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Criterion 3– Research, Innovations and Extension

3.3: Research Publications and Awards

3.3.1: Number of research papers published per teacher in the Journals notified on UGC care list during the last five years

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Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
						Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
2023-2024								
XRD and AFM characterization of Diarun-MgO-Averaplus fabricated nanoparticles using precipitation method	A Christy Ferdinand, T Kasthury	Physics	Zhuzao/Foundary	2024	1001-4977	https://foundryjournal.net/	https://foundryjournal.net/wp-content/uploads/2024/03/5.FJ23C296.pdf	Yes Scopus
STRUCTURAL PROPERTIES OF CU MG ALLOY NANOPARTICLES: SYNTHESIZED BY WET CHEMICAL PRECIPITATION TECHNIQUE	A Christy Ferdinand, T Kasthury	Physics	Journal of Nonlinear Analysis and Optimization: Theory & Applications	2024	1906-9685	https://jnao-nu.com/	https://jnao-nu.com/Vol.%2015,%20Issue.%2001,%20January-June%20:%202024/2.6.pdf	Yes
Antibacterial activity against Staphylococcus aureus and Salmonella enterica and Density functional studies on Silver doped Bismuth Selenide nanostructures	R Thilak Kumar	Physics	International Journal of Multidisciplinary Research and Growth Evaluation	2024	2582-7138	https://www.allmultidisciplinaryjournal.com/	https://www.allmultidisciplinaryjournal.com/uploads/archives/20240715171536_B-24-90.1.pdf	No
Synthesis and characterization of Cu-Al alloy nanoparticles using chemical precipitaion method	A Christy Ferdinand, T Kasthury	Physics	Zhuzao/Foundary	2024	1001-4977	https://foundryjournal.net/	https://foundryjournal.net/wp-content/uploads/2024/05/18.FJ23C385.pdf	Yes Scopus

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PREPARATION AND CHARACTERIZATION OF DIARUN DOPED MAGNESIUM OXIDE NANOCOMPOSITES: A WET CHEMICAL APPROACH	A Christy Ferdinand, T Kasthury	Physics	Journal of Nonlinear Analysis and Optimization: Theory & Applications	2024	1906-9685	https://jnao-nu.com/	https://jnao-nu.com/Vol.%2015,%20Issue.%2001,%20January-June%20:%202024/22.3.pdf	Yes
Women in the Unorganized Sector in India	Dr.S.Subash Chandrabose	Political Science	International Journal of Novel Research and Development	2024	2456-4184	https://www.ijnrd.org/	https://www.ijnrd.org/viewpaperforall?paper=IJNRD2402045	No
LEAN SIX SIGMA METHODOLOGY FOR MANUFACTURING INDUSTRY DEFECT REDUCTION	Eakambaram. S	Statistics	Journal of Xidian University	2024	1001-2400	https://xadzkjdx.cn/	https://drive.google.com/file/d/1BxNEegDk8lxaHRu43OtG5pDlyI0nHL6K/view	Yes Scopus
Humidity Sensing Performance of Nitrogen Doped Reduced Graphene Oxide-WO3 Composite	R. Ravichandran	Chemistry	BioNanoScience	2024	2191-1630, 2191-1649	https://link.springer.com/journal/12668	https://link.springer.com/article/10.1007/s12668-023-01193-z	Yes Springer
A Study on Variable Selections and Prediction for Crop Recommender System with Soil Nutrients Using Stochastic Model and Machine Learning Approaches	S. Dhanavel, A. Murugan	Computer Science	TuijinJishu/Journal of Propulsion Technology	2023	1001-4055	https://www.propulsiontechjournal.com/	https://doi.org/10.52783/tjjpt.v44.i2.1065	Yes Scopus

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Agricultural Data Analysis with Weather and Soil UsingMachine Learning Models	S. Dhanavel, A. Murugan	Computer Science	Journal of Chemical Health Risks	2023	2251-6727	https://jchr.org/index.php/JCHR	https://jchr.org/index.php/JCHR/article/view/1353/1040	Yes Scopus
A Study on the Impact of Paddy Yield with weather conditions in India using Data Mining and Machine Learning Approaches	Dr. A. Murugan	Computer Science	European Chemical Bulletin	2023	2063-5346	https://www.eurchembull.com/	https://www.eurchembull.com/archives/volume-12/issue-6/10328	Yes Scopus
Analysis of Online Intrusion Detection Models to Inccorporate Secured Digital Cash Transaction in Mobile Smart Systems	Dr. R. Bhuvaneswari, Dr. M. Paul Arokiadass Jerald	Computer Science	ICTACT JOURNAL ON COMMUNICATION TECHNOLOGY	2023	0976-0091, 2229-6948	https://ictactjournals.in/	https://ictactjournals.in/ArticleDetails.aspx?id=14901	Yes
A Study on Prediction for Crop Area, Production, and Yield Analysis Using Machine Learning Approaches	Dr. A. Murugan	Computer Science	TuijinJishu/Journal of Propulsion Technology	2023	1001-4055	https://propulsiontechjournal.com/	https://propulsiontechjournal.com/index.php/journal/article/view/1434/1003	Yes Scopus
A Study on Parkinson's Disease Parameters Using Data Mining with Machine Learning Approaches	Dr. A. Murugan	Computer Science	TuijinJishu/Journal of Propulsion Technology	2023	1001-4055	https://propulsiontechjournal.com/	https://propulsiontechjournal.com/index.php/journal/article/view/1435	Yes Scopus
Intertextuality In Chitra Banerjee Divakaruni's Trilogy Brotherhood Of The Conch	Dr. K. GANESHRAM	ENGLISH	Journal of Namibian Studies	2023	1863-5954 2197-5523	https://namibian-studies.com/index.php/JNS/index	https://namibian-studies.com/index.php/JNS/article/view/5488	Yes Scopus

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Sunlight-driven photocatalytic degradation of organic pollutant in an aqueous medium by Gd-doped CuO nanocatalyst	V. Natarajan , R. Thilak Kumar	Physics	Journal of Materials Science: Materials in Electronics	2023	0957-4522	https://link.springer.com/journal/10854	https://doi.org/10.1007/s10854-023-11715-w	Yes Springer
POLYNOMIAL REGRESSION MODELLING PERFORMANCE EVALUATION	Eakambaram. S	Statistics	Journal of Information and Computational Science	2023	1548-7741	https://joics.org/	https://drive.google.com/file/d/1fu8eMCJaLI5ASdVGyCGyJ7Vz_53aNHyh/view	No
A CONTRAST BETWEEN THREE LINEAR PROGRAMMING MODELS FOR ESTIMATING LEAST ABSOLUTE REGRESSION MODEL	Eakambaram. S	Statistics	Journal of Xidian University	2023	1001-2400	https://xadzkjdx.cn/	https://drive.google.com/file/d/1O615pkbriLTU4B9-_YBm4N4-sHdVqqNv/view	Yes Scopus
ESTIMATION OF LEAST ABSOLUTE DEVIATIONS REGRESSION WITH SERIALLY CORRELATED DISTURBANCES	Eakambaram. S	Statistics	High Technology Letters	2023	1006-6748	https://gjstx-e.cn/	https://drive.google.com/file/d/1ppGvybUUgmSqdVRPAWWzn7MQXjrhIrvE/view	Yes Scopus
Estimation of Least Absolute Deviation for Multiple Linear Regression Models	Eakambaram. S	Statistics	High Technology Letters	2023	1006-6748	https://gjstx-e.cn/	https://drive.google.com/file/d/1oIoz2rH_HcuCR1lyL95fIGmeNa2Fuacy/view	Yes Scopus

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PROCESS IMPROVEMENT USING SIX SIGMA DIFFERENT COMPONENTS	Eakambaram. S	Statistics	High Technology Letters	2023	1006-6748	https://gistx-e.cn/	https://drive.google.com/file/d/16TRe0bpbLHI0VA4D5-NF2hvcoSBvAFom/view	Yes Scopus
THE METRICS FOR LEAST SQUARES ROBUST RIDGE REGRESSION ESTIMATOR TO SOLVE MULTICOLLINEARITY	Eakambaram. S	Statistics	Journal of Xidian University	2023	1001-2400	https://xadzkjdx.cn/	https://drive.google.com/file/d/18aVizBcFZUYAlUqIEVXfF6gDUoPnMDXN/view	Yes Scopus
Bharati's Indigenous Curriculum & Mother Tongue Education	Dr R.MURUGAN	TAMIL	Journal of Valartamil	2023	2716-5507	https://ejournal.upsi.edu.my/index.php/JTS	https://ejournal.upsi.edu.my/index.php/JTS/article/view/8379/4576	No
SILAPATHIKARATHTHIL VAZHVIYAL ARANGAL	Dr S.PARASURAMAN	TAMIL	Shanlax International Journal of Tamil Research	2023	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)
Kambaramayanathil Vazhviyal Nerigal	Dr. G.PUSHPAVALLI	TAMIL	Shanlax International Journal of Tamil Research	2023	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)

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Consumers'' Perception on Marketing Strategies adopted by select retailers in Online Market	Dr.P.GNANAVEL	Commerce	The Seybold Report	2023	1533-9211	https://seyboldreport.org	https://seyboldreport.org/article_overview?id=MTAyMDIzMTEzMDQ1NDA1MjA2	Yes Scopus
Customers' Perception On Problems Towards Adopting Marketing Strategies Of Select Online Retailers	Dr.P.GNANAVEL	Commerce	Journal of Namibian Studies	2023	1110-1122 2197-5523	https://namibian-studies.com/index.php/JNS/index	https://namibian-studies.com/index.php/JNS/article/view/5168/3578	Yes Scopus
Shgs And Ngos Activities In The Women Entrepreneurship Development	Dr. R. Prabakaran	Commerce	Journal of Namibian Studies	2023	1110-1122 2197-5523	https://namibian-studies.com/index.php/JNS/index	https://namibian-studies.com/index.php/JNS/article/view/5167	Yes Scopus
ROLE OF SELF HELP GROUPS IN THE ECONOMIC DEVELOPMENT OF WOMEN – SPECIAL REFERENCE TO KOZHIKODE DISTRICT	Dr. R. Prabakaran	Commerce	THE SEYBOLD REPORT	2023	1533-9211	https://seyboldreport.org	https://seyboldreport.org/article_overview?id=MTEyMDIzMDcwNDE0MTg3Mjc4	Yes Scopus
HERO'S JOURNEY WITH REFERENCE TO CHITRA BANERJEE DIVAKARUNI'S THE CONCH BEARER AND JOSEPH CAMPBELL'S THE HERO WITH A THOUSAND FACES	Dr. K. GANESHRAM	ENGLISH	THE SEYBOLD REPORT	2023	1533-9211	https://seyboldreport.org	https://seyboldreport.org/article_overview?id=MDUyMDIzMDUyNTQ5NDYxNTI2	Yes Scopus

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2022-2023								
Sanadhana Maatramum Maru Aakkamum - Pandiya Nedunchezhiyanai Mun Vaithu	Dr.C.ELUMALAI	TAMIL	Journal of Tamil Culture and Literature	2023	2583-0325	https://forschung.in/journals/index.php/jtcl	https://www.forschung.in/journals/index.php/jtcl/article/view/75	No
Bharathiyin Paadaththitta Sindhanaigal	Dr.R.Murugan	TAMIL	Kavimugi	2023	2950-6611	Printed Journal	Printed Journal	No
Solutions Of Fully Fuzzy Linear Programming Problem Models Using ϑ_R - Ranking Function	S. Ramathilagam	Mathematics	Educational Administration: Theory and Practice	2023	1300-4832, 2148-2403(P)	https://kuey.net/index.php/kuey/index	https://kuey.net/index.php/kuey/article/view/6446	Yes Scopus
Analysis and Prediction for Micronutrients Performance in Paddy using Data Mining and Machine Learning Approaches	Mr. S. Dhanavel	Computer Science	Journal of Data Acquisition and Processing	2023	1004-9037	https://sjcj.nuaa.edu.cn/sjcjycl/home		Yes Scopus
An Medical Clinical, of a Single-Queue, Single-Server Model with a Feedback	N.Paranjothi	Statistics	Journal of Xidian University	2023	1001-2400	https://xadzkjdx.cn/	https://drive.google.com/file/d/1_lgQzjopjpEAGeszkhkQylx2Qw1qHd2z/view	Yes Scopus
Analysis of the Steady State of a Queueing System with Random Vacation Under Additional Variables	N.Paranjothi	Statistics	High Technology Letters	2023	1006-6748	https://gjstx-e.cn/	DOI.org/10.37896/HTL29.05/8636	Yes Scopus

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A Non-Markovian Queuing System for a Single Server with Multiple Working Vacations and a Broken Promise	N.Paranjothi	Statistics	Journal of Information and Computational Science	2023	1548-7741	www.joics.org	https://drive.google.com/file/d/1_x87y3dSOZV9dMxOz8Fkj1Y3I4_wwGBo/view	No
Modelling of a cloud platform via M/M+ M/1queues of a Jackson network	N.Paranjothi	Statistics	International Journal of Cloud Computing	2023	Print: 2043-9989 Online: 2043-9997	https://www.inderscience.com/jhome.php?jcode=ijcc	https://doi.org/10.1504/IJCC.2023.129774	Yes Scopus
Assessing the Vanishing State through Hidden Markov Chain in an Organization	N.Paranjothi	Statistics	Journal of Xidian University	2023	1001-2400	https://xadzkjdx.cn/	https://drive.google.com/file/d/1fHKc90Otf6h9o4AZO4ejQ1xekb1d7vVY/view	Yes Scopus
Markov model analysis of faculty promotion in education institution	N.Paranjothi	Statistics	Journal of Xidian University	2023	1001-2400	https://xadzkjdx.cn/	https://drive.google.com/file/d/1z6Fe5XFa0hGfNjryAq8lpXVapPT1zPBY/view	Yes Scopus
A Study on Sustainable Development Goals in South India Using Data Mining and Machine Learning Approaches	Santhosh Kumar B	Computer Applications	Journal of Data Acquisition and Processing	2023	1004-9037	https://sjcj.nuaa.edu.cn/sjcjycl/home	https://sjcjycl.cn/article/view-2023/pdf/03_1559.pdf	Yes Scopus
A Study on Women's rights in UNO	Dr.S.Subash Chandrabose	Political Science	Education and Society	2023	2278-6864	Print Journal	Printed Journal	Yes

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Modified operations of Trapezoidal fuzzy number foe solving fuzzyn linear programmin problems	S. Ramathilagam	Mathematics	Fuzzy Mathematical Analysis and Advances in Computational Mathematics	2022	ISBN : 978-981-19-0470-7	https://link.springer.com/book/10.1007/978-981-19-0471-4	https://link.springer.com/chapter/10.1007/978-981-19-0471-4_2	Yes Springer
Structural, morphological and magnetic properties of (c-ZnFe2O4 and t-CuFe2O4) ferrite nanoparticle synthesized by reactive ball milling	A CHRISTY FERDINAND	PHYSICS	CHEMICAL DATA COLLECTIONS	2022	2405-8300	https://www.sciencedirect.com/journal/chemical-data-collections	https://doi.org/10.1016/j.cdc.2021.100825	Yes Scopus
Structural, Spectroscopy and Magnetic Properties of Copper Doped Nicke Ferrite by the Co-Precipitaion method	A CHRISTY FERDINAND	PHYSICS	Chemistry Africa	2022	2522-2788	https://link.springer.com/journal/42250	https://link.springer.com/article/10.1007/s42250-022-00438-w	Yes Springer
IIdentification of Heavy Metal Source and Seasonal Variation in Flatfish from Cuddalore Coastal Waters in Southern India.	Aruljothiselvi S , Rajakumar	ZOOLOGY	Indian Journal of Natural Sciences	2022	0976-0997	https://tnsroindia.org.in/journals.html	https://tnsroindia.org.in/JOURNAL/issue70/ISSUE%2070%20FEB%202022%20FULL%20TEXT%20PART%20-%202.pdf	No

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Seasonal Variation in the Proximate Composition of Flatfishes(Order:Pleuronectiformes) Collected from Cuddalore, south east coast of Tamil Nadu	Aruljothiselvi S , Rajakumar	ZOOLOGY	Indian Journal of Natural Sciences	2022	0976-0997	https://tnsroindia.org.in/journals.html	https://tnsroindia.org.in/JOURNAL/issue70/ISSUE%2070%20FEB%202022%20FULL%20TEXT%20PART%20-%202.pdf	No
Influence of Cadmium Toxicity and Orgonic Feeds on growth performance of fresh water fish labeo rohita	K.Aruldoss	ZOOLOGY	International Journal of Zoology Studies	2022	2455-7269	www.zoologyjournals.com	https://www.zoologyjournals.com/archives/2022/vol7/issue1/7-1-13	No
Cadmium Toxicity Studies and the effect of several Bio Feeds in Labeo Rohita	K.Aruldoss	ZOOLOGY	Uttar Pradesh Journal of Zoology	2022	0256-971X	https://mbimph.com/index.php/UPJOZ	https://mbimph.com/index.php/UPJOZ/article/view/2872	Yes
Effect of Cadmium and LC50 Values of WBCs of Labeo Rohitaa Freshwater Fish.	K.Aruldoss	ZOOLOGY	International Journal of Fisheries and Aquaculture Sciences	2022	2248-9975	http://www.irphouse.com/sci/ijfas.htm	http://www.irphouse.com/ijfas22/ijfasv12n1_02.pdf	No
Machine Learning-Based Trust Management in Cloud Using Blockchain Technology	M. Paul Arokiadass Jerald, R.Bhuvaneswari	Computer Science	SN Computer Science	2022	2661-8907	https://www.springer.com/journal/42979	https://link.springer.com/article/10.1007/s42979-022-01337-0	Yes Springer

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A NOVEL METHOD FOR PREDICTION OF WEB SERVICES USING EXTRA TREES REGRESSION THROUGH HYPERPARAMETER TUNING	Mr. P. Mourougaradjane	Computer Science	Journal of Tianjin University Science and Technology	2022	0493-2137	https://ijisae.org/index.php/IJISAE	https://ijisae.org/index.php/IJISAE/article/view/2171/754	Yes Scopus
Prediction of Web Service Performance and Successability using Comparative Analysis of Machine Learning and Deep Learning Algorithms	Mr. P. Mourougaradjane	Computer Science	International Journal of Intelligent Systems and Applications in Engineering	2022	2147-6799	https://ijisae.org/index.php/IJISAE	https://ijisae.org/index.php/IJISAE/article/view/2171	Yes Scopus
Analyzing the Lack of interest in the undergraduate science courses by using fuzzy relational equationsof Max-Add composition	Dr. S. Ramathilagam	Mathematics	TELEMATIQUE	2022	1856-4194	https://www.provinciajournal.com/index.php/telematique	https://www.provinciajournal.com/index.php/telematique/article/view/397	Yes Web Of Science
Numerical study of Casson-Nanofluid flow past an exponentially stretching sheet filled by porous medium in presence of velocity and thermal slip effects	R. VijayaKumar	Mathematics	International Journal of Health Sciences	2022	2550-6978	https://sciencescholar.us/journal/index.php/ijhs	https://sciencescholar.us/journal/index.php/ijhs/article/view/9913	Yes Scopus

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Joint Effects of Thermophoresis and Brownian Motion on Williamson-Nano Fluid Flow Near a Non-Linearly Stretching Sheet Filled by Porous Medium	R. VijayaKumar	Mathematics	Journal of Nanofluids	2022	2169-4338	http://www.aspbs.com/jon/	https://www.ingentaconnect.com/contentone/asp/jon/2022/00000011/00000006/art00014?crawler=true&mimetype=application/pdf	Yes Scopus
Hall and Ion Slip Influence on Unsteady MHD Convective Rotating Flow of Non-Newtonian Fluid through Porous Medium with Chemical Reaction	R.VijayaKumar	Mathematics	International Journal of Mechanical Engineering	2022	0974-5823	https://www.kalaharijournals.com/ijme.php	https://kalaharijournals.com/resources/APRIL_69.pdf	Yes Scopus
Radiation Effect on Unsteady Mixed Convective MHD Flow of Heat and Mass Transfer Over An Accelerated Infinite Vertical Porous Plate With Suction And Chemical Reaction	R.VijayaKumar	Mathematics	IOSR Journal of Mathematics	2022	2278-5728	https://www.iosrjournals.org/iosr-jm.html	https://iosrjournals.org/iosr-jm/papers/Vol18-issue2/Ser-1/E1802013241.pdf	No
Contemporary Tamil Poems : Gyno Critic Approach	Dr.J.Shyamala	Tamil	International Research Journal of Tamil	2022	2582-1113	https://irjt.iorpress.org/index.php/irjt	https://irjt.iorpress.org/index.php/irjt/article/view/1271	Yes
Women' Rights and Protection in India: Impact on the Rights	Dr.S.Subash Chandrabose	Political Science	Journal of the Asiatic Society of Mumbai	2022	0972-0766	https://www.asiaticsociety.org.in/journal/	Printed Journal	Yes

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						Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
Constitutional Reforms of India from 1800 to 1950	Dr.S.Subash Chandrabose	Political Science	AJANTA	2022	2277-5730	https://www.ajantaprakashan.in/ajanta_journal.html	Printed Journal	No
Women Rights in Tamil Nadu with special reference to Harassment and the Functions of SHRC	Dr.S.Subash Chandrabose	Political Science	International Journal of Biology, Pharmacy and Allied Science	2022	2277-4998	www.ijbpas.com	https://ijbpas.com/pdf/2022/January/MS_IJBPAS_2022_JAN_SPCL_1078.pdf	No
Biochemical studies on the cissus Quadrangularis plant extract treated.Fish Oreochromis Mossambicus Peters	R.Kannan	Zoology	Indian Journal of Natural Sciences	2022	0976-0997	https://tnsroindia.org.in/journals.html	https://tnsroindia.org.in/JOURNAL/issue73/ISSUE%2070%20FEB%202022%20FULL%20TEXT%20PART%20-%202.pdf	No
Optimization of scale inhibitors nitrilotriacetic acid and 1-hydroxyethylidene-1, 1-diphosphonic acid, efect of magnesium ions and temperature on calcium carbonate scale	V K Subramanian	Chemistry	Chemical Papers	2022	0366-6352	https://www.springer.com/journal/11696	https://doi.org/10.1007/s11696-022-02503-7	Yes Springer
Spray pyrolisis deposition and characterization of Cd-TiO2 thin film for photocatalytic and photovoltaic applications	V K Subramanian	Chemistry	Journal of Electrochemical Science and Engineering	2022	1847-9286	https://pub.iapchem.org/ojs/index.php/JESE	https://pub.iapchem.org/ojs/index.php/JESE/article/view/1120	Yes Scopus

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Crystal structure, Hirshfeld surface and frontier molecular orbital analysis of 10-benzyl-9-(4-hydroxy-3-methoxyphenyl)-3,3,6,6-tetramethyl 3,4,6,7,9,10-hexahydroacridine-1,8(2H,5H)-dione	V.Suganya	Chemistry	Acta Crystallographica Section E: Crystallographic Communications	2022	2056-9890	https://journals.iucr.org/e/	https://journals.iucr.org/e/issues/2022/08/00/yk2171/	Yes Scopus
INDIVIDUALITY CHAOS DISMISSED FEMINITY PREFERENCE IN DATTANI'S DANCE LIKE A MAN	C. KAVITHA	ENGLISH	INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS	2022	2320-2882	https://www.ijcrt.org/	https://www.ijcrt.org/papers/IJCRT2204014.pdf	No (Removed from UGC list)
TRAUMA OF INDENTITY AND CULTURE IN GITA HARIHARAN'S FUGITIVE HISTORIES	K. MAHENDRA VARMAN	ENGLISH	JOURNAL OF THE ORIENTAL INSTITUTE	2022	0030-5324	https://journaloi.com/index.php/JOI	Printed Journal	Yes
THE LONELINESS AND ALIENATION OF MODERN AMERICAN SOCIETY IN VIKRAM SETH'S THE GOLDEN GATE	R. NISHA	ENGLISH	JOURNAL OF THE ORIENTAL INSTITUTE	2022	0030-5324	https://journaloi.com/index.php/JOI	Printed Journal	Yes
TRACES OF FEMININE CONSCIOUSNESS IN SHOBHA DE'S SOCIALITE EVENINGS	S . DAVIDSOUNDAR & MR. S. KALIDASS	ENGLISH	JOURNAL OF THE ORIENTAL INSTITUTE	2022	0030-5324	https://journaloi.com/index.php/JOI	Printed Journal	Yes
2021-2022								

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Hall and Ion Slip Influence on Unsteady MHD Convective Rotating Flow of Non-Newtonian Fluid through Porous Medium with Chemical Reaction	R.VijayaKumar	Mathematics	International Journal of Mechanical Engineering	2022	0974-5823	https://www.kalaharijournals.com/journals.php	https://kalaharijournals.com/resources/APRIL_69.pdf	Yes Scopus
Fuzzy relational equation - composition of maximum-addition	S. Ramathilagam	Mathematics	GIS SCIENCE JOURNAL	2022	1869-9391	https://gisscience.net/	https://drive.google.com/file/d/1BFOENFRLnhnlu5Z8QHxu8rOfluHcnHkx/view	No
Structural, morphological and magnetic properties of (c-ZnFe2O4 and t-CuFe2O4) ferrite nanoparticle synthesized by reactive ball milling	A CHRISTY FERDINAND	PHYSICS	Chemical Data Collections	2022	2405-8330	https://www.sciencedirect.com/journal/chemical-data-collections	https://www.sciencedirect.com/science/article/abs/pii/S2405830021001798	Yes Scopus
The Impact of the Government Aid to Human Development in the Covid-19	Dr.S.Subash Chandrabose	Political Science	Ajanta	2022	2277-5730	https://www.ajantaprakashan.in/ajanta_journal.html	Printed Journal	No
Sexual Harssment and Women Rights Protective Mechanism in Tamil Nadu	Dr.S.Subash Chandrabose	Political Science	International Journal of Early Childhood Special Education	2022	1308-5581	https://www.int-jecse.net/	https://www.int-jecse.net/article/SEXUAL+HARASSMENT+AND+WOMEN+RIGHT+PROTECTIVE+MECHANISM+IN+TAMILNADU_5281/	Yes Scopus

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Robust Regression using Least Absolute Deviations Method	Dr. S. Eakambaram	Statistics	International Journal of Mechanical Engineering	2022	0974-5823	https://www.kalaharijournals.com/journals.php	https://kalaharijournals.com/resources/MAY_08.pdf	Yes Scopus
Bayesian Estimation of Robust Regression using Least Absolute Deviations Method	Dr. S. Eakambaram	Statistics	Aryabhatta Journal of Mathematics and Informatics	2022	Print : 0975-7139 Online : 2394-9309	https://www.aryanseducationtrust.com/abjmi	https://www.aryanseducationtrust.com/_files/ugd/1ee7d3_ccc88bc703af46d0b77c115f9fbadbfd.pdf	No
DATA MINING APPLICATIONS AND VISUALIZATION OF HEALTHCARE DATABASE	N.Paranjothi	Statistics	Aryabhatta Journal of Mathematics and Informatics	2022	Print : 0975-7139 Online : 2394-9309	https://www.aryanseducationtrust.com/abjmi	https://www.aryanseducationtrust.com/_files/ugd/1ee7d3_ccc88bc703af46d0b77c115f9fbadbfd.pdf	No
Novel Synthesis, Spectralcharacterisation and DFT calculation of (3,4-bis((E)(substituted-dichlorobenzylidene)amino)phenyl)(phenyl)methanone derivatives	J.Chakkaravarthy	Chemistry	Materials Today: Proceedings	2021	2214-7853	https://www.sciencedirect.com/journal/materials-today-proceedings	https://www.sciencedirect.com/science/article/abs/pii/S2214785320396541	Yes Scopus

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Novel Synthesis of NE,N`E-4,4`-Sulfonyl bis(N-(substituted-dichlorobenzylidene) anilines derivative their application biological and DFT studies	J.Chakkaravarthy	Chemistry	Journal of Physics: Coference Series	2021	Online: 1742-6596 Print: 1742-6588	https://iopscience.iop.org/journal/1742-6596	https://iopscience.iop.org/article/10.1088/1742-6596/1724/1/012046/pdf	Yes Scopus
Photo-Electrocatalytic Applications of Pure and Bismuth Doped Zinc Oxide Thin Films by Spray Pyrolysis	V K Subramanian	Chemistry	Chemistry Africa	2021	2522-5766	https://www.springer.com/journal/42250	https://doi.org/10.1007/s42250-021-00300-5	Yes Springer
Synergistic effects of magnesium and EDTA on polymorphism and morphology of CaCO3 and its influence on scale	V K Subramanian	Chemistry	Journal of Crystal Growth	2021	Online: 1873-5002 Print: 0022-0248	https://www.sciencedirect.com/journal/journal-of-crystal-growth	https://www.sciencedirect.com/science/article/abs/pii/S0022024821000841	Yes Scopus
An Identification of Heart Disorder using Machine Learning Algorithms	G. Karthikeyan	Computer Science	Design Engineering	2021	0011-9342	http://www.thedesignengineering.com/index.php/DE	https://www.thedesignengineering.com/index.php/DE/article/view/4206	Yes Scopus
Design of Optimal Deep Learning based Disease Diagnosis Model for Cloud Centric IoT Healthcare Environment	G. Karthikeyan	Computer Science	Turkish Journal of Physiotherapy and Rehabilitation	2021	2651-4451	https://dergipark.org.tr/en/pub/tjpr	https://turkjphysiotherrehabil.org/pub/pdf/321/32-1-3388.pdf	Yes Scopus

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A Novel Improved Grey Wolf Optimization Algorithm Based Resource Management Strategy for Big Data Systems	J. Saravana Kumar	Computer Science	Journal of Computational and Theoritical Nano Science	2021	1546-1955	http://www.aspbs.com/ctn/	https://www.ingentaconnect.com/contentone/asp/jctn/2021/00000018/00000004/art00013	Yes Scopus
Improved Artificial Butterfly Optimization Algorithm Based Resource Scheduling Technique for Big Data Environment	J. Saravana Kumar	Computer Science	Journal of Green Engineering	2021	2677-2696			No
Fuzzy relational equation of minimum-addition composition	S. Ramathilagam	Mathematics	Strad Research	2021	0039-2049	https://stradresearch.org/	https://doi.org/10.37896/sr8.1/002	No
Washing machine using fuzzy logic controller to provide wash quality	S. Ramathilagam	Mathematics	Soft computing	2021	1433-7479, 1432-7643	https://link.springer.com/journal/500	https://link.springer.com/article/10.1007/s00500-020-05477-4	Yes Scopus
Automation on washing machine using fuzzy logic controller provided with three input and two output for setting the temperature of water	S. Ramathilagam	Mathematics	IEEE-International Conference on Trends in Electronics and Informatics (ICEI)	2021	978-1-6654-1570-5	https://ieeexplore.ieee.org/xpl/conhome/9452735/proceeding	https://ieeexplore.ieee.org/document/9453060	Yes Scopus
Fuzzy logic control system of Washing machine using Python	S. Ramathilagam	Mathematics	Malaya journal of Matematik	2021	2321 – 5666	https://www.malayajournal.org/index.php/mjm	https://www.malayajournal.org/articles/MJMS210109.pdf	Yes

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Smart air conditioning system using fuzzy logic system and simulation using mat lab	S. Ramathilagam	Mathematics	Malaya journal of Matematik	2021	2321–5666	https://www.malayajournal.org/index.php/mjm	https://www.malayajournal.org/articles/MJMS210070.pdf	Yes
A study on structural analysis and magnetic behaviour of barium hexaferrite nanomaterial: Classical ferromagnetic material under thermal treatment	A CHRISTY FERDINAND	PHYSICS	Applied Physics A	2021	0947-8396	https://link.springer.com/journal/339	https://link.springer.com/article/10.1007/s00339-021-05179-0	Yes Scopus
Climate Change in Pandemic Era: A Study Regarding India	Dr.S.Subash Chandrabose	Political Science	Galaxy Link	2021	2319-8508	https://ajantaprakashan.in/galaxy_link_journal.html	Printed Journal	No
AWomen's Responsibility is more than Male People in the Society : A Critical analysis	Dr.M.Jeyabrabha	Political Science	Journal of Emerging Technologies and Innovative Research	2021	2349-5162	https://www.jetir.org/	https://www.jetir.org/papers/JETIR2110214.pdf	Yes Old List
Prevalence of Cardio Vascular Disease Risk Facors in Suburban of Chennai, South India: A Community Assessment	N.Paranjothi	Statistics	Aryabhatta Journal of Mathematics and Informatics	2021	Print : 0975-7139 Online : 2394-9309	https://www.aryanseducationtrust.com/abjmi		No
Evaluation of Breast Self - Examination and Clinical Breast Examination Among Rural Female Population in Tamilnadu: A Pilot Study"	N.Paranjothi	Statistics	Aryabhatta Journal of Mathematics and Informatics	2021	Print : 0975-7139 Online : 2394-9309	https://www.aryanseducationtrust.com/abjmi	https://www.indianjournals.com/ijor.aspx?target=ijor:abjmmi&volume=13&issue=2&article=013	No

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Design and Development of M/G/1 Queuing Model for Real Time Applications	N.Paranjothi	Statistics	Turkish Journal of Computer and Mathematics Education	2021	3048-4855	https://turcomat.org/index.php/turkbilmat/index	https://turcomat.org/index.php/turkbilmat/article/view/6292	Yes Scopus
A Poisson Queues with Markov Modulated service rates	N.Paranjothi	Statistics	International Journal of Mathematics in Operational Research	2021	1757-5869	https://www.inderscience.com/jhome.php?jcode=ijmor	https://www.inderscience.com/info/inarticle.php?artid=116317	Yes Scopus
Vallalar Vagutha Vazhkkai Neri	D.VENI	Tamil	Modern Thamizh Research	2021	2321-984X	https://rajapublications.com/issues	Printed Journal	Yes
Kalanthorum Kadal Velippadu	R.MURUGAN	Tamil	Modern Thamizh Research	2021	2321-984X	https://rajapublications.com/issues	Printed Journal	Yes Discontinued in January 2022

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Histological studies on the cissus Quadrangularis plant extract treated fish Oreochromis Mossambicus peters	R.Kannan	Zoology	Indian Journal of Applied Research	2021	2249-555X	https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/	https://www.worldwidejournals.com/indian-journal-of-applied-research-(IJAR)/fileview/histological-studies-on-the-cissus-quadrangularis-plant-extract-treated-fish-oreochromis-mossambicus-peter_March_2022_9754692312_2314912.pdf	Yes Scopus
2020-2021								
Individual and synergetic effect of EDTA and NTA on polymorphism and Q1Q9 morphology of CaCO3 crystallization process in presence of barium	V K Subramanian	Chemistry	Journal of Solid state Chemistry	2021	Print: 0022-4596 Online: 1095-726X	https://www.sciencedirect.com/journal/journal-of-solid-state-chemistry	https://doi.org/10.1016/j.jssc.2021.122026	Yes Scopus

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Privatization of Water Sources and Its Implications in India	Dr.V.Leela	Economics	International Journal of Innovative Research in Technology	2021	2349-6002	https://ijirt.org	https://ijirt.org/master/publishedpaper/IJIRT150740_PAPER.pdf	No
GENDER DISPARITY IN ALICE WALKER'S THE COLOR PURPLE	DR. S. DAVID SOUNDAR	ENGLISH	Wesleyan Journal of Research	2021	0975-1386	http://www.wesleyanjournal.in/	Printed Journal	Yes
FEMININE QUEST FOR IDENTITY AND SELF ASSERTIVENESS IN SHOBA DE'S STARRY NIGHTS	DR.S . DAVIDSOUNDAR & MR. S. KALIDASS	ENGLISH	Psychology and Education	2021	0033-3077	http://psychologyandeducation.net/pae/index.php/pae	http://psychologyandeducation.net/pae/index.php/pae/article/view/5276	No
Effect of Sr2+ ions on crystallization process of CaCO3 in presence of EDTA, NTA and Mixture of EDTA and NTA	V K Subramanian	Chemistry	International Journal of Advanced Science and Technology	2020	Print:2005-4238 Online:2207-6360	http://sersc.org/journals/index.php/IJAST/index	http://sersc.org/journals/index.php/IJAST/article/view/34188	Yes Scopus

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Estimation of Qualitative and Quantitative Analysis of Antioxidant activity of different parts of catharanthus Roseus (L).	V K Subramanian	Chemistry	Plant Archives	2020	0972-5210	http://www.plantarchives.org/	https://www.researchgate.net/publication/347911323_ESTIMATION_OF_QUALITATIVE_AND_QUANTITATIVE_ANALYSIS_OF_ANTIOXIDANT_ACTIVITY_OF_DIFFERENT_PARTS_OF_CATHARANTHUS_ROSEUS_L	Yes Scopus
The effect of DTPA on calcium carbonate scale deposition on copper and aluminium surfaces	V K Subramanian	Chemistry	Heliyon	2020	2405 8440	https://www.cell.com/heliyon/home	https://www.cell.com/heliyon/pdf/S2405-8440(20)30351-0.pdf	Yes Scopus
Crystal structure, Hirshfeld surface and frontier molecular orbital analysis of 10-benzyl-9-(3-ethoxy-4-hydroxyphenyl)-3,3,6,6-tetramethyl 3,4,6,7,9,10-hexahydroacridine-1,8(2H,5H)-dione	V.Suganya	Chemistry	Acta Crystallographica Section E: Crystallographic Communications	2020	2056-9890	https://journals.iucr.org/e/issues/2020/04/00/	https://www.sciencedirect.com/org/science/article/pii/S205698902200994X	Yes Scopus

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Effect of barium and strontium ions on the morphology and polymorphism of CaCO3	V K Subramanian	Chemistry	Chemical Physics Letters	2020	Print: 0009-2614 Online: 1873-4448	https://www.sciencedirect.com/journal/chemical-physics-letters	https://doi.org/10.1016/j.cplett.2020.137502	Yes Scopus
Unsteady solute dispersion in non-Newtonian fluid flow in a channel with effects of magnetic field and wall absorption	R.VijayaKumar	Mathematics	Journal of Information and Computational Science	2020	1548-7741	https://joics.org/	https://drive.google.com/file/d/1dd54j_ENmHVfEDPs51b5MebXK_iVKuVm/view	No
Structural and Magnetic Characterization of Rare Earth Element Cerium-Doped Nickel Ferrite Nanoparticles (NiCexFe2-xO4) by Sol-Gel method with antibacterial activity	R Thilak Kumar	Physics	Journal of superconductivity and novel magnetism	2020	1557-1939	https://link.springer.com/journal/10948	https://link.springer.com/article/10.1007/s10948-020-05475-5	Yes Springer
Synthesis, characterization and applications of Aniline passivated bismuth selenide	R Thilak Kumar	Physics	Materials Today: Proceedings	2020	2214-7853	https://www.sciencedirect.com/journal/materials-today-proceedings	https://doi.org/10.1016/j.matpr.2020.03.744	Yes Scopus
Construction of Shopping Model and Analysis using Fuzzy Linear Programming	Dr. S. Ramathilagam	Mathematics	Design Engineering	2020	0011-9342	https://ores.su/en/journals/design-engineering-toronto/	http://thedesignengineering.com/index.php/DE/article/view/2159	Yes Scopus

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Performance of ZnO-Nb_2O_5 core/shell and aluminium doped ZnO electron transporting layer with CdS/CdSe quantum dot-sensitized solar cells	P Venkatachalam	Physics	Indian Journal of Pure & Applied Physics	2020	0975-1041	http://op.niscair.res.in/index.php/IJPAP/index	http://op.niscair.res.in/index.php/IJPAP/article/view/28895	Yes Scopus
Organic dye sensitized TiO_2–Nb_2O_5 electron collecting bilayer photoanode for efficient power conversion in solar cells	P Venkatachalam, K.Anandalakshmi	Physics	Optical Materials	2020	Online ISSN: 1873-1252 Print ISSN: 0925-3467	https://www.sciencedirect.com/journal/optical-materials	https://www.sciencedirect.com/science/article/abs/pii/S0925346720306765?via%3Dihub	Yes Scopus
A Study of Political Impact and Policies in Financial Inclusion	Dr.N.Swaminathan	Political Science	Studies in Indian Place Names	2020	2391-3114	https://tpnsindia.org/index.php/sipn	Printed Journal	yes
A Pilot Study on Non Voting Behavior in India, State Maharashtra with Specific to Nasik district	Dr.N.Swaminathan	Political Science	Our Heritage	2020	0474-9030	https://www.ourheritagejournal.com/index.php/oh	Printed Journal	Yes (Discontinued in 2021)
A Study on Comparison of Voting Behaviour of United States of America, United Kingdom and India	Dr.N.Swaminathan	Political Science	Our Heritage	2020	0474-9030	https://www.ourheritagejournal.com/index.php/oh	Printed Journal	Yes (Discontinued in 2021)
Secularism in India and Its Indian Context	Dr.S.Subash Chandrabose	Political Science	Modern Thamizh Research	2020	2321-984x	https://rajapublications.com/issues	Printed Journal	Yes

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						Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
A Digital Court monopolization of the facilities in Indian judicature and new judicial culture in Covid	Dr.T.Jothiramaliingam	Political Science	Journal of Xidian University	2020	1001-2400	https://xadzkjdx.cn/	https://doi.org/10.37896/jxu14.11/052	Yes Scopus
Stochastic Model for expected time using Generalized Exponential Distribution	S. Jothimanikam, E. Susiganeshkumar	Statistics	Journal of Xi'an University of Architecture and Technology	2020	1006-7930	https://xajzkjdx.cn/	https://drive.google.com/file/d/1CEV6uJTM6sul2U6bj-cV59iHAAuRa377/view	No
Development of Hybrid Queuing Model	N.Paranjothi	Statistics	Solid State Technology	2020	0038-111X	https://solidstatetechnology.us/index.php/JSST/	https://solidstatetechnology.us/index.php/JSST/article/view/5074	Yes Scopus
A Case Study of Queueing Model in a Restaurant	N.Paranjothi	Statistics	Parishodh Journal	2020	2347-6648	https://parishodhpu.com/	https://app.box.com/s/2pb36twj3k2xvc5kzynjl52irw4jil89	Yes (Discontinued in 2020)

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Expected Time Using Alpha–Poisson Distribution Under Stochastic Model	S. Jothimanikam	Statistics	International Journal Of Scientific & Technology Research	2020	2277-8616	https://www.ijstr.org/	https://www.ijstr.org/final-print/apr2020/Expected-Time-Using-Alphapoisson-Distribution-Under-Stochastic-Model.pdf	No
Assessing the Infant Breastfeeding experience of Women in Cuddalore District of Tamilnadu, India	Vijayamirtharaj S.	Statistics	International journal of research in Pharmaceutical sciences	2020	0975-7538	https://ijrps.com/home	https://ijrps.com/home/article/view/1037/3919	No
Inakkuzhu Irukkaiyum Vendar Avaiyum: Kalvisaar Adhigara Arasiyal	Dr.K.Pajanivelou	Tamil	Peyal-An Internationally refereed Journal of Tamil Studies	2020	2394 - 0948	https://www.magzter.com/IN/Peyal_Publications/PEYAL/Art/	Printed Journal	Yes
Kanjithurai Kattum Marak Kudumpa Penkalin Veeramanangkal	Dr.N.Baskaran	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2020	2278-7550	Printed Journal	Printed Journal	Yes Old List
Reproductive cycle of the the freshwater loach Lepidocephalichthys thermalis from the river thamirabarani, Tirunelveli	J.Michael A.P.Arachi	Zoology	European Journal of Biomedical and Pharmaceutical Science	2020	2349-8870	https://www.ejbps.com	https://www.ejbps.com/ejbps/abstract_id/6532	No

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2019-2020								
English Textbook Evaluation at Higher Secondary Level – A Study	Dr.R.Baskaran	English	Journal of Information and Computational Science	2020	1548-7741	www.joics.org	https://drive.google.com/file/d/1ygEQVbOJ8cUZ53sOzfY9C7R9vzDsCZYm/view	No
Govt. of Tamilnadu Political Leaders	Dr.S.Subash Chandrabose	Political Science	Modern Thamizh Research	2020	2321-984x	https://rajapublications.com/issues	Printed Journal	Yes
Application of Hammett Equation on Spectroscopic data of some Arylsulphonamides	Jayaraman Chakkaravarthy	Chemistry	Journal of Advanced Scientific Research	2019	0976-9595	https://sciensage.info/index.php/JASR	https://sciensage.info/index.php/JASR/article/view/365/474	Yes Scopus
Conformational Study of Some 3t,5t-Dimethyl -N-nitroso-2r,6cdiaryl piperidin-4-one Oximes using NMR spectra	J.Chakkaravarthy	Chemistry	Journal of Molecular Structure	2019	Online: 1872-8014 Print: 0022-2860	https://www.sciencedirect.com/journal/journal-of-molecular-structure	https://www.sciencedirect.com/science/article/abs/pii/S0022286019308129	Yes Scopus
SPECIFIC ADVANCEMENTS MODIFIED CRO4-ZNO THIN FILMS CHARACTERIZATION AND APPLICATION OF PHOTOCATALYTIC PURIFICATION OF CARCINOGENIC DYE AND SYNTHETIC DYESENSITIZED SOLAR CELLS	V K Subramanian	Chemistry	The International journal of analytical and experimental modal analysis	2019	0886-9367	https://ijaema.com/	https://ijaema.com/index.php/volume-11-issue-12-december-2019-r/	No

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						Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
Quality of Service Analysis on WRP and DSR Protocols in Mobile Adhoc Networks	Dr. K. Geetha	Computer Science	International Journal of New Innovations in Engineering and Technology	2019	2319-6319	https://www.ijniet.org/	https://www.ijniet.org/wp-content/uploads/2019/11/10.pdf	Yes Old List
Enhancement of TCP/IP Performance Through Split Mechanism in 4G Wireless Networks	Dr. M. Leenus	Computer Science	International Journal of Research and Analytical Reviews (IJRAR)	2019	2348-1269	https://www.ijrar.org/	https://ijrar.org/papers/IJRAR19J2629.pdf	Yes Old List
Optimized Link Level Snoop State Transfer for TCP/IP Performance Tuning in Recent Wireless Networks	Dr. M. Leenus	Computer Science	International Journal of Management, Technology And Engineering	2019	2249-7455	https://www.ijamtes.org/	https://app.box.com/s/mea13rppnpoc44g6xb5642322n4k288h	Yes Old List
Feedback Based Congestion Control for TCP/IP Performance Enhancement in Wireless Networks	Dr. M. Leenus	Computer Science	Journal of Emerging Technologies and Innovative Research (JETIR)	2019	2349-5162	https://www.jetir.org/	https://www.jetir.org/view.php?paper=JETIR1902B45	Yes Old List
A Hybrid Approach For Improving Accessibility In Data Grid Environment Using Dynamic Replication And Consistency Methods	Dr. R. Bhuvaneswari	Computer Science	ARPN Journal of Engineering and Applied Sciences	2019	1819-6608	https://www.arpnjournals.com/	https://www.arpnjournals.org/jeas/research_papers/rp_2019/jeas_0119_7545.pdf	Yes Scopus

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Kernel Induced Possiblistic Unsupervised Clustering Techniques in Analyzing Breast Cancer Database	Dr. S. Ramathilagam	Mathematics	International Journal of Computer Sciences and Engineering	2019	2347-2693	https://www.ijcseonline.org/	https://www.ijcseonline.org/pdf_spl_paper_view.php?paper_id=1098&20-IACIT%20-%20403.pdf	No
Effective kernel-based possibilistic fuzzy clustering techniques: analyzing cancer database	Dr. S. Ramathilagam	Mathematics	Data-Enabled Discovery and Applications	2019	2510-1161	https://link.springer.com/journal/41688/volumes-and-issues	https://link.springer.com/article/10.1007/s41688-018-0026-1	Yes Scopus
Dispersion of solute with chemical reaction in blood flow	R.VijayaKumar	Mathematics	Bulletin of Pure & Applied Sciences- Mathematics and Statistics	2019	2320-3226	https://acspublisher.com/journals/index.php/basm/index	https://acspublisher.com/journals/index.php/basm/article/view/9330	No
Paddy growth analysis and disease prediction using fuzzy logic controller system	Dr. S. Ramathilagam	Mathematics	Turkish journal of computer and mathematics education	2019	3048-4855	https://turcomat.org/index.php/turkbilmat	https://turcomat.org/index.php/turkbilmat/article/view/11857/8674	Yes Scopus
STRUCTURAL, OPTICAL,MECHANICAL AND DIELECTRIC PROPERTY STUDIES OF ADDUCT SINGLE	A Christy Ferdinand	Physics	PHYSICA B:CONENSED MATTER	2019	Print ISSN: 0921-4526 Online ISSN: 1873-2135	https://www.sciencedirect.com/journal/physica-b-condensed-matter	https://www.sciencedirect.com/science/article/abs/pii/S0921452619302595	Yes Scopus

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Synthesis growth and characterization of semi organic non linear optical single crystal bis (thio urea) barium nitrate (BTBN) for Frequency conversion	A. Anbarasi	Physics	Material Science Poland	2019	ISSN:2083-1331 EISSN:2083-134X	https://materialsscience.pwr.edu.pl/	https://intapi.scindo.com/pdf/10.2478/msp-2019-0039	Yes Scopus
Application of Density Functional Theory (DFT) in Solid and Geo Science	J Karpagam	Physics	Journal of Emerging Technologies and Innovative Research	2019	2349-5162	https://www.jetir.org/	https://www.jetir.org/papers/JETIR1901206.pdf	Yes Old List
Perovskite sensitized erbium doped TiO2 photoanode solar cells with enhanced photovoltaic performance	P Venkatachalam	Physics	Optical Materials	2019	Online ISSN: 1873-1252 Print ISSN: 0925-3467	https://www.sciencedirect.com/journal/optical-materials	https://www.sciencedirect.com/science/article/abs/pii/S0925346719303386	Yes Scopus
Performance of perovskite and quantum dot sensitized solar cell based on ZnO photoanode structure	P Venkatachalam	Physics	Materials Today: Proceedings	2019	2214-7853	https://www.sciencedirect.com/journal/materials-today-proceedings	https://www.sciencedirect.com/science/article/abs/pii/S2214785319325763	Yes Scopus
Erbium doped anatase TiO2 nanoparticles for photovoltaic applications	P Venkatachalam	Physics	Optical and Quantum Electronics	2019	EISSN:1572-817X Print ISSN: 0306-8919	https://link.springer.com/journal/11082	https://link.springer.com/article/10.1007/s11082-019-2034-2	Yes Springer

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Structural, morphological, enhaned magnetic properties and antibacterial biomedical activity of rare earth element (REE) Cerium doped CoFe2O4 nanoparticles	R Thilak Kumar	Physics	Journal of Magnetism and Materials	2019	Print: 0304-8853 Online: 1873-4766	https://www.sciencedirect.com/journal/journal-of-magnetism-and-magnetic-materials	https://www.sciencedirect.com/science/article/abs/pii/S0304885318326787	Yes Scopus
Enhanced magnetic property and antibacterial biomedical activityof Ce3+ doped CuFe2O4 spinel nano particles synthesized by sol-gel method	R Thilak Kumar	Physics	Journal of Magnetism and Materials	2019	Print: 0304-8853 Online: 1873-4766	https://www.sciencedirect.com/journal/journal-of-magnetism-and-magnetic-materials	https://www.sciencedirect.com/science/article/abs/pii/S0304885318336977	Yes Scopus
Effect of morphology on the formation of CdO nanostructures for Antibacterial and Hemolytic studies	R Thilak Kumar	Physics	Applied surface science	2019	Online: 1873-5584 Print : 0169-4332	https://www.sciencedirect.com/journal/applied-surface-science	https://doi.org/10.1016/j.apsusc.2019.05.172	Yes Scopus
Nature Resources Based Sustainable Development with Special Reference to Tribal Community Rights	Dr.N.Swaminathan	Political Science	Research Journey	2019	2348-7143	https://www.researchjourney.net/	Printed Journal	No
Political Impact on the Recent Trending in Economics with Special Reference to GST and Demonetization	Dr.N.Swaminathan	Political Science	Our Heritage	2019	0474-9030	https://www.ourheritagejournal.com/index.php/oh	Printed Journal	Yes (Discontinued in 2021)

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Structure of Supreme Court Building in the Styles of Delivering Good Justices	Dr.T.Jothiramaliingam	Political Science	International Journal of Research and Analytical Reviews (IJRAR)	2019	2349-5138	www.ijrar.org	https://ijrar.org/viewfull.php?&p_id=IJRAR19K8343	No
A Maximum Likelihood Approach to Least Absolute Deviation Regression	Eakambaram. S	Statistics	Review of Research	2019	2249-894X	https://oldror.lbp.world/	https://drive.google.com/file/d/1sG83MoaPclmjGvT_DrN9VCPSaasVIVW6/view?usp=drivesdk	Yes Old List
Estimation of the General Linear and Nonlinear Regression Models with Autocorrelated Errors	Eakambaram. S	Statistics	International Journal of Advance and Innovative Research	2019	2394-7780	https://ijairjournal.in/	https://iaraedu.com/pdf/ijair-volume-6-issue-2-xviii-april%E2%80%93june-2019.pdf	Yes Old List
Accelerated Failure Time Model For Survival Analysis	R. Mohanasundari and Susiganeshkumar, E	Statistics	Journal of Information and Computational Science	2019	1548-7741	www.joics.org	-	No
A New Area-Biased Distribution with Applications in Cancer Data	R. Mohanasundari	Statistics	Science, Technology and Development	2019	0950-0707	https://journalstd.com/	https://drive.google.com/file/d/1MHGa6wwrli7gDLruPaBDKY53qjVw4z7O/view	No

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On Weighted Quasi-Sujatha Distribution with Properties and Applications to Blader Cancer Data in Survival Analysis	R. Mohanasundari and Susiganeshkumar, E	Statistics	Science, Technology and Development	2019	0950-0707	https://journalstd.com/	https://drive.google.com/file/d/1W8ylFUvkys3zePLCMgdFs8HW4i8vhGDC/view	No
Novel Machine Learning Methods to Accurately Classify Celestial Bodies	Ramani.T	Statistics	International Journal of Advanced Information Science and Technology	2019	2319:2682	https://www.ijaist.com/	-	Yes Old List
Calculating the Survival Time of Cancer Patients Through Exponentiated Weibull Distribution	S. Jothimanikam	Statistics	Journal of Information and Computational Science	2019	1548-7741	www.joics.org	https://drive.google.com/file/d/1stnt-8i7FpD2joy7lXb46ofkr-hYkE_F/view?usp=drivesdk	No
Analysis of discrete – time Geo/Geo/1 queue with negative customers	Susiganeshkumar. E	Statistics	JAC : A JOURNAL OF COMPOSITION THEORY(JCT)	2019	0731-6755	https://jctjournal.com/	https://drive.google.com/file/d/1l3tGxjwO5XQMVogDZOcpPYQDCjZZYYxL/view	Yes Scopus
Than Munaippum Karuthuth Thirutum Thamizhavanin "Sinthanaith thotramum Karuthuth Thirutum" enra Katturaikkana Ethirvinai	Dr.K.Pajanivelou	Tamil	Peyal-An Internationally refereed Journal of Tamil Studies	2019	2394-0948	https://www.magzter.com/IN/Peyal-Publications/PEYAL/Culture/?redirect=true	Printed Journal	Yes

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Silappathikarathil thamizh pengalin vazhviyal Kural	Dr.B.Geetha	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Avaiyar padalkalil aanmigasinthanaigal	Dr.B.Geetha	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Kurundhokai Ariviyal Pathivukal	Dr.N.Baskaran	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)
Su.Thamizhselvi Puthinaththil Penkal	Dr.N.Baskaran	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2454-3993 2582-2810	Print Journal	Printed Journal	Yes Old List
Mullaippattil Inavaraiviyal Pathivugalum Aayar Panbaattu Marabugalum	Dr. A. Arounassalame	Tamil	Inam : International E-Journal of Tamil Studies	2019	2455-0531	https://www.inamtamil.com/	Printed Journal	No
Tholkappiyathil inavaraiviyal karuthiyal Melathikkam	Dr. A. Arounassalame	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)

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Mullaippattum virichiyum	Dr.S.Premakumari	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)
Paavaiyil pen	Dr.S.Premakumari	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Purananootril Pen Patriya Sinthanaigal	Dr.J.Poorani	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Inbakeni pudinathil penniyam	Dr.K.Kavitha	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Purananutril Aram	Dr.K.Kavitha	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Aingurunudril Maruthathinaiyil Padalgalil Paravaigal.	Dr.K.Kavitha	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)

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Sedal: Murangalmel Kattappadum Pennudal	Dr.J.Shyamala	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)
Kundriyanar Padalgalil Eyarkai punaivugal	Dr.A.Thirumeni	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Kabilar paadalkalil ueirinangal	Dr.A.Thirumeni	Tamil	Literary Findings	2019	2278-2311	Print Journal	Printed Journal	No
Agananootril thai theiva vazhipaadu	Dr.A.Thirumeni	Tamil	Ayidha Ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Sanga Ilakkiyathil Nadukal Vazhipadu	Dr.J.Raja	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Journal	Yes (Discontinued from 2020)
Madal Eariya Mangai	Dr.J.Raja	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Sanga Ilakkiyathil Uyirum Uravumana Iyarkkai	Dr.J.Raja	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	https://shanlaxjournals.in/journals/index.php/tamil	Printed Conference Proceeding	Yes (Discontinued from 2020)

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BHARTHIYIN KATTURAIGALIL PEN VIDUDHALAI SINTHANAIGAL	Dr.R.Murugan	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
"Thoal" Novel Siththarikkum Thozhilaalar Vazhviyal	Dr. B.Kumaran	Tamil	Modern Thamizh Research	2019	2321-984X	https://rajapublications.com/issues	Printed Journal	Yes
T.Selvaraj Novelgalil Kadai Maandar Vaazhviyal	Ms.D.Sumitha	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
S.Ra. vin Mozhi Aalumai	Mr.A.Vairamuthu	Tamil	Shanlax International Journal of Tamil Research	2019	2454-3993 2582-2810	Printed Conference Proceeding	Printed Conference Proceeding	Yes (Discontinued from 2020)
Suzhaliyil Nokkil Purappadalkal	Dr.R.Murugan	Tamil	Literary Findings	2019	2272 -2811	Print Journal	Printed Journal	No
Bharathiyin Katturaikalil Pen Viduthalai sinthanaikal	Dr.R.Murugan	Tamil	Ayutha Eluthu - International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Aingurunutturil vaelanmai	Dr.S.Premakumari	Tamil	Journal of Classical Tamizh	2019	2321-0737	Print Journal	Printed Journal	No
Su.Thamizhselviyin Padaippukkalil Nambikkaikalum Sadangukalum	G.Bhuvaneswari and B. Kumaran	Tamil	Ayidha ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Tholkappiyathin Vazhil Silambil Kannakiyin Punaivukal Pokkukal	Dr.J.Poorani	Tamil	Chempulam	2019	2320-589X	Print Journal	Printed Journal	No

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Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
						Link to website of the Journal	Link to article / paper / abstract of the article	Is it listed in UGC Care list
S.Ra. vin Thuyil Novelil Paaththiramum Kadaikkalamum	A.Vairamuthu and B.Kumaran	Tamil	Ayidha Ezhuthu-International Journal Tamil Studies	2019	2278-7550	Print Journal	Printed Journal	Yes Old List
Reprotoxic Effect of ammonia of the nutrition	J.Michael A.P.Arachi	Zoology	International Journal of Modern Research and Reviews	2019	2347-8314	http://journalijmrr.com/	http://journalijmrr.com/wp-content/uploads/2020/02/Dr-Arachi.pdf	No
Seasonal variation in the Infestation of Digenea in the Indian Killifish	J.Michael A.P.Arachi	Zoology	International Journal of Modern Research and Reviews	2019	2347-8314	http://journalijmrr.com/	http://journalijmrr.com/wp-content/uploads/2020/02/IJMRR-19-2.pdf	No
Antioxidant and antitumour activity of acid soluble collagen extracted from freshwater snakeead fish channa striatus	M.Prakash	Zoology	Journal of Emerging Technologies and Innovative Research	2019	2349-5162	https://www.jetir.org/	https://www.jetir.org/papers/JETIR1902C64.pdf	Yes Old List

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Antioxidant and Hemolytic activity of the fish collagen extracted from freshwater snackehead fish chana striatus	M.Prakash	Zoology	International Journal of Pharmacy and Biological Sciences	2019	Online : 2230-7605 Print : 2321-3272	https://ijpbs.com/	https://ijpbs.com/ijpbsadmin/upload/ijpbs_5cedb2b0e11d4.pdf#:~:text=Thus%2C%20the%20collagen%20extracted%20from,mode%20of%20action%20against%20microbes.	NO

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XRD and AFM characterization of Diarun-MgO-Averaplus fabricated Nanoparticles using precipitation method

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Abstract

The importance of nanomaterials to the pharmaceutical industry is evident - over 90% of pharmaceutical products contain a drug in nano form. However, the nanomaterial phenomena of drug compounds are poorly understood. An increased understanding of these processes may allow a greater degree of control over the outcomes, such as morphology, purity, or stability. In these studies, we have applied Atomic Force Microscopy (AFM) to the in situ investigations of drug crystal growth. This study comprehensively investigates the physicochemical properties of Diarun, MgO, AveraPlus nanomaterials synthesized via three different chemical precipitation method at three annealing temperatures. X-ray diffraction (XRD) analysis reveals the crystalline structure and phase composition, highlighting changes in crystalline and phase transitions with varying annealing temperatures. The annealing process was employed to enhance the crystallinity and interfacial interactions between the constituents, thereby improving the overall thermal stability and performance of the nanocomposites. A comprehensive characterization was conducted using X-ray diffraction (XRD), atomic force microscopy (AFM) offered surface morphology and topography details. Particle size analysis enabled the determination of size distribution. This multi-technique approach provides a thorough understanding of the structural, chemical, optical, morphological, and size-related properties of Diarun + MgO nanocomposites, crucial for their potential applications.

Keywords: Diarun, Averaplus, Magnesium Oxide, chemical synthesis, AFM,XRD

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STRUCTURAL PROPERTIES OF CU MG ALLOY NANOPARTICLES: SYNTHESIZED BY WET CHEMICAL PRECIPITATION TECHNIQUE

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Abstract

Metaloxide nonmaterial's are important and excellent materials, because of its special properties like chemical stability, high photo catalytic activity, high electric permittivity, non-toxic nature. So it is used in various applications like optical, electrical, electronic, antiseptic, antibacterial, environmental, semiconductors and catalytic devices.

Present work is focused on to synthesis of copper Magnesium alloy Nanoparticles at different annealed temperatures by simple wet chemical Precipitation method. The synthesized copper magnesium alloy nanoparticles have been characterized by X-ray Diffractometer (XRD), Particle Size Analyser (PSA), Scanning Electron Microscope(SEM), ultraviolet-visible spectroscopy (UV VIS),Fourier-transform infrared spectroscopy (FTIR) and CV for structural, average crystallite size, average particle size, morphology, optical properties, chemical bonding and thermal stability respectively.

Key words:
Copper, Magnesium, Alloy Nanoparticles, Chemical precipitation technique

1. INTRODUCTION

Magnesium is renowned for its favorable low-density attributes, rendering it a viable choice for commercial engineering applications in which weight has substantial design implications. Magnesium (Mg) stands as a readily obtainable metallic element, exhibiting robustness, efficient heat dissipation, and excellent damping properties. The utilization of pure magnesium remains infrequent due to its susceptibility to instability under high temperatures and pronounced vulnerability to corrosion within humid environments. Hence, the incorporation of magnesium alloys into the design process of aircraft, automotive, and biomedical applications assumes paramount importance. Magnesium is a strong deoxidizer particularly for nickel alloys. As a Copper master alloy it is effective and less reactive. If alloyed, in can improve mechanical properties. Cu is a less expensive element than several rare earth elements like Nd, Ce, Gd, and Y. [1] Cu, on the other hand, helps to improve the characteristics of Mg alloys. It is commonly accepted that the inclusion of Cu enhances castability and effectively boosts the alloy's eutectic temperature, enabling the complete dissolution of solute atoms at high temperatures. [2, 3] Additionally, the dissolved atoms of the element Cu appear to enhance nucleation, limit grain expansion, and increase precipitate concentration during aging treatment. Because of the refinement of grains generated by Zn and Cu, the alloy Mg–Zn–Cu has been observed to have good ductility and strength. [4] Zhu *et al.*, [5] looked at how copper additions to alloys affected the micro structural features and mechanical qualities of cast ZK60 magnesium alloy products. The results reveal that the addition of the alloying element copper (0.5–1 wt %) to magnesium produces strong mechanical properties, particularly an exceptional elongation percentage of more than 9%. As

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Antibacterial activity against *Staphylococcus aureus and Salmonella enterica* and Density functional studies on Silver doped Bismuth Selenide nanostructures

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Abstract
The current study uses a hydrothermal technique to demonstrate the antibacterial activity of silver- doped bismuth selenium nanoparticles. Because they are more biocompatible, nanoparticles made of metals, polymers, or lipids are better suited as antibiotics. They behave like molecules, breaking through bacterial cell membranes to obstruct the molecular process. According to the studies, the activity against bacteria is caused by the host immune system being triggered, RNA and protein synthesis being inhibited, biofilm development being inhibited, cell membrane disruption occurring, or reactive oxygen species (ROS) being produced. Low toxicity and a well-established medicinal agent characterize bismuth. It had the property of good X-ray contrast agent due it is huge atomic mass (Z=83). The human body need selenium as a necessary component. In the present work, the prepared Ag doped bismuth selenide nanostructures are characterized using XRD, HRSEM with EDAX. The antibacterial property of Ag doped bismuth selenide nanostructures against gram-positive bacteria *S. aureus* and gram negative *Salmonella enterica* analysed by disk diffusion method. The optimized structure, structural parameters, Homo-Lomo, molecular electrostatic potential, dipole moments, polarizability and hyperpolarazibilary are analyzed using DFT method.

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Keywords: XRD, HRSEM, EDAX, Antibacterial Activity, DFT

Introduction

One of the most common topological insulators is bismuth selenide (Bi2Se3), which had a energy gap of 0.3 eV. It shows vast applications as the next generation of quantum computing, spintronics and optoelectronics appliances [1]. Moreover, much importance given in the field of physical, chemical and materials science but less use of bismuth selenide nanoparticles in the field of biomedicine. It is interesting to note that selenium (Se) is an important element that it reduces the mortality of prostate, hepatic and pulmonary malignant tumour. Also, bismuth (Bi) is used as a healing agent and has a high coefficient of X-ray attenuation property supporting the potential of Bi2Se3 in biological applications [2]. Silver (Ag) has many uses in the health sector, including as antimicrobial agents, food preservation, textile industries and ecological uses. They require additional uses as antibacterial agents, such as water treatment and the disinfection of household appliances and medical equipment. Furthermore, textile companies have demonstrated the excellent antibacterial activity of silver nanocomposite fabrics, such as cotton fibers infused with silver nano compounds, against germs. The textiles containing silver are advertised, as having the antibacterial properties as well and also the reducing post sweat odour [3]. Chitosan bead hydrogel was observed and encourage a high level of antibacterial activity against *Staphylococcus aureus* and *Salmonella enterica* as well as controlled and extended

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Synthesis and Characterization of Cu-Al Alloy Nanoparticles Using Chemical Precipitation Method

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Abstract

In this work, nano structured Cu Al Alloy particles were synthesized by a chemical-precipitation method. The photo catalytic activities of the synthesized powders were investigated. The characteristics of synthesized powders were studied using a variety of techniques including X-ray diffraction, applied potential variation using Cyclic Voltammetry, Scanning Electron Microscopy with EDAX, Fourier transform infrared spectroscopy and ultraviolet-visible spectroscopy and Particle size Analyzer . The SEM results showed that CuAl nanoparticless are displayed agglomerated symmetrical and that the morphology of Cu Al alloy NPs of the single nanoparticles is flake like the flakes are 7.1 nm to 5.7 nm in dimensions for 300°c and 700°c. The similar shape of the CVs recorded at different scan rates indicates excellent electro chemical reversibility of the synthesized CuAl alloy nanoparticles.

Keywords: Cu, Al, SEM, EDAX, CV,UV, FTIR, XRD, PSA

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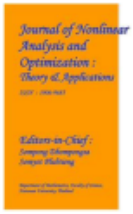

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PREPARATION AND CHARACTERIZATION OF DIARUN DOPED MAGNESIUM OXIDE NANOCOMPOSITES: A WET CHEMICAL APPROACH

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Abstract

Diarun 50% + MgO 50% nanocomposites were synthesized via wet chemical methods and subsequently annealed at temperatures of 200°C, 400°C, and 600°C. The annealing process was employed to enhance the crystallinity and interfacial interactions between the constituents, thereby improving the overall thermal stability and performance of the nanocomposites. A comprehensive characterization was conducted using X-ray diffraction (XRD), Fourier-transform infrared spectroscopy (FTIR), ultraviolet-visible spectroscopy (UV), scanning electron microscopy (SEM), atomic force microscopy (AFM), and particle size analysis. XRD analysis revealed the crystalline structure evolution, while FTIR provided insights into chemical bonding. UV spectroscopy elucidated the optical properties, while SEM and AFM offered surface morphology and topography details. Particle size analysis enabled the determination of size distribution. This multi-technique approach provides a thorough understanding of the structural, chemical, optical, morphological, and size-related properties of Diarun 50% + MgO 50% nanocomposites, crucial for their potential applications.

Keywords:
Diarun, Magnesium Oxide, Wet chemical synthesis, XRD, SEM.

1. Introduction

Nanoparticles have gained significant attention in various scientific fields due to their unique properties and potential applications in diverse areas, including medicine, electronics, and catalysis [1]. Among the myriad nanoparticles explored, magnesium oxide (MgO) nanoparticles exhibit exceptional properties such as high surface area, chemical stability, and biocompatibility, making them promising candidates for multifaceted applications [2-4].

Diarun, a herbal extract derived from Rumi Herbals India, has emerged as a promising dopant for modifying the properties of metal oxide nanoparticles. With its rich composition of organic compounds and bioactive constituents, Diarun offers a novel approach to enhance the functionality and performance of nanomaterials [5].Diarun is a pharmaceutical compound that has garnered considerable attention in recent years due to its potential therapeutic applications in the field of medicine. This drug, with its unique chemical composition and pharmacological properties, holds promise for addressing various medical conditions and improving patient outcomes.

Synthesis methods play a crucial role in tailoring the size, morphology, and surface properties of MgO nanoparticles [6,7], thereby influencing their performance and applicability [8]. Various synthesis techniques including sol-gel [9], hydrothermal [10], combustion [11], and wet chemical [12] methods have been employed to fabricate MgO nanoparticles with controlled characteristics. Moreover, the dopant-induced modification of MgO nanoparticles has emerged as an effective strategy to further enhance their properties for specific applications [13]. Doping MgO with different elements

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WOMEN IN THE UNORGANISED SECTOR IN INDIA

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Abstract:

A women's role can be appropriately described as 'multi-dimensional'. A women has to be a daughter, a wife, a mother, and a professional at the same time. Today, women's importance is gaining speed in the world of work. But, the inappropriate notion about women which says that 'women are ruled by heart, not head,' restricts the women to be credited for their contribution towards the economic success. In India, although the absolute numbers are lower, a slightly higher percentage of women workers are in informal employment as compared to men. In India, women are almost always involved in some kind of productive and/or reproductive activity, but much of their work is invisible, and they are largely employed in low skilled, low paid informal work with little or no social security—for instance, as domestic workers or self-employed home-based workers.

Keyword: women workers, census, problem, unorganized sector,conclusion

Women constitute nearly a third of the workforce in India. In 2011, out of a total workforce of 481.7 million, 149.9 million or 31 per cent are women. The present study of women workers is based on analysis of Census data. It describes the variations in work participation rate of men and women by States and regions and the distribution of workers among the principal occupational categories. The macro overview of occupational structure of female work participation shows that a larger share of women workers is still in primary sector in India. Women's employment is much more concentrated in agriculture than men's; nearly 65 per cent of employed women work in agriculture compared to 50 per cent of employed men. A multiple linear regression model is used to identify the factors determining women's participation in different types of economic activities, i.e., female literacy rate, per capita income, sex ratio and female work participation rate. A correlation matrix is also calculated to find out the relation between female WPR and female literacy rate, per capita income, sex ratio. The results reveal that sex ratio is positively related while per capita income and female literacy rate are negatively related to female WPR.

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LEAN SIX SIGMA METHODOLOGY FOR MANUFACTURING INDUSTRY DEFECT REDUCTION

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Abstract

Six Sigma is a business strategy that uses statistical tools and techniques to eliminate waste from business processes and address process variability. It is a well-organized continuous improvement methodology. Customers expect zero defects in today's competitive economy. This puts each supplier's capacity to lower nonconformance, hold onto market share, and increase profitability in jeopardy. The purpose of this study is to apply the Lean Six Sigma technique for raising the profitability and bottom line of the automotive glass manufacturing sector while lowering faults. Industry adoption of the Lean Six Sigma methodology is higher than that of other management techniques and methods for process improvement. It is a fact-based, data-driven mindset that uses statistics to decrease process variance and increase quality. Determining the underlying causes of quality problems and managing the process parameters are also beneficial. By identifying the source of the issue and optimizing the process parameters, the define-measure-analyze-improve-control (DMAIC) method helps to decrease flaws in the glass bending process. Using this strategy, the process yield rose to 99.10 from 97.33% in six months. The cause-and-effect diagram (C and E diagram) and root cause analysis of defective items are used in this study to identify the causes. This paper aims to introduce a framework for developing solutions to enhance the Lean Six Sigma process in the Indian automotive glass manufacturing industry.

Keywords: Lean Six Sigma, Defect reduction, Glass production, Quality problems

Introduction

Although Six Sigma is being used more and more in industry, there hasn't been much academic study on the subject or its effects on quality management theory and practice. Some claim that Six Sigma is nothing more than an updated version of conventional quality management techniques. To look into this matter and Six Sigma's function in quality control, this study examined both the Three new activities that

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Humidity Sensing Performance of Nitrogen Doped Reduced Graphene Oxide-WO3 Composite

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Accepted: 29 August 2023

Abstract
In this study, we fabricated a porous hybrid N-doped graphene oxide (NGO)-WO_3 composite for resistive-type humidity sensor applications. The humidity sensor NGO-WO_3 composite were fabricated by a facile electrospinning technique. The incorporation of NGO into WO_3 nanoparticles brings following advantages: improve the hydrophilicity further form double layer to absorb more water vapor and enhance the electrical conductivity, thus resulting in better resistive type humidity sensing performance. Prepared composite was characterized by X-ray Diffractometer (XRD), Field Emission Scanning Electron Microscopy (FE-SEM), Transmission Electron Microscopy (TEM), UV-Visible spectrophotometers techniques. The humidity sensing properties of WO_3 nanoparticles and NGO-WO_3 composite (1:1 ratio) was tested 5–98% RH at room temperature. Humidity sensing results demonstrate NGO-WO_3 composite shown higher humidity sensing properties compare than pure counterpart. Humidity sensing experiment demonstrate that the NGO-WO_3 composite sensitivity factor (S_f) around 3,427 with good linearity, and short response/recovery (24 s/53 s) time. Finally, possible humidity sensing mechanism of the hybrid composite was proposed for resistive type humidity sensor. These findings suggest NGO-WO_3 composite could be promising humidity sensor for widespread application.

Keywords Composite · NGO-WO_3 · Electrospinning · Humidity sensor · Response – recovery time

1 Introduction

At present, humidity monitoring and detection have been much more important in many fields such as medical ventilator is helpful to maintain warm and wet air in medical treatment, soil water content determination in agriculture, air conditioning system in food quality monitoring, environment and meteorological monitor and so on [1–3]. In recent year's varieties of humidity detecting technologies available such as capacitive, resistive, BAW (bulk acoustic wave) and QCM (quartz crystal microbalance) [4, 5]. Capacitive and resistive type sensor are same principal where electric change is measured to produce a value for relative humidity and QCM and BAW types are related to gravimetric or mass-sensitive humidity sensor. Among all sensing techniques, resistive type received a great attention because of good environmental stability, high electrical conductivity and simple synthesis method [6]. However, at low RH, the sensitivity and selectivity of the resistive humidity sensor is low due to low hydrophilicity [7].

Metal oxides, such as ZnO, WO_3, SnO_2, TiO_2, and Fe_2O_3 as the most popular semiconductor metal oxide explored as humidity sensing materials [8–10]. Most of the metal oxides relatively low charge/discharge process, high cost, low selectivity poor conductivity and low abundance of raw materials [11]. Among this metal oxides, WO_3 frequently used n-type semiconductor sensing material due to direct path of charge transport, chemical stability, selectivity and low cost [2, 12]. However due to intrinsic obstacles pure WO_3 have weaken sensing ability at high RH (relative humidity) still restrict their further development. At the same time some limitations need to overcome the sensing application of WO_3. There are two ways to improve the properties of WO_3 based humidity sensor, (i) intrinsic problems (recombination rate of photo-generated charge)

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A Study on Variable Selections and Prediction for Crop Recommender System with Soil Nutrients Using Stochastic Model and Machine Learning Approaches

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Abstract

To develop a crop recommendation system using soil nutrient data, you'll need a dataset containing details on soil nutrients and the crops that thrive in particular soil conditions. While I can't supply a specific dataset, I can offer guidance on the types of data you should seek or gather for building such a system. Machine learning, a subset of artificial intelligence (AI) and computer science, centers on harnessing data and algorithms to replicate human learning processes, steadily enhancing its precision over time. This paper considers crop recommender dataset with soil nutrients-related dataset like N, P, K, ph, EC, S, Cu, Fe, Mn, Zn, B, label. The machine learning approaches are used to analyze and predict the dataset using Logistic, Multilayer Perceptron, Simple Logistic, Hoeffding Tree, random forest, random tree, and REP tree. Numerical illustrations are provided to prove the proposed results with test statistics or accuracy parameters.

Keywords: Machine learning, crop recommender dataset with soil nutrients, decision tree, correlation coefficient, and test statistics.

1. Introduction and Literature Review

A successful crop recommendation system necessitates ongoing fine-tuning and adjustment to fit specific local circumstances. Its effectiveness is intrinsically linked to the excellence and appropriateness of the training data and the resilience of the employed machine learning models.

Data mining finds application in various domains, such as customer relationship management, fraud detection, market basket analysis, recommendation systems, medical diagnosis, and scientific research, among numerous others. Its utilization empowers organizations to make data-informed decisions, recognize trends, and unearth valuable insights from extensive datasets. Machine learning finds extensive use in diverse domains, such as natural language processing, image and speech recognition, healthcare, finance, autonomous vehicles, and more. Its versatile applications are expanding, presenting opportunities to automate processes, extract insights from data, and enhance decision-making within intricate, data-driven contexts.

A system for predicting crop yield based on historical data. We accomplish this by employing machine learning algorithms such as Support Vector Machine and Random Forest on agricultural data. Additionally, we offer recommendations for suitable fertilizers tailored to specific crop types. The primary focus of this study is the creation of a predictive model that can be applied for future crop yield forecasts. It also provides a concise analysis of crop yield prediction through machine learning techniques [1].

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Agricultural Data Analysis with Weather and Soil Using Machine Learning Models

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KEYWORDS
Machine Learning, Data Mining, Agricultural Data, Correlation, Test Statistics.

ABSTRACT:
Data mining involves extracting valuable insights, patterns, correlations, and trends from large datasets stored in databases or data repositories. It employs statistical, mathematical, and computational techniques to unveil information not easily visible to humans. The main objective is to convert raw data into actionable knowledge. Creating a decision tree involves recursively dividing the data into subsets based on different attributes, aiming to achieve homogeneity (for classification) or minimize variance (for regression) within each subset. This paper considers agriculture and its soil chemical-related dataset for applying data mining techniques to find suitable variables for future predictions. The five decision tree approaches are decision stump, M5P, random forest, random tree, and REP tree. Numerical illustrations are provided to prove the proposed results with test statistics or accuracy parameters.

1. Introduction and Literature Review

Data mining encompasses diverse methods like clustering, classification, regression analysis, association rule mining, anomaly detection, text mining, and time series analysis. Its significance spans various fields such as business, marketing, finance, healthcare, and scientific research. Data mining provides valuable insights by analyzing structured and unstructured data (e.g., text, images, images, and videos). However, ethical considerations, privacy, and security should be prioritized, especially when dealing with sensitive or personal information [1] and [2].

The problem of knowledge acquisition and efficient knowledge exploitation is also prevalent in agriculture. One of the methods for knowledge acquisition from the existing agricultural databases is classification. In agricultural decision-making, weather and soil characteristics play an essential role. This research aimed to assess the various classification techniques of data mining and apply them to a soil science database to establish if meaningful relationships can be found. A large data set of soil databases is extracted from the Soil Science & Agricultural Department, Kanchipuram, and National Informatics Centre, Tamil Nadu. Data mining techniques have never been applied to Tamil Nadu soil data sets. The research compares the different classifiers, and the outcome of this research could improve the management and systems of soil uses throughout many fields, including agriculture, horticulture, and environmental and land use management [3].

New data mining techniques and apply them to a soil science database to establish if meaningful relationships can be found. A large data set of Soil database is extracted from the Department of Soil Sciences and Agricultural Chemistry, S V Agricultural College, Tirupati; The database contains measurements of soil profile data from various locations of Chandragiri Mandal, Chittoor District. The research establishes whether Soils are Classified Using multiple data mining techniques. In addition, a comparison was made between the Naive Bayes classification and analyze the most effective method. The research outcome may benefit agriculture, soil management, and the environment [4].

The page offers an overview of soil chemical properties, encompassing concentrations of specific chemicals (such as phosphorus, nitrogen,

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A STUDY ON THE IMPACT OF PADDY YIELD WITH WEATHER CONDITIONS IN INDIA USING DATA MINING AND MACHINE LEARNING APPROACHES

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Abstract

Agriculture and accessories contribute to approximately 17% of India's GDP, still the most popular occupation amongst 70% of India's population. The agriculture sector provides different outputs used by diverse segments, including, but not limited to, use as raw materials by various industries, sources of nutrition and businesses, etc. Indian farmer still struggles to pick up the right crop for the proper biological and non-biological factors. Thus, in this case, different machine-learning techniques have been proposed for paddy growth with weather datasets to accelerate the paddy yield of crops. In this paper, we present a summarization of these different approaches: the regression model, random forest, and random tree. These techniques are a part of the paradigm, Precision Agriculture, specifically in paddy data analysis. These algorithms consider and implement external factors, like meteorological data like rainfall and temperature and others like pesticides, to give the best recommendations, which not only lead to better yields but also minimum use of resources and capital.

Index Terms: Precision agriculture, weather conditions, regression model, random tree, and random forest.

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ANALYSIS OF ONLINE INTRUSION DETECTION MODELS TO INCORPORATE SECURED DIGITAL CASH TRANSACTION IN MOBILE SMART SYSTEMS

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Abstract

The major Objective of this research paper is to design the Mobile Smart Device Digi Cash Intrusion Detection Framework (MSDDID) for assessing Intrusion Detection (ID) techniques and evaluating ID parameters that has to be rectified for enhancing the security of Digital Cash Transactions in Mobile Smart devices. The Research examined the Intrusion Detection dataset with 41 predictive features and 1 class feature for evaluating prediction in its novel form. The Framework was examined in WEKA with RapidMiner for analysis. The Results of classifiers Decision Table (98.7%), Random Forest Tree (99.79%), AdaBoost (94.37%), CART Model (99.61%), LazyIBK (99.44%), Naïve Bayesian (89.66%) signified that Smart devices security in Digi cash transactions could be predicted with refinement of data during transaction as deployed in this research work. The cluster analysis again conformed that num_root, su_attempted and num_compromised were the three parameters predominantly used for intrusions in the network and has to be addressed in the model.

Keywords:

Intrusion Detection System, Network Security, Intrusion Detection Parameters, Digital Cash Transactions, Mobile Smart Systems

1. INTRODUCTION

India is regarded as one of the best nations thriving best in global Digital Economy as directed by the Prime Minister of India. In recent survey, it was found in 2022, around 70 billion transactions [1] were completed by people of India. It was a steady increase from 44 billion in 2021. Various digital payment schemes like Gpay, Paytm and Phonepe has been predominantly in practice among the millions of people. Government also focused on the Unified Payment National Payments Corporation of India (NPCI) to encourage cashless transaction among the people. Various countries have accepted payment schemes [2] available in India like RuPay and UPI as a gateway for carrying out their regular transactions. The first one to accept Indian mode of online gateway was Nepal followed by several countries like Singapore, Bhutan, UAE, France etc. The Global payment system has been increasing [3] since 2018 after demonetisation in 2016 to gain trust among the customers including business people, government officials and all the common people. It was recently mentioned by Prime minister of India that every household will be given with cashless transactions in the future. Hence it is highly significant that the security of the system [4] has to be tightened and made securely available for the masses. This is because with inception of any new technology or change, the problems also tend to seek into the system. Same way, the intruders have changed their way of stealing money from physical snatching to online intrusion [5] and money cheat with the knowledge and support of the systems. Thus, a secure platform is required to manipulate the system and bring solution to the problem of handling secure transactions in the future. This is the problem addressed in the research study. The major Objective of this research paper is to design the Mobile Smart Device Digi Cash Intrusion Detection Framework (MSDDID) for assessing Intrusion Detection (ID) techniques and evaluating ID parameters that has to be rectified for enhancing the security of Digital Cash Transactions in Mobile Smart devices. Various Reearch Questions were pondered to determine the purpose of the research and its relevant outcomes. The substantial analysis and experiments were expected to be performed to determine that there is significant relationship between the selection of relevant parameters in predicting the intrusion during digi cash transactions in smart devices. The scope is applied among mobile smart devices to enhance security of digital cash transactions carried out by people using applications like Gpay, UPI etc. This analysis would ponder to the needs of the futuristic needs of the masses of people in bring quality solution to the problem of being afraid to make transactions in all public places.

2. RELATED WORKS

The research work encompasses few of the earlier works completed by different researchers to promote secured cashless transactions in the digital communications. Lee, H., and Hong, D., [6] focused on the inception of blockchain technology to improve the quality of security in cashless digital transactions. The major idea was to reduce the financial crisis among the organisations due to theft of transactions in online mode. Nandal, N., et.al. [7] analysed the importance of global technology in bringing secured e-transactions for the future. The author believed that such secure transaction would bring sustainable economy for the future. Also, Digital Signature Authentication Cryptosystem was discussed by Islam, A., et.al. [8] to encourage stable E-cash flow in commercial and markets from the customers and investors. The cashless India was dreamt with reliable security by Aggarwal, K., et. al. [9] for better enhancement of finance and business. A secure wallet creation was developed by Igboanusi, I. S., et.al. [10] to bring both offline and online transaction among the common people to grow the number of transactions.

Alupotha, J., et.al. [11] concentrated on the quality of transactions with cryptocurrency using Aggregable and confidential transactions among the business people. Also, this increased the efficiency of Quantum-Safe Cryptocurrencies. Ahamed, S., et.al. [12] discussed on the decentralised security systems on the basis of Blockchain technologies to bring easy payment system for the cash transactions. There is a potential warning for all the cash transactions as suggested by Prasad, E., [13] as it was mentioned that cash would become obsolete in the future and complete cashless transaction will occur among all the people in America. Raj, P. V. R. P., et. al. [14] also suggested that

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A Study on Prediction for Crop Area, Production, and Yield Analys is Using Machine Learning Approaches

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Abstract

Analyzing crop area, production, and yield typically involves data collection from farmers, the application of remote sensing technologies like satellite imagery, and on-site surveys. This gathered data is then used to assess crop performance, identify trends, and offer recommendations to improve agricultural practices.Data mining finds extensive application across diverse sectors such as business, healthcare, finance, marketing, and scientific research, enabling the extraction of knowledge and insights from data that may not be readily discernible using conventional approaches.This paper considers Crops Production between 2006 to 2011. The machine learning approaches which is used to analysis and predict the dataset usinglinear regression, multilayer perceptron, SMOreg, random forest, random tree, and REP tree. Numerical illustrations are provided to prove the proposed results with test statistics or accuracy parameters.

Keywords: *Machine learning, crop area, production, yield analysis, decision tree, correlation coefficient, and test statistics.*

1. Introduction and Literature Review

Machine learning and data mining in the analysis of crop area, production, and yield, agricultural stakeholders can bolster their decision-making, streamline resource utilization, boost efficiency, and promote sustainable farming practices. These technologies foster a data-centric approach to agriculture, ultimately resulting in more effective crop management and heightened food security.

The present research aims to illuminate the role of machine learning in agriculture by conducting an extensive review of recent scholarly literature. This review is based on keyword combinations such as "machine learning" alongside "crop management," "water management," "soil management," and "livestock management," following PRISMA guidelines. Only journal papers published between 2018 and 2020 were considered. The findings suggest that this topic spans various disciplines, promoting international convergence research. Notably, crop management takes center stage, with a plethora of machine learning algorithms utilized, with Artificial Neural Networks standing out for their efficiency. Maize and wheat, along with cattle and sheep, were the most investigated crops and animals, respectively. Additionally, a variety of sensors, including those on satellites and unmanned ground and aerial vehicles, have been employed to gather reliable input data for data analysis. It is anticipated that this study will serve as a valuable guide for all stakeholders, raising awareness of the potential benefits of employing machine learning in agriculture and fostering more systematic research in this domain [1].

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A Study on Parkinson's Disease Parameters Using Data Mining with Machine Learning Approaches

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Abstract

Parkinson's disease is a long-term condition that demands continuous attention and care. While it can substantially affect an individual's quality of life, with appropriate treatment and support, people diagnosed with Parkinson's can enjoy meaningful lives for numerous years. Research into Parkinson's disease remains active, with ongoing progress in comprehending the condition and discovering innovative treatment options. Data mining, also known as Knowledge Discovery in Database (KDD), is a highly valuable technique employed by entrepreneurs, researchers, and individuals for extracting valuable insights from extensive data collections. The knowledge discovery process encompasses several key steps, including data cleaning, data integration, data selection, data transformation, data mining, pattern evaluation, and knowledge presentation.This paper considers Parkinson's disease Data Set.The machine learning approaches which is used to analysis and predict the dataset usinglinear regression, multilayer perceptron, SMOreg, random forest, random tree, and REP tree. Numerical illustrations are provided to prove the proposed results with test statistics or accuracy parameters.

Keywords: *Machine learning, parkinsons disease, decision tree, correlation coefficient, and test statistics.*

1. Introduction and Literature Review

Parkinson's disease, a global affliction impacting millions, stands as a neurodegenerative condition. The promise of machine learning and data mining techniques lies in their capacity to offer substantial advancements in Parkinson's disease research by facilitating early diagnosis, tracking disease progression, and enhancing treatment optimization.

Machine learning (ML) is a branch of artificial intelligence (AI) specifically concerned with developing systems capable of learning and enhancing their performance through the information they ingest. Artificial intelligence encompasses a wide range of technologies and systems designed to mimic human intelligence.Data mining involves the exploration and analysis of extensive sets of unprocessed data to uncover patterns and extract valuable insights. Businesses utilize data mining software to gain deeper insights into their customer base, enabling the development of more potent marketing strategies, heightened sales, and reduced operational costs.

A machine learning-based approach for diagnosing Parkinson's disease, which involves a two-step process: feature selection and classification. We considered Feature Importance and Recursive Feature Elimination methods for feature selection and employed Classification and Regression Trees, Artificial Neural Networks, and Support Vector Machines for patient classification. Notably, Support Vector Machines with Recursive Feature Elimination outperformed other methods, achieving an accuracy of 93.84% while utilizing the fewest voice features [1].

Early prediction of Parkinson's disease is crucial, and this study extends prior work by incorporating non-motor features such as RBD and olfactory loss, along with important biomarkers. Novel machine learning models, including Multilayer Perceptron, BayesNet, Random Forest, and Boosted Logistic Regression, were developed to automate diagnostics. Impressively, Boosted Logistic Regression demonstrated the best performance, with an

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Intertextuality In Chitra Banerjee Divakaruni's Trilogy Brotherhood Of The Conch

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Abstract:

This paper focuses on the elements of intertextuality with reference to Chitra Banerjee Divakaruni's trilogy, The Brotherhood of the Conch. The term "Intertextuality" refers to the presence in a text of two or more texts that are connected with each other. i.e similarity.

Unintentional references can sometimes happen, depending on how well the reader understands the text andits meanings. Intertextuality is a common thread connecting the novels The Conch Bearer (2007), The Mirror of Fire and Dreaming (2008), and Shadowland (2011), where the author draws inspiration from J.K. Rowling's Harry Potter and J.R.R. Tolkien's Lord of the Rings, and The Hobbit. The protagonist of Divakaruni's trilogy is similar to the fictitious characters Harry and Bilbo Baggins. In the novel Harry Potter, Tom Riddle, who would later become Lord Voldemort, makes a similar allusion to the antagonist Surabhanu from Chitra Banerjee'sBrotherhood of the Conch. This article also discusses intertextuality from Julia Kristeva's point of view. Divakaruni's trilogy has had a significant influence on a text in which the characters and plot overlap with other works.

Keywords: Fantasy fiction, Intertextuality, Indian-writing, Iterability, Post-Modernism.

Introduction

Chitra Banerjee Divakaruni is a well-known Indian born American writer, and novelist.

She has bagged numerous awards for her various fictional works. She is widely known for diasporicwriting which deals with feminism. In addition, she has also written fantasy novels.

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Sunlight-driven photocatalytic degradation of organic pollutant in an aqueous medium by Gd-doped CuO nanocatalyst

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ABSTRACT

The scope of the present study is to investigate the influence of CuO doped with copper oxide (CuO) and gadolinium (Gd^{3+}) metal ions on the structural, optical, morphological, magnetic, and photocatalytic degradation activity. A series of Gd-doped CuO moieties (1, 3, 5, 10, and 15 mol %) were prepared in a facile hydrothermal manner. The properties of the synthesized Gd-doped CuO catalyst were investigated using various instrumentation methods. It was found that Gd^{3+} ions were effectively incorporated into the CuO matrix and the photocatalytic activity of the Gd-doped CuO photocatalyst was improved compared to pristine CuO. The developed photocatalytic activity of Gd-doped CuO is attributed to improving the absorption of sunlight. Also, to make the charge separation between photo-induced e^- and h^+ effectively. Furthermore, the probable photocatalytic mechanism of the Gd-doped CuO nanostructure was proposed. The organic pollutants rhodamine B (RhB) and ciprofloxacin (CIP) were exposed to sunlight and also investigated. The photocatalytic degradation efficiency of the synthesized Gd-doped CuO catalyst was tested with the organic pollutants RhB and CIP. Among the synthesized catalysts GC 10 mol % showed the maximum photocatalytic degradation efficiency. It was observed that RhB has a maximum degradation of about 87% in 90 min and CIP has 80% in 90 min. The foremost dynamic parameters responsible for the photocatalytic degradation were determined by catching (trapping) phenomena; The abundance of the dye was 10 ppm and the amount of the synthesized catalyst was 50 mg L^{-1}. This work is expected to provide new inspiration for the rational design of high-efficiency catalyst systems for environmental remediation.

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POLYNOMIAL REGRESSION MODELLING PERFORMANCE EVALUATION

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Abstract:

The polynomial regression model, which is helpful when there is cause to suspect that the connection between two variables is curvilinear, is the main focus of this article. Utilizing the characterization of the relationship between stresses and drilling depth, the polynomial regression model has been used. The least squares method was used to estimate model parameters. Following fitting, the model was assessed using a few of the standard metrics for assessing the reliability of regression models. The forced expiratory volume in 1 second over time in children with cystic fibrosis was predicted using flexible polynomial regression models inclusive of a first up to a fourth order and estimated using electronic health information. The best fit was determined to be the model with the lowest for each participant. Comparing the measured values to the values provided by the customized polynomial allowed researchers to determine the best settings for employing flexible polynomials.The polynomial regression model, which is helpful when there is cause to suspect that the connection between two variables is curvilinear, is the main focus of this essay. Utilising the characterization of the relationship between stresses and drilling depth, the polynomial regression model has been used. The least squares method was used to estimate model parameters. Following fitting, the model was assessed using a few of the standard metrics for assessing the reliability of regression models. These calculations were made using the computer programme MATLAB, which was used to analyse the data.

Keywords: Mean absolute percentage error, Root mean square error, R-squared, polynomial regression, Adjusted R-Squaed

1. Introduction

Finding the correlation between a dependent variable and one or more independent variables is the goal of regression analysis. One of the most significant statistical techniques, it is heavily utilised throughout practically all sciences. It is specifically employed in business and economics to investigate the causally connected relationship between two or more variables. An estimated regression equation is created using estimations of the parameter values and a model of the relationship that is hypothesised. The model is then put through a number of tests to see if it

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A CONTRAST BETWEEN THREE LINEAR PROGRAMMING MODELS FOR ESTIMATING LEAST ABSOLUTE REGRESSION MODEL

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Abstract:

The Least Absolute Regression Model (LARS) and linear programming are two distinct ideas. The Least Absolute Regression Model is a regression analysis methodology used for variable selection and regularization, whereas linear programming is a mathematical optimization technique used to get the optimum result in a mathematical model with linear relationships. It is crucial to understand that LARS is a regression algorithm rather than a linear programming problem. The Least Absolute Values method has led to the development of a number of techniques for estimating the regression model parameters. In this study, the Central Process Unit (CPU) time and the magnitude of the determination coefficients of three approaches for estimating the least absolute values proposed by Charnes et al., Gonin and Money and Li are compared. For estimating regression model coefficients, the Least Absolute Value (LAV) approach is employed as an alternative to the Least Squares (LS) method. This popular approach essentially relies on estimating the coefficients by reducing the absolute difference between the observations and the estimation values. The LAV estimate approach might be treated as a constrained optimization issue in this situation. When there are too many independent variables and observations, solving the model will take a very lengthy time. In this regard, a number of models have emerged in an effort to cut down on CPU time. These models were created and then compared in terms of CPU time; however, the models' determination coefficients were not taken into consideration.

Keywords : Linear Programming, Univariate regression Model, Ordinary least squares, Leat Absolute Regression Model (LARM), Lasso Method and Matlab simulation tools.

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ESTIMATION OF LEAST ABSOLUTE DEVIATIONS REGRESSION WITH SERIALLY CORRELATED DISTURBANCES

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Abstract

Least Absolute Deviations (LAD) regression provides a robust alternative to Least Squares (LS), particularly when the disturbances follow distributions that are non-normal and subject to outliers. While inference in least squares estimation is well-understood, inferential procedures in the context of LAD estimation have not been studied as extensively, particularly in the presence of non-independent disturbances. In this paper, three alternative significance test procedures, along with two approaches are used for serial correlation. Large-scale Monte Carlo Simulations is used and comparisons are made, on both observed significance levels and power.

Keywords: L_1 regression, least absolute deviations, serial correlation robust regression, simulation.

1. Introduction

Ordinary Least Squares (OLS) yields parameterestimates that are unbiased and have minimum variance when the disturbances are i.i.d normal. In the presence of non-normal errors, OLS can be performed quite lessen especially if the errors follow adistribution that produce outliers. Many researches have been focused at developing the estimation approaches that are robust to such outlier producing error distributions. LAD regression comes out as one of the most commonly used techniques for robust regression. LAD estimates are affected less strongly by extreme observations, relative to their OLS counterparts.

Time Series data often results in the infraction of the conditions that assure the optimality of OLS in regression. In OLS, the problem of serial correlation has been greatly investigated and numerous approaches for autocorrelated errors have been proposed. For this, refer Cochrane and Orcutt (1949), Weiss (1990) and Dielman and Rose (1994).

In OLS, inferential procedures are more developed than LADregression. In LAD regression, inference is an active area of research. When using LAD estimation Koenker and Bassett (1982) suggested Likelihood Ratio (LR) tests and Lagrange Multiplier (LM) tests. These approaches are used to test for coefficient significance

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Estimation of Least Absolute Deviation for Multiple Linear Regression Models

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Abstract

For estimating the coefficient vector of a linear regression model with disturbances following the case when the error covariance matrix depends on a finite number of parameters, we derived the approximate expression for the distribution of the two-step Generalized Least Square (GLS) estimator. Mathematicians and statisticians use multiple linear regression models to study the different aspects of how this mode is formulated, especially when applied in real life situations. An interesting aspect of the study is estimating the least absolute deviation for multiple linear regression models. Most of the behavior in using applied statistics models to estimate the least absolute deviation for multiple linear regression models. For multiple linear regression models, refer to Judge and Bock (1978) and Vinod and Ullah (1981). In this paper, the research work deals with appropriate methods of estimation and the importance of using techniques for estimating the parameters of multiple linear regression models. Numerical illustrations are also provided to validate the model.

Keywords: multiple linear regression models, least absolute deviation, generalized least square, non linear regression models.

Introduction

For estimating the coefficient vector of a linear regression model with disturbances following the case when the error covariance matrix depends on a finite number of parameters and derived the approximate expression for the distribution of the two-step Generalized Least Square (GLS) estimator. Magee (1985) also adopted a general method to derive expansions for iterative estimators and applied it to obtain the approximation dispersion matrices for the iterated Prais-Winsten and Maximum Likelihood Estimators. While several families of improved or shrinkage estimators with superior properties in terms of a quadratic loss function have been developed for the linear regression model with i.i.d disturbances refer to Judge and Bock (1978) and Vinod and ullah (1981). The development of many estimators of parameters of linear regression model is traceable to non-validity of the assumptions under which the model is formulated, especially when applied to real life situation. The notwithstanding, regression analysis may aim at prediction. Nowadays, nonlinear regression model building is new and very fascinating filed of research in Applied Statistics.

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PROCESS IMPROVEMENT USING SIX SIGMA DIFFERENT COMPONENTS

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Abstract:

In today's industrial company, it is widely acknowledged that product quality is essential. The conventional components of product quality relate to product design (converting client needs into appealing features and technical requirements), as well as the creation and specification of high-performance production methods with low defect rates. The term "quality management" refers to all activities that promote quality.

The goal of quality management is to increase customer satisfaction by continuously improving processes, eliminating uncertain activities, and raising the calibre of procedures, goods, and services. Quality planning, quality assurance, quality control, and quality costs are just a few of the four main operations that make up quality management. This paper's main focus will be on quality control and how to use one of the tools for it in order to make it better.

Six Sigma differs from previous quality improvement ideas in that it uses a framework made up of numerous principles, tools, and methodologies that are all combined with experience to become best practices. This paper focuses on Six Sigma as a technique to continuously enhance quality, keeping in mind that every firm wants to operate efficiently and effectively over the long term. This document specifically highlights the essential qualities of product/service quality, the necessity of applying Six Sigma for quality assurance, and a comprehensive list of tools and techniques that can be employed during Six Sigma implementation.

Keywords: process improvement, tools, and six sigma quality.

Meaning and fundamental qualities of quality:

Quality is a perceptual, conditional, and somewhat subjective property that can be interpreted differently by different people. There are several definitions of the word quality that may be found in contemporary literature in the area of quality. One of the various definitions is provided by the worldwide family of standards ISO 9000: 2000: "The extent to which a set of inherent characteristics satisfies their requirements is the measure of quality." There are various definitions for the word "quality," but two of them are crucial for controlling quality:

"Quality" refers to a product's features that satisfy customers by ensuring that their needs are met. In this view, quality is defined in terms of income. Such enhanced quality has the dual goals of increasing customer pleasure and revenue. However, adding additional and/or higher-quality features typically demands a financial commitment, which raises prices. In this sense, higher quality typically "costs more."

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THE METRICS FOR LEAST SQUARES ROBUST RIDGE REGRESSION ESTIMATOR TO SOLVE MULTICOLLINEARITY

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Abstract

One of the various techniques used to analyse data is regression analysis. Ordinary least squares (OLS) is a technique for estimating a parameter in a linear regression model. When all the assumptions are true, OLS will provide the best estimator. However, in practise, not all of the presumptions are always true. For a general regression model $Y = X\beta + e$, $E(e) = 0$, *, some results on the relationship between two measures of multicollinearity, the eigenvalues and the condition numbers of* $X'X$ *and* $X'VX$, *are obtained. These results are useful in examining the effects of augmentation of data on multicollinearity and the influence of an observation on the condition number of* $X'X$ *in regression diagnostics. Assumptions that usually violated are multicollinearity and outlier. Ridge regression is a regression method that give constrain on the parameters that used to deal with multicollinearity, meanwhile Robust regression is used to overcome the presence of outlier. The issues of multicollinearity and outlier in a traditional linear regression model were addressed by the suggested techniques Ridge Regression and Robust Regression Estimators, respectively. The multicollinearity and outlier issues in a traditional linear regression model are simultaneously addressed by the robust ridge regression estimator proposed in this study. Since the ridge parameter cannot be estimated using the Ordinary Least Squares (OLS) estimator, the robust estimators (M, MM, S, LTS, LAD, and LMS) must be used instead. When the data set has both issues, the Robust Ridge Estimators outperformed the Ordinary Ridge Regression (ORR) estimator and the Ordinary Latent Scale (OLS) estimator. The effectiveness of these estimators was evaluated based on their Mean Square Error. The proposed estimator was applied to a data set with the two issues, and the desired result was obtained.*

Key words: Least Squares, Multicollinearity, Robust Regression Estimator, Robust Ridge Regression Estimator, Ordinary Least Square Estimator.

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பாரதியின் சுதேசி பாடத்திட்டமும் தாய்மொழிக்கல்வியும்

Bharti's indigenous curriculum and mother tongue education

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ஆய்வுச் சுருக்கம்: ஆங்கிலேயரின் காலத்தில் இந்தியர்களுக்கு வழங்கப்பட்ட கல்வி முறையானது அவர்களுக்கான அடிமைகளை உருவாக்குவதாக இருந்தது. சுய சார்போடு வாழ இந்தியர்களுக்கு ஏற்ற பாடத்திட்டம், சுதேசி பாடத்திட்டம் சார்ந்த கல்வியாக இருக்க வேண்டும் என பாரதி விரும்பினார். ஆங்கிலேயரின் ஆங்கிலக்கல்வி இந்திய சமூகத்தில் ஏற்படுத்திய விரும்பத்தகாத விளைவுகளை பாரதி குறிப்பிட்டுக்காட்டி, சுதேசி பாடத்திட்டம் அமைய வேண்டியதன் அவசியம் குறித்த கருத்துக்களை இக்கட்டுரை ஆய்கின்றது.

திறவுச் சொற்கள்: பாடத்திட்டம், இந்தியக் கல்வி முறைகள், சுதேசிக் கல்வி, தாய்மொழிக் கல்வி, பாரதியின் கல்வி

Abstract: The system of education given to Indians during the British period was to make them slaves. Bharathi wanted the curriculum to be suitable for Indians to live independently, an education based on the Swadeshi curriculum. Bharti points out the undesirable effects of British English education on Indian society and explores the views on the need for an indigenous curriculum.

Keywords: Curriculum, Indian Education Systems, Bharathi's Education System

முன்னுரை

கல்வி மனிதனின் அறிவினைச் செம்மைப்படுத்துவதாக அமைய வேண்டும். ஆங்கில அரசு இந்தியர்களுக்கு வழங்கிய கல்வியானது, அடிமைத்தனத்திற்கும் இந்தியச் சமூகங்களுக்கு உள்ள பெருமை வாய்ந்த மரபுகளைச் சிதைக்கும் வகையிலும் அமைந்து வருவதாக பாரதி உணர்ந்தார். அதனால் சிறுமையான நோக்கத்துடன் இந்தியர்களுக்கு வழங்கப்பட்ட கல்வி முறையினை வெளிப்படுத்திக் காட்டி, ஆங்கிலக் கல்விக்கு மாற்றாக இந்திய மக்களுக்கு சமூகமரபுகளைக் காக்கும் வகையிலான சுதேசியக் கல்வியை தாய்மொழியில் வழங்க வேண்டியதன் நிலை குறித்து இக்கட்டுரை ஆராய முற்படுகின்றது.

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சான்லாக்ஸ் பன்னாட்டுத் தமிழியல் ஆய்விதழ்

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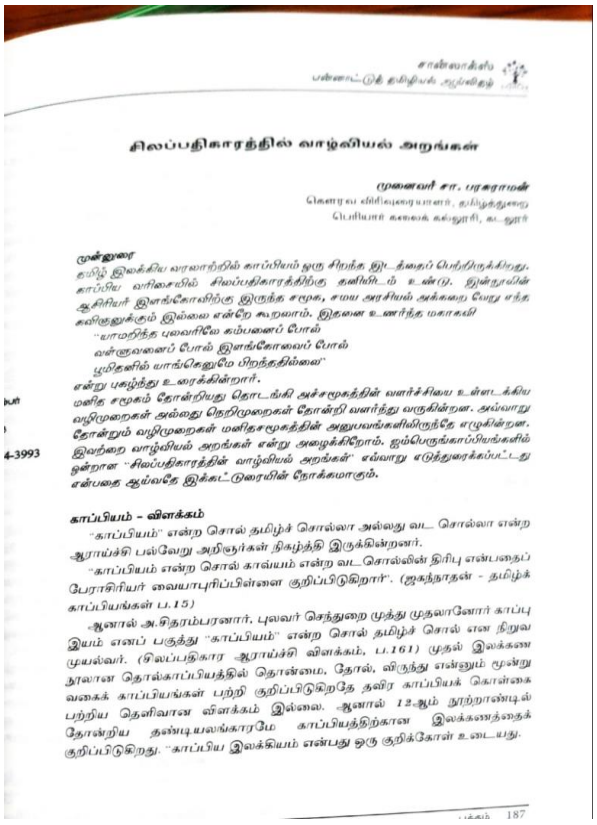
ஐந்தமிழ் ஆய்வு மன்றம்
மதுரை

தமிழ்த்துறை
விவேகானந்தா கல்லூரி
அகத்தீஸ்வரம்

இணைந்து நடத்தும்
பத்தொன்பதாவது தேசியக் கருத்தரங்கம்
ஆய்வுச் சிந்தனைகள்
தொகுதி - 2

29 - 30 செப்டம்பர் 2023



சான்லாக்ஸ்
பன்னாட்டுத் தமிழியல் ஆய்விதழ்

சிலப்பதிகாரத்தில் வாழ்வியல் அறங்கள்

முனைவர் சா. பரசுராமன்
கௌரவ விரிவுரையாளர், தமிழ்த்துறை
பெரியார் கலைக் கல்லூரி, கடலூர்

முன்னுரை

தமிழ் இலக்கிய வரலாற்றில் காப்பியம் ஓரு சிறந்த இடத்தைப் பெற்றிருக்கிறது. காப்பிய வரிசையில் சிலப்பதிகாரத்திற்கு தனியிடம் உண்டு. இன்றாயின் ஆசிரியர் இளங்கோவிற்கு இருந்த சமூக, சமய அரசியல் அக்கறை வேறு எந்த கவிஞனுக்கும் இல்லை என்றே கூறலாம். இதனை உணர்ந்த மகாகவி

"வாமறித்த புலவரிலே கம்பனைப் போல்
வள்ளுவனைப் போல் இளங்கோவைப் போல்
மூவிதனில் யாங்கெனுமே பிறந்ததில்லை"

என்று புகழ்ந்து உரைக்கின்றார்.

மனித சமூகம் தோன்றியது தொடங்கி அச்சமூகத்தின் வளர்ச்சியை உள்ளடக்கிய வழிமுறைகள் அல்லது நெறிமுறைகள் தோன்றி வளர்ந்து வருகின்றன. அவ்வாறு தோன்றும் வழிமுறைகள் மனிதசமூகத்தின் அனுபவங்களிலிருந்தே எழுகின்றன. இவற்றை வாழ்வியல் அறங்கள் என்று அழைக்கிறோம். இம்பெருங்காப்பியங்களில் ஒன்றான "சிலப்பதிகாரத்தின் வாழ்வியல் அறங்கள்" எவ்வாறு எடுத்துரைக்கப்பட்டது என்பதை ஆய்வதே இக்கட்டுரையின் நோக்கமாகும்.

காப்பியம் – விளக்கம்

"காப்பியம்" என்ற சொல் தமிழ்ச் சொல்லா அல்லது வட சொல்லா என்ற ஆராய்ச்சி பல்வேறு அறிஞர்கள் திகழ்ந்தி இருக்கின்றனர்.

"காப்பியம் என்ற சொல் காவ்யம் என்ற வடசொல்லின் திரிபு என்பதைப் பேராசிரியர் வையாபுரிப்பிள்ளை குறிப்பிடுகிறார்". (ஜகந்நாதன் - தமிழ்க் காப்பியங்கள் ப.15)

ஆனால் அ.சிதம்பரனார், புலவர் செந்துறை முத்து முதலானோர் காப்பு இயம் எனப் பகுத்து "காப்பியம்" என்ற சொல் தமிழ்ச் சொல் என நிறுவ முயல்வர். (சிலப்பதிகார ஆராய்ச்சி விளக்கம், ப.161) முதல் இலக்கண நூலான தொல்காப்பியத்தில் தொன்மை, தோல், விருந்து என்னும் மூன்று வகைக் காப்பியங்கள் பற்றி குறிப்பிடுகிறதே தவிர காப்பியக் கொள்கை பற்றிய தெளிவான விளக்கம் இல்லை. ஆனால் 12ஆம் நூற்றாண்டில் தோன்றிய தண்டியலங்காரமே காப்பியத்திற்கான இலக்கணத்தைக் குறிப்பிடுகிறது. "காப்பிய இலக்கியம் என்பது ஒரு குறிக்கோள் உடையது.

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பெரியார் கலைக் கல்லூரி, கடலூர்

மலர்: 8
தெகுப்பிதழ்: 1
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முன்னுரை

வாழ்வியல் நெறி என்பது செம்மையான வாழ்க்கை முறை எனலாம். இல்வாழ்வாளுக்குரிய பண்பாக வள்ளுவர் அன்பு, அறம் ஆகியவற்றைக் கூறுகிறார். நற்பண்பு கொண்ட இச்சான்றோர் பண்பாக அன்பு, நாணம், ஒப்புரவு, கண்ணோட்டம், வாய்மை ஆகியவற்றை வள்ளுவர் காட்டுகிறார். பெண்களுக்குரிய வாழ்வியல் பண்பாக அச்சம், நாணம், மடம், பயிர்ப்பு, விருந்தோம்பல், கணவனைத் தெய்வமாகக் கொண்டொழுகுதல் முதலிய பண்புகளைக் காட்டுவர். இத்தகு வாழ்வியல் நெறிகளைக் கருவிலே திருவுடைய கம்பர் தமது காப்பியமான கம்பராமாயணத்தில் இருள் கடிந்தெழுகின்ற ஞாயிறே போல் உயர்த்தி காட்டுகின்றார். இதனை ஆய்வதே இக்கட்டுரையின் நோக்கமாகும்.

கல்வியின் மேன்மை

இல்லறம் இனிமை பெற, இல்லாள் அறிவும், பண்பும் பெற கல்வியே அடிப்படை ஆகும். கல்வி பெற்ற பெண்டிரே இல்லறப் பண்பை உணர்ந்து இனிது நடத்தி செல்ல முடியும். வறுமையால் வாடி வந்தவர்க்கு வேண்டியவற்றைக் கொடுத்து உதவினர். விருந்தினர் அருந்தி மிகுழ உணவை அளித்தனர். கோலச நாட்டு குடும்பங்கள் இவ்வாறு குறைவின்றி வாழ்ந்தன என்று கோசல நாட்டைப் பற்றி கூறும் போது கம்பர் கூறுகிறார். இதனை,

"பெரும் தடங்கண் பிறை நுதலார்க்கெலாம்,
பொருந்து செல்வமும் கல்வியும் பூத்தலால்,
வருந்தி வந்தவர்க்கு ஈதலும், வைகலும்",
விருந்தும் அன்றி விளைவன யாவையே (36) என்கிறார்.

காமம் வெளிப்படுத்தா பெண்மை

காமம் கொண்ட பெண்கள் அன்பை, தாம் வெளிப்படுத்துதல் இல்லை என்னும் தமிழர் தம் உயரிய பண்பை பஞ்சவடியில் இராமனைக் கண்டு காமுற்ற சூர்ப்பனகையின் சொற்களில்,

"தாம் உறு காமத் தன்மை
தாங்களே உரைப்பது என்பது,
ஆம் எனில் ஆவது அன்றால்"
அருங் குல மகளிர்க்கு அம்மா (2873)

என கம்பர் அழகாகக் காட்டுகிறார்.

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CONSUMERS' PERCEPTION ON MARKETING STRATEGIES ADOPTED BY SELECT RETAILERS IN ONLINE MARKET

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Abstract

The Internet has transformed the conventional methods of doing business, ultimately causing more difficulties in the online marketing system. Nowadays, due to free access to the plethora of information available, online buyers need not be depended dependent on a salesperson. Because of more comprehensive coverage, online shopping has simplified the way of shopping and has gained hype not only from customers but from retailers as well. Customers select online shopping for different reasons, with convenience and belief being the chief factors next to prices and superiority of products. The study established the level of influence of different marketing strategies adopted by e-retailers. Data has been collected from 450 respondents through a primary source, for which the interview schedule was used. SPSS 20 has been used to analyze and interpret data. T-test, ANOVAs and chi-square analysis have been used. Study results show that marketing strategies adopted by different leading online retailers have significant differences towards influencing the customers to shop through the online market.

Keywords: Marketing Strategies, Influencing, Online-retailers and Online Marketing.

INTRODUCTION

In the last two decades there has been a rapid growth of e-commerce in India. The penetration of mobile and internet connections has transformed the way of communication. While compared with some developed countries like the United States, United Kingdom, and Canada, online shopping is still at a nascent stage in India, but it is growing very fast. This growth has been propelled by the quick adoption of technology, especially because of more access to the internet and broadband, use of tablets and smart phones, betterment of standards of living and the growing middle class. The Internet has completely changed the way transactions happen and online shopping is one of the most important ones. Since the year 2000, online shopping has been present in India. It became popular with the introduction of the deep discount model of different websites. In a way, it was instrumental in relaunching online shopping. The digital transformation happening in India is increasing the e-commerce revenue to US$ 120 billion in 2020, up from 39 billion in 2017. The growth rate is being 51%, the highest in the world. Average annual e-commerce sales per digital buyer in India were 424 U.S. dollars in 2020.

The response of the consumer indicates their post-purchase behavior, it provides suggestions to others about the willingness of online retailers' service and also can understand whether the customers' expectations have been fulfilled or not. Customers' decisions and their views about the site are known as trust. Trust is a significant perception of online shopping. In online

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Customers' Perception On Problems Towards Adopting Marketing Strategies Of Select Online Retailers

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ABSTRACT

E-commerce can be stated as the buying and selling of goods or services through electronic means. Like the internet, mobiles, telephones, ATMs, fax machines, etc. Online marketing talks about the techniques and strategies that are used for marketing products and services on different digital platforms. Online marketing aids in attracting customers as increasingly more people are engaged in the digital world. The online market sector has gone through many industrial and rigid changes, which play a role in creating a shift in consumer buying attitudes. The present study makes an effort to locate the differences in the problems associated with adopting online e-retailers' marketing techniques and strategies. The study was on only 450 customers of selected online e-retailers in Cuddalore District. The study was based on primary data collected through an interview schedule. SPSS has been used to analyze the t-test and chi-square analysis has been used. The result of the study showed that problems relating to e-retailers' services are at variance among the customers of select online-retailers.

Key Words: Online market, Digital platforms, marketing strategies, Problems.

INTRODUCTION

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Shgs And Ngos Activities In The Women Entrepreneurship Development

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Abstract

SHGs made a substantial contribution to the development of women's entrepreneurship by helping women improve their skills and providing them with opportunities to participate in a variety of activities that were entrepreneurial in nature. SHG encourage and support the development of an entrepreneurial mindset in their member women. It is essential to use an integrated approach in order to turn the movement of women becoming business owners into a successful one. They perform a catalytic function in mobilizing the human resources to establish an acceptable entrepreneurial environment and producing new prospects. As a result of this contribution to the expansion of the microenterprise sector, numerous state and central governments have begun looking for the assistance of SHGs in an effort to speed up the process of economic development. SHGs are playing an increasingly important part in the process of developing women entrepreneurs, which is gaining prominence in today's society. In this context, both the government and SHGs play an important role and both types of organisations provide support to female business owners. In light of this, an effort is being made to investigate the activities of SHGs in the hopes of fostering a more robust entrepreneurial scene in the Kozhikode District of Kerala. Data were collected from 145 individuals who participated as responders within the scope of the study.

Key Words - Entrepreneurship, Economic development, Marketing activity.

1.1. Introduction

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ROLE OF SELF HELP GROUPS IN THE ECONOMIC DEVELOPMENT OF WOMEN – SPECIAL REFERENCE TO KOZHIKODE DISTRICT

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Abstract

Women are considered inferior in society and they are not permitted to participate in social activities. The women in society face a lot of difficulties because of the existence of patriarchal society, family care roles, deep-rooted cultural norms, etc. Hence, to overcome these difficulties The Self-Help-Group Program is a way to bring women together to be involved in saving schemes and prompted to create internal resources to meet emergencies or business needs, thus helping to do away with money lenders and also promoting entrepreneurial activities. The SHGs activity also focuses on the economic empowerment of women in the society. This has provided the motivation for the researcher to make an in-depth study on the various aspects of the economic empowerment enjoyed by women. Hence, the present study is undertaken in SHGs in Kozhikode district, Kerala. Ten women entrepreneurs were selected from the twelve Taluks of Kozhikode district, for a total of 120 respondents. The results show that employment, savings, the beginning of income generation activities, effective use of resources and the elimination of poverty are important economic activities of the SHGs.

Keywords: Economic Development, Self-Employed, Empowerment

1.1. INTRODUCTION

The increasing challenges of unemployment and uneven growth in India can be alleviated by fostering the economic participation of India's female population. Through a variety of different development programs, both the State and the Central governments encourage their respective populations' female populations to participate in self-employment. The most well-known of these programs are those that assist in the professional and economic advancement of women through the formation of self-help groups.

Women's role in the family and society is always important for economic development. Therefore, it is essential to cultivate the roles that women play in SHGs in order to bring together, over the course of many years, women who have been marginalized and isolated in some fashion or another.

Therefore, the industrial revolution brought about a significant shift in the way in which women conducted their economic lives. They suffered a blow to the pride of place that they had in traditional society as a result of the event. In the new factory system, they were reduced to the role of wage earners.

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HERO'S JOURNEY WITH REFERENCE TO CHITRA BANERJEE DIVAKARUNI'S THE CONCH BEARER AND JOSEPH CAMPBELL'S THE HERO WITH A THOUSAND FACES

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Abstract

This article attempts to explore the hero's journey in Chitra Banerjee Divakaruni's *The Conch Bearer* with reference to Joseph Campbell's *The Hero with a Thousand Faces*. Chitra Banerjee Divakaruni's *The Brotherhood of the Conch* series falls under the category of fairy tales since they focus on moral guidance and exploring various themes of fantasy, magical aspects, fairytales, etc. This paper primarily focuses on the protagonist's quest-related adventures and the 'Monomyth'. The protagonist's journey ultimately mirrors his inner self and his ability to conquer all challenges in order to achieve his spiritual purpose. The work depicts a chain of fairy stories with supernatural adventures that are entirely distinct from other genres of fiction. The trilogy portrays the quest of the hero towards self-realization. *The Hero with a Thousand Faces* explores the hero's journey in another world. The journey faces numerous difficult challenges between the birth and death. This paper also focuses on the term 'Monomyth' analysed by Joseph Campbell.

Keywords: Fantasy, Story-telling, Adventures, Monomyth, Hero's Journey.

INTRODUCTION

Fairy tales reverberate in a storytelling voice that tries out several narrative conceits. According to the French folklorist Emmanuel Cosquin, "Hindu representations in India are where the origins of fairy tales lie" (Oxford). The word "Zaubermärchen" in German means "fairy tales". Fairy tales, a category of children's literature containing magical components, are the traditional forms of telling stories all over the world. Fairy stories, on the other hand, are associated with society, which has a beginning and an end. These stories typically have pleasant endings. Due to numerous ethnic traditions, these stories contain many unique characteristics. In the fictional world of fairy tales, traps and sneaky tricks are unpredictable. The characters may take on new forms or alter their appearance with the use of magical spells in imaginative worlds.

In *The Hero with a Thousand Faces*, Joseph Campbell analyses and explains quest of the hero who moves between worlds in stages to achieve his goal. At an initial point, the protagonist is from a physical realm without any mysterious or mystical abilities. Harry from *Harry Porter* and Bilbo Baggins from *The Hobbit* are two interesting examples of characters. A quest is a search for an issue where the objective is ultimately attained. Some quest objects have the ability to heal, but they have been stolen, and the hero must protect the healing object from evil eyes by surpassing all obstacles. The protagonists of many fairy tales are shown in perennial

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சநாதன மாற்றமும் மறு ஆக்கமும் - பாண்டிய நெடுஞ்செழியனை முன்வைத்து

Chances of Sanathana and its Re-Creation – Based on Pandiya Nedunchelian

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ஆய்வுச் சுருக்கம்

ஆரியர்களின் வருகைக்குப் பிறகு இந்திய அளவில் வேதம் முதன்மைப் பெற்று அதன் கருத்துக்கள் வழி நடப்பது கட்டாய மயமாக்கப்பட்டது. இதன் பின்னர் இரண்டாம் தலைமுறை ஆரியர்கள் தங்கள் கருத்து களுக்கு ஏற்ப வேதக் கருத்துக்களை மாற்றி உபநிடதங்களாகவும், மனுஸ்மிருதிகளாகவும் ஆக்கினர். பின்னர் அவற்றின் வழி நடப்பதே சனாதனதர்மம் என்ற நிலையை உருவாக்கினர். குறிப்பாக வேதக் கல்வியைக் கற்பது பிராமணர்களுக்கே உரியது என்ற கட்டாயத்தை முன்வைத்து அனைத்துத் தரப்பினரிடமும் இருந்து கல்வியையே பறித்து அதனைப் பிராமணர்களுக்கே உரியதாக ஆக்கினர். இதனால் வேளாளர் மற்றும் சூத்திரப் பிரிவினர் மிகுவும் பாதிக்கப் பட்டனர். இதனைத் தொடர்ந்து பல உரிமைகள் அவர்களிடம் இருந்து பறிக்கப்பட்டன. இத்தகு சூழலைத் தென்னாட்டிலும் ஏற்படுத்தினர். இருந்தபோதிலும் எதிர்பார்த்த அளவில் அவர்களால் வெற்றிபெற முடியவில்லை. பாண்டிய நெடுஞ்செழியன் போன்றோர் கல்வி கற்றலை அனைவருக்கும் உரியதாக ஆக்கி சமதர்ம சமுதாயச் சிந்தனைகளை முன்வைத்துச் சனாதன தர்மத்தை மறு ஆக்கம் செய்தனர். இத்தகுப் போக்கையே கட்டுரை காட்டுகின்றது.

முக்கியச்சொற்கள்: ஆரியர், சனாதன தர்மம், வர்ணாசிரமம், உபநிடதம், மனுஸ்மிருதி, சூத்திரர், இராசசூயம்

Abstract

After the arrival of the Aryans, the Vedas became dominant in India and to follow its ideas became mandatory. After this, the second generation Aryans modified the vedic concepts according to their own ideas and made them into Upanishads and Manusmritis. Then they created the situation that following this way as the sanathana dharma. They took away education from all classes and made it exclusive to brahmins. Due to this the Velala and Sutras sects suffered the most. Following this many rights were taken away from them. They created such a situation in south also. However, they could not achieve the expected success. By making education available to all and presenting Samadharma society ideaspeople like Pandiya Nedunchezhian re-created Sanatana Dharma. The article shows this trend.

Keywords: *Aryar, Sanatana Dharma, Varnasiramam, Upanidatham, Manusmiruthi, Sutras, Rasasooyam.*

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பாரதியின் பாடத்திட்டச் சிந்தனைகள்

முனைவர். இரா. முருகன்,
உதவிப் பேராசிரியர்,
தமிழ்த்துறை,
பெரியார் அரசு கலைக்கல்லூரி,
கடலூர்.

Abstract

The education system during the British era was not favorable for Indians. Bharathi wanted an independent India to have a curriculum-based education system suitable for Indians. This article examines Bharathi"s views on the curriculum that curriculum-based education such as character education, science education, interfaith education, political education, and economic education will strengthen the Indian people.

திறவுச் சொற்கள்

பாடத்திட்டம், இந்தியக் கல்வி முறைகள், பண்புக்கல்வி, மதஒற்றுமைக்கல்வி, பாரதியின் கல்வி

Keywords

Curriculum, Indian Education Systems, Character Education, Interfaith Education, Bharathi"s Education System

ஆய்வுச் சுருக்கம்

ஆங்கிலேயரின் காலத்தில் இருந்த கல்வி முறையானது இந்தியர்களுக்குச் சாதகமானதாக இல்லை. சுதந்திரம் அடைந்த இந்தியாவில் இந்தியர்களுக்கு ஏற்ற பாடத்திட்டம் சார்ந்த கல்வி முறை இருக்க வேண்டும் என பாரதி விரும்பினார். பண்புக்கல்வி, அறிவியல் கல்வி, மதஒற்றுமைக்கல்வி, அரசியல் கல்வி, பொருளாதாரக் கல்வி போன்ற பாடத்திட்டம் சார்ந்த கல்வி முறையே இந்திய மக்களை வலுப்படுத்தும் என்று பாரதியின் பாடத்திட்டம் குறித்த கருத்துக்களை

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Research Article

Solutions Of Fully Fuzzy Linear Programming Problem Models Using $\vartheta_{\mathcal{R}}$ - Ranking Function

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ARTICLE INFO

ABSTRACT

Initially, the paper begins with the introduction of linear programming problem techniques and the literature reviews on fuzzy optimization concepts. Then, it proposes a new ranking function that employs the value of a trapezoidal fuzzy number to solve the fully fuzzy linear programming problems. Furthermore, the paper compares the proposed method with Maleki's ranking function method. Next, this paper discusses the following two models: the shopping model and the power generation model. The first model aims to minimize the costs for consumers who shop either online or offline, while the second model focuses on generating more power to enhance the economy of the country. Through the paper, both the models will be analyzed and then the proposed ranking function will be applied. The goal of the research paper is to contribute to the field of fully fuzzy linear programming problems by suggesting a new ranking function and discussing its applications in two significant models.

Keywords: Fully Fuzzy linear programming problems; Offline shopping; Online shopping; Power generations; Trapezoidal fuzzy number.

1. INTRODUCTION

Linear programming [1] is a technique which is used to solve optimization problems while keeping constraints in mind. It can also be solved using software such as Lindo, AMPL, MPL, etc. However, uncertainty is a common factor in most real-life optimization problems. This is where fuzzy optimization techniques come in handy. Fuzzy linear programming problems are used to make decisions in uncertain situations.

In 1965, Zadeh introduced the concept of fuzzy optimization, which led to the development of optimization problems dealing with uncertainty in 1974. Zimmerman [2] proposed a method for solving linear programming problems that contained fuzzy constraints. Since then, many authors have contributed to the development of fuzzy linear programming based on Bellman and Zadeh [2] principles of decision-making. Ebrahimnejad and Verdegay [3] have developed various solution techniques for solving fuzzy linear programming problems.

This paper covers two topics: shopping and power generation models. Shopping has become a popular activity, and some people now prefer to purchase household items and other necessities online using platforms such as Amazon, Flipkart, etc. Therefore, it is important to analyze the advantages and disadvantages of both online and offline shopping methods to help people make informed choices. Some authors have conducted comparative studies on online and offline shopping through questionnaires and survey reports. In the next section, this paper discusses the shopping model using the collected survey report and obtains the solution of the corresponding formulated fuzzy linear programming problem.

Power generation is critical for India's economic growth, and the majority of electricity in India is generated through coal and other thermal power plants. Fossil fuels, nuclear energy, and renewable energy are the three main categories of energy used to generate electricity. The importance of power generation lies in promoting sustainable development by using renewable sources that lead to cleaner food and energy. Maharashtra is the

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ANALYSIS AND PREDICTION FOR MICRONUTRIENTS PERFORMANCE IN PADDY USING DATA MINING AND MACHINE LEARNING APPROACHES

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Abstract

In this study, data mining and statistical approaches were established to estimate the agriculture growth using soil micro and macro nutrient level. Agricultural development covers different parameters like weather conditions and soil nutrient level. In this paper, consider four essential plant nutrient elements defined as micronutrients namely, zinc (Zn), iron (Fe), copper (Cu) and manganese (Mn). To archive this objective, analysis of paddy yield and level of soil micronutrients using data mining and machine learning approaches with stochastic gaussian process, linear regression model, and sequential minimal optimization algorithm. Numerical illustrations also provide to prove the results and discussions using different nutrients parameters and various machine learning classifiers with its accuracy parameters namely R2 score, Mean Absolute Error (MAE), Root Mean Squar Error (RMSE), Relative Absolute Error (RAE) and Root Relative Squared Error (RRSE).

Index Terms: Data Mining, Machine Learning, Gaussian Process and Performance Metrics.

1. Introduction

In India, the field of agriculture for most important for increasing the Indian economy. The current situations the field of agriculture face different problems like weather conditions, labour demands and soil nutrient level. Indian soils have become deficient not only in major plant nutrients like nitrogen, phosphorus and in some cases, potash but also in secondary nutrients, like sulphur, calcium, and magnesium. Micronutrients such as zinc, boron and to a limited extent iron, manganese, copper and molybdenum have also been reported to be deficient.

Deficiency of micronutrients during the last three decades has grown in both, magnitude, and extent because of increased use of high analysis fertilizers, use of high yielding crop varieties and increase in cropping intensity. This has become a major constraint to production and productivity of paddy, sugarcane, and wheat. Thus, there is an urgent need for correction of individual nutrient deficiency and for arresting its further spread.

In this research, collect different data regarding agricultural related primary and secondary data for various resources like department of economics and statistics, department of agriculture and other relevant departments for state and central government. Data collection faces different stages in the area of data mining and also finding different hidden information using various statistical analysis. Finally, based on numerical illustrations how to increase the paddy growth using micronutrients. There are four essential micronutrients in plants. Some

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Journal of Xidian University https://doi.org/10.37896/jxu17.1/010 ISSN No:1001-2400

An Medical Clinical, of a Single-Queue, Single-Server Model witha Feedback

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Abstract

The suggested model has just one server and one waiting queue. Both new and external jobs are added to the queue, and jobs that return after a service round are referred to as feedback jobs. The arrivals of jobs from the outside have a Poisson distribution. Jobs that require feedback or returns have a binomial distribution. As a result, the jobs that are added to the queue have a mixed distribution. The model is intended to show how patients move around in a medical clinic. Minor illnesses are typically treated for people who visit the doctor. Some patients like those with diabetes and high blood pressure may need to have routine follow up visits. It is suggested to use a mixed distribution for the arrival distribution. For the model, which assumes that the service distribution follows an exponential distribution, the cumulative distribution function of the mixed distribution and relative measures are proposed. (0, 1) is the uniformly distributed random variable ρ is used to choose the binomial distribution $\beta(\eta, \rho)$. The relative measurements, like waiting time and queue of length are obtained.

1. INTRODUCTION

A G/M/1 queue model is suggested in this research to assess the line of patients waiting outside a medical office. It employs the embedded Markov chain method. The embedded points are the patient (jobs) arrival instants to the doctor. In this study, a single server with jobs of the feedback or return kind isused to simulate a doctor's office. While patients who return for care after their

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Analysis of the Steady State of a Queueing System with Random Vacation Under Additional Variables

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Abstract

This article is thought to be about an M/G/1 retrial system with a single working vacation for customers with several options. The administration is state-subordinated, and the server provides all clients who arrive with basic assistance before providing discretionary assistance to a select few of them. If the circle becomes empty after the administration of a satisfied customer, the server may occasionally go on a working excursion. Excursion interference occurs when the server is vulnerable to failure due to the emergence of unfavourable clients. Additionally, the server seeks a fix if a problem arises. In addition, there is a chance that the correction will be put off till later. A more robust variable technique is used to organise the administering conditions. Peripheral likelihood disseminations, which are also utilised to process other beneficial performance measures, have also been established.

Keywords: Steady State; Retrial System; Random Vacation; Supplementary Variable Method.

1. INTRODUCTION

The numerical search of investing up lines or line is known as queuing hypothesis. The idea enables numerical evaluation of only specific associated forms, such as holding up in queue, expressing emotion while standing in queue, and receiving service from the server in front of the queue. The assumption permits the induction and computation of a few presentation metrics, such as the typical client load, the average number of customers, and the possibility of experiencing the framework in different states, such as empty, full, with a server available, or with the confidence that a certain time will be served. Repair in this context refers to the situation where a server is periodically unavailable to crucial customers. The numerical search of investing up lines or line is known as queuing hypothesis. The idea enables numerical evaluation of only specific associated

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A Non-Markovian Queuing System for a Single Server with Multiple Working Vacations and a Broken Promise

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Abstract

This article discusses Non-Markovian queuing with a variety of options for consumers who arrive throughout several working vacations and cause frustration. Customers are served by the server before it can break down at any time throughout the service, and once the repair has been made, the client may choose to exit the system. Due to the server's vacation, they are regarded as having reneged on their agreement. When the system is idle for a generally distributed random amount of time, the server goes on vacation. If the client becomes uncooperative while the server provides the service continually to a small number of clients at a sluggish rate. To demonstrate the outcome and the results of the system performance study, some numerical calculations are made.

Subject Classification: 60K25, 68M07, 90C90.

Key Words: Queuing System, Single Server, Multiple Working Vacations

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Modelling of a cloud platform via $M/M_1 + M_2/1$ queues of a Jackson network

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Abstract

Modelling of a cloud platform that can provide the best quality of service (QoS) to minimise the average response times of its clients is investigated via an open Jackson network. Compact expressions for the input and output parameters and measures of the proposed model are presented. Designing of the model involves the performance measures of $M/M_1 + M_2/1$ queues with a K policy. This new cloud system is able to control virtual machines dynamically and to implement its operations to promote effectiveness in most of the commercial applications.

Keywords

cloud computing, open Jackson network, M/M/1 queue, response time, quality of service, QoS

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ASSESSING THE VANISHING STATE THROUGH HIDDEN MARKOV CHAIN IN AN ORGANIZATION

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Abstract

Manpower distribution at various states, a crucial part of an organization's structure, has a significant impact on all parts of an organization, either directly or indirectly. Thus, it is now important to consider the practical implications of manpower planning in an organization. This article, which is based on the hidden markov chain, was developed to assess the organization's manpower planning's vanishing state. The findings indicate how much manpower an organization will need in its early (10 state) and later (6 state) stages. The three disappearing states that were presented in the early stage can be handled by the six states that are presented in the latter stage, according to a competency evaluation of the workforce, since there will be no process delay in the organization's output. This model can help with manpower planning by offering details on the structure and availability of internal manpower resources within an organization.

Keywords: Grades, Manpower, Markov chain, Organization, States.

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Markov model analysis of faculty promotion in education institution

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Abstract

Faculty academic performance is one of the factors to be noted in educational institute. Promotional system varies according to the nature of the work and designation within educational institute. Promotions of faculty in educational institute and analogous institutions remain crucial to the attainment of economic, environmental and societal objectives nationally and globally. The movements of faculty within the grades levels called transitions are usually the consequences of promotions between wastage and recruitment into the system. A Markov chain is a special type of stochastic model. Markov chain model is very useful for describing the probabilistic behavior of faculty promotion in an educational institute. The formulated Markov chain model had shown its flexibility to deal with faculty promotion. The expected time of faculty spending at a specific grade and expected time period for promotion is been observed. In our result we observed, faculty under assistant professor grade have high performance to move forward for promotion. This research can be extended to include recruitment control by placing control on recruitment.

Keywords: Educational institute, Faculty, Grade, Markov model, Promotion,

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A STUDY ON SUSTAINABLE DEVELOPMENT GOALS IN SOUTH INDIA USING DATA MINING AND MACHINE LEARNING APPROACHES

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Abstract

Data mining is the best tool for process of discovering interesting result or patterns in large datasets involving methods for using machine learning and statistical methods. It is an interdisciplinary or multidiciplanary subfield of computer science and analytics. Data mining is used to uncover insights such as patterns and trends, and user preferences. In this paper consider the 17 SDG dataset relating to South India, including five states, namely 1. Andhra Pradesh, 2. Karnataka, 3. Kerala, 4. Tamil Nadu, and 5. Telangana. Numerical illustrations were also provided to prove the results and discussions using the Gaussian process, linear regression, random forest, and REP tree with accuracy parameters.

1. Introduction

NITI Aayog is an institution of the Indian government, established with achieve the sustainable development goals with involvement of State Governments of India in the economic policy using a bottom-up approach. It replaced with differernt modification finally name as the Planning Commission of India, which was set up in 1950, it was the major advisory body to the Government of India.

Data Mining is the best data analytical process of extracting and discovered lot of useful knowledge from large amounts of data. It involves the process of discovering patterns and insights from data sets with the help of different major data mining techniques such as clustering, classification, regression, and association rules. These data mining techniques help to identify relationships, trends, and patterns in data that can lead to valuable business insights.

ML is a subset of AI and is concerned with the design of algorithms that can learn and make predictions using pre-existing data. It uses algorithms to analyze data, identify patterns, and make predictions. These algorithms can be trained to detect patterns in data and to make decisions without being explicitly programmed to do so. This can be done through supervised or unsupervised learning methods. Supervised learning methods use labeled data (data with a known outcome) to train the algorithm, while unsupervised learning methods use unlabeled data (data with an unknown outcome) to train the algorithm. Machine learning algorithms can be used for a wide range of tasks, including pattern recognition, image recognition, text analysis, language processing, and more.

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A Study on Women's Rights in Uno

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Abstract:

UN Women is a United Nations organisation committed to gender equality women's empowerment. UN Women was founded to accelerate progress in fulfillin needs of women and girls throughout the world. UN Women assists UN Member Sts in developing global standards for gender equality, and collaborates with governm and civil society to develop the laws, policies, programmes, and services requir guarantee that the standards are properly implemented and actually benefit wome girls throughout the globe. It works internationally to make the Sustai Development Goals vision a reality for women and girls, and it advocates for wo equitable involvement in all aspects of life via four key goals. Women lead, partic in, and profit from governance systems on an equal footing. Women enjoy fin stability, respectable job, and economic independence.

Keywords: Women Rights, Uno, Protection, Gender Equality, UNO Off conclusion.

Introduction:

All women and girls live a life free from all forms of violence Women an contribute to and have greater influence in building sustainable peace and resilienc gender equality, and in all deliberations and agreements linked to the 2030 Agenda. The entity works to position gender equality as fundamental to the Sustainable Development Goals, and a more inclusive world.

Status of Women:

Gender equality is not only a fundamental human right, but it also has tremendous socioeconomic implications. Women's empowerment promotes healthy economies, boosting productivity and growth. Nonetheless, gender inequities persist in every culture. Women endure occupational segregation and salary disparities based on

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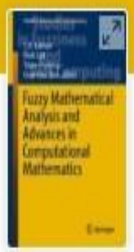

Fuzzy Mathematical Analysis and Advances in Computational Mathematics pp 33–41

Modified Operations of Trapezoidal Fuzzy Numbers for Solving Fuzzy Linear Programming Problems

M. Mohamed Salih Mukthar ✉ & S. Ramathilagam

Chapter | First Online: 07 April 2022

144 Accesses

Part of the Studies in Fuzziness and Soft Computing book series (STUDFUZZ,volume 419)

Abstract

In the standard fuzzy subtraction and division of trapezoidal fuzzy numbers, some difficulties arise while getting the solution of fuzzy linear equations and solving the fully fuzzy linear programming problems. In this paper, we have modified both operations subtraction and division of trapezoidal fuzzy numbers, derived the sufficient conditions of both operations and verified by using some examples. Also, these new operations provide the exact inverses of the addition and multiplication operators.

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Data Article

Structural, morphological and magnetic properties of (c-$ZnFe_2O_4$ and t-$CuFe_2O_4$) ferrite nanoparticle synthesized by reactive ball milling

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https://doi.org/10.1016/j.cdc.2021.100825 Get rights and content

Abstract

Cu-ferrite and Zn-ferrite nanoparticles were employed using the reactive ball milling method in this study. The structural, vibrational frequencies, morphological and magnetic properties of the prepared materials were analyzed using XRD, FT-IR, UV, SEM with EDAX, VSM. XRD revealed the formation of a tetragonal phase with the space group $14_1/amd$ of t-$CuFe_2O_4$ ferrite and c-$ZnFe_2O_4$ cubic phase with space group $Fd\bar{3}m$. The FTIR spectra revealed two predicted bands 567 and 484 cm^{-1} for t-$CuFe_2O_4$ ferrite and 565 and 480 cm^{-1} c-$ZnFe_2O_4$ ferrite which indicates that the ferrite phase has formed. FE-SEM images show the spongy morphology with a number of porous due to severely agglomerated nanoscale particles. The UV–vis spectrum shows that copper ferrite has strong compare to zinc ferrite. Ferrimagnetic properties were observed in copper ferrite and zinc ferrite nanoparticles using a hysteresis loop.

Graphical abstract

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Structural, Spectroscopy and Magnetic Properties of Copper Doped Nickel Ferrite by the Co-precipitation Method

Original Article | Published: 08 August 2022

Volume 5, pages 1387–1396, (2022) Cite this article

J. Subhashini, A. Christy Ferdinand & R. Sagayaraj

Abstract

The Copper doped nickel ferrites were integrated by the co-precipitation method at 900 °C in this study. XRD patterns reveal the synthesized material are in single phase, face-centered Cubic (FCC) spinel structure and got good crystallinity with 10–20 nm in size. FT-IR confirmed high (426–456 cm^{-1}), low (346–387 cm^{-1}) frequency integration of tetrahedral and octahedral voids and confirmed inverse spinel structure. The ferrimagnetic properties of all synthesized materials at different concentrations were declared by the VSM. EPR analysis confirmed that existence of paramagnetic centers proves the evidence of free radicals in the ferrite materials.

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RESEARCH ARTICLE

Identification of Heavy Metal Source and Seasonal Variation in Flatfish from Cuddalore Coastal Waters in Southern India

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ABSTRACT

In this study, we have evaluated the concentrations of four heavy metals (Cd, Cu, Pb, and Zn) across the monsoon and summer seasons in 30 flatfish species collected from the Cuddalore coastal waters in Tamil Nadu, India. Out of the four metals, Cd and Cu were below detection limits in both seasons in all 30 flatfish. Pb was reported in the monsoon season in 27 species of flatfish. However, in the summer season, Pb was detected only in three species. Zn was detected in all flatfish in both seasons. The order of metal concentration in the flatfish was Zn > Pb > Cu & Cd. Principal component analysis (PCA), and hierarchical cluster analysis (HCA) were carried out revealing the interrelationships between metal and species for two seasons. Beneficial Zn was present in all the collected species of flatfish in both dry and wet seasons. Flatfish with their nutritional value, seasonal availability, and absence of harmful heavy metals may be considered for human consumption. However, continued surveillance of metal concentration in environment and flatfish are recommended to monitor the metal pollution in an effective manner to mitigate environmental pollution and health of humans who consume fish.

Key words: Metal pollution, trophic transfer, seasonal variation, toxic metals, ecotoxicology.

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RESEARCH ARTICLE

Seasonal Variation in the Proximate Composition of Flatfishes (Order: Pleuronectiformes) Collected from Cuddalore, Southeast Coast of Tamil Nadu

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ABSTRACT

Seasonal variation in the proximate composition of 30 flatfish species collected from Cuddalore and Puducherry fish landing centers during 2020–2021 across two seasons was evaluated with a view to provide nutritional data for dietary planning. The obtained results revealed that protein was the most important component found in flatfishes comprising towering percentages. The overall protein content fell in the range of 6.09–54.62%, with the lowest value observed during the monsoon season (6.09 ± 0.19%) and the highest in the summer season (54.62 ± 0.76%). The carbohydrate level was between 1.13 and 15.05%, with the lowest value observed during the monsoon season (1.13 ± 0.39%) and the highest in the summer season (15.05 ± 0.08%). Overall, lipid percent was in the range of 0.44–2.79%, with the lowest (0.44 ± 0.28%) and the highest values both observed in the in the monsoon season. The proximate composition of flatfishes during the summer season was richer compared to the monsoon season. Flatfish may not be available through all seasons and look unappealing to eat because of their body shape and size, but they are equally rich in nutritional value to the other marine fishes. With the dwindling marine resources, flatfishes can be a viable replacement for lean protein dietary foods. The flatfishes can be also

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Influence of cadmium toxicity and organic feeds on growth performance of fresh water fish *Labeo rohita* (Hamilton, 1822)

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Abstract
A freshwater fish *Labeo rohita* were collected and treated from commercial fish farms in and around Cudalore from June 2019 to October 2019. The fishes were fed with control and experimental diet and growth performance such as ABW, ABL, body weight gain and specific growth rate were thoroughly studied adopting standard procedures. The result indicating that there was significant variation in growth parameters of control and experimental diet. The fish fed with live feed organism mixed diet have higher increment in body weight, length, weight gain and specific growth rate and cadmium treated fishes stunted the growth and infected the tissue organisms. The study reveals the fact that the aqua feed with live organism is more suitable for fish culture practice and heave metals are very dangerous for fish and environments.

Keywords: *Labeo rohita,* cadmium, live feed organism, protein and carbohydrates

Introduction

In the environmental waste heavy metals still pose immense health hazards to aquatic organisms. Unlike other classes of pollutants, which can be biodegraded and destroyed completely, metals are non-biodegradable (Wepener *et al*., 2001) [19] and can neither be created nor destroyed. However, these metals might be altered into more toxic forms or complexed to more stable and less toxic compounds (Viljoen, 1999) [18]. Metals are naturally found in aquatic ecosystems by a wide range of natural and anthropogenic sources (Wepener *et al*., 2001) [19] and with anthropogenic being either domestic or industrial (Biney *et al*., 1994) [4].

Fish is a fairly valuable item of human nutrition which gaining greater recognition. The fishes obtain their entire nutritional requirements through the food they consume (Pillay, 1990) [14]. Untreated wastes of industrial, technological and agricultural origin containing various metallic compounds often contaminate natural waters. Heavy metals due to their bio-accumulative and non-biodegradable properties constitute a major group of aquatic pollutants. These metals particulates enter the aquatic medium through effluents discharged from tanneries, textiles, metal finishing, mining, dyeing and printing industries, ceramic and pharmaceutical industries etc. (Azmat and Talat, 2006).

Rohu or roho labeo is a species of the carp family and is a natural inhabitant of freshwater and is present in the rivers of Asian countries (India, Bangladesh, Burma Pakistan, and Nepal). In India this species is mostly available in the province of Tamil Nadu and due to its non-oily nature; it is widely consumed as food. Fish is an important source of balanced and easily digestible protein, carbohydrates, polyunsaturated fatty acids, minerals i.e. copper, iodine, potassium, phosphorus, iron, and vitamin A and D. The Rohu fish has a spindle-shaped body measuring up to 1 m in length and weighing about 20-25. kg. The dorsal side of the body is blackish in colour and the ventro-lateral sides are silvery. The body, like that of Bhetki, is distinguishable into a conspicuous head, trunk and postnatal tail. Fish proteins have a high biological value and contain all the essential amino acids and are an excellent source of lysine. The food and feeding habits of fish is important and vital need for production of the fish. Food and feeding habits of fish are important biological factors for selecting a group of fish for culture in ponds to avoid competition for food among themselves and live in association and to utilize all the available food (Dewam and Saha, 1979). So, the knowledge of food and feeding habits help to select such species of fish for culture and produce an optimum yield by utilizing all the available potential food of the water bodies without any competition. Feeding is the dominant activity of the entire life cycle of fish (Royce, 1972) [16]

The growth of the fish mainly depends on the nutritional quality of the diet provided to them (Jayaprakash and Euphrasha, 1997). Generally live feed is rich in protein, carbohydrates, vitamin, minerals and fats. (Singh *et al*., 1994) [17]. Protein and fats is the most expensive component in fish feed and also the most important factor affecting growth performance of fish (Luo *et al*., 2004) [11]. Reducing the feed costs and improve growth rate could be a key factor for the successful development of aquaculture (Kalsoom *et al*., 2009; Muhamed Yagoob *et al*., 2010; Ahmed *et al*., 2012; Pankajkumar *et al*., 2013) [9, 13, 1]. The impact of artificial diets and live feed on growth of fishes have been extensively studied by many workers (Yahya Bakhtiyar *et al*., 2001; Manivannan and Saravanan, 2012; Javaid Iqbal *et al*., 2013). The present investigation was aimed to study the effect of live feed organism mixed diet on the growth performance of freshwater fish *Labeo rohita*.

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CADMIUM TOXICITY STUDIES AND THE EFFECT OF SEVERAL BIO FEEDS IN *Labeo rohita* (HAMILTON 1822)

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AUTHORS' CONTRIBUTIONS
This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Original Research Article

The goal of this study was to compare and contrast the contents of proximate analysis, AST, ALT, LDH, and SDH in *Labeo rohita* gill, muscle, liver, and kidney. It is because of the high nutritional value of this fish as a source of protein in poor nations. The proximate study of *L. rohita* collected from various locations in Melarungunam, Cudalore district, Tamil Nadu found that hatchery *L. rohita* had the greatest protein (19.97%) and ash (1.76%) contents, whereas fat (0.84%), carbohydrate (5.39%), and dry matter (24.11%) contents. In the genus *Labio rohita*. The moisture content of the fish morphology was the greatest (81.42%). Maximum peroxidase and - amylase activity were measured during enzymatic analysis. The liver had the highest concentration of Cd metals, followed by kidney, muscle, and gills, in that order. When compared to other fish, rice bran and tapioca powder treated fish grew the fast.

Keywords: Aquaculture; enzymes; proximate analysis; antioxidant enzymes; cadmium; *Labeo rohita*. L.

1. INTRODUCTION

Modernization, industrialisation, and fertilisation are now the leading causes of ecosystem pollution, which is a severe problem all over the world. Toxic heavy metal contamination of water and soils is a severe environmental issue for which most traditional treatments do not give satisfactory remedies; in any event, most solutions are invasive and costly [1]. Cadmium (Cd) is a very poisonous nonessential transition metal that may harm people and animals. It is a contaminant that occurs naturally in the environment and is derived from agricultural and industrial sources [2]. Cadmium is largely absorbed by the consumption of contaminated food and drink, as well as, to a lesser extent, inhalation and cigarette smoking [3]. Cadmium is a heavy metal that accumulates in plants and animals and has a half-life of around 50 years. Beginning in 1912, cadmium poisoning was a severe problem in Toyama Prefecture (Japan), where many people ate rice cultivated in Cadmium contaminated irrigation water.

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Effect of cadmium and LC50 values of WBCs of Labeo rohita, a freshwater fish (Hamilton, 1822)

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ABSTRACT

Heavy metal-containing industrial effluents can enter aquatic systems by direct discharge or surface runoff, causing harm to aquatic creatures' immune systems and health. As a result, the current study was conducted to investigate the effects of cadmium on the WBCs of Labeo rohita, a freshwater fish. WBCs serve a critical part in the fish's immunological response. Healthy fish were submitted to static bioassays to determine acute toxicity. The LC50 values after 12 hours, 36 hours, 48 hours, and 96 hours were 52.54, 46.32, 26.43,and18.55ppm,respectively.For 20 days, the fish were exposed to 0.5, 1, 1.5, and 2 ppm. For a total of twenty days, the differential count of WBCs and the total WBC count were determined every five days. Two way analysis of variance was used to analyse the data.

1. INTRODUCTION

The most significant biomonitoring agents for assessing hazardous components accumulating in contaminated aquatic environments are fish. They aid in the effective understanding of the nature and changes of aquatic ecosystems. When compared to other aquatic animals, they are extremely susceptible to environmental changes,

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ORIGINAL RESEARCH

Machine Learning-Based Trust Management in Cloud Using Blockchain Technology

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Abstract

Blockchain technology contains records of data which consists of all transactions and these details are distributed among all legal nodes present in a network. This system confirms all its transactions based on consensus mechanisms, and this data once stored cannot be changed or updated. Blockchain is an important technology in current digital currency in the name of Bitcoin. Cloud computing is a remote server used for storing, managing and processing data in networking. But it is facing lot of issues like reliability, integrity and data management. The efficiency and authentication of cloud server will be improved by novel trust management framework by integration of blockchain in cloud computing environment. This hybrid model of cloud-based blockchain is named as blockchain as a Service (BaaS). This proposed framework contains the smart contract and access mechanism for data authentication against Byzantine attack. Also, the performance of the proposed model is compared with some state of art methods and proving that our framework is having highest security against Byzantine attack.

Keywords Blockchain · Machine learning · Cloud computing · Security · BaaS

Introduction

Cloud computing is a recent developing technology which is emerged from large scale and distributed technology. Cloud computing is used to reduce the data managing issues of users [1]. It is also having various advantages of scalability, availability of data all over world, minimum maintenance of hardware, easy access, low costs and flexibility. Some major corporations are also using cloud technology of IBM, Google, Microsoft and Amazon. Many cloud applications are available in the name of Google App Engine, Google Cloud Platform, the Amazon Cloud, the Elastic computing platform, etc. [2]. These are usually providing the facility of pay per user and flexible architecture which are accessible through the internet from anywhere using portable devices. In spite of its having so many services and benefits, the organizations are little bit slow to accept it owing to its privacy concerns. These significant drawbacks are hampering the cloud in security aspect [3].

Commonly, there are three important trust risk in cloud computing.

Data controlling. After submitting their data to the cloud server, the users are struggling to control their private data.

No transparency. Cloud computing does not provide their internal operation to its user. Only it acts as block box. So, the cloud users are having their own concern on their privacy policies.

Unclear security assurance. To offer a commitment, most of the cloud services are providing the Service Level Agreements (SLAs) to its user for data privacy, security and reliability. But these SLA is unclear to understand in user level.

This article is part of the topical collection "Predictive Artificial Intelligence for Cyber Security and Privacy" guest edited by Hardik A. Gohel, S. Margret Anouncia and Anthoniraj Amalanathan.

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A NOVEL METHOD FOR PREDICTION OF WEB SERVICES USING EXTRA TREES REGRESSION THROUGH HYPERPARAMETER TUNING

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ABSTRACT

Web services, which are insecurely joined software systems, are becoming more widely available on the internet, and there are many services with comparable capabilities. As a result, while selecting a service, customers consider non-functional aspects such as Quality of Service (QoS).This work proposes a novel tree-primarily based ensemble technique named Extra Tree Regress or to solve regression complications. It basically includes randomizing each and every single attribute and cut-factor desire whilst splitting a tree and branch nodes. The energy of the randomization of the node may be tuned to hassle free information with the aid of using the correct desire of a parameter. Web services do not require a long learning curve and are easy to interpret, so they can be classified and graded using the regression approaches. The various decision tree and rule methods accessible are functional and verified to find the best decision technique to suitably categorize functionally parallel web services, taking quality parameters into account. We examine the accurateness of the default desire of the parameter, and we additionally offer perception on the way to modify the specific conditions. In addition to accuracy, the main energy of the ensuring set of rules is computational productivity. Eight dissimilar quality parameters are measured. Comparative analysis of various regression models helps to determine the best fit model Extra Tree Regression which are fine-tuned and analyzed hyper parameter tuning through random search cross validation. The accuracy of Extra Tree (ET) Regress or is the best fit model since the R Squared is more than 1.

Keywords—Machine learning, quality of services, regression, extra trees regressor, hyperparametertuning, cross validation

1 INTRODUCTION

In today's Internet world, web and e-commerce applications are very wide spread due to the diverse organization of the Internet in a distributed atmosphere. These disseminated requests can be retrieved through web services expertise by reprocessing, extending, or integrating current web services with other facilities to provide clients with the finest possible amenity in one place, rather than looking for diverse services for changed purposes and is very easier to get started. Many web services share parallel functionality, requiring clients to make service choices lacking of former information of potential services. Recommender systems are intended to allow clients to choose a service. Collaborative Filtering (CF) is a frequently used method to build an e-commerce recommender system. Various methods based on CF have been proposed for making QoS predictions, and many challenges have been ended to expand the accurateness of the predicted values. Existing approaches to predict web service quality [1], [2] or how to recommend web services [3], [4] focus only on web service throughput or response time

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Prediction of Web Service Performance and Successability using Comparative Analysis of Machine Learning and Deep Learning Algorithms

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Abstract: Internet services, also known as e-services, has gained in importance as a means of providing online commercial services. Service Oriented Architecture (SOA) is built on a combination of multiple web services, each responsible for developing a specific task, in order to obtain complete professional software. Quality of Web Services (QWS) is a key characteristic for choosing a web service throughout the service configuration procedure and has a set of non-functional properties such as response time, availability, throughput, successability, reliability, compliance, best practices, latency and documentation is included. Now a days, Machine Learning (ML) has been used for service classification and regression problems. Though, the performance of traditional ML techniques is highly dependent on the superiority of physical feature engineering. We propose a technique to extract multiple data, procedural, and structured set metrics from a web service interface and use them as predictors to estimate QWS properties. Our proposed method applies Deep Learning (DL) methods with six dissimilar training approaches to build predictive models with successability rate. The outcome of the research shows that the proposed method is efficient and the investigational outcomes indicate that operational quality metrics are superior to technical and data quality metrics in terms of Mean Absolute Error (MAE), Mean Square Error (MSE), Root Mean Square Error (RMSE), Root Mean Square Logarithmic Error (RMSLE), R-Squared and Adjusted R-Squared performance metrics. The comparative study of six models concludes that Extra Trees Regressor model outperforms other five common DL training methods.

Keywords: *Deep learning, machine learning, performance metric, quality of web services, regression, successability.*

1. Introduction

Recently, a new technology known as web services which highlights the characteristics of web services like software, but users can use it but they don't need to own them. That is, the handler does not install the software but use them through the internet and standard rules. Communication network services and e-services have developed a significant medium on operational commercial service. Through these services an architectural illustration called Service-Oriented Architecture (SOA) is used. This method is built on combining several web services, each responsible for developing a specific task to get fully functional software. [1]. The World Wide Web Consortium(W3C) has specified a common characterization for services. Services are characteristic intangible resource ability to perform responsibilities that form a contract with functionality from the provider's corporate perspective requestor entity. To use the service, specific service provider agent needs to be implemented. Web services that form SOA may able to perform the task within a specific time. There may be security policies that aren't available in some instances. All of these characteristics, referred to as Quality Web service (QWS), are crucial when choosing a service during the service configuration process. When it comes to implementing QWS, one of the most pressing concerns is the cost. In fact, information concerning web services is widely available. For non-functional requirements, the best service is provided to those that offer the same capabilities. Some of the non-functional properties includes response time, availability, throughput, successability, reliability, compliance, best practices, latency and documentation [2]. We have taken the data statistics of 2507 observations with 11 variables and considered no null values in the rows. With the statistics successability are predicted using the ratio between respond messages by request messages. Successability is nothing but measuring the message without error or free from error. The user will request for certain message which means the responded message is correct or not will be determined by this successability ratio. This ratio will be in terms of percentage and by using the parameter of web service error free message need to be delivered. Web service detection techniques have progressed and upgraded in many ways to address today's difficulties. Numerous literature and studies have

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Analyzing the Lack of Interest in the Undergraduate Science Courses by Using Fuzzy Relational Equations of Max-Add Composition.

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Abstract:
In this paper we introduce a concept of fuzzy relational equations to appear today as a problem for lack of interest to learn under graduate science courses, because it connects mathematics and complicated science related syllabus with real world applications. Our aim finds out the problems of difficulties and increases the student interest on this science subject. Fuzzy relation equations, which are obtained by the composition of binary fuzzy relations, are used in this work as a tool for finding interest of students which they are liked and disliked and their under graduate causes

Keywords: Fuzzy subsets, composition of maximum-minimum, composition of maximum-addition, Fuzzy Binary Relations, algebraic sum and product of fuzzy subsets, Fuzzy Relation Equations.

1. INTRODUCTION

Fuzzy relations are significant concepts in fuzzy theory and have been widely used in many fields such as fuzzy clustering, fuzzy control and uncertainty reasoning. The notion of fuzzy relational equations based upon the max-min composition was first investigated by Sanchez [4]. Fuzzy relational equations are identities of the form $R \circ S = T$, where R, S and T are fuzzy relations (R is a fuzzy relation between sets X and Y , S is a fuzzy relation between Y and Z, and T is a fuzzy relation between X and Z). The maximum-addition composition of fuzzy relations were introduced and studied by S. Ramathilagam and A. Arokiamary [1]. In this paper we discuss about finds out the problems of difficulties and increase the student interest on the undergraduate science subject. Fuzzy relation equations, which are obtained by the composition of binary fuzzy relations, are used in this work as a tool for finding interest of students which they are liked and disliked their under graduate degree courses.

Preliminaries
A popular in such cases method for evaluating the interest to subject wise of a student Grade Point Average (GPA) index, GPA is a weighted average in which greater coefficients (weights) are assigned to the higher grades, which means that it reflects not the mean, but the quality performance to interest of the student. In an effort to find out the mean of student interest in such fuzzy assessment cases. We have used in the tools from fuzzy relational equations. More explicitly, representing a student interest as a fuzzy set in the set of the linguistic grades assessing the student. We calculated the existing in it probabilistic or

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Numerical study of Casson-Nanofluid flow past an exponentially stretching sheet filled by porous medium in presence of velocity and thermal slip effects

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Abstract---An inquiry of the non-Newtonian Casson flow of nanofluid through a non-linear exponentially expanding sheet is one of the things that will be covered in the course of this work. When a magnetic field, chemical reaction, thermophoresis, and Brownian motion phenomena are present, the influence of coupled velocity and thermal slip conditions on porous embedded fluid flow is investigated. These phenomena include Brownian motion. In particular, the flow of fluid through porous embedded structures is studied in the presence of a magnetic field. Because the mechanics of fluid motion are extremely sequential and non-linear, fluid dynamics may be described as having these characteristics. In order to acquire an approximate answer, what has been done here is to combine the Runge-Kutta method with a numerical approach that makes use of the shooting technique and a shooting scheme. This has been done in order to get an approximation. The degree to which the thermo-fluid parameters are susceptible to change is shown by both the tabular and graphical representations of the data. When the new findings are contrasted with the findings of the earlier study, there may be found to be a high degree of congruence between the two sets of findings. This finding

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ARTICLE

Joint Effects of Thermophoresis and Brownian Motion on Williamson-Nano Fluid Flow Near a Non-Linearly Stretching Sheet Filled by Porous Medium

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With the help of influences of Thermophoresis and Brownian motion, as well as magneto hydrodynamic boundary layers, we study an electrically conducting, incompressible, viscous Williamson-Nanofluid flow towards a stretched sheet surrounded by the porous material. Because of its form, the stretched sheet is regarded as non-linear. The basic flow-regulating non-rectilinear fractional differential conditions are declined to non-rectilinear coupled differential equations in their most simplest form for this flow thru applying the necessary resemblance conversions arranged as fractional derivatives. Toward solve these non-rectilinear coupled conventional fractional derivatives, the Runge-Kutta technique of fourth order with shooting technique is used, depending on the boundary conditions. It is given in this research report, as well as a graph and a comprehensive analysis of the consequences of physical limitations towards flow variables including velocity besides hotness, over and above nanoparticle concentration, among other things. Numerous factors were used to compute and analyse values in numbers of the Cf, as well as Nu_x and Sh_x in addition other related variables. These plots are used to make conclusions, and the conclusions that are drawn are verified to ensure that they are accurate. From this problem, the velocity profiles are decreasing with boosting the importance of Maxwell fluid stricture in addition Element of such magnetization. With increasing effects of Thermophoresis and Brownian motion, the patterns of temperatures too increases. By means of the importance of Dufour number increases, temperature sketches are also increases. An expansion of the Thermophoresis parameter leads to increased nanoparticle volume concentration distribution and the in the instance of, the opposite effect is observed. Brownian motion effect. concentration profiles are increasing with rising values of Soret number parameter.

KEYWORDS: Thermophoresis, Brownian Motion, Williamson Fluid, Nanofluid, Stretching Sheet, Porous Medium.

1. INTRODUCTION

Although non-Newtonian fluid models are important in a variety of biological and industrial processes, few scientists are interested in them. Given the many technical applications of non-Newtonian fluids, including emulsions, greases, synovia in living organism substance in addition polyamide, bio-medical nuclear combustible slurries and combustible, theory attributed to fluids that aren't Newtonian has garnered a great deal of interest in the past decades. A large number of rheological to account for this, models have been devised. The wide range of rheological properties seen in non-Newtonian fluids. The Williamson fluid model is used to describe shear-thinning non-Newtonian fluids that do not behave like Newtonian fluids. Williamson[1] first proposed this concept in 1929 and published the findings of his study into the subject the following year. If the Williamson fluid model is correct, and the fluid possesses inexhaustible viscosity next to rest in addition a thickness of zero as the rate of shear approaches endlessness, the effective viscosity should continue to decrease forever as the shear rate increases. Until recently, no one has attempted to investigate the circulation

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Hall and Ion Slip Influence on Unsteady MHD Convective Rotating Flow of Non-Newtonian Fluid through Porous Medium with Chemical Reaction

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Abstract: The purpose of this study is to investigate the effects of Hall and ion slip on the unsteady MHD convective rotating flow of Casson fluid through porous media under the impact of chemical reaction. The equations governing flow, heat, and mass transport may be reduced to a set of ordinary differential equations that can be solved analytically by utilizing the perturbation technique. The numerical values of shear stress, Nusselt number, and Sherwood number at the plate are tabulated, while the changes in fluid velocity, temperature, and concentration fields caused by changes in different physical parameters are visually shown.

Keywords: Casson fluid; Hall and ion slip effect; Perturbation method; Magnetohydrodynamic (MHD); Porous medium; Rotating flow.

1.Introduction

One of the rheologic and fluid dynamic property of blood flow deals a substantial bit part in the essential grasping and treating of many cardiovascular, cerebra vascular and arterial diseases. Many research scholars are making serious attempt to do research in blood. Blood is plasma, platelets, erythrocytes and other particles. Rheologic ally blood flow behaves differently in large blood vessels and narrow blood vessels. It behaves homogenous Newtonian fluid way in large blood vessels and non-Newtonian in narrow blood vessels e.g., capillaries. The flow behaviour is further intricated due to the fact that at low shear rate certain chemical reactions occur that may cause momentous changes in the flow behaviour of blood. Since harmful experiments cannot be carried out on living human beings, many theoretical researchers experiment blood flow through human artery with a branch capillary. The complications in describing the flow of blood in the arterial system leads to develop a constitutive mathematical model that can explain its non-Newtonian behaviour[1]. Craig and Watson supposed, since blood is an electrically conducting fluid, it exhibits magnetohydrodynamic (MHD) property, which may cause potential health consequences. When a magnetic field is applied to a moving, electrically conducting fluid, electric and magnetic fields are generated. They interact and create Lorentz force, which is a body force per unit volume. It has a substantial influence on preventing liquid movement[2]. Ajaz explains the complexities of blood flow via a nonsymmetric horizontal artery with a slight stenosis. It is classified as a micropolar fluid that is homogeneous and incompressible. The impact of rotation and magnetic field was studied in detail and numerically estimated [3]. Ali and others study the use of magnetic particles for medicinal purposes in a brief manner. Their blood flow analysis uses a concealed magnetic field that is administered perpendicularly. As a result, adequate utilization of magnetic field strength can regulate particle and blood mobility [4]. Saqib and others experimented the blood flow through a cylindrical tube [5]. Ramakrishnan proposed simplified mathematical model to understand the behaviour of blood flow through porous medium with finite thickness [6].

Shahzad and others (Shahzad et al., 2013) did their research in the flow of electrically conducting Casson fluid through a porous stretching sheet by the influence of mass transfer with the chemical reaction. Hussanan[8]investigated unsteady motion in the boundary layer on MHD flow of a Casson fluid inserting through a oscillating vertical plate with the effect of heat. A significant result found and acquired exact solutions. Khalid [9] research is in two-fold, those are MHD and porous medium. The magnetic fields induce currents in the fluid flow of a transient phenomenon that past in an oscillating vertical plate thrust in a porous medium with constant wall temperature and used Laplace technique to find results. The investigation of boundary layer flow on MHD incompressible Casson fluid past in the porous medium is explored by Shahzad(Shahzad et al.,2016). Biswas and others[11]discussed heat and mass transfer of Casson fluid on electrically conducting through a vertical plate with emission of

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Radiation Effect on Unsteady Mixed Convective MHD Flow of Heat and Mass Transfer Over An Accelerated Infinite Vertical Porous Plate With Suction And Chemical Reaction

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Abstract
This paper analyzes the unsteady mixed convective MHD flow of a viscous incompressible electrically conducting fluid past an accelerated infinite vertical porous flat plate with suction in presence of radiation. The governing equations are solved both analytically and numerically using finite difference scheme. The flow phenomenon has been characterized with the help of flow parameters such as magnetic parameter (M), suction parameter (a), Grashof number for heat and mass transfer (Gr, Gc), Schmidt number (Sc), radiation parameter (R) and Prandtl number (Pr). The effects of these parameters on the fluid velocity, temperature, concentration distribution, skin friction and heat flux have been analyzed and the results are presented graphically and discussed quantitatively. This type of problem is significantly relevant to geophysical, astrophysical and cosmical studies.

Keywords: *MHD flow, mixed convection, mass transfer, accelerated plate,chemical reaction, thermal radiation.*
MSC 2010 No. *: 76E25, 76E06, 80A20, 74K20 74F05, 74F25 , 78A40*

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I. Introduction

The problem of mixed convective MHD flow with mass transfer has been given much importance because of its possible applications to nuclear research and in the study of stars and planets. These problems are of general interest in the field of geophysical and astrophysical studies. In view of these applications a series of investigations were made to study the flow past a vertical wall.

Convective flows under different physical situations have become a subject of interest of several researchers. Alam and Sattar (1999) analyzed the transient MHD heat and mass transfer flow in a rotating system in presence of thermal diffusion. Brinkman (1947) estimated the viscous force imparted by a flowing fluid in a dense swarm of particles. Chandran et al. (1998) studied the unsteady hydromagnetic free convection flow with heat flux and accelerated boundary motion. Choudhury and Das (2000) investigated the magnetohydrodynamic boundary layer flow of a non-Newtonian fluid past a flat plate. Das and his associates (2006) solved numerically the mass transfer effects on unsteady flow past an accelerated vertical porous plate with suction. Dash and Das (1999) analyzed the effect of Hall current on MHD flow along an accelerated porous flat plate with mass transfer and internal heat generation. Hasimoto (1957) discussed the boundary layer growth on a flat plate with suction or injection. Makinde et al. (2003) have explained the unsteady free convection flow with suction on an accelerating porous plate.

Mansutti et al. (1993) have analyzed the steady flows of non-Newtonian fluids past a porous plate with suction or injection. Pathal and his co-workers (2005) discussed the unsteady mass, momentum and heat transfer in MHD free convection flow past a vertical plate suddenly set in motion. Raptis et al. (1987) have studied the unsteady free convective flow through a porous medium adjacent to a semiinfinite vertical plate using finite difference scheme. Sattar (1994) reported the free convection and mass transfer flow through a porous medium past an infinite vertical porous plate with time dependant temperature and concentration. Sharma and Pareek

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சமகாலத் தமிழ்க் கவிதைகள்: பெண் மையத் திறனாய்வு

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Contemporary Tamil Poems: Gyno Critic Approach

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ABSTRACT

This article analyses the evidence on Gender – based issues in contemporary Tamil poems written by female authors. The aim of this paper is to find out female centric experience through poems by applying Gyno – Criticism. Gyno – Criticism is the branch of Feminist Literary Theory and studies. This critical term was coined by the famous critic Elaine Showalter. She analyses four theoretical models that explore these differences: Biological, Linguistical, Psychological and Cultural. This study shows that many Tamil poets (Women) represent their experiences and women issues in their work. This study also conveys resistance of social and cultural constructions which make the whole women society become a subordinate group through the attitude and life of women in their poems.

Keywords: Andro Text, Gyno-Criticism, Socialization, Gyno-Centric, Feminist Critique, Revisionary Reading

முன்னுரை

'சமகாலத் தமிழ்க் கவிதைகள்: பெண் மையத் திறனாய்வு' என்னும் இக்கட்டுரை, 'சமகாலத்தில் எழுதி வரும் பெண் கவிகளின் கவிதைகளை நவீனப் பெண்ணியவாதிகள் முன்வைக்கும் கோட்பாடுகளின் அடிப்படையில் அணுகுவது எப்படி' என்பதான ஒர் அறிமுகத்தைத் தரும் நோக்கிலானது. சமகாலத் தமிழ்க் கவிதைப் பரப்பு அகன்று விரிந்தது. அவற்றுள் பதிவான பெண்களின் கவிதைப் பதிவுகளின் எண்ணிக்கையை விரிப்பின் பெருகும். இவ்வாய்வுக் கட்டுரையில் ஆய்வுத் தரவுகளைத் தெரிவு செய்வதில் ஒரு நெறிமுறை பின்பற்றப்பட்டுள்ளது. பெண்களின் கவிதைப் பதிவுகள் அனைத்தையும் பெண்மையத் திறனாய்வுக்கு நாம் உட்படுத்திவிட இயலாது. பெண்ணாக இருந்துகொண்டு ஆண்மையக் கற்பிதங்களை தமதாக்கிக்கொண்டு எழுதுவோரின் பதிவுகள் இவ்வாய்வுக் கட்டுரையில் தவிர்க்கப்பட்டுள்ளன. மாற்றுக் கருத்தாடலை முன்வைக்கும் பழமையான ஆணரசியலைக் கேள்விக்குட்படுத்தும், உடல், மொழி, உள, பண்பாட்டுத் தளங்களில் தன் இருப்பை உரத்து ஒலிக்கச் செய்யும் பெண் கவிகளின் பதிவுகள் மட்டுமே இங்கு தரவுகளாகக் கொள்ளப்பட்டுள்ளன. நவீன மேலைப் பெண்ணியத் திறனாய்வாளர்களுள் எலைன் ஷோவால்டரின் 'Gyno - Critic' என்னும் அணுகுமுறை இங்கு ஆய்வு அணுகுமுறையாகப் பின்பற்றப்பட்டுள்ளது. 'Gyno - Critic' என்னும் ஆங்கிலக் கலைச்சொல்லுக்கு நிகராகத் தமிழில் பல சொற்கள் புழக்கத்தில் உள்ளன. பெண் படைப்புத் திறனாய்வு, பெண் அணுகுமுறை ஆய்வு, பெண்மைய விமர்சனம் என்று பலவாறாக இச்சொல் ஆளப்படுகிறது. இவ்வாய்வுக் கட்டுரையில், 'பெண் மையத் திறனாய்வு' என்னும் சொல்லாடல் பயன்படுத்தப்படுகிறது. இவ்வாய்வுக் கட்டுரை மூன்று கூறுகளாகப் பகுக்கப்பட்டுள்ளன.

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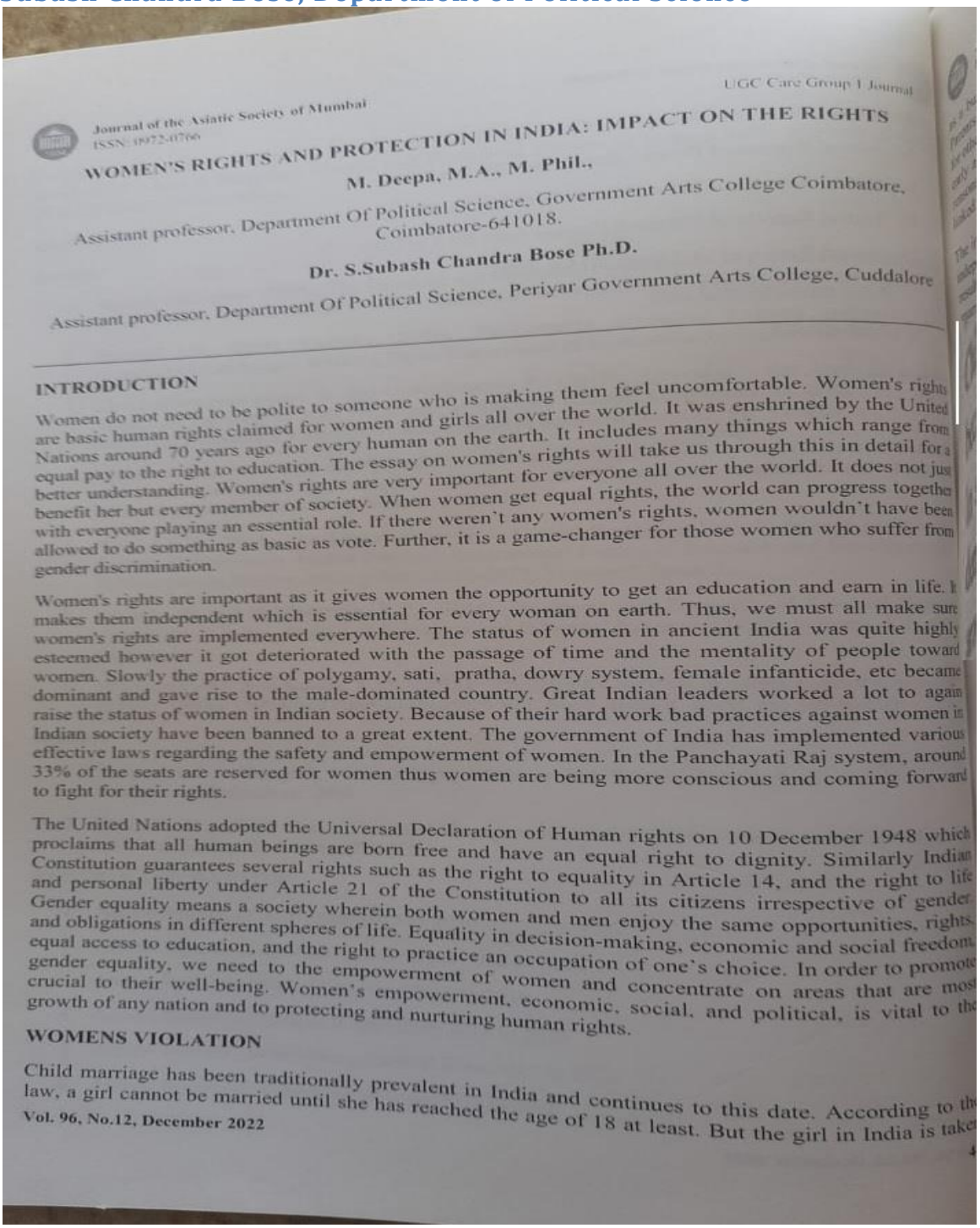

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WOMEN'S RIGHTS AND PROTECTION IN INDIA: IMPACT ON THE RIGHTS

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INTRODUCTION

Women do not need to be polite to someone who is making them feel uncomfortable. Women's rights are basic human rights claimed for women and girls all over the world. It was enshrined by the United Nations around 70 years ago for every human on the earth. It includes many things which range from equal pay to the right to education. The essay on women's rights will take us through this in detail for a better understanding. Women's rights are very important for everyone all over the world. It does not just benefit her but every member of society. When women get equal rights, the world can progress together with everyone playing an essential role. If there weren't any women's rights, women wouldn't have been allowed to do something as basic as vote. Further, it is a game-changer for those women who suffer from gender discrimination.

Women's rights are important as it gives women the opportunity to get an education and earn in life. It makes them independent which is essential for every woman on earth. Thus, we must all make sure women's rights are implemented everywhere. The status of women in ancient India was quite highly esteemed however it got deteriorated with the passage of time and the mentality of people toward women. Slowly the practice of polygamy, sati, pratha, dowry system, female infanticide, etc became dominant and gave rise to the male-dominated country. Great Indian leaders worked a lot to again raise the status of women in Indian society. Because of their hard work bad practices against women in Indian society have been banned to a great extent. The government of India has implemented various effective laws regarding the safety and empowerment of women. In the Panchayati Raj system, around 33% of the seats are reserved for women thus women are being more conscious and coming forward to fight for their rights.

The United Nations adopted the Universal Declaration of Human rights on 10 December 1948 which proclaims that all human beings are born free and have an equal right to dignity. Similarly Indian Constitution guarantees several rights such as the right to equality in Article 14, and the right to life and personal liberty under Article 21 of the Constitution to all its citizens irrespective of gender. Gender equality means a society wherein both women and men enjoy the same opportunities, rights and obligations in different spheres of life. Equality in decision-making, economic and social freedom, equal access to education, and the right to practice an occupation of one's choice. In order to promote gender equality, we need to the empowerment of women and concentrate on areas that are most crucial to their well-being. Women's empowerment, economic, social, and political, is vital to the growth of any nation and to protecting and nurturing human rights.

WOMENS VIOLATION

Child marriage has been traditionally prevalent in India and continues to this date. According to the law, a girl cannot be married until she has reached the age of 18 at least. But the girl in India is taken

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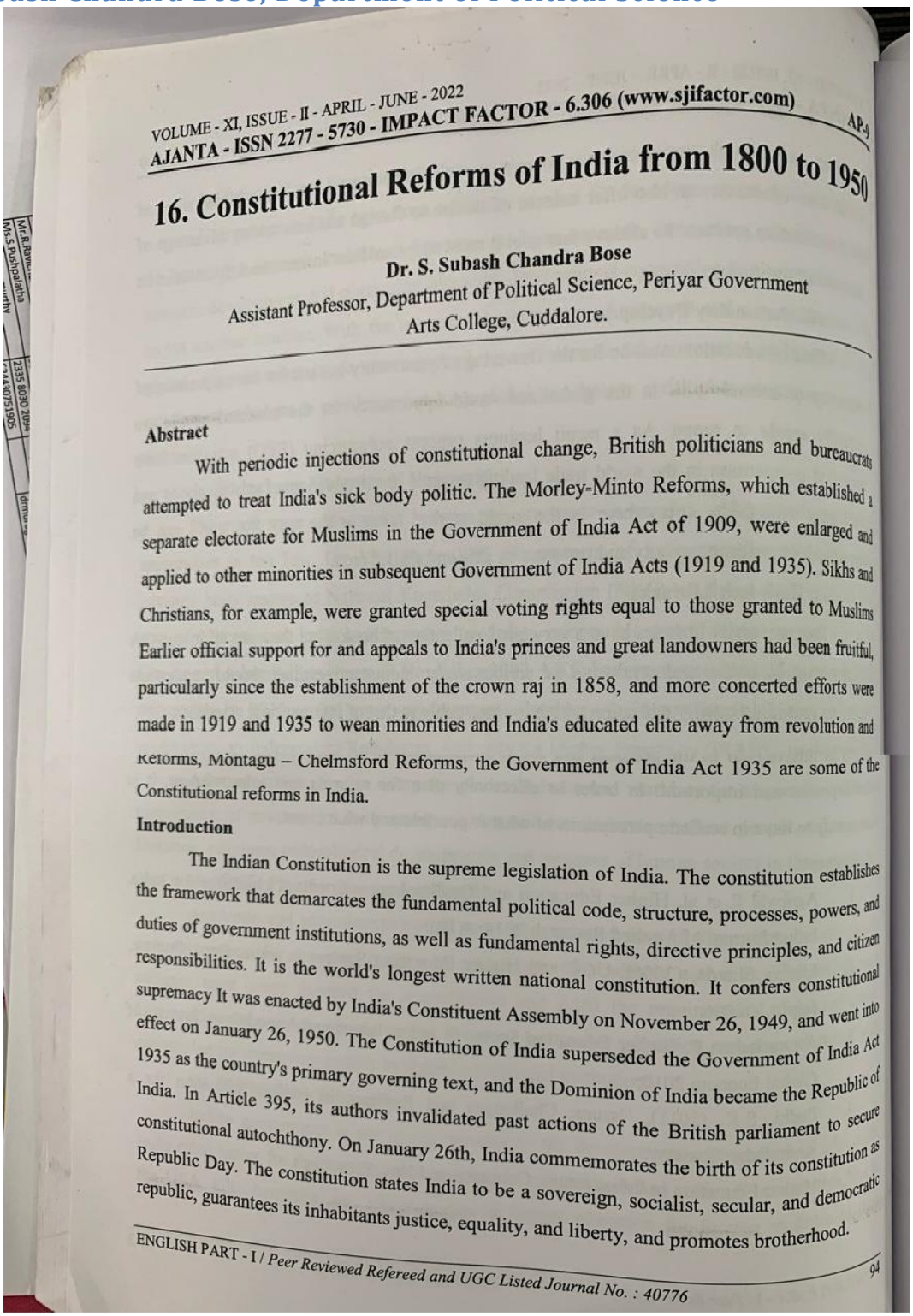

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16. Constitutional Reforms of India from 1800 to 1950

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Abstract

With periodic injections of constitutional change, British politicians and bureaucrats attempted to treat India's sick body politic. The Morley-Minto Reforms, which established a separate electorate for Muslims in the Government of India Act of 1909, were enlarged and applied to other minorities in subsequent Government of India Acts (1919 and 1935). Sikhs and Christians, for example, were granted special voting rights equal to those granted to Muslims Earlier official support for and appeals to India's princes and great landowners had been fruitful, particularly since the establishment of the crown raj in 1858, and more concerted efforts were made in 1919 and 1935 to wean minorities and India's educated elite away from revolution and Reforms, Montagu – Chelmsford Reforms, the Government of India Act 1935 are some of the Constitutional reforms in India.

Introduction

The Indian Constitution is the supreme legislation of India. The constitution establishes the framework that demarcates the fundamental political code, structure, processes, powers, and duties of government institutions, as well as fundamental rights, directive principles, and citizen responsibilities. It is the world's longest written national constitution. It confers constitutional supremacy It was enacted by India's Constituent Assembly on November 26, 1949, and went into effect on January 26, 1950. The Constitution of India superseded the Government of India Act 1935 as the country's primary governing text, and the Dominion of India became the Republic of India. In Article 395, its authors invalidated past actions of the British parliament to secure constitutional autochthony. On January 26th, India commemorates the birth of its constitution as Republic Day. The constitution states India to be a sovereign, socialist, secular, and democratic republic, guarantees its inhabitants justice, equality, and liberty, and promotes brotherhood.

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WOMEN RIGHT IN TAMILNADU: A STUDY WITH SPECIAL REFERENCE TO HARASSMENT AND THE FUNCTION OF SHRC

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ABSTRACT

In 1947 there were various struggles and movements in support of women. women in India are deprived of their fundamental right to dignity also, leave alone the question of gender parity.some Issues faced by the women in Tamil Nadu,India like Harassment, dowry, female foeticide, denial of inheritance rights, sale and trafficking of girls, etc. The objective of the paper is to discuss women's harassment in overall Tamilnadu.

Keywords: Women's, Rights, Problems, Women Fighter, Harassment, Human Right, Conclusion

INTRODUCTION:

Many reformers, including Ram Mohan Roy, Ishwar Chandra Vidyasagar, and JyotiraoPhule, fought for women's rights during the British era. Peary Charan Sarkar, a former student of Hindu College in Calcutta and a member of "Young Bengal," founded India's first free school for girls in Barasat, a Calcutta suburb, in 1847. While this may appear to imply that the British made no positive contributions during the Raj, this is not entirely true. Martha Mault née Mead and her daughter Eliza Caldwell née Mault, missionaries' wives, are credited with pioneering the education and training of girls in south India. This practice was initially met with local opposition because it went against tradition. In 1829, Governor-General William Cavendish-Bentinck abolished Sati as a result of Raja Rammohan Roy's efforts. The Widow

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RESEARCH ARTICLE

Biochemical Studies on the *Cissus quadrangularis* Plant Extract Treated Fish *Oreochromis mossambicus Peters*

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ABSTRACT

Cissus quadrangularis L. is an Indian medicinal plant that belongs to the vitaceae family. The purpose of this study was to see how *Cissus quadrangularis* affected the biochemical changes in Oreochromis mossambicus, a freshwater fish. To determine the impact of *Cissus quadrangularis* plant extract on total protein, calcium, and phosphorous levels in *Oreochromis mossambicus* tissues (gill, liver, and muscle), samples were taken at 7, 14, and 21 days. *Cissus quadrangularis* affected fish were compared to control fish. According to the findings of this study, *Cissus quadrangularis* is favorable to fish growth and development.

Keywords: *Cissus quadrangularis, Oreochromis mossambicus,* Tissues, protein calcium, and phosphorous.

INTRODUCTION

Ayurveda and Ayurvedic remedies are based on Indian medicinal plants. When used properly and in accordance with the fundamental principles, they create miraculous results. Their duty is not limited to only curing diseases; they also make use of the human body. As a result, Ayurvedic medicines are appropriately referred to as "life elixirs." From ancient times to the present, Ayurvedic herbs have played an important part in Ayurvedic medicine. Humans have relied on nature for their basic requirements, such as food, housing, clothing, transportation, fertilizers, flavors and scents, and medicines, throughout history [1]. Plants with medicinal properties have long been a primary source of therapeutic substances for the relief and complete treatment of many human ailments. Medicinal plants are widely used by all parts of the population in India, either directly as folk cures, in various indigenous systems of medicine, or indirectly in the pharmaceutical manufacturing of contemporary

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ORIGINAL PAPER

Optimization of scale inhibitors nitrilotriacetic acid and 1-hydroxyethylidene-1, 1-diphosphonic acid, effect of magnesium ions and temperature on calcium carbonate scale

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Received: 9 July 2022 / Accepted: 18 September 2022

Abstract
The objective of this study was to investigate whether scale inhibitors' performance vary with operational conditions and if so, how to develop a methodology for the same. Commonly used internal water treatment additive ingredients, nitrilotriacetic acid (NTA) and 1-hydroxyethylidene-1, 1-diphosphonic acid (HEDP) were used and effect of temperature and presence of magnesium ions were taken to consideration for the optimization studies. Calcium carbonate ($CaCO_3$) was synthesized from calcium chloride ($CaCl_2$) solution by addition of sodium carbonate in the presence of NTA, HEDP and magnesium ions (Mg^{2+}) between 60 and 100 °C. The samples were characterized using XRD, FTIR, and FE-SEM techniques. The study revealed HEDP is most effective in scale inhibition at 80–100 °C when 5 ml Mg^{2+} ion solution was used. The mechanism of inhibitor's interaction on the crystallization revealed that the formation of $CaCO_3$ when its ionic product reach solubility product resulted in the stabilization and depletion of Ca^{2+} ions. This can result into liberation of more inhibitor into the system that can complex with the Mg^{2+}. If the ionic product of Mg^{2+} and CO_3^{2-} ions reaches its solubility product formation of $MgCO_3$ initiates. This is a critical point as the further formation of $CaCO_3$ causes depletion in CO_3^{2-} ions and this initiates the dissolution of $MgCO_3$. This facilitated a positive synergistic effect on the stabilization of vaterite at 80–100 °C when 5 ml of Mg^{2+} solution was present in HEDP systems. The data also showed that it is essential to have an empirical investigation to ascertain the efficacy of internal treatment formulation for various operational conditions and feed water parameters.

Keywords Scale inhibition · Water treatment · Inhibitor · Polymorphism · Morphology

Introduction

Due to free availability and high heat capacity, water is the most commonly used heat transfer fluid. However, it cannot be used without proper treatment as water from any source is impure and may contain dissolved or suspended impurities. Common treatment techniques include filtration, precipitation, softening and demineralization etc. and are called external treatment methods. In some cases, after external treatment, addition of chemicals into the feed water may be necessary and is termed as internal treatment (Partridge 1929). Considerable developments in process engineering and materials used for the construction of heat transfer equipment which demands high quality feed water has compelled the chemists in developing advanced internal water treatment additives/formulations (Zhou Li et al. 2017). These formulations comprise different chemicals to address various problems such as foaming (Partridge 1929), corrosion (Zhou Li et al. 2017), scale formation (Gopi et al. 2015), and pH boosting in a single composition. Nevertheless, since these additives are tailor-made prescriptions and are used over a broad range of feed water quality and operational conditions such as temperature/pressure, it is unclear whether they deliver their best results under these different operational conditions.

Calcium is the most common ions that cause hardness and $CaCO_3$ (Azizollah et al. 2015; Gopi and Subramanian 2012) and $CaSO_4$ (Azizollah et al. 2016) are some of the major constituents of scale. There are three crystalline polymorphic forms of $CaCO_3$, ranked in order of decreasing

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Original scientific paper

Spray pyrolisis deposition and characterization of Cd-TiO_2 thin film for photocatalytic and photovoltaic applications

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Abstract

In the present paper, an innovative approach to enhance the photocatalytic efficiency and energy of photovoltaics by modifying the surface morphology of a TiO_2 is demonstrated.The photovoltaic device provides sustainable power efficiency in TiO_2 (TO) and Cd-TiO_2 (CTO) thin films grown through spray pyrolysis. The structural and optical properties of the prepared undoped and Cd doped TiO_2 thin films were studied. The morphology and content of the produced samples were studied using scanning electron microscopy (SEM with EDAX). A UV-Vis spectrophotometer was used to record the optical absorption spectra of TiO_2 nanoparticles. XRD analysis showed that TO and CTO had anatase structure, and the average crystalline size was calculated as 132.0 nm.The photocatalytic efficiency of TO and CTO for degradation of Rodhamine B (RhB) dye was examined. Also, power-voltage (P-V) and photocurrent-voltage (I-V) output current intensity relations werediscussed.

Keywords
Energy materials; doped TiO_2 thin film; photocatalytic degradation; photocurrent-voltage characteristics

Introduction

Among materials useful for either photocatalysis orphotovoltaic devices, TiO_2 has been immensely inquired due toits photochemical corrosion, strong optical absorption, nontoxicity, and

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Crystal structure, Hirshfeld surface and frontier molecular orbital analysis of 10-benzyl-9-(4-hydroxy-3-methoxyphenyl)-3,3,6,6-tetramethyl-3,4,6,7,9,10-hexahydroacridine-1,8(2*H*,5*H*)-dione

V. Sughanya,[a] B. Loganathan,[b] D. Praveenkumar,[c] J. Ayyappan,[d] M. L. Sundararajan,[e] A. Prabhakaran,[f] A. Dhandapani[f] and N. Suresh Babu[f]*

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Keywords: crystal structure; benzylamine; acridinedione; hydrogen bonding; Hirshfeld analysis; frontier orbitals.

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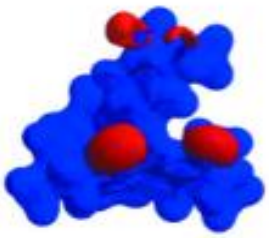
In the fused ring system of the title molecule, $C_{32}H_{35}NO_3$, the conformation of the central dihydropyridine ring is intermediate between boat and envelope with the N and the opposite C atoms lying out of the basal plane. The conformations of terminal rings are close to envelope, with the atoms substituted by two methyl groups as the flaps. In the crystal, the molecules are linked by O—H···O hydrogen bonds into helical chains. The Hirshfeld surface analysis indicates that the most important contributions to the crystal packing are from H···H (63.2%), O···H/H···O (20.1%) and C···H/H···C (14.4%) contacts. Quantum chemical calculations of the frontier molecular orbitals were carried out to characterize the chemical reactivity of the title compound.

1. Chemical context

The acridine fragment is a part of a number of naturally occurring substances, and its derivatives have been used as photoinitiators. Acridine-1,8-diones have been shown to have very high lasing efficiencies and have been used as dyes (Niknam & Damya, 2009). Some acridine derivatives (Nasim & Brychcy, 1979; Thull & Testa, 1994), also well known as therapeutic agents, have a wide range of applications in the pharmaceutical and dye industries. These include compounds that are used as anti-cancer (Sondhi *et al.*, 2004; Sugaya *et al.*, 1994; Kimura *et al.*, 1993), anti-tubercular (Aly & Abadi, 2004; Tripathi *et al.*, 2006), anti-inflammatory (Chen *et al.*, 2002), anti-malarial (Kumar *et al.*, 2009; Tomar *et al.*, 2010), anti-viral (Gupta & Jaiswal, 2010; Tonelli *et al.*, 2011), anti-parasitic (Di Giorgio, *et al.*, 2005) and fungicidal agents (Srivastava & Nizamuddin, 2004). In this context, we report here the synthesis, crystal structure, Hirshfeld surface and frontier molecular orbital analysis of the title acridine-1,8-dione derivative.



2. Structural commentary

The title compound (Fig. 1) crystallizes in the monoclinic space group $P2_1/n$ with $Z = 4$. The conformation of the central

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Individuality chaos dismissed femininity preference in Dattani's *Dance like a Man*

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Abstract:

Femininess variation is a conjoint nevertheless utterly establishes sensation in Indian culture. Inspire of foremost reformative deeds in our nation, at hand is a boundless plea for the societal conversion and restructuring in humanity flush nowadays. Our social order is tranquil curbed to its stiff, stage of development deep-rooted beliefs and confines which ought to turn out to be track race in our social headway. In over-all, perception is exposed on the slice of feminine common but then Mahesh Dattani's play *Dance like a Man* displays it on the supplementary chunk in genuine viewpoint. He displays in what way a masculine dancer scraps to acquire his uniqueness as a dancer in society and deceases starved of recognizing ample achievement. He is made known as a prey of masculinity unfairness. The play majorly debates around the woes of Jairaj, a dancer, instinctive and carried aware in a prosperous household but then all the time conflicting and repressed by his papa. He is plagued by his private publics for pick out Dancing as his career. But present-day is a liberty aimed on him to distinct dancing as a career and then he remains not permissible to thrive as a prodigious dancer deceitful his profession since of the acceptance that Dancing career stands not intended for menfolk. Modification cutting-edge supposed arranged before subsequent unique peer group toward additional group remains revealed in this play through by means of three generations of Jairaj's domestic. He implies the necessity intended for the modification in social supposed through chucking bright happening the miseries of Jairaj, by way of a skilled dancer.

Key word:

Conjoint, plea, flush, plagued, thrive, prodigious, chucking, curbed.

Dance like a Man is one of the supreme standard plays engraved and focused by Dattani. The play was accomplished for the main spell at Chowdiah Memorial Hall, Bangalore, on 22 September 1989 as a fragment of Deccan Herald Theatre. Although finest of the plays of Dattani pact with the feminine

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TRAUMA OF IDENTITY AND CULTURE IN GITA HARIHARAN'S *FUGITIVE HISTORIES*

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ABSTRACT
The human race is threatens by the sense of desolation in one's own country, society or family. The feeling of 'Otherness' incorporates the traits as cruelty, rage, extortion, violence, lust, incivility and barbarity. The 'other' is also viewed as the source of the trauma which constantly terrifying the self with extinction. The current study examines the challenges of marginalized people in the name of religion as they attempt to trace their self- identity after the communal war in the novel of Gita Hariharan's *Fugitive Histories*.
Gita Hariharan is a dynamic writer who skillfully combines the Indian society and its conventional values with contemporary thoughts. *Fugitive Histories* is a novel published in 2009 that sets the backdrop incident of Godhra riots in Gujarat in 2002. This novel speaks up the issues of conflicting sense of otherness by religious conscious and focusing on the plights of women Mala, Sara and Yasmin. The characters are sketches from the different religion and caste that searches for their individuality. The author depicts a web of human relationships that both unites and divides. The marginalized people's search for the hope of life after the riots and shaping their identities is the theme of the novel. The protagonists struggle to find their own identities while trapped in the misery and hatred of their past traumatic experiences. This paper delves deeply into the impacted people's psyches and their quest for a better future. The analysis explores the oppressed people who are alienated by experiencing with trauma, dilemma and double-conscious of their religion, culture, caste, identity conflict and rootlessness in their homeland.
Keywords: Quest for identity, Trauma, Double-consciousness, Religious conflict and Individuality.

Githa Hariharan is a contemporary Indian writer who has made a name for herself among Indian women writers. She has a distinct narrative style in which she blends Indian mythological themes to explore feministic thoughts, social, political, and gender concerns in a modernistic approach. In her works, she emphasized Indian culture and heritage while also juxtaposing the complexities of relationships, cultural and religious tensions, mythical and societal values, caste, and faith. She has written short stories, children's stories, essays, and seven novels. Her first novel, "The Thousand Faces of Night," was published in 1992 that established her as a promising novelist and earning her Commonwealth Writers Prize in 1993. Hariharan's other notable works such as *The Ghost of Vasu Master* (1994), *In times of Seige* (2003), and short stories collections under the title *The Art of Dying* (1993) and her only non-fiction is *Almost Home* (2014).

This study explores the diasporic themes in Hariharan's novel *Fugitive Histories* (2009). It is a fiction of tragic events that devastated the lives of innocent individuals. It examines the novel in a psychoanalytic way of approach on the sense of trauma of the characters and the consequences of trauma that desolates an individual or a community away from their homeland as a result of violent riots. Hariharan speaks the issues of discrimination based on religion, nostalgic repressions and social

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THE LONELINESS AND ALIENATION OF MODERN AMERICAN SOCIETY IN VIKRAM SETH'S *THE GOLDEN GATE*

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Abstract
The present paper is to analyse the loneliness and alienation of Modern American Society. For this purpose, Vikram Seth's *The Golden Gate* has been taken into consideration. The protagonist of the novel does not find satisfaction, happiness, peace, fulfilment and security in his life. The novel *The Golden Gate* deals with the lives and exploitation of a group of young Americans known as Yuppies. John Brown, one of the main characters in the novel. The main characters are the upwardly mobile young professionals who live and work in San Francisco and the Silicon Valley, with no awareness of the outside world. The novel deals with five main characters namely John, his old friends Phil and Janet, Liz and her brother Ed. Seth portrays the 1980's Yuppie life style in northern California. John, the protagonist is a lonely and depressed human being, search for meanings and happiness to find self-fulfilment. His life has come full circle and bitter-sweet experiences of life has made him a mature and better human being. Seth gives us a truthful picture of a modern American Society in *The Golden Gate*.
Keywords: The Golden Gate, American Society, Protagonist, Yuppies.

Vikram Seth is a prolific writer, poet and biographer. His birth place is Kolkata. He was born on June 20th 1952. Seth wrote variety of genres – fiction, poetry, travelogue and non-fiction. He has a wide knowledge of life. Seth is well versed in many language – German, French, Welsh, Mandarin, English, Urdu and Hindi. He has written many novels. *The Golden Gate* was published in 1986. It is written in the form of verse. His novels are fully focused only the real-life situations like loneliness, alienation, the personal guest, quest for self-fulfillment, love, romance, marriage and others.

Seth has presented three different societies in his novels namely American, Indian and European. His themes are fully connected with the members of the society. The theme of *The Golden Gate* is a romantic relationship between man and woman, man and man. *The Golden Gate* is a novel written in verse. Writing a novel is not at all a easy task.

The story of *The Golden Gate* deals with a handful of youngsters living in California. They are known as Yuppies. John Brown, the protagonist of the novel does not find satisfaction, happiness, peace, fulfilment and security in his life. Even though they have enough money to lead their life but they are feeling the lonely and alienation. It happens only because of Modernism. It reflects Modern American Society. Clearly John Brown, one of the main characters in the fiction. They are young professionals who live and work in San Fransisco and the Silicon Valley, with no awareness of the outside world. The novel *The Golden Gate* deals with the five main characters namely John Brown, his old friends Phil and Janet, Liz and her brother Ed. Seth beautifully portrays the 1980's yuppie life style in Northern California. John is a lonely and depressed human being searching for meaning in life.

John Brown is the protagonist of the novel *The Golden Gate*. From the beginning of the novel John is young, energetic, having good status and financial security but he feels lonely and unhappy. Seth clearly introduces his character as

> There lived a man. His name was John.
> Successful in his field though only,
> Twenty-Six, respected, lonely
> One evening as he walked across
> Golden Gate Park, the ill-judged toss
> Of a red frishee almost brained him.[1]

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TRACES OF FEMININE CONSCIOUSNESS IN SHOBHA DE'S *SOCIALITE EVENINGS*

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Abstract
This paper aims at considering Shobha De's treatment of Feminine issues as found in her novel, *Socialite Evenings*. In this novel, she portrays the story of a young college girl, Karuna, in the mega city of Bombay. Through this novel she gives a vivid picture of high society life in contemporary India. This novel presents the institutions of family and marriage as they exist in the wealthy class of contemporary Indian society. In *Socialite Evenings,* Karuna is a well trained wife but her husband is an average Indian. And so there is no meaningful communication between them. Karuna voices her protest about her meaningless marital relationship. In this novel Karuna plays different roles at different times to quench her emotional and psychic thirst. The element of feminist consciousness is unmistakably felt in *Socialite Evenings* which invariably makes the novel tilted in favour of the fair sex.
Keywords: Feminine, Consciousness, Marriage, Patriarchy, Family

Traces of Feminine Consciousness in Shobha De's *Socialite Evenings*

Shobha De, an eminent Indian novelist who has crossed the line into higher human issues, is a blooming star in Indian English literature. She has a unique ability to tackle sensitive areas of human life as a writer. She has a great understanding of a woman's mentality. Readers have been piqued by her imagined world, which has piqued their interest. Her works are renowned for their unrivalled appeal due to her in-depth comprehension of women's psyches and issues. Jaydipsinh Dodiya, in "Introduction" to *The Fiction of Shobha De: Critical Studies*, writes, "One of the major reasons of De's popularity as a writer is her intimate understanding of woman and her problems" (3). Through her writings, De has tried to shatter patriarchal hegemony. Her novels indicate the arrival of new Indian woman eager to defy rebelliously against the well-entrenched moral orthodoxy of the patriarchal social system.

The presentation of modern, rich, educated and assertive women in De's fiction marks a difference from traditional women's problems. Their problems and concerns are different from those of the ordinary, traditional, middle-class women. Being educated and wealthy, they have an easy access to new ways of life informing women's independence. Most of the women characters depicted by De, are conscious of their self-respect because they are competent professionals working shoulder to shoulder with their male counterparts.

In 1989, De wrote her first novel *Socialite Evenings*. It presents the picture of marginalization of Indian women in the hands of their husbands. The central theme of this novel revolves around Anjali and Karuna, who is a rebel against the male-assigned role and identities. De's novels reflect critical observations of familial and marital relations. *Socialite Evenings* portrays Karuna who is compelled to live like an alien in her husband's house. Karuna is from a traditional middle-class family with meagre resources. Her parents desire to bring her up conventionally. The

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International Journal of Mechanical Engineering

Hall and Ion Slip Influence on Unsteady MHD Convective Rotating Flow of Non-Newtonian Fluid through Porous Medium with Chemical Reaction

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Abstract: The purpose of this study is to investigate the effects of Hall and ion slip on the unsteady MHD convective rotating flow of Casson fluid through porous media under the impact of chemical reaction. The equations governing flow, heat, and mass transport may be reduced to a set of ordinary differential equations that can be solved analytically by utilizing the perturbation technique. The numerical values of shear stress, Nusselt number, and Sherwood number at the plate are tabulated, while the changes in fluid velocity, temperature, and concentration fields caused by changes in different physical parameters are visually shown.

Keywords: Casson fluid; Hall and ion slip effect; Perturbation method; Magnetohydrodynamic (MHD); Porous medium; Rotating flow.

1.Introduction

One of the rheologic and fluid dynamic property of blood flow deals a substantial bit part in the essential grasping and treating of many cardiovascular, cerebra vascular and arterial diseases. Many research scholars are making serious attempt to do research in blood. Blood is plasma, platelets, erythrocytes and other particles. Rheologic ally blood flow behaves differently in large blood vessels and narrow blood vessels. It behaves homogenous Newtonian fluid way in large blood vessels and non-Newtonian in narrow blood vessels e.g., capillaries. The flow behaviour is further intricated due to the fact that at low shear rate certain chemical reactions occur that may cause momentous changes in the flow behaviour of blood. Since harmful experiments cannot be carried out on living human beings, many theoretical researchers experiment blood flow through human artery with a branch capillary. The complications in describing the flow of blood in the arterial system leads to develop a constitutive mathematical model that can explain its non-Newtonian behaviour[1]. Craig and Watson supposed, since blood is an electrically conducting fluid, it exhibits magnetohydrodynamic (MHD) property, which may cause potential health consequences. When a magnetic field is applied to a moving, electrically conducting fluid, electric and magnetic fields are generated. They interact and create Lorentz force, which is a body force per unit volume. It has a substantial influence on preventing liquid movement[2]. Ajaz explains the complexities of blood flow via a nonsymmetric horizontal artery with a slight stenosis. It is classified as a micropolar fluid that is homogenous and incompressible. The impact of rotation and magnetic field was studied in detail and numerically estimated [3]. Ali and others study the use of magnetic particles for medicinal purposes in a brief manner. Their blood flow analysis uses a concealed magnetic field that is administered perpendicularly. As a result, adequate utilisation of magnetic field strength can regulate particle and blood mobility [4]. Saqib and others experimented the blood flow through a cylindrical tube [5]. Ramakrishnan proposed simplified mathematical model to understand the behaviour of blood flow through porous medium with finite thickness [6].

Shehzad and others (Shehzad et al., 2013) did their research in the flow of electrically conducting Casson fluid through a porous stretching sheet by the influence of mass transfer with the chemical reaction. Hussanan[8]investigated unsteady motion in the boundary layer on MHD flow of a Casson fluid inserting through a oscillating vertical plate with the effect of heat. A significant result found and acquired exact solutions. Khalid [9] research is in two-fold, those are MHD and porous medium. The magnetic fields induce currents in the fluid flow of a transient phenomenon that past in an oscillating vertical plate thrust in a porous medium with constant wall temperature and used Laplace technique to find results. The investigation of boundary layer flow on MHD incompressible Casson fluid past in the porous medium is explored by Shehzad(Shehzad et al.,2016). Biswas and others[11]discussed heat and mass transfer of Casson fluid on electrically conducting through a vertical plate with emission of

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Fuzzy relational equation - Composition of maximum-addition

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Abstract: In this paper we introduce a new concept of fuzzy relational equation that is composition of maximum-addition. Several properties are also discussed with suitable examples.

Keywords: Fuzzy subsets, algebraic sum and product of fuzzy subsets, composition of maximum-minimum, composition of maximum-addition.

1. Introduction

Relation is an implication of the connectivity, reflexivity and similarity between two or more sets. Fuzzy relations are significant concepts in fuzzy theory and have been widely used in many fields such as fuzzy clustering, fuzzy control and uncertainty reasoning. The notion of fuzzy relational equations based upon the max-min composition was first investigated by Sanchez [2]. Fuzzy relational (relation) equations are identities of the form $R \circ S = T$, where R, S and T are fuzzy relations (R is a fuzzy relation between sets X and Y , S is a fuzzy relation between Y and Z, and T is a fuzzy relation between X and Z). The minimum-addition Composition of fuzzy relations were introduced and studied by Dr. S. Ramathilagam and A. Arokiamary [1]. In this paper we introduce a new concept of fuzzy relational equation that is maximum-addition Composition of fuzzy relations. Several properties are also discussed with suitable examples.

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Data Article

Structural, morphological and magnetic properties of (c-$ZnFe_2O_4$ and t-$CuFe_2O_4$) ferrite nanoparticle synthesized by reactive ball milling

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Abstract

Cu-ferrite and Zn-ferrite nanoparticles were employed using the reactive ball milling method in this study. The structural, vibrational frequencies, morphological and magnetic properties of the prepared materials were analyzed using XRD, FT-IR, UV, SEM with EDAX, VSM. XRD revealed the formation of a tetragonal phase with the space group $14_1/amd$ of t-$CuFe_2O_4$ ferrite and c-$ZnFe_2O_4$ cubic phase with space group $Fd\bar{3}m$. The FTIR spectra revealed two predicted bands 567 and 484 cm^{-1} for t-$CuFe_2O_4$ ferrite and 565 and 480 cm^{-1} c-$ZnFe_2O_4$ ferrite which indicates that the ferrite phase has formed. FE-SEM images show the spongy morphology with a number of porous due to severely agglomerated nanoscale particles. The UV–vis spectrum shows that copper ferrite has strong compare to zinc ferrite. Ferrimagnetic properties were observed in copper ferrite and zinc ferrite nanoparticles using a hysteresis loop.

Graphical abstract

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13. The Impact of Government Aid to Human Development in the Covid-19

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Abstract

The year 2020 began with the once-in-a-century pandemic, which saw the frontline health workers working tirelessly to save human lives from COVID-19. While the pandemic caused its ripples on the economy and the social sector, Governments at the Centre and States intervened promptly to respond to the pandemic. India has one of the lowest case fatality rates of less than 1.5 percent. The COVID-19 has brought into focus the vulnerabilities of societies, states, and countries in facing a pandemic. India imposed a complete lockdown of the economy from 24th March to 31st May 2020, which helped in arresting the number of fatalities due to COVID-19 as well as taking precautionary measures to contain the spread of the disease and it has helped India to save lakhs of lives. However, the lockdown had an inevitable impact on the vulnerable and informal sector, the education system, and the economy as a whole.

Keyword:- Human Development challenges, Education, Health, Screening andTesting, Economic Impact, conclusion.

Introduction

In the late 1980s, the human development paradigm shook the foundations of utilitarianism by stressing that a country's development could not be defined solely as the accumulation of wealth. On the contrary, it had to transcend the capacities that people had to live a life that they valued, that is, the "process of expansion of real liberties that individuals enjoyed" (Sen, 2000: 55).

From 1990, with the first measurement of the Human Development Index (HDI)[1] by the United Nations Development Program (UNDP), decision-makers began to redirect their attention towards development, focusing on human beings and the generation of strategies that promote the progress of societies (UNDP, 2010).

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SEXUAL HARASSMENT AND WOMEN RIGHT PROTECTIVE MECHANISM IN TAMILNADU

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Abstract:
Our Indian scenario accurately depicts a hushed civilization in serious need of revealing secret realities to the unknown. Today's environment is made up of millions of stories told by people with happy faces. Regardless of gender, sexual harassment has affected men, women, and transgender people, as well as children and senior citizens. A female housekeeper was offered a note of ten rupees instead of the house owner forcing himself on her during her working hours, according to some true reports. Mental anguish and the dread of losing her work had kept her from telling his wife about the occurrence. People are often pressured to not raise their voices and stand up for themselves due to poverty and fears such as fear, low esteem, and so on.

Keyword: Rights of women, Organisation, Issues, Sexual harassment, Causes and consequence, conclusion.

Introduction:
Sexual harassment is defined as rude, embarrassing, or intimidating sexual behavior. It can take the form of written, verbal, or physical communication, and it can take place in person or online. Sexual harassment can happen to anyone, regardless of gender. When sexual harassment occurs at work, school, or university, it may be considered discrimination. Since the dawn of time, the position and status of women have been a fluid concept. Women's standing has changed dramatically throughout history, from the Vedic period to the present day. Women have tasted every flavor of life, from the glory and respect bestowed upon them in the Vedic period to denial and subordination in the post-Vedic period, and finally the fight for equality, acknowledgment, and survival in the modern world. However, one thing that has been consistent throughout this period is women's marginalization.

Violence, physical abuse, denial of the right to life, subordination, and neglect have all been perpetrated against women. The most horrible and humiliating of these atrocities is an assault against women. Violence against women is a broad word that refers to a variety of acts of violence, abuse, and torture directed towards women. It encompasses not only physical violence against women, but also verbal abuse, emotional agony, economic hardship, and social disrespect. No woman is born to be treated inhumanely and to have her right to life taken away. Any form of violence directed towards a woman is a direct violation of her human rights, and it is the most heinous of human rights violations. Women of all ages, from all walks of life, and all backgrounds experience some form of violence at some point in their lives.

Domestic violence, sexual abuse, physical and verbal abuse, rape, human trafficking, forced prostitution, dowry-related violence, dowry deaths, female foeticide or infanticide, and other inhumane practices are examples. They are victimized and ignored in all aspects of life, and they are subjected to discrimination in all areas of human endeavor. As a result, women all over the world are subjected to these practices in practically every aspect of their lives, including education, employment, at home, at work, in marriage, and even in childhood. Women are seen as being at a disadvantage because of their social roles as well as physical and biological differences from men.

Violence is defined as an act of hostility that violates the autonomy and identity of another individual. In technical words, violence is the use of force against another person that is not permitted by law and is inflicted with the intent of obtaining something against the other person's will or without their agreement. "To summarise, the idea of 'violence' is famously difficult to describe since it is a multidimensional, socially interpreted, and extremely ambivalent reality." ii It is a complex and diverse concept because no single act can be classified as violent or abusive. It can take the shape of verbal or physical abuse, it can be individual or collective, it can be a continuous process or a one-time occurrence, and it can even go beyond that.It is an act that a bystander, as well as the victims themselves, are unable to fully describe and understand. It is a complicated and dynamic idea that requires careful consideration and management. Gender-based violence has risen to prominence on the global human rights agenda. Although there is little credible data on the prevalence of gender-based violence in India, there is an emerging body of reports and opinions indicating that it is prevalent in all types of communities and among all classes of people. It

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Robust Regression using Least Absolute Deviations Method

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Abstract

The least squares regression is optimal and the maximum likelihood estimators of the unknown parameters of the model if the errors are independent will follow a normal distribution with mean zero and a common (though unknown) variance. Robust estimation refers to the ability of a procedure to produce highly insensitive estimates to model misspecifications. Robust methods are known as resistant of abnormal values and other violations of model assumptions and appropriate for a broad category of distributions. A comparative study has been made between Least Absolute Deviations (LAD) method and Least Squares (LS) method. It has been made by using the empirical part which was the generation of experimental data depending on comparison criteria. Finally, it found that the LAD method is more efficient in estimating the parameters in all cases the distribution of errors for the model.

Keywords: Least Absolute Deviations, Ordinary Least Square, Maximum Likelihood Estimator, Iteratively Reweighted Least Squares.

1. Introduction

Least squares regression is sensitive to outlier points. It has dominated the statistical literature for a long time. This dominance and popularity of the least square regression can be imputed, at least partially to the fact that the theory is simple, well developed and documented. The computer packages are also easily available. The Least Squares regression is optimal and the maximum likelihood estimators of the unknown parameters of the model if the errors are independent will follow a normal distribution with mean zero and a common (though unknown) variance.

The least squares regression is very far from the optimal in many non-Gaussian situations, especially when the errors follow distributions with longer tails. For the regression problems Huber (1973) stated that "just a single grossly outlying observation may spoil the least squares estimate and moreover, outliers are much harder to spot in the regression than in the simple location case". The outliers occurring with extreme values of the regressor variables can be especially confusing. Andrews (1974) noted that even when the errors follow a normal distribution, alternatives to least squares may be required; especially if the form of the model is not exactly known. Further, least squares are not very satisfactory if the quadratic loss function is not a satisfactory measure of the loss. Loss denotes the seriousness of the nonzero prediction error to the investigator, where prediction error is the difference between the predicted and the observed value of the response variable.

The least absolute deviation errors regression overcomes the drawbacks of the least squares regression and provides an attractive alternative. It is less sensitive than least squares regression to the extreme errors and assumes absolute error loss function. Because of its resistance to outliers, it provides a better starting point than the least squares regression for certain robust regression procedures. Unlike, other robust regression procedures, it does not require a rejection parameter. It may be noted that the absolute errors estimates are maximum likelihood and hence asymptotically efficient when the errors follow the double exponential distribution.

To ease the model formulation and computation, some desired assumptions such as normality of the response variable are made on the regression structure. Out of many possible regression techniques for fitting the model, the Ordinary Least Squares (OLS) method has been traditionally adopted due to the ease of computation. However, there is presently a widespread awareness of the dangers posed by the occurrence of outliers in the OLS estimates (Rousseuw and Leroy, 2003). The robustness method is considered as an alternative to a LS method, especially if the regression model does not meet the fundamental assumptions.

2. Ordinary Least Square Method or L_2-norm Method

Utilizing the OLS method, the estimator $(\hat{\beta})$ is found by minimizing the sum of squared residuals

$$\min_{\hat{\beta}} \sum_{i=1}^{n} (U_i)^2 \quad where \quad U_i = y_i - \hat{y}_i$$

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BAYESIAN ESTIMATION ON ROBUST REGRESSION USING LEAST ABSOLUTE DEVIATIONS METHOD

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ABSTRACT

Recent days we can obtain easily large sample high dimensional data sets from cheap sensors. However, the growth of variables can prevent us from constructing a parsimonious model which provides good interpretation about the system. One important stream of statistical research requires effective variable selection procedures to improve both accuracy and interpretability of the learning technique. Variable selection is an important research topic in linear regression especially for model selection in high-dimensional data situation. In this paper,it is proposed to develop a procedure for Bayesian estimation based on robust regression by leastabsolute deviations method.

Keywords: Variable selection, Linear Regression, Robust Regression, Least Absolute Deviations.

1. INTRODUCTION

Recent days we can obtain easily large sample high dimensional data sets from cheap sensors. However, the growth of variables can prevent us from constructing a parsimonious model which provides good interpretation about the system. One important stream of statistical research requires effective variable selection procedures to improve both accuracy and interpretability of the learning technique. Variable selection is an important research topic in linear regression especially for model selection in high-dimensional data situation.

Tibshirani (1996) proposed the least absolute shrinkage and selection operator (LASSO), which can simultaneously select valuable covariates and estimate regression parameters. Traditional model selection criteria such as Akaike Information Criterion (AIC) [Akaike, 1973] and Bayesian Information Criterion (BIC) [Schwarz, 1978] have major drawbacks that parameter estimation and model selection are two separate processes. The LASSO is a regularisation with $l1$-type penalization and it becomes extremely popular, because it shrinks the regression coefficients toward zero with the possibility of setting some coefficients equal to zero, resulting in a simultaneous estimation and variable selection.

Many literatures show successful applications using the LASSO. However, the LASSO can be biased for the coefficients whose absolute values are large. Fan & Li (2001) proposed a penalized regression

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DATA MINING APPLICATIONS AND VISUALIZATION OF HEALTHCARE DATABASE

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ABSTRACT

This paper is attempted to identify hidden structure, classification and clustering of Healthcare data. In healthcare, data mining is becoming more and more popular, if not increasingly essential. Data mining applications can significantly benefit all parties involved in the healthcare industry. The huge amounts of data generated by healthcare transactions are too complex and voluminous to be processed and analyzed by traditional methods. Data mining provides the methodology and technology to transform these mounds of data into useful information for decision making. This study explores data mining applications in healthcare. In particular, this area was chosen as a model to study Master Health Checkup (MHC). The data were collected from secondary source containing 295 patients in St. Johns Hospital, Bangalore. The case sheet deals with socio demographic characteristic, Blood Pressure, Fat, Liver and diabetic related parameters. The salient feature of this study is the application of Factor Analysis, K-means clustering and Self Organizing Map (SOM) as data mining tools to develop the hidden structure present in the data. The scores from extracted factors are used to find initial groups by K-means clustering algorithm. A few outlier health care profiles, which could not be classified to any of the larger groups, are discarded as some of the parameters possessed higher values. Finally, SOM is applied and the groups are identified as MHC patients belonging to O-Class (Obesity), N-Class (Normal) and UW-Class (Under Weight) in that order. The results of the study indicate that SOM can be a feasible tool for the health care analysis of large amounts of master health checkup data.

Keywords: Master Health Check (MCH), Data mining, Factor Analysis, k-means Clustering and Self Organizing Map (SOM)

1. BACKGROUND OF THE STUDY

The Master Health Check-up (MHC) offered by various hospitals and medical research institutes is a programme that attempts to reduce health care costs by prevention and early diagnosis. A variety of chronic diseases afflict us, most of which take their toll after the fifth decade of life. Diabetes, hypertension, heart attacks, stroke and cancer are some of the more common examples. Almost all of these problems first go through a long quiescent phase where they produce no symptoms. This period can

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Novel synthesis, spectral characterisation and DFT calculation of (3,4-bis ((*E*)-(substituted-dichlorobenzylidene)amino) phenyl) (phenyl) methanone derivatives

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ABSTRACT

The organic compounds containing (3,4-bis((*E*)-(2,3-dichlorobenzylidene)amino)phenyl) (phenyl) methanone **(1)**, (3,4-bis((*E*)-(2,6-dichlorobenzylidene)amino)phenyl)(phenyl) methanone **(2)** and (3,4-bis((*E*)-(3,4 dichlorobenzylidene)amino) phenyl)(phenyl) methanone **(3)** were synthesised in the current study. The synthesized methanone derivatives **1–3** are characterized by elemental analysis, mass spectral studies, FT-IR, ^{1}H&^{13}C NMR. Due to the basis set to derive the optimised geometry, dipole moment, HOMO-LUMO energy, molecular electrostatic potential, Mulliken charge population, and first-order molecular hyperpolarization (β), theoretical calculations were carried out using the DFT (B3LYP) strategy with 6-31G(d, p).

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1. Introduction

A daunting search for chemists is the development of safe and environmentally friendly chemical processes following the twelve principles of green chemistry [1]. The condensation of a primary amine and an aldehyde/ketone typically forms Schiff bases. Schiff bases containing aryl substituents are slightly more stable and rapidly synthesized, whereas those containing alkyl substituents are comparatively unstable. The Schiff bases aliphatic aldehydes are relatively unstable and readily polymerizable [2], whereas those with successful conjugation of aromatic aldehydes are more stable. In general, in condensation reactions, aldehydes react quicker than ketones, leading to the formation of Schiff bases, since the aldehyde reaction center is less sterically compromised than that of the ketone. In addition, the extra carbon of the ketone gives the azomethine carbon electron density and hence makes the ketone less electrophilic than aldehydes [3]. In general, the Schiff bases are polydentate [4] tetradentate [5] tridentate [3], or bidentate [2], ligands capable of forming extremely stable transition metal complexes. In many fields, for example, biological, analytical, and inorganic chemistry, Schiff bases derived from aromatic aldehydes and aromatic amines have a wide range of applications [4,5]. The presence of organic reagents as essential compounds of the measuring system is required for applications of many new analytical devices. Schiff bases are used to detect increased selectivity and sensitivity in optical and electrochemical sensors, as well as in various chromatographic methods [6–8]. In coordination chemistry, Schiff bases play a significant role because they quickly form stable complexes with other transition metal ions [9]. Schiff base reactions are useful in producing carbon–nitrogen bonds in organic synthesis. The Schiff bases are nitrogen-containing active organic compounds obtained by removing water molecules from the condensation reaction of aldehyde or ketone with the primary amine [10,11]. To their notable coordination ability, Schiff bases are among the most common ligands used in modern organic chemistry [12,13]. Especially, the nitrogen of the C = N group is a very well donor and if this group can be supplemented with other

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Novel Synthesis of *NE,N'E-4,4'-sulfonylbis(N-(substituted-dichlorobenzylidene) anilines* derivative their application biological and DFT studies

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Abstract. The structure of synthesized compounds has been established on the basis of their spectral (FT-IR, ^{1}H&^{13}C NMR and Mass) data. The purity of the compounds was confirmed by TLC. The compounds **1-3** were evaluated for their *in vitro* activity against several microbes. Compound **1-3** exhibited potent antibacterial activity with the reference standard ciprofloxacin and fluconazol. In the ground-state, compounds **1-3** molecular geometries were determined using the DFT based on B3LYP/6-31G(d,p) and compared to the experimental results. In addition, compounds **1-3**, MEP maps and molecular frontier orbitals were performed, and the results obtained were compatible with the electronic properties.

Keywords: Schiff base, azomethine, in vitro activity, NLO, DFT.

1. Introduction

The common structural feature of these compounds is the azomethine group with a general formula RN=CH-R^1, where R and R^1 are alkyl, aryl, cyclo alkyl or heterocyclic groups which may be variously substituted. These compounds are also known as anils, imines or azomethines [1-4]. Schiff bases that contain aryl substituents are substantially more stable than alkyl substituents. Schiff bases of aliphatic aldehydes are relatively unstable and readily polymerizable, while those of aromatic aldehydes have effective conjugation and stability [5].The formation is generally driven to the completion by separation of the product or removal of water or both. Many Schiff bases can be hydrolysed back to their aldehydes or ketones and amines by aqueous acid or base [6]. Schiff bases were reported to possess antibacterial, antifungal and antitumor activities. Several researchers have studied the synthesis, characterization and structure-activity relationship of Schiff bases [7]. Some of the Schiff base complexes containing N and O donor atoms are effective stereo specific catalysts for oxidation [8], reduction [9], hydrolysis [10], biological activities [11,12], and other organic and inorganic transformations. These organic transformations are environmentally friendly and hence they are highly desirable for the treatment of waste water which contains toxic organic pollutants. Aniline one such pollutant, is used in the manufacturing of dyes, polymers, which includes rubber, herbicides, pesticides, fungicides, and pharmaceuticals, is released into environment from these industries. Aniline is also found in the effluents of petroleum refinery plants. Aniline containing chemicals find wider applications in various arenas. Because of its toxic and unmanageable nature it is considered to be an increasing threat to both the environment and human health. Therefore, aniline has aroused great attention and is classified as a persistent organic pollutant. So there is an urgent need to develop efficient and economical methods to remove this pollutant from wastewater. The presence of both hard nitrogen or oxygen and soft sulphur donor atoms in the backbones, makes the ligands readily

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ORIGINAL ARTICLE

Photo-Electrocatalytic Applications of Pure and Bismuth Doped Zinc Oxide Thin Films by Spray Pyrolysis

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Abstract
Pure and bismuth doped zinc oxide thin films were grown by spray pyrolysis and they subjected to spectral and optical analysis. The surface morphology measurement of HR-SEM and HR-TEM images show nano flower shaped structure is observed by Bismuth. Zinc oxide thin films, the EDX analysis confirms that Zn, Bi and O present in thin films. XRD analysis reveals that as synthesized films polycrystalline wurtzite structure (Zincite), are and doped materials are present was done and average crystalline size (26 nm and 19 nm) was calculated by Scherer's formula. The PL analysis from doped thin film decreased intensity appear high efficiency was discussed. The optical study of UV–Vis DRS identify ZnO thin film increased band gab decreased from 3.32 eV to 3.20 eV and the efficiency increases from 5.6 mA/cm^2 to 7.00 mA/cm^2 respectively. And the doped thin films this result identifies decreased band gab energy high efficiency of catalytic and electrochemical application of (DSSCs) was done.

Keywords ZnO · HR-SEM · HR-TEM · Catalytic · Solar cell application

1 Introduction

In recent years, semiconducting materials have become widely used in many scientific and technological applications. Especially, zinc oxide (ZnO) has been used for various applications in active, semi-active and multifunctional devices [1–5]. ZnO is an n-type semiconductor material with certain properties such as wide direct energy band gap of (3.37 eV). Their high binding energy is about 60 meV and it is reliable to tune their resistive nature by suitable dopants/concentrations [6]. Deposition of quality films is very challenging depends on many factors such as processing method; annealing temperature and doping concentration are the dependent factors for the electrical resistivity [7–10]. In general, many roots to deposit thin films via, physical, chemical, evaporation, sputtering, thermal agitation and laser ablation methods and etc., [11, 14]. In last few decades the technique as spray pyrolysis used to deposit the film with uniform thickness. In addition it is cost effective, risk free and easy to grown [15, 16]. Preparation of ZnO thin films by chemical bath deposition and sol–gel technique are known methods now a day. Even though, the method of spray pyrolysis is used most commonly. Pyrolysis is the types of chemical degradation processes that occur at higher temperatures. The main advantage of this process not leaves the solid residues. In order to enhance the above mentioned properties, ZnO should be doped with various dopants. Several researchers reported the ZnO film with various dopants like metal, non-metal and magnetic such as Al, Ga and In with ZnO. The grain size of ZnO may decrease with the addition of Bi dopant were reported [20–22]. In this present work ZnO in pure and doped with proper choice of addition of Bi concentrations to enhance the optical, conducting

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Synergistic effects of magnesium and EDTA on polymorphism and morphology of $CaCO_3$ and its influence on scale

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ABSTRACT

Calcium carbonate scale formation in the presence of magnesium ions has been studied between 60 and 100 °C. The samples were characterized using XRD, FTIR and FE-SEM techniques. The effect of EDTA on the polymorphism and morphology of calcium carbonate in presence of magnesium ions also have been reported. The study revealed that both magnesium and EDTA influence the crystallization behavior and morphology of the $CaCO_3$ formed. The study also revealed that the effect need not be same under different temperatures and environments and the morphological transformation need not compulsorily represent the polymorphic transformation. The findings are explained by a two stage mechanism which revealed that the magnesium ions present in the system can favorably or adversely affect the scale inhibition property of the inhibitor depending on the concentration and temperature.

1. Introduction

Calcium carbonate is one of the most abundant minerals on the earth's crust which finds many uses such as filler in manufacturing of rubber, cosmetics, electronics, paints, plastics and construction materials [1,2]. It exists in three anhydrous crystalline forms; calcite, aragonite and vaterite and also as hexa hydrated, mono hydrated and amorphous forms (ACC) [3]. Magnesium carbonate is another important inorganic compound having similar applications as $CaCO_3$ and exhibits excellent physical, chemical and mechanical properties [4]. The coexistence of magnesium and calcium carbonates in nature, with magnesium up to 44% has been already reported by many researchers [5–7].

Water, due to its abundance, high heat content, nontoxic nature and reusability, is the most widely used substance in heat transfer systems in industries. Presence of calcium and magnesium in water increases the hardness and causes scale formation resulting into poor heat transfer, increased fuel consumption and unexpected failure of heat exchangers. Even though, external treatment such as demineralization and softening removes minerals/hardness, scale deposition occurs due to concentration of ions over several cycles of operation during reuse of the condensate. Hence, to avoid this, internal treatment methods are followed in industries where chemicals are added to keep the ions/sludge under suspension. It has been reported that the more vaterite (or less the calcite) appears in the scale, the more efficient the scale inhibitor will be [8].

Studies reveal that presence of magnesium increases the lifetime of the amorphous phase of $CaCO_3$ in the solution from a few minutes [9] to several hours [10]. There are many reports which suggest that presence of magnesium ions can significantly influence the polymorphic form and, morphology of $CaCO_3$ [11–18]. However, it is unclear if and how magnesium affects the dynamics of the water molecules inside the amorphous phase. Often water contains magnesium along with calcium and hence in order to understand the scale formation mechanism and its inhibition it is essential to investigate the crystal growth of $CaCO_3$ in the presence of Mg^{2+} ions.

In the present work, we have made an attempt to understand the effect of magnesium on the crystallization process of $CaCO_3$ where studies were conducted with different volumes of Mg^{2+} ions and at three different temperatures; 60 °C, 80 °C and 100 °C. As a further step to understand the mechanism of scale inhibitors in the presence of Mg^{2+} ions, the experiments were conducted using EDTA, which is a widely used chelating agent in internal treatment program to inhibit the scale formation. The details of the observations are discussed in the following sections.

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An Identification of Heart Disorder Using Machine Learning Algorithms

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Abstract

Cardiovascular disease, sheathes numerous conditions that affect the heart which is the predominant reason for death worldwide over the span of the past few decades. Recently, there is an increase in mortality rate of young people ranging from age of 30 to 40. Therefore, this created a perilous need of prediction of cardiovascular disease. This paperpredicts the heart diseasebyexploitation of coronary heart sound and uses machine learning methods such as K-Nearest Neighbour, Gaussian Naive Bayes, Random Forest, Support Vector Machine, Decision Tree, and Logistic Regression. The proposed method uses dataset collected both stable persons and from patients with heart disease were collected around 650 cardiac sound patterns were collected. The proposed work consists of pre-processing, feature extraction and classification. The audio signal of heart is given as the input, then onset detector and onset strengthare used to forpre-processing to remove the unwanted noise. After pre-processing the Mel Frequency Ceptral Coefficients are used to extract the features. The extracted features are given as the input to Decision Tree, K- Nearest Neighbour, Logistic Regression, Naive Bayes Classifier, Support Vector Machine and Random Forest for classification which classifies into five categories namely, normal, artefact, extrahls, extrasystole and murmur. From the experimental results it is found that Random Forest gives the highest accuracy 87. 69 % when comparing with other standard methods.

Keywords

Random Forest (RF), Mel Frequency Ceptral Coefficients (MFC), K- Nearest Neighbour (KNN), Logistic Regression(LR), Support Vector Machine (SVM), Coronary Heart Disease (CHD).

1. INTRODUCTION

Cardiovascular diseases are the top most commonsource of death worldwide taking an estimated 17.9 million be alive per year and Heart diseases are on uppermost of the fatal diseases list.A collection of illness of blood vessels, coronary heart disease, cerebrovascular disease and other conditions are called CVDs(Cardiovascular diseases). Due to heart attacks and strokes four out of five cardio vascular disease deaths as occurred, and one third of these deaths occur in advance in people lesser than seventy years of age [1]. Heart is vital organ of human system were

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Design of Optimal Deep Learning based Disease Diagnosis Model for Cloud Centric IoT Healthcare Environment

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Abstract

Recently, Cloud centric Internet of Things (IoT) technologies have been commonly employed in healthcare sector, which enables the seamless monitoring of patients' health conditions. For effective medical diagnosis using the data collected by IoT devices, automated machine learning (ML) and deep learning (DL) models find useful. In this view, this study introduces an optimal deep learning enabled disease diagnosis model for cloud centric IoT (ODLDD-CCIoT) for healthcare environment. The proposed ODLDD-CCIoT technique comprises different stages of operations such as data acquisition, pre-processing, classification, and hyperparameter optimization. In addition, the ODLDD-CCIoT technique involves the design of convolution neural network-long short term memory (CNN-LSTM) model for disease diagnosis and classification. Moreover, the efficient teaching and learning based optimization (TLBO) technique can be utilized for the hyperparameter tuning of the CNN-LSTM model. A comprehensive experimental analysis is performed on heart disease (HD) and activity recognition datasets and the results are investigated interms of different measures.

Keywords: Internet of things, Cloud computing, Deep learning, Machine learning, Healthcare diagnosis, Hyperparameter optimization, CNN-LSTM.

1. Introduction

IoT is an evolving trend for the next generation of technology that is referred to as interconnection of exclusively identified devices and smart objects. IoT is enclosed by several objects that are embedded invisibly in the environmental surroundings [1-3]. Furthermore, IoT provides appropriate solutions to massive applications like industry management, emergency service, health care, and traffic congestion. For efficiently monitoring remote patient health, IoT based medical application has gradually received significant attention [4]. With the continuous growth in Information and Communication Technology (ICT), medicinal sensor provides a resolution to several healthcare applications such as diagnosing chronic diseases,

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A Novel Improved Grey Wolf Optimization Algorithm Based Resource Management Strategy for Big Data Systems

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Presently, big data is very popular, since it finds helpful in diverse domains like social media, E-commerce transactions, etc. Cloud computing offers services on demand, broader networking access, source collection, quick flexibility and calculated services. The cloud sources are usually different and the application necessities of the end user are rapidly changing from time to time. So, the resource management is the tedious process. At the same time, resource management and scheduling plays a vital part in cloud computing (CC) results, particularly while the environment is employed in the analysis of big data, and minimum predictable workload dynamically enters into the cloud. The identification of the optimal scheduling solutions with diverse variables in varying platform still remains a crucial problem. Under cloud platform, the scheduling techniques should be able to adopt the changes quickly and according to the input workload. In this paper, an improved grey wolf optimization (IGWO) algorithm with oppositional learning principle has been important to carry out the scheduling task in an effective way. The presented IGWO based scheduling algorithm achieves optimal cloud resource usage and offers effective solution over the compared methods in a significant way.

Keywords: Big Data, Resource Management, Scheduling, Meta Heuristics, Cloud.

RESEARCH ARTICLE

1. INTRODUCTION

The amount of data produced by traditional virtual group has been improved rapidly. On the other hand, a massive quantity of data has been produced and recorded by different firms. By using the immediate social media Web sites, users develop numerous data regarding the routine life events like, the places visited and several other aspects. These types of data is named as big data [1] which needs massive amount of storage space as well as processing energy for memory and to mine. Cloud computing (CC) is said to be a class of computing process that provides measurable, processing abilities for customer service. The cloud-assisted platforms and shared data centres are used at the time of obtaining robust computing resources and parallel techniques. In line with this, several firms are capable of presenting numerous estimations on CC environment. Furthermore, virtualization deals with modified computing resources and cloud users satisfy the secondary requirements in cloud compliance [2].

Here, CC offers maximum function in the application of scientific as well as engineering fields. Hence, huge developers attempted diverse techniques to improve the effectiveness in diverse cloud systems. Scheduling is one of the major sections applied in this study. Process of scheduling has the vital role to distribute required processing resource for requests which are attained from cloud, about higher amount of workload with numerous data in a correct time location [3]. The type of scheduling big data processing from applied resource in cloud platform is referred as NP-hard problem. Major problem involved in this technique is to manage a suitable trade-off among scheduling overhead as well as accuracy [4].

Various research works has been carried out in solving the problems involved in scheduling concept in diverse platforms. Here, it is reported with the newly presented techniques used for scheduling in grid as well as CC models. The problem in scheduling has been resolved using meta-heuristic approaches as well as Swarm Intelligence (SI) [5]. Analyzed multiple processing techniques under the application of Artificial Bee Colony (ABC) method. It is concluded with optimal results when compared to Genetic Algorithm (GA) as well as Ant Colony Optimization (ACO) technique by including storage for bees in ABC method. Then, Job scheduling has been employed

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Improved Artificial Butterfly Optimization Algorithm Based Resource Scheduling Technique for Big Data Environment

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Abstract

Due to the rapid development in big data processing, it extremely requires resources to be optimized like computation, storage, and cost. In addition to big data processing, operational cost spent in geo-distributed data centers also needs to be decreased. The process of managing massive quantity of data in a geographically distributed data center with resource and cost optimization is a crucial issue. Though numerous techniques were developed in the literature, the data handling process in multiple datacenters is highly time consuming. For resolving this issue, this paper presents an improved artificial butterfly optimization algorithm based resource scheduling (IABOA-RS) technique for big data systems. The IABOA incorporates the cross-entropy (CE) technique into the conventional BOA to avoid the local optimal problem. In this scenario, the search space and massive data quantity are fed as input to the geo-distributed datacenter, where the butterfly population is initialized. Besides, the MapReduce function determines the optimum virtual machine (VM) and therefore allocation takes place in such a way that the data allocation efficiency can be enhanced.

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Fuzzy relational equation of minimum-addition composition

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Abstract: **In this paper we introduce a new concept of fuzzy relational equation that is composition of minimum-addition. Several properties are also discussed with illustration of suitable examples.**

Keywords: Fuzzy Sets, algebraic sum and product of fuzzy subsets, composition of minimum-maximum, composition of minimum-addition.

1. Introduction

Relation is an implication of the connectivity, reflexivity and similarity between two or more sets. Fuzzy relations are significant concepts in fuzzy theory and have been widely used in many fields such as fuzzy clustering, fuzzy control and uncertainty reasoning. The notion of fuzzy relational equations based upon the max-min composition was first investigated by Sanchez [1]. Fuzzy relational (relation) equations are identities of the form $R \circ S = T$, where R, S and T are fuzzy relations (R is a fuzzy relation between sets X and Y , S is a fuzzy relation between Y and Z, and T is a fuzzy relation between X and Z). In this paper we introduce a new concept of fuzzy relational equation that is composition of minimum-addition. Several properties are also discussed with suitable examples.

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METHODOLOGIES AND APPLICATION

Washing machine using fuzzy logic controller to provide wash quality

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Published online: 22 March 2021

Abstract
Washing clothes is one of the daily routine for the living population. Washing has been done by hands traditionally. But at present the technology has developed a lot and all the hand-done works are replaced by machines. One of such inventions is washing machine which helps the people to save the water, energy and time. Based on the needs and deeds of the people, a fuzzy logic control system has been developed. The input given for the process is type of clothes, degree of dirt and mass of the cloth load, and the output received is wash time, RPM, dry time and temperature. The simulation results show that the system provides a good wash quality.

Keywords MATLAB · Rule viewer · Surface viewer · Fuzzy logic toolbox

1 Introduction

Fuzzy logic is a concept which helps computers in making decision which resembles human activities. It provides a simple way to arrive at a definite conclusion based on vague, noisy or missing input information. It is a type of logic that recognizes true as well as false values. Most people do not know how much time is required for washing clothes to remove dirt. To overcome these issues, Fuzzy logic controller (FLC)-based washing machines need to be designed which offers better performance, simplicity and low cost.

The Fuzzy logic controller for liquid level control was designed using Fuzzy logic tool box in MATLAB. Washing machine developed based on Fuzzy logic rules will be helpful in achieving economical washing procedures by sensing the amount of dirt, type of dirt, etc. The Fuzzy logic precision in washing time will not only economize energy resources (including electricity and water) but also benefit the user to save finances in commercial boundary solutions offered in the market. The areas of application of Fuzzy logic controllers have a more dynamic range when compared to the conventional PID controller.

Fuzzy logic washing machines have a good popularity because they have many advantages such as low cost, good performance and productivity. The conditions inside the machine are monitored by sensors. The fuzzy logic also has a feature of 'one touch control.' They offer energy-saving features which consume low power and reduce the cost. In addition to operation, the fuzzy logic also checks the amount of dirt and grease, the direction of spin, the soap and water to add and so on. The reloading takes place to correct the direction of spin. Neuro-fuzzy logic has been inbuilt with optical sensors to detect the type of fabric.

The washing machines incorporate optical sensors to find the light permeability of water in a washer tank, a device that converts light rays to electrical signals. The optical sensors have the ability to detect a change in light beams. A point at which there is no change of color in the water is known as saturation point. There is no logic or formula to determine the relationship between volumes of clothes and dirt and also the time needed to wash. The structure of the washing machine controller has not let itself to ancient methods as the input and output are not clear.

The principle of the sensor is that the light is transmitted through a sample of water; the amount of light passed through is proportional to the amount of soil. The increase in soil levels leads to decrease in amount of light

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Automation on Washing Machine Using Fuzzy Logic Controller Provided with Three Input and Two Output for Setting the Temperature of Water

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***Abstract*—Washing machines are household devices that are used to wash clothes and at present it is preferred by all people. Traditional controllers have been proved to be less capable of controlling these devices and therefore, a need has arisen to apply the Fuzzy logic for such controller applications.**

Fuzzy logic is computer-based approach on "degrees of truthiness" rather than the usual Boolean logic on which computing is based on. It enables system designers to approach the imprecise and unambiguous problems. In this project we have proposed a washing machine controller taking in three inputs to give exact wash time and water temperature for the corresponding inputs. The objective is to minimize the time taken, the electricity consumption and water usage for washing clothes. The principle of this process is to subject input to Fuzzy arithmetic which in turn returns the value of the temperature of water and washing time.

Keywords—Rule Viewer; Surface Viewer; FIS Editor; Fuzzy Logic Toolbox; MATLAB.

I. INTRODUCTION

Fuzzy logic helps in monitoring nonlinear systems that are difficult to tackle arithmetically. Hence Fuzzy logic theory is now used as an alternative to the automatic control systems.

The main aim of this thesis is to determine the washing time and water temperature using FLC system. This paper explains about the procedure which is used for getting the preferable washing time and water temperature for various types of fabric, stains on clothes and quantity of clothes needed to be washed. The process is to sense the temperature and time and subject them with fuzzy logic system and to obtain the washing time and also the temperature of washing.

The companies that manufacture electronic products are working on fully automatic washing machine that detects type of clothes, water temperature, wash load, water level, and degree of stain to decide the ideal washing time. Currently available sensors in washing machines are temperature sensor, load sensor, turbidity sensor and optical(wash) sensor.

The consumers have a hard time in determining the duration of the washing time based on the above criteria. Washing machines based on Fuzzy Logic Controller System provides us the advantage of cost-effectiveness and efficiency.

Important parts of the washing machine are Water pump, Door safety sensor, Water inlet control valve, Motor, Drain pipe, Detergent drawer, Mechanical programmer, Controller.

Optical transducer converts light rays into electronic pulse. A optical sensor has the capability to sense the changes in one or more than one light beams. The optical transducer present in washing machine contains a light receiving part and a light emitting part which is used for sensing and detecting light permeability of rinsed water and detergent solution in a washing tank. In addition to it an Integrated Chip (Fuzzy Controller) also controls the amount of light intensity emitted from the light emitting source.

This work aims at introducing three input and two FLC output to get wash time. For simulation of Fuzzy Logic Controller (FLC), fuzzy logic toolbox in MATLAB is used.

II. LITERATURE REVIEW

A. Fuzzy Logic System: In 1965, a Professor from Zadeh University of California in Berkeley named

Lotfi Alisaker, first introduced the concept of Fuzzy Logic Controller System [1]. It is a control system used by most of the engineers to simplify the complex system into a easy method using this Fuzzy logic [2]. Fuzzy Logic Controller system accepts various inputs of many no. of degrees and states and provides easy implementation to the engineers.

B. FLC system and its application:

- In reference to classical circuits, fuzzy controllers [4] are capable of performing human decisions or human operation. FLC for Gas Heater was designed on the basis of behavioral model.[5]

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Fuzzy logic control system of washing machine using Python

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Abstract
Washing clothes is one of our daily routine. Washing is done by hands traditionally. But at present the technology has developed a lot and all the hand done works are replaced by machines. One such invention is a washing machine which helps people to save the water, energy and time. Based on the needs of people, the fuzzy logic control system has been developed. Fuzzy logic system is a type of reasoning logic that reasons out YES or NO based on the given input. Nowadays this system is mainly used in Artificial Intelligence for human like thinking of automated products. Fuzzy logic problems are being used in many of our everyday applications such as washing machines, air conditioners, unmanned aerial vehicles, satellites, traffic control systems, transmission systems, anti-lock braking systems (ABS) etc. Python offers a simple solution to fuzzy logic problem for washing machine environment. Previously, fuzzy logic was used in washing machines designed using MATLAB. But in this we use Python logic, which reduces the disadvantages identified by fuzzy logic MATLAB. In this, the input given are the type of clothes, degree of dirt and load of clothes and the output received is wash time, RPM, dry time, temperature. This objective is to minimize time taken, current consumption and water usage for washing clothes. The result of this simulation shows that this washing machine provides a good wash quality.

Keywords
Python; Fuzzy logic system; Artificial Intelligence; Rule Viewer; MATLAB.

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Contents

1. Introduction

Python was first designed in 1980 and it was a high-level interpreted programming language. Python was released in the year 1991 by Guido Van Rossum at Centrum Wiskunde and Informatica (CWI) in Netherland. For his continuous efforts in the development and central role in deciding the correct direction, he was given the title, "Benevolent Dictator for Life" (BDFL) by the Python community.

Python is an easy and powerful programming language. It is helpful for the beginners. It can perform complex mathematics and handle large data and files. It increases the reduction of memory usage and time complexity. Python finds its application over several domain such as Artificial Intelligence, Machine Learning, Deep Learning, Web Development, installers, security systems, etc.

In this paper, we use Fuzzy Logic Controller for liquid level maintaining and control. Previous approaches for Fuzzy Logic Control was designed in MATLAB. But here we have programmed Fuzzy Logic Control using Python for easy, precise and compact structure of program.

2. Fuzzy logic system

Fuzzy logic control is a concept which helps the computers to make decision like human. It works on the basis of conditional statement. Most of the people do not know how much time is required for washing clothes in order to overcome these issues, Fuzzy logic controller (FLC) based washing machines are designed in such a way it offers better performance and low cost.

The principle of sensor is that the light is transmitted

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Smart air conditioning system using fuzzy logic sytem and simulation using Matlab

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Abstract
The air conditioning system we use on our daily life has only the manual automation of temperature control, fan speed and etc. Some latest air conditioners have come up with automatic temperature control, fan speed, compressor speed, and etc. But in this paper, we have improved it to one more step ahead of automation using Fully Logic Control System. Using IR sensor, we determine the number of persons in the room and according to it temperature and fan speed is maintained. We use sonar to detect the size of the room and according to it, we determine the tilt position of the fin and fan speed also maintained. Using external temperature and humidity sensor, we determine the temperature to be maintained inside. These are the three factors or ways in which we determine the temperature, fan speed, fin direction to maintain the appropriate temperature required.

Keywords
Fuzzy Logic Control, MATLAB, Air conditioner, Sensor, FLC System.

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Contents

1. Introduction

The air conditioning system has become a very important thing in our day-to-day life. Everywhere in the world it has become the most common and primary need for humans. The history of air conditioning system goes off to the ancient Egypt, where the reeds where hung tied along the window side and trickling water was used for moistening. The evaporation of the seed made the air blowing from the window cool.

It accepts various degree inputs in a particular amount of time and can develop a system in more natural ways [9]. Fuzzy logic controllers are similar to the classical controllers which uses knowledge gained from human thoughts and operators. Using fuzzy logic behavioral model, gas heaters were also designed [2].

The performances of these fuzzy logic are controlled by the embedded automatic controller [3]. The fuzzy logic is a logic where when an input is given, it produces the output which already coded for the particular input.

The simulation of the fuzzy logic controller system is done using the software called MATLAB. It is a toolbox which can be used to design fuzzy logic controller [4]. It is the most used simulation software for simulation of any kind of input and to read the output and we can compare it with our expected result. It is being used by many engineers and scientists across the world.

2. Proposed Design

The fuzzy logic system can be determined by using inputs and outputs given. The main task of this air conditioner is to provide the cooling to the room with best possible current consumption with respect to room size, number of persons, atmospheric temperature and ton capacity. There are 27 rules for input and output for smart air conditioning system which is

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Materials Science & Processing

A study on structural analysis and magnetic behaviour of barium hexaferrite nanomaterial

Classical ferromagnetic material under thermal treatment

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Abstract
Hydrothermal synthesis, 900 °C calcination has been done for barium hexaferrite material to find the structural background of the material. The M-type hexagonal structure, Mauguin phase group (P63/mmc) has been extracted from the Rietveld refinement, and the positions of Fe and Ba have been identified. The electron density of selected atoms with the suitable Miller planes has been discussed with a Fourier synthesis map. The retentivity, coercivity and saturated magnetisation have been identified through VSM studies.

Keywords Hydrothermal synthesis · Powder diffraction · Rietveld refinement · Vibrating sample magnetometer analysis

1 Introduction

Barium hexaferrite ($BaFe_{12}O_{19}$) is a classical ferromagnetic material, because of its excellent chemical, physical and large magnetocrystalline anisotropy nature. In order to synthesise this material, many researchers had followed many methods and successfully fabricated this titled material [1–4]. Solgel, polymer precursor, spray pyrolysis, co-precipitation and hydrothermal have been adopted to their work to synthesise this material. Among those, the simplest method is hydrothermal method. It has been very attractive, and the impact of this method had been resulting in the barium hexaferrite is to become a mono-phase crystalline nature. The main advantage of this method is to increase the homogeneity, and high surface area of the resulting powders leads to relatively high retentivity. In structural conformation, many research articles have been confirmed its phase occurrences by identifying the peaks located in powder diffraction studies and they have indexed to the M-type, S-type, Y-type of $BaFe_{12}O_{19}$, and particularly the Miller plane (017) was also the other key-plane to confirm its nucleation that always projected to the hexagonal crystal system.

In order to look at this material in the density aspects, the average density of the materials in all aspects of synthesis was $4.91 g/cm^3$ and on other side some synthesis like solgel based [5], the density was achieved in the range of 90–93% of the theoretical value ($5.30 g/cm^3$). Regarding the atomic position in a single unit cell, the huge studies have focused on Wyckoff's position analysis. In that understanding, the divalent and trivalent cations have been located in 12k, 4fw, 2a, and 2b [6]. The phase group (194), point group (6/mmm), Bravais lattice (P) and the hexagonal crystallisation nature have been reported in their studies [2, 5–7]. Particularly, according to the magnetic properties, the anisotropy field of M type Barium hexaferrite can be changed by substituting Fe^{3+} ions shifted the resonance frequency. This has led to large efforts to modify the magnetic parameters of barium hexaferrite by substitution with other cation combinations, either completely on the iron site, or concurrently on both the iron and the barium sites. In these modified ferrites, the substituted ions should maintain electrical neutrality and also have similar ionic radii to the original one [8]. In general, the barium hexaferrite powders are preferably suited for the development of electromagnetic attenuation materials at microwave frequencies, due to their magnetocrystalline

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21. Climate Change in the Pandemic Era: A Study Regarding India

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Abstract

The world is facing two significant challenges, the threat of coronavirus and the economic crisis. 'Return to everyday life cannot be defined as usual. This will be the New Normal life. We need to be prepared for that, experts say. The significant problem to note is that in that new everyday life, we will be followed by climate change many times more severe than the coronavirus. Scientists warn that even if a successful recovery from this plague continues, the scourge of climate change remains for humankind. Coronavirus has provided a small preview of the plague disaster. Climate change is undoubtedly far more severe than this. The warning of climate change can be a bit boring for us as everything dissolves and we spend our days in fear. But the threat of climate change has been steadily intensifying over the years. This must be approached so that the world, which is already struggling with climate change, is threatened by the plague.

Keyword - COVID-19, Positive Environment, Negative Environment, state climate, conclusion.

Introduction

The year 2020 is a crucial milestone in the global climate change response. It is also the year when the pandemic of coronavirus has led humankind to face an unprecedented world crisis. Governments struggle to protect the lives of their people. The organization, to keep pace with change, learn new ways to work. The world changed in a matter of months.

This year's annual climate summit in Glasgow was postponed to November 2021 in the context of the pandemic, initially scheduled for November 2020. It was expected to be a significant moment in the climate dialogue following the Paris Convention 2015, as anticipated countries accelerated their climate ambitions. However, ambitious climate actions should not overcome the economic challenge posed by Covid 19 pandemic. Instead, it should be seen as an opportunity to make economies better off, driven by cleantech, clean jobs, and resilient systems.

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Women's Responsibility is more than Male People in the Society: A Critical analysis

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Abstract

This study is coined and made from the sights, perceptions, observations and direct understandings of the people who are living in the villages of Kodukkur, vikkravandi Taluk of villupuram District. To choose this topic researcher needs to have great calibre, valour and courage because suddenly researcher cannot choose this topic since it involves in cooperative study of male and female genders. Based on the understanding, observation, one to one conversation and dialogue the researcher came to write this article with an interest to highlight and disseminate most important toiling task of the women's people in every household in this village. Through an observation close to samples the researcher is motivated himself to focus on this topic to write about their orginal and factual matters which prevails in their life ,in this context male people at beginning of their life will be eager, enthusiastic , interesting and dynamics toward working for family development ,protecting family members and Chilterns and relatives ,after they crossed age of 30 and 35 they are found without family responsibility and liability ,this situation is before marriage, after marriage there are lot of unuttered problems are found neither to explain nor contain them self due to plenty of mournful stories are made by the mistakes of the male people in this villages. Regarding to this study wants to message to global people as to male irresponsible activities are making lot of problems in a family thereby an entire family and members are struggling lot as to survive in day today life by facing an opposite gender's psychological and physiological problems .From marriage to burial ground how women are facing and struggling in this village in terms of conducting family,

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PREVALENCE OF CARDIO VASCULAR DISEASE RISK FACTORS IN SUBURBAN OF CHENNAI, SOUTH INDIA : A COMMUNITY ASSESSMENT

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ABSTRACT
In a cross-sectional survey, 240 subjects aged ≥ 20 years were studied from June 2015 to March 2016 in Pammal Suburban Chennai, a south Indian city. Demographic history, anthropometry and blood pressure were assessed. The descriptive statistics and one way ANOVA analysis was carried out to show the sub urban of Pammal, South Chennai, India activities towards scientific production in the field of CVD patient's significance during this period. In this study population 53.8% are female, 46.2% are male with mean age (in years) of (56.48±13.503); 63.3% are found withS1S2 (+) Cardiovascular System (Heart Beat Sound). The age group of above 50 years (57.1%) is more prone to first stage of heart attack; 30.8% got cured at initial phase itself through artificial respiratory Oxygen therapy. There is significant association between Gender and age at first heart attack (p<0.05). Mean and Standard deviation of Length of stay in Hospital (L) of 240 subjects is (8.96±16.701) days; for female it is (11.6±21.520) and for male (5.9±7.038) days. Using One way ANOVA, it is found that Duration of stay (p<0.05), Temperature (p<0.05) and Pulse Rate (p<0.05) is significant with respect to Gender. Age (p>0.05), Blood Pressure (p>0.05), Respiratory Rate (p>0.05) has no significant with respect to Gender and identifies pulse rate as significant contributing factor to the model. The length of stay in hospital with cardiovascular disease is more among females when compared to male.
Keyword : Pammal Suburban, Greater Chennai, Cardiovascular Disease (CVD), Descriptive Statistics and One Way ANOVA.

1. INTRODUCTION

Pammal is a suburban city in greater Chennai, town in Chengalpet district of Tamil Nadu, India. Leather and tannery factories are present in and around Pammalsuburban which has labour intensive and employs many people. Pammal Sambandha Mudaliar, the father of modern Tamil theatre, was born in Pammal which is very close to Chennai International Airport.

According to 2011 census, Pammal had population of 75,870 with a sex-ratio of 998 females for every 1,000 males, much above the national average of 929. A total of 8,264 were under the age of six, constituting 4,223 males and 4,041 females. Scheduled Castes and Scheduled Tribes accounted for 19.28% and 0.16% of the population respectively. The average literacy of the town was 81.13%, compared to the national average of 72.99%.The suburban had a total of 18812 households. There were a total of 29,090 workers, comprising 105 cultivators, 154 main agricultural labourers, 370 in house hold industries, 24,304 other workers, 4,157 marginal workers, 47 marginal cultivators, 63 marginal agricultural labourers, 127 marginal workers in household industries and 3,920 other marginal workers.

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EVALUATION OF BREAST SELF-EXAMINATION AND CLINICAL BREAST EXAMINATION AMONG RURAL FEMALE POPULATION IN TAMILNADU : A PILOT STUDY

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ABSTRACT

This research paper attempts a cross-sectional descriptive study conducted on Female rural population at KarpakaVinayagar Institute of Medical Science and Research Center, Chengalpet, Tamilnadu, India, among female population regarding their awareness of Breast Self-Examination (BSE) and Clinical Breast Examination (CBE). In the recent days, breast cancer is play vital disease for women and men also. In this connection, the primary sources of samples were collected from voluntary basis. Secrecy and privacy of the responses was assured. The questionnaire consists of threesections: socio-economic parameters, BSE and CBE. All the questions are closed ended and the total samplesize is 200. Initially, the descriptive statistics were described in the form of frequency tables and percentages. Principal Component Analysis, k-mean cluster and Multiple Discriminant analysis used to identify the structure, pattern and Cross Validation of BSE and CBE.Principal Component Analysis (PCA) is used for data reduction or variable reduction and this method extracted 9 factors with 70.95%, the nine factor regression scores are statistically significant except 3 factor regression score. The k-mean cluster identified three meaningful clusters and cross validate with the help of Multiple Discriminant Analysis. The extracted factors are named as Knowledge of BSE 1, Initial Stage of BSE, use of BSE, tool for BSE, practice of BSE, Benefits of BSE, Mammography and CBE, Knowledge of BSE 2, without awareness of CBE and BSE. The k-means cluster analysis achieved three clusters with 88, 71 and 43 respondents based on the centroids of their cluster. The clusters are assessed by high awareness in second cluster, moderate awareness in third cluster and low awareness in first cluster respectively. Finally, three cluster cross validation using Multiple Discriminant Analysis (MDA) accounts to 96.5% of original grouped cases correctly classified in first iteration itself

Keywords: Descriptive Statistics, CBE, BSE, PCA, K-mean Clustering and Multiple Discriminant Analysis.

1. INTRODUCTION

World Health Organization (WHO) recommends developing nations those suffering the dual saddle of cervical and breast cancer to implement economical and inexpensive interventions to confront these greatly preventable diseases [1] Although there is no proof of the worth of screening through BSE, the BSE practice has been appreciated to enable women, taking concern for their health [2] BSE is a suitable and cheap means that can be implemented regularly. The American Cancer Society and other leading

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Research Article

Design and Development of M/G/1 Queuing model for Real Time Applications

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Abstract: : The questions relevant to the queuing system's performance can be addressed by considering the available information of user demand and system capacity. This system can evaluate based on different parameters such as service denial, service duration, response time, etc. Based on analytic tools of Queuing Theory, the desired evaluation of performance is not able to conduct, since the models are of specific kinds for arrival and service processes. The system performance is evaluated based on the simulation. The case of a Spotify back-end server is considered in this work that utilizes in the well-known on-line media-streaming service. A set of models is provided that demonstrates the service capabilities of the band-end server and the user demand. The proposed method is measure the performance of a system based on the simulation of behaviour towards the user input demand.

Keywords: Queuing model, M/G/1 model, Spotify server, Real time applications.

I. Introduction

A Spotify band-end site is considered that is responsible for music delivery for the Spotify customers [1-2]. In Fig.1, the Spotify back-end site's structure is illustrated. A set of storage servers includes in the site on which the music files or songs are stored. C is indicated the number of available storage servers. N is denoted the total number of songs in the system [3]. N indicates the set of songs. In a single storage server, Ni is stored which is assumed for each song. $C_i \in \{1, ..., C\}$, $i = 1, 2, ..., N$ denotes the allocation of song N_i. The information about this system is how the songs are allocating on the various storage servers is contained in the song allocation [4] vector, $C = \{Ci\}$, where $i = 1,....N$.

1.2 Client Requests & Server Response

The client requests to the back-end site i.e. requests for downloading the music files, produce by the Spotify users that relevant to a large population. The Spotify manager collects a client request for a music file which forwards to a storage server immediately on which the respective music file is stored [5-6]. The arrival process of the client requests to the Spotify Manager is modelled using a Poisson time-invariant process with intensity λ requests per second.

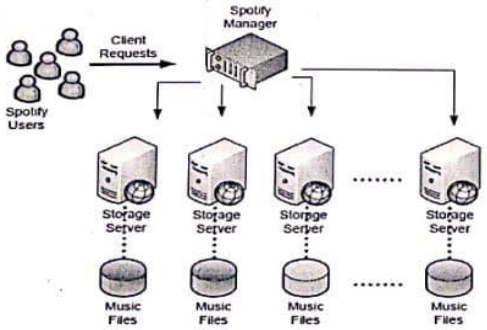

Figure 1: Architecture of the Spotify back-end server

The storage server buffer is queued-up by the requests which are served with the policy of first-come-first-served [7]. At most client requests of B, the buffers of the storage servers can hold. The client requests can't be served by a server in parallel. By relying on whether the storing of music file in the hard disk of the server or in its cache

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Poisson queues with Markov modulated service rates

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Abstract: In this paper we investigate an M/MM/1 queueing system that makes transitions between two service rates 'S(slow) and F(fast)' only at service completion epochs. Switching between these 'S and F' states occurs according to an embedded Markov chain rule. Both inter arrival times and service times follow exponential distributions. We also discuss an extension for an M/MM/1/(0, N] $\cup(N, \infty)$ system. Under steady state conditions, the stationary probability distribution for the system size is obtained by spectral expansion method. To exemplify the tractability of the dynamics of the switching probabilities on the offered work load and the mean waiting time, we provide numerical illustrations.

Keywords: Markov modulated service; fast and slow service rates; stationary probability distribution.

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ஆய்வுக் கருக்கம்

தமிழ் மண்ணில் தோன்றிய அருளாளர்கள் பலர். அவ்வருளாளர்களுள் ஒருவரான இராமலிங்க வள்ளலார் மக்கள் நல்வாழ்வுக்குரிய வழிவகைகளைத் தம் அருட்பாவிலும் உரைநடையிலும் தெரிவித்துள்ளார் அவர் மக்களோடு மக்களாக கலந்து வாழ்ந்து அவர்களின் வாழ்க்கை முறையை நெறிப்படுத்த பல கருத்துக்களை விதைத்துள்ளார். விருந்தோம்பல் சுற்றதாரை பேணுதல், பிறர்பசிப்பிணியை போக்குதல் என அவர் கூறிய இன்றியமையாக் குறிப்புகளை இவ்வாய்வுக் கட்டுரை தொகுத்துரைத்துள்ளது.

கருச்சொற்கள்

புலால்மறுத்தல், பசி, விருந்தோம்பல் சுற்றம், இல்லறம்.

முன்னுரை

அறம், பொருள், இன்பம், வீடு என்ற நான்கு உறுதிப் பொருள்களும் இல்லறத்தால் எய்தக் கூடியனவே என வாழ்ந்து காட்டியவர்கள் நம் முன்னோர்கள். ஆகவே மனையறத்தின் மாண்பினை,

"கற்பும் காமமும் நாற்பால் ஒழுக்கமும்
மெல்லியல் பொறையும் நிறையும் வல்லிதின்
விருந்து புறந்தருதலும் சுற்றம் ஓம்பலும்,
பிறவும் அன்ன கிழவோள் மாண்புகள்." 1

எனத் தொல்காப்பியம் கூறுகின்றது. தமிழ் இலக்கண இலக்கியங்கள் இல்லறப் பாங்கினைச் செவ்விதமாய் எடுத்தியம்புகின்றன. இவ்வடிப்படையிலே இராமலிங்க அடிகளாரும்

"நிலையுறு நிராசையாம் உயர்குலப்
பெண்டிரொடு
நிகழ் சாந்தமாம் புதல்வனும்
நெறிபெறும் உதாரகுணம் எனும்
நாற்பொருளும், மருள்
நீக்கும் அறிவாம் துணைவனும்
அலைவறு நிராங்கார நண்பனும் சுத்தமுறு
மனம் எனும் நல் ஏவலும்
வருசகல கேவலம் இலாத இடமும் பெற்று
வாழ்கின்ற வாழ்க வருளுவாய்" 2

என உலக வாழ்விற்கான குடும்பம் போன்று சிவபோக வாழ்விற்கான குணங்களைக் குடும்பமாக உவமித்துக் கூறுகிறார். இல்லறம் ஏற்கும் மக்களுக்கு இராமலிங்க அடிகளார் கூறிய இன்றியமையா பற்பல கருத்துக்களை இக்கட்டுரை ஆராய்கின்றது.

விருந்தோம்பல்

இல்லறத்தின் முக்கிய கடமைகளுள் ஒன்று விருந்தோம்பல் ஆகும். ஒருவன் திருமணம் செய்து கொண்டு பொருளைப் பாதுகாத்து இல்லறத்தில் வாழ்வதே விருந்தோம்புவதற்காகத் தான் என்பதனை

"இருந்தோம்பி இல்வாழ்வதெல்லாம்
விருந்தோம்பி
வேளாண்மை செய்தற் பொருட்டு"3

என திருவள்ளுவர் மொழிகிறார். 'இன்மையுள் இன்மை விருந்து ஓரால்' என விருந்தோம்பலினால் பெறும் இன்பம் தன் மனைவியிடம் கண்டு கேட்டு உண்டு உயிர்த்து, உற்று ஐம்புலன்களாலும் ஆரத்துய்க்கும் இன்பத்திற்கு நிகராகும் என இலக்கியங்கள் உணர்த்துகின்றன. இத்தகைய

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காலந்தோறும் காதல் வெளிப்பாடு

முனைவர் இரா.முருகன்
உதவிப்பேராசிரியர்,
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முன்னுரை

'மாறும் என்பதே மாறாத இயல்பு' எனும் இக்கருத்து ஒன்றுதான் மாறாத்தன்மையுடையதாய் நிலைத்து நிற்கக்கூடியது. மற்ற அனைத்துமே மாற்றத்திற்கு உட்பட்டுக் கொண்டே தான் இருக்கும். தமிழிலக்கிய பாடுபொருள் மாற்றத்தையும் இவ்வகையில் அடக்கலாம்.அகம், புறம் பற்றி ஆர்ப்பரித்த சங்க இலக்கியங்களை அடுத்துத் தோன்றிய சங்கம் மருவிய கால இலக்கியங்கள் அறத்தைப் போதித்தன. கடவுளைப் பாடிய பக்தி இலக்கிய காலத்திற்குப் பின் வந்த சிற்றிலக்கியங்கள் தனி மனிதனின் புகழைப் பாடத் துவங்கின. சமீப காலத்திற்கு முன்னர்த் தோன்றிய நவீன இலக்கியங்கள் இலக்கிய மரபை மீறிய கருப்பொருள்களையே பாடுபொருளாகக் கொண்டிலங்குகின்றன.

இப்பாடுபொருள் மாற்றம் புலவரின் மனநிலை, காலச்சூழல், சமூக ஒழுங்கமைவு போன்றவற்றை மையமாகக் கொண்டு இயங்கும்.சங்க கால அகப்பாடல்கள் அக இலக்கிய மரபைத் தழுவியவை.அதோடு இலக்கிய மரபை மீறிய பாக்கள் தவிர்த்து ஓர் ஒழுங்கமைவுக்குட்பட்ட பாடல்களாகவே தொகுக்கப்பட்டவை.இருப்பினும் இலைமறை காயாகப் புலவர்களின் காதலுணர்வு ஒருசில பாடல்களில் ஒலிக்கின்றன.அதிலும் குறிப்பாகப் பெண்பாற் புலவர்களின் பா வரிகளில் அடக்கப்பட்ட காதலுணர்வு மேலோங்கி நிற்கிறது.பெண்கள் தம் காதலைச் சொல்லக்கூடாது என்பது சங்க இலக்கிய அகமரபு.தற்கால இலக்கியம் படைக்கும் பெண்பாற் கவிஞர்கள் இம்மரபை மீறிய நிலையில் காணப்படுகின்றனர். அக இலக்கிய மரபுகளுக்குள் சிக்கித்தவித்த பெண்களின் காதலுணர்வு தன்னை மீறிய நிலையில் வெளிப்படுத்தப்பட்ட விதம் காலந்தோறும் எவ்வாறு மரபு மாற்றம் அடைந்துள்ளது என்பதை ஆராய்வதே இக்கட்டுரையின் நோக்கமாகும்.

சங்க காலப் பெண்பாற் புலவர்கள்

ஆண்பாற்புலவர்களோடு பெண்பாற் புலவர்களும் சங்க இலக்கியத்தை யாத்துள்ளனர்.ஔவையார், வெள்ளிவீதியார் போன்றவர்களின் பாக்கள் எடுத்துக்காட்டாய் அமைகின்றன.பெண்பாற் புலவர்களைச் சிலர் நாற்பத்தொருவர் என்றும், ஒருசிலர் முப்பத்தொருவர் என்றும் குறிக்கின்றனர்.சஞ்சீவி அவர்கள் சங்ககாலப் பெண்பாற் புலவர்களை முப்பத்தாறு எனும் எண்ணிக்கையில் அடக்குகின்றார்.பொதுவாகச் சங்கப் பெண்புலவரை முப்பதின் மராக் குறிக்கலாம்.பாடல் வனைந்த பெண்பாற் புலவர்கள் சங்க நூல்கள் சிலவற்றில் பாடல் புனையவில்லை என்பது குறிக்கத்தக்கது.இதனை, "எட்டுத் தொகை நூல்கள் ஐங்குறுநூற்றிலும் கலித்தொகையிலும் பரிபாடலிலும் பெண்பாற் புலவர்களின் பாடல் இடம் பெறாதது குறிக்கத்தக்கது.(முடத்தாமக்கண்ணியாரைச் சிலர் பெண்பாற்புலவராகக் கருதுவர்.)எட்டுத்தொகை நூல்களுள் அகத்தில் மூன்றிலும்ளூ புறத்தில் இரண்டிலுமாக ஐந்து நூல்களுள் மட்டுமே பெண்பாற்புலவர்கள் பாடியுள்ளனர்".1 என்று குறிக்கிறார்.

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HISTOLOGICAL STUDIES ON THE *CISSUS QUADRANGULARIS* PLANT EXTRACT TREATED FISH *OREOCHROMIS MOSSAMBICUS* PETER

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ABSTRACT ***Cissus quadrangularis*** **L.**belongs to the family vitaceae and is an indigenous medicinal plant of India. The present study was aimed to investigate the effect of ***Cissus quadrangularis*** on histological changes of normal and ***cissus quadrangularis*** plant extract treated fresh water **fish, *Oreochromis mossambicus*** tissues samples (gill, liver and muscle) of *Oreochromis mossambicus*, at 7 , 14 and 21days.The fish exposed with *Cissus quadrangularis* when compared with control fish. The present study concludes that *Cissus quadrangularis* is an beneficial to the growth and development of fishes.

KEYWORDS : *Cissus quadrangularis, Oreochromis mossambicus*, Tissues (gill, liver and muscle)

INTRODUCTION

Indian medicinal plants are the essence of Ayurveda and Ayurvedic treatments. When used judicially and clocking with the basic principles they produce miraculous effects. Their role cannot be confined to mere curative of disease but they also used being of human body. Hence, Ayurvedic drugs are rightly called the elixirs of life. Ayurvedic Herbs played important role in Ayurvedic treatment, from ancient time to this most modern time. Throughout the ages, humans have relied on nature for their basic needs, for the production of food, shelter, clothing, transportation, fertilizers, flavours and fragrances, and medicines **(Cragg and Newman, 2005).**

Plants having medicinal property have been a major source of therapeutic agents for alleviation of complete cure of many human diseases since times immemorial. In India, the medicinal Plants are used widely by all sections of people either directly as folk remedies or in different indigenous system of medicine or indirectly in the pharmaceutical preparation of modern medicines. The medicinal plant based industry is growing at the rate of 7.15% annually. India, being a rich reservoir of natural resources has immense potential to capture the world markets in the area of medicinal and aromatic plants and their products **(Singh, et al., 2003).** According to national health experts, more than 200 different plants are used for medicinal preparations for both internal and external use in India alone.

Cissus quadrangularis L.belongs to the family vitaceae and is an indigenous medicinal plant of India: it is known as " asthisnghara" in Sanskrit, Meaning which will strengthen the bones.This plant has been in safe use for countries. One that heals bones and joint problem, relief from pain without side effects can aid in the healing of overuse injuries, help solve gastrointestinal issues such as ulcers or acid reflux, is full of antioxidants and vitamins real plant that has been use and is recorded in ancient ayurvedic texts and has been applied by modern medicine to be completely safe. Plant extract of Cissus quadrangularis L. is like many such products. There are a vast number of phytonutrients that work synergistically together to produce an effect much greater than the whole. The tendril shoots and young leaves are used in various food preparations. The juice of the plant is said to be curative in scurvy. The plant contains high amounts of vitamin C, carotene and anabolic steroid substances. The plant has been used as an asthelmintic, antiseptic, digestive tonic, analgesic and treatment for scurvy and asthma.

Many studies have been shown that hormone replacement therapy in postmenopausal women may increase the risk of breast cancer, heart disease and many women are looking at alternative to estrogen to help prevent osteoporosis. Although there appears to be no published research showing that Cissus increases bone density in osteoporosis, or helps prevent the disease, the disease, the fact that the herb speeds recovery of fractures suggests that it may increase bone density as well. Besides the above -mentioned properties of Cissus, the plant is also rich in the vitamins antioxidants vitamin C and beta-carotene. As analyzed, Cissus quadrangularis contained ascorbic acid 479 mg. and carotene 267 units per 100g of freshly prepared paste in addition to calcium oxalate **(Chidambara Murthy, et al., 2003).** Cissus also possess the properties on a mg basis comparable to aspirin or anti-inflammatory drugs like ibuprofen. Cissus guadrangularis constituents are one of the ingredients of an Ayurvedic preparation, 'Laksha Gogglu", which has been proved to be highly effective in relieving pain, reduction of swelling and promoting the process of healing of the simple fractures as well as in curing the allied disorders associated with fractures. The mechanism through which Cissus extracts its analgesic and anti- inflammatory properties has not been well characterized. It may act centrally but preventing the conversion of arachidonic acid to inflammatory prostaglandins. It is one of the most widely used ingredients in alternative medicine (Ayurveda) for the treatment of piles, anorexia, indigestion, chronic ulcers, asthma, wounds and in augmenting fracture healing process **(Agarwall, 1977 and Rajpal 2002).**

Traditional medicine in many areas of the world relies of the use of a wide variety of plant species in Africa. Phototheraphy still plays an important role in the management of diseases mainly among population with very low income. Cissus quadrangularis Linn (Vitaceae) originate from India and Malaysia, grows in Savannah areas in Africa (Cameroon, Mali, Mauritania, Senegal, Somalia and Chad) **(Arbonier, 2000).** In traditional medicine, the plant is used to treat hemorrhoids, Anorexia, indigestion, and asthma, **(Rajpal, 2002).** In sahelian areas particularly C. quadrangulais is used in the treatment of Sickle cells, Syphilis, gonorrhea. Fractures, colds, pains, malaria, abscess, asthma and as an analgesic **(Arbonie, 2000).** The plant is also used in Cameroon for the treatment of epilepsy (Personal communications). Chemical Studies have shown that the presence of sterols, steroids, tannins, flavonoids, carotenes, ascorbic acid linoleic acid in C. quadrangularis **(Marty,et al., 2003).** Biologically active compounds from natural sources have always been a great interest for scientists working on infectious diseases. Cissus quadrangularis is used by common folk in India to hasten the fracture healing process. Phytochemical analyses of Cissus quadrangularis reveal a high content of ascorbic acid, carotene, phytosterol slubstances and calcium **(Harikrishnan et al. 2003). Shirwaikar et al.,(2003)** have studied that the antiosteoporotic effect of ethanol extract of Cissus quadrangularis Linn. on ovariectomized rat.

Medicinal plants have been used in various traditional systems, as they immune potential against numerous diseases **(Kottai Muthu et al., 2005).** Medicinal plants have been used as traditional treatments for numerous human diseases for thousands of years and in many parts of the world. More than 30% of the entire plant species, at one time or other was used for medicinal purposes. The herbal products today symbolise safety in contrast to the synthetics that are regarded as unsafe to human and environment. Medical plants play an important role in the management of diseases in developing countries where resources are meager. Herbal medicine is based on the premise that plants contain natural substances that can promote health and alleviate illness **(Balakumar et al.,2011, Rajan et al.,2011).** The most important of these biologically active constituents of plants are alkaloids, flavonoids, tannins and phenolic compounds. Cissus quadrangularis belongs to the taxonomic group Magnoliopsida and family Vitaceae. Cissus quadrangularis is an ancient medicinal plant

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Individual and synergetic effect of EDTA and NTA on polymorphism and morphology of $CaCO_3$ crystallization process in presence of barium

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ABSTRACT

The effect of different chelating agents on the crystallization of $CaCO_3$, polymorphism and morphology of $CaCO_3$ in the presence of barium were studied at 100 °C. The samples were characterized using FTIR, Raman spectroscopy, XRD and FESEM techniques. The study revealed that without any chelating agents, in the presence of different volumes of 0.1 M Ba^{2+} ion solution, stabilization of a binary mixture of rhombohedral calcite and flower-like vateritewas facilitated. In the presence of EDTA, the phenomenal transformation of calcite to vateritewas observed. Pure calcite has resulted in the presence of Nitrilotriacetic acid (NTA) in the presence of Ba^{2+} ions. Blending EDTA with NTA favored a binary mixture of spherical vaterite and calcite. The probable mechanism for stabilization of various polymorphs by the additives and effect of blending of additives for better scale inhibition efficiency has been discussed.

1. Introduction

Calcium carbonate is the most abundant minerals on earth surface widely used as filler in papermaking, medicine, ceramics, cosmetic, sealant, pigments, plastic and food industries etc [1–4]. It exists in three anhydrous crystalline forms: calcite, aragonite, and vaterite [5–7]. Calcite is the most stable polymorph, while aragonite and vaterite are metastable which can be easily changed into calcite [1,8,9].

Scale formation in heat transfer equipment, boilers tubes, heat exchangers etc … is a major problem in many industries, causing considerable production loss and increased energy consumption [10–15]. It is well known that certain chemicals and polymers can influence the crystallization of inorganic materials leading to enhancement of their physical and chemical properties [16–24]. Some of these additives influence the morphology and crystalline phase of $CaCO_3$and such chemicals have been used in water treatment for many years [25–28]. Although various methods for crystallization of $CaCO_3$ and morphology control have been reported, the individual and synergetic effect of chelating agents for the inhibition of scale has not been reported yet. In an earlier study conducted in our lab [29], we observed that crystallization behavior of $CaCO_3$ was significantly influenced by the presence of barium and strontium ions and also by the presence of Ethylenediamminetetraaceticacid (EDTA) at 60 °C. Further, we observed [30] that at elevated temperatures blended chelating agents influence the reaction even without any additives. Hence, in this work, crystallization of $CaCO_3$ was carried out in the presence of different volumes of 0.1 M barium solution along with individual EDTA, NTA and blended chelating agents (EDTA + NTA) at 100 °C and investigated in details. This study will provide a new understanding of the development and changes in the nucleation process, polymorphic composition, morphology and growth of scale and will be useful for preclusion of scale using EDTA, NTA and blended (EDTA + NTA) in industrial applications.

2. Materials and methods

2.1. Reagents and materials

Analytical grade $CaCl_2$, disodium salt of EDTA, NTA (disodium salt), $BaCl_2{\cdot}2H_2O$, and Na_2CO_3 were obtained from Sigma-Aldrich chemical company. De-mineralized water was double distilled and used for the preparation of aqueous solutions.

2.2. Synthesis of $CaCO_3$ precipitate

100 mL of 0.1 M $CaCl_2$ followed by 5 mL of 0.1 M barium chloride solutions were added in a round bottom flask and heated to 100 °C in a

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Abstract - **The United Nations has recognized access to water as a basic human right, states that water is social and cultural goodness, not only economic commodities. Since ancient times, water has been universally recognized as a priceless resource. About 50 percent to 90 percent of the body weight of living organisms is water. So, water is as important as living things as the air we breathe. Water is a very important commodity for rural development. At present, due to increasing consumption patterns, water becomes scarce, and this scarcity is a threat that arises to the global population. Water problems, which were only local problems, have now become an international problem. Therefore, the water privatization involves transferring water control and / or water management services to private companies. Water privatization has been recommended by the National Water Policy of the Indian Government to overcome the problem of scarcity of water. Public partners are more responsive, reliable, and cost-effective than private water companies. Water problems are an ecological crisis and try to solve commercially will destroy the earth and increase inequality. Ecological problems must be completed ecologically.**

Index Terms - **Groundwater, Private sector, Surface water, Scarcity, water resources, Water Policy**

I.INTRODUCTION

The United Nations has recognized access to water as a basic human right, states that water is social and cultural goodness, not only economic commodities. Since ancient times, water has been universally recognized as a priceless resource. In 1781, British chemist Henry Cavendisk was the first to find that water was a mixture of hydrogen and air. Two years later, French chemist Andrs Laurent Lavoisier said the water was not an element; proven to be a mixture of oxygen and hydrogen. In 1804, France chemist Joseph Louis K. Lussac and Germanist Germany Alexander Von Humboldt proved that water contained two parts of hydrogen and one part of oxygen.

About 50 percent to 90 percent of the body weight of living organisms is water. So water is as important as living things as the air we breathe. Likewise, in 1800, around 2 hectares of land were irrigated for agriculture that produced food for humans. In 1950, it was 26 Crore hectares. So, according to the demand for irrigation water also increases. It transports land nutrients to leaves through the membrane on the roots during photosynthesis in plants. Without water, modern agricultural discovery will not be useful. Seeds produce high, nothing else includes useless chemical fertilizers. Without ground water it's just a desert. Water is a very important commodity for rural development. Despite a lot of debate about the negative effects of the green revolution technique, large-scale water demand is important hidden from farmers. At present, due to increasing consumption patterns, water becomes scarce, and this scarcity is a threat that arises to the global population. Global water consumption doubles every 20 years, more than double the growth rate of the human population. At present, more than one billion people on earth have lacked access to fresh drinking water. In 2025 the demand for fresh water is expected to increase to 56 percent above what water can be conveyed today if the current trend persists. Seeing the current world environment, India seems that farmers will give up control of local water sources. We can see signs of these people nationally and globally, and rural must be careful not to lose their water rights under anyone who is looking for personal profits.

Objectives:

- To study the availability of water resources in India

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GENDER DISPARITY IN ALICE WALKER'S THE COLOR PURPLE

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Abstract: This research paper deals with Gender disparity in Alice Walker's The Color Purple. African American literature started during the eighteenth century with the writers of African descent who settled in America. The present study depicts racial discrimination of African people in America where they are denied freedom due to color. Walker makes an effort great in understanding the depth of different perspectives of black woman's struggles and liberation that she explores in her novels. Through this novel, Alice Walker makes the people to be aware the social injustice done to black females by white people and even by their counterparts. The Color Purple was written to flourish political and social change, and with notions of erasing sexuality, gender bias, race and class. It has become an important part of American literature, gaining a lot of popularity since it first came out in 1982, and even more after the release of the film adaptation. Celie 14 years old young girl faces oppression from her step father, widowed husband and step son throughout her life. So Celie writes letters directed to God, because she feels isolated and God is the only one she can turn to. She talks about the hardships and oppression she faces as a young black woman. Her stepfather rapes her repeatedly and forces to marry a widower named Albert. This paper focuses on violent and abusive behavior of male that black women face both psychologically and physically. Gender and race are inextricably linked which mostly women face in their day today life.

Keywords: racial discrimination, oppression, liberation, inextricably.

Article History

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Introduction:

African American literature is a literature that flourished in United States. It got emerged in 18th century by the writers of African descent who settled in America. African American literature bloomed in order to abolish racism, slavery, and inequality of Black people. Before feminism, Black Women were treated as slaves and sex

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Feminine Quest for Identity and Self-Assertiveness in Shobha De's Starry Nights

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Abstract

This paper attempts to explore the themes of the feminine quest for identity and self-assertiveness in Shobha De's *Starry Nights*. Shobha De has written about the high socialite women. Her novels deal with the lives of such high society women. She describes the characters of modern women in the contemporary society as they are, riot as they should have been. Through her novels, she wants to express that sex and sensuality are a part of life. In *Starry Nights*, Aasha Rani seems more powerful and bold than Akshay. Like other heroines of Shobha De, she designs a code of conduct for herself which is free of the prescribed gender roles and sexual restrains of traditional society. Shobha De recognizes the unprivileged position of woman and tries her best to this pattern upside down. She is notable for her understanding of the woman's psyche and her bold and frank treatment of sensitive issues pertaining to women does not present women's sufferings alone. She transforms them into a creative principle of art and beauty. In a male-dominated society, usually a woman is reduced to being a mere object. This reduction of woman as a commodity is a phallocentric pattern. The women in the novels of Shobha De work to break this image. Her women are assertive, dominating and bold in comparison to their male counterparts. They are not submissive and not feel guilty about their affairs and attitude.

Keywords: Feminism; Desperation; Childhood; Society; Identity

Feminine Quest for Identity and Self-Assertiveness in Shobha De's Starry Nights

Shobha De stirred the feminist literature in India and is a modern writer who draws attention towards the problem of upper-class women in society. Through her novels, she throws light on the predicament of Indian women. Her novels have emphasized the value of the equivalence of power. She says that men are not willing to accept it and many men expressed their anxiety over the changed power equation. Shobha De's works got popularity for their inclination towards I the fair sex and the graphic depiction, of their pursuits and attitudes. They raise a protest against the male dominated society of India. In this society, women are denied the freedom to act according to their will and to cherish their own dreams.

Women are treated as subordinates. The role of women in society has been changing with each decade of the century. It has left a great influence on sexual modes and social codes in the society, which in tum is well embodied by Shobha De in her characters. In "Contemporary Indian Fiction in English," R.S. Pathak observes, "several contemporary writers have drawn our attention to the rot that has set in different walks of life. Social evils and individual weaknesses are exposed bluntly" (20).

Shobha De is a feminist in the fullest and the latest sense of the term. She takes up complex issues related to women and treats them with an entirely original approach. She reflects on feminine issues but her approach is more modern than theirs. Her chief aim, as a novelist, is to turn the existing pattern upside down as it is the cause of woman's sufferings and subjection. She pays special attention to the urban Indian women. She strives to present the distorted image of women who cry for freedom and equality which still goes unheard in the patriarchal world. From this perspective, the women in her novels are more powerful than men.

Shobha De has written about the upper society women of modem culture. *Socialite Evenings, Sisters,* and *Second Thoughts* deal with the lives of such high society women. She describes the characters of modem women in the contemporary society as they are not as they should be. Through these novels she wants to express that sex and sensuality are a part of life.

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Effect of Sr^{2+} ions on crystallization process of $CaCO_3$ in presence of EDTA, NTA and Mixture of EDTA and NTA

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Abstract

Calcium carbonate scale samples were synthesized with different amounts of strontium ion in the presence of ethylenediaminetetraacetic acid (EDTA), Nitrilotriacetic acid (NTA) and mixture of EDTA and NTA (blended) at 100 °C and compare with blank samples (prepared without EDTA and NTA). The samples were characterized using XRD, FTIR and FESEM techniques. The details revealed that in absence of any chelating agent, NTA and EDTA-NTA blended system facilitated stabilization of calcite and aragonite. Presence of EDTA stabilizes calcite more efficiently at all the amounts of strontium ions. It was also observed that increasing the amount of strontium ions influenced the morphology and the particles size whereas no significant effect was observed on the polymorphic composition.

Keywords: *Calcium Carbonate, polymorphism, Aragonite, Morphology*

1. Introduction

Formation of mineral scales on reverse osmosis membrane surfaces, heat transfer equipments, boilers, cooling water systems etc., is a persistent and expensive problem as these mineral scales can lead to loss of system efficiency, shutdown, and eventually equipment failures (1-5). Calcium carbonate ($CaCO_3$) is one of the major constituents in the scale and it exists in six different polymorphic forms out of which three are crystalline forms viz., calcite, aragonite, and vaterite and three are hydrated forms; amorphous $CaCO_3$ (ACC), calcium carbonate monohydrate ($CaCO_3 \cdot H_2O$), and calcium carbonate hexahydrate ($CaCO_3 \cdot 6H_2O$)[6-10]. Among the three crystalline forms of $CaCO_3$, calcite is thermodynamically the most stable followed by aragonite and then vaterite. The metastable aragonite and vaterite polymorph can easily get transformed into the stable phase calcite. To control the scaling problems it is essential to inhibit formation of stable calcite as the physical properties of the scale depend on the polymorphic compositions [11-15]. This can be achieved by manipulating many factors such as pH, pressure, temperature, additives, etc [16-18]. Additives such as EDTA, NTA etc have been used for internal water treatment for many decades [19]. In the recent past, considerable attention has been paid on controlling scale problems by using chemicals. Many studies have revealed that plenty of additives can influence the morphology of crystalline $CaCO_3$ [20-23]. In our earlier studies [24] we observed that the presence of EDTA influenced the polymorphism and morphology of the $CaCO_3$ under different volumes of barium/strontium solutions and the unusual phenomena of conversation of rhomboidal calcite to spherical-like vaterite structure in the presence of Ba^{2+} solutions. The objectives of this study are to understand the crystallization behavior of $CaCO_3$ in the absence and presence of EDTA, NTA and mixture of EDTA and NTA. The samples were characterized using XRD, FTIR, and FE-SEM techniques. The studies revealed that the presence of strontium ions significantly influenced the structure and morphology of $CaCO_3$.

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ESTIMATION OF QUALITATIVE AND QUANTITATIVE ANALYSIS OF ANTIOXIDANT ACTIVITY OF DIFFERENT PARTS OF *CATHARANTHUS ROSEUS* (L).

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Abstract

Catharanthus roseus is an alkaloid plant that contains alkaloid constituents such as Vincristine and Vinblastine. In the present study we report the Total phenol content (DPC), total flavonoid content (TFC), free radical scavenging activity (DPPH) of the entire plant (shoot, flower, Root (SFR) extract obtained from *C. roseus* and evaluated for cancer treatment. *C. roseus* plants were identified, collected the plants, separated the shoot, flower and roots and dried under laboratory conditions and powdered. The temperature specific suitable solvents were used to and extraction was done using conical flasks for one week and filtered through whatman No. 1 paper. The filtrate was stored and used for further experimentation. Analysis of solvent extracts was subjected to phytochemical and free radical scavenging activity of DPPH assay. Various concentrations of extract containing 25Og to125 Og were taken for all experimental analysis, and were carried out in triplicate and the values are entered on the mean ± SD. The IC50 values in the DPPH estimate were calculated using ANNOVA. Methanolic extraction from respectively solvent has a high value of antioxidant properties.

Key words : Total Phenol, Total Flavonoid, DPPH, C. roseus.

Introduction

Ayurveda is an important system of alternative and complementary medicine. Various medicinal formulas are utilized in the treatment of Ayurvedic systems. Also, for other herbal medicines, majority of its medicines belong to domestic herbs. It is essential for everyone working in Ayurveda to have a complete and recent knowledge of herbal plants to find out specific plant suitable for a specific disease (Ballabh and Chaurasia, 2007). In current years, interest in medicinal plants has increased tremendously, and the West has taken the problem vigorously (Perumal *et al.*, 1998). The World Health Organization (WHO) is presently promoting folk medicine in national health programs that are cheaply obtainable and culturally accepted. Furthermore, WHO consider that one third of the world's population utilize herbs and other folk medicines to treat diseases (Leena and Sreelakshmi, 2017). Plant-based treatments are safe because they have very little or no side effects (Sreesha *et al.*, 2017). However, the lack of quality control knowledge for accepting Ayurvedic medicines is less acceptable to receive Ayurvedic medicines. Hence the end product analysis form has an impact on its functionality and safety (Shaikh and Jain, 2018).

Plant formulas are chiefly utilized for a diverse of diseases related with cancer treatment. Plants fabricate numerous secondary metabolites comprise alkaloids, steroids, flavonoids, cyanogenic glycosides, saponins, terpenoids to guard for themselves from an attack of obviously occurring disease, pests, environmental stresses. Compounds are separated by techniques based on the

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Research article

The effect of DTPA on calcium carbonate scale deposition on copper and aluminium surfaces

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ABSTRACT

Calcium carbonate ($CaCO_3$) scale inhibition by Diethylenetriaminepentaacetic acid (DTPA) on copper and aluminium metal surfaces was studied at 60 and 100 °C. The samples were characterized using X-ray diffraction (XRD), Scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). The results revealed a novel pot like morphology for calcite which was resulted from the transformation of dumbbell morphology. The pot like morphology exposed the possibility of hollow structures for other polymorphs and is resulted from the breaking apart of the dumbbell structures at the middle, followed by fluffing of the separated parts.

1. Introduction

Water, the universal solvent due to its abundance, is the most commonly used material for heat transfer applications. It is used in small car radiators to large cooling towers and boilers. Corrosion, scale formation and biological growth are major problems encountered in such heat exchangers [1, 2, 3, 4, 5, 6]. Scale formation is due to the precipitation of insoluble salts, mostly of calcium and magnesium which forms as sludge at high temperatures and gets deposited on the surfaces of equipment leading to reduced heat transfer efficiency and sometimes shutdown of the equipment or even an industrial plant [7].

Different water treatment techniques are adopted for scale inhibition. External treatment such as softening and demineralization removes the major scale causing constituents from the water to a great extend, but makes it more corrosive [7]. This makes internal treatment inevitable, particularly for operations at elevated temperatures and closed systems where the same water is recycled for long period such as in the case of radiators. Internal treatment mainly consists of adding chemicals like coolants which are capable of the scale causing constituents in suspension, thus delaying their deposition [8, 9, 10, 11]. Another major advantage is that they are usually added in the low concentrations (usually 2–10 ppm), thereby having very little impact on the feed water quality [7,12].

Calcium carbonate is found to be one of the major constituents of scale. $CaCO_3$ has three anhydrous crystalline forms; calcite, aragonite and vaterite and three hydrated forms; amorphous calcium carbonate (ACC), monohydrocalcite ($CaCO_3.H_2O$) and ikaite ($CaCO_3.6H_2O$) [13, 14, 15, 16, 17]. Since different polymorphs have different physical properties, polymorphism plays an important role in scale formation [18]. Literature survey indicates that the predominant polymorphic forms of $CaCO_3$ in scale are calcite and aragonite [19, 20, 21] and vaterite is usually not observed.

Among the above different polymorphs decreases in the order of calcite is the most stable, aragonite is meta stable and vaterite is the least stable [22, 23, 24]. The crystallization of $CaCO_3$ starts from unstable ACC, and proceeds to calcite via vaterite and metastable aragonite. This process is governed by many factors such as pH, temperature, presence of additives etc [25, 26, 27, 28, 29, 30, 31, 32, 33]. For example, ACC will transform to calcite via vaterite at low temperatures (<30 °C) and to aragonite via vaterite at higher temperatures (≥40 °C) [34]. Report suggests that grater the vaterite a scale inhibitor can produce, the more efficient it will be [35,37]. But managing the formation of a particular

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Crystal structure, Hirshfeld surface and frontier molecular orbital analysis of 10-benzyl-9-(3-ethoxy-4-hydroxyphenyl)-3,3,6,6-tetramethyl-3,4,6,7,9,10-hexahydroacridine-1,8(2*H*,5*H*)-dione

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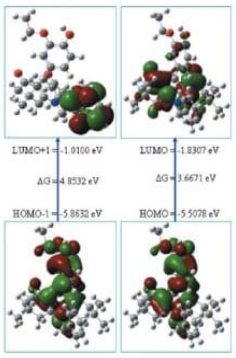
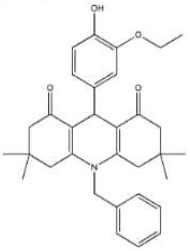
In the fused ring system of the title compound, $C_{32}H_{37}NO_4$, the central dihydropyridine ring adopts a flattened boat conformation, the mean and maximum deviations of the dihydropyridine ring being 0.1429 (2) and 0.2621 (2) Å, respectively. The two cyclohexenone rings adopt envelope conformations with the tetrasubstituted C atoms as flap atoms. The benzene and phenyl rings form dihedral angles of 85.81 (2) and 88.90 (2)°, respectively, with the mean plane of the dihydropyridine ring. In the crystal, molecules are linked *via* an O—H···O hydrogen bond, forming a helical chain along the *b*-axis direction. A Hirshfeld surface analysis indicates that the most important contributions to the crystal packing are from H···H (65.2%), O···H/H···O (18.8%) and C···H/H···C (13.9%) contacts. Quantum chemical calculations for the frontier molecular orbitals were undertake to determine the chemical reactivity of the title compound.

1. Chemical context

The crystal structures of acridinedione derivatives are expected to provide useful information on the molecular conformation, which has a direct relationship to biological activity. Acridine derivatives (Nasim & Brychcy, 1979; Thull & Testa, 1994; Mándi *et al.*, 1994), well known as therapeutic agents, are important because of their range of applications in the dye and pharmaceutical industries. Certain acridinedione derivatives exhibit good inhibition against the pathogen vibro isolate-I (Josephrajan *et al.*, 2005), display anti-cancer (Sondhi *et al.*, 2004; Sugaya *et al.*, 1994; Kimura *et al.*, 1993) and anti-tumour (Talacki *et al.*, 1974) activity and act as K-channel openers (Li *et al.*, 1996).





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ELSEVIER

Chemical Physics Letters
Volume 750, July 2020, 137502

Research paper

Effect of barium and strontium ions on the morphology and polymorphism of $CaCO_3$

K. Sanjiv Raj [a], Nirmala Devi [a], V.K. Subramanian [a b]

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Highlights

- Effect of Barium and Strontium on $CaCO_3$ crystallization and thus their effect on scale formation are discussed.
- A multistep mechanism is proposed to explains the effect of Ba^{2+}/Sr^{2+} ions.
- Novel observation that Ba^{2+} itself as scale inhibitor is reported.

Abstract

Industrial internal water treatment programs provide a robust solution for many water related problems such as scale inhibition, corrosion control, microbial growth etc. in heat transfer equipment. In order to design a good program it is essential to study the individual effect of each constituent in the program and how it affect the parameters for which it is added. Ethylenediaminetetraacetic acid (EDTA) is one such constituent widely used in internal treatment for scale inhibition. Calcium carbonate ($CaCO_3$) is one of the major constituents in scale. Polymorphism and morphology of the crystallites have significant effect on the nature of scale. In this work, we report the effect of EDTA on the morphology and polymorphic composition of $CaCO_3$ in the presence of barium and strontium ions and their effect on the scale inhibition.

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Unsteady solute dispersion in non-Newtonian fluid flow in a channel with effects of magnetic field and wall absorption

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Abstract

The dispersion of a solute in a non-Newtonian fluid flow in a channel bounded by porous beds with interphase mass transfer that was investigated by Sankarasubramanian & Gill. This model is used to calculate the dispersion of solute in blood flow. The study describes the three effective transport coefficients (exchange, convection and dispersion coefficients) are determined to analyse the dispersion process of solute. The mean concentration distribution of a solute, and is expressed as a function of dimensionless axial distance and time. The absorption coefficient does not depend on magnetic field but the convection and dispersion coefficients are influenced by the magnetic field. The effects of Hartmann number (M), porous parameter(σ) and rheological parameter(width of the plug flow region η_0) on dispersion coefficient and mean concentration are discussed clearly in this study.

Keywords: Exchange coefficient, Convection coefficient, Magnetic field, Dispersion coefficient, Generalized dispersion model.

1 Introduction

Transport phenomena involving the unsteady convective dispersion of solute with inter phase mass transfer has some applications in mass transfer in polymer systems, in the dispersion of tracers in blood streams, in extracorporeal

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ORIGINAL PAPER

Structural and Magnetic Characterization of Rare Earth Element Cerium-Doped Nickel Ferrite Nanoparticles ($NiCe_xFe_{2-x}O_4$) by Sol-Gel Method with Antibacterial Activity

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Received: 12 January 2020 / Accepted: 5 March 2020

Abstract
The paper explains the different concentrations of rare earth element (REE) cerium-doped nickel ferrite nanoparticles prepared by the sol-gel method. The structural, morphological, and magnetic properties are characterized by XRD, SEM/TEM, and VSM techniques respectively. The XRD pattern shows the single phase with the spinel nature. The calculated particle size is confirmed with SEM/TEM analysis. The VSM technique is carried out to study the magnetic characterization of the prepared sample. Also, the decrease in the saturation magnetization and coercivity of the ferrite samples when varying the concentration of cerium ions is found. The antibacterial activity of nickel ferrite nanoparticles is also analyzed on gram-positive and gram-negative bacteria.

Keywords Nickel ferrite · Spinel structures · VSM · Antibacterial activity

1 Introduction

Nowadays, nanoferrite particles show remarkable applications in the fields of engineering, biomedicine [1–3], MRI, photocatalysts, etc. [4]. In general, ferrites are classified into three types: spinel, garnet, and hexaferrite [5]. In the present work, we have focused on spinel ferrite with the formula XFe_2O_4, where X indicates divalent metal ions (x = Co, Cu, Ni, Mn, etc.) [6]. Among these spinel ferrites, nickel ferrite nanoparticles lead a specified ferrite, since it has a wide range of applications such as high-density magnetic storage media, color imaging, ferro fluids, high-frequency devices, catalysts, and microwave devices [7]. $NiFe_2O_4$ is a soft ferrite which comes under the inverse spinel structure. In the inverse spinel structure, all the X^{2+} ions occupy the B site; half of the Fe^{3+} ions also occupy the same site while half of the Fe^{3+} stay in the A site [8–11]. The cation distribution and valence state of A and B cations are necessary influence on the physico-chemical properties of spinel metal oxides [3]. The octahedral site (B) contains all the (Ni^{2+}) ions and the Fe ions (Fe^{3+}) occupy both the A and B sites. The size and shape of the final products depend on the mode of preparation like amount of precursors, stirring temperature, pH value, doping concentration, and calcination temperature of the process [12–16].

There are several methods for the preparation of ferrite nanoparticles like the sol-gel method [17], co-precipitation method [18], autocombustion method [19], hydrothermal method [20], ball milling method [21], inverse microemulsion method [22], solid-state reaction method [23], and double-sintering method [24], etc. Among these methods, a simple and cost effective sol-gel method is preferred for the fabrication of ferrite nanoparticles [25]. In the sol-gel technique, there is no need to go for higher temperatures for calcinations to get a pure spinel ferrite nanoparticle [8, 9].

Various techniques are followed for the synthesis of spinel ferrite nanoparticles. Among these chemical synthesis techniques, the sol-gel method is the most commonly used technique to get pure rare earth element (REE)-doped nanoparticles. And also impurity-free and well-resolved intense peaks can be observed in the sol-gel method. The ionic radii of Ce^{3+} (1.03 Å) ions are larger than the Fe^{3+} (0.64 Å) ions [26], which tends to weaken the interaction of sublattice and decrease the magnetic moments of the unit cells, which in turn causes a reduction in saturation magnetization [27]. So, there is reduction in the structured parameters like crystallite size and lattice

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Synthesis, characterization and applications of Aniline passivated bismuth selenide thermoelectric nanoparticles

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ABSTRACT

Thermoelectric materials have been around since more than a hundred years with applications related to cooling and power generation. The most commonly used thermoelectric materials were typically semiconductors like tellurides and selenides of bismuth, lead, antimony and their alloys. A recent revival of interest in the study of these materials has been propelled by the global needs for alternative sources of energy and by the advances in field of novel material synthesis and characterization. In particular, bismuth selenide (Bi_2Se_3) has been characterized as efficient n-type thermoelectric materials. Another intriguing property of Bi_2Se_3 is that it behaves like a topological insulator with a conducting surface and an insulating bulk. This has also led to extensive studies on electronic properties of Bi_2Se_3.The thermoelectric effect or Seebeck effect is the direct con-version of heat into electric energy when two junctions made up of two dissimilar conductors are held at two different temperatures, T1and T2, with T1 > T2 lead to a voltage being developed between the two junctions. In the present investigation Bismuth selenide nanoparticles are synthesized by two different physical methods namely co-precipitation and hydrothermal method. The resultant nanostructures are characterized by X ray diffraction , SEM , FTIR , UV spectroscopy etc.

Selection and peer-review under responsibility of the scientific committee of the 2nd International conference on Advanced Materials – Materials for a Better Living.

1. Introduction

Thermoelectrics, in specific solid-state conversion of heat to electricity, is expected to be a key energy harvesting technology to power global sensors and wearable devices in the future. The semiconducting chalcogenidesV_2 and VI_3 compounds have fascinated increasing interest in the recent years due to their unique optical, electrical and magnetic properties. Hence the potential applications are found in thermoelectric devices, opto-electric devices, and IR spectroscopy [1]. The thermoelectric effect or Seebeck effect is the direct conversion of heat into electric energy when two junctions made up of two dissimilar conductors are held at two different temperatures, T1 and T2, with T1 > T2 lead to a voltage being developed between the two junctions. The ratio of the developed voltage and the applied temperature gradient across a material is defined as Seebeck coefficient (S). The efficiency of heat conversion into electrical energy is denoted by a dimensionless quantity called the thermoelectric figure of merit. It is defined as $ZT = \frac{S^2\sigma T}{K}$, where S is the Seebeck coefficient, σ is electrical conductivity, K is thermal conductivity, and T is temperature. A high figure of merit (ZT) is desirable to get efficient conversion of heat into electrical energy as this material can be used to generate power from waste heat. To improve ZT the three intrinsic parameters S, σ and K have to be tuned. These three quantities are interrelated in such a way that one cannot control these parameters independently. The increase in S will result in a decrease in σ and according to Wiedemann–Franzlaw's, a decrease in σ will decrease K [2]. The typical tradeoff between the Seebeck coefficient and electrical conductivity, and somewhat paradoxical requirement of a material conducting electricity but as little thermal conductivity as possible, have hindered the enhancement of ZT. Therefore, various novel principles and materials are being actively developed to improve ZT and the overall thermoelectric performance [3–5]. The most commonly used thermoelectric materials are typically semiconductors like tellurides and selenides of bismuth, lead, antimony and their alloys. A recent revival of interest in the study of these materials has been propelled by the global needs for alternative sources of energy and by the advances in field of novel material synthesis and characterization. In particular,

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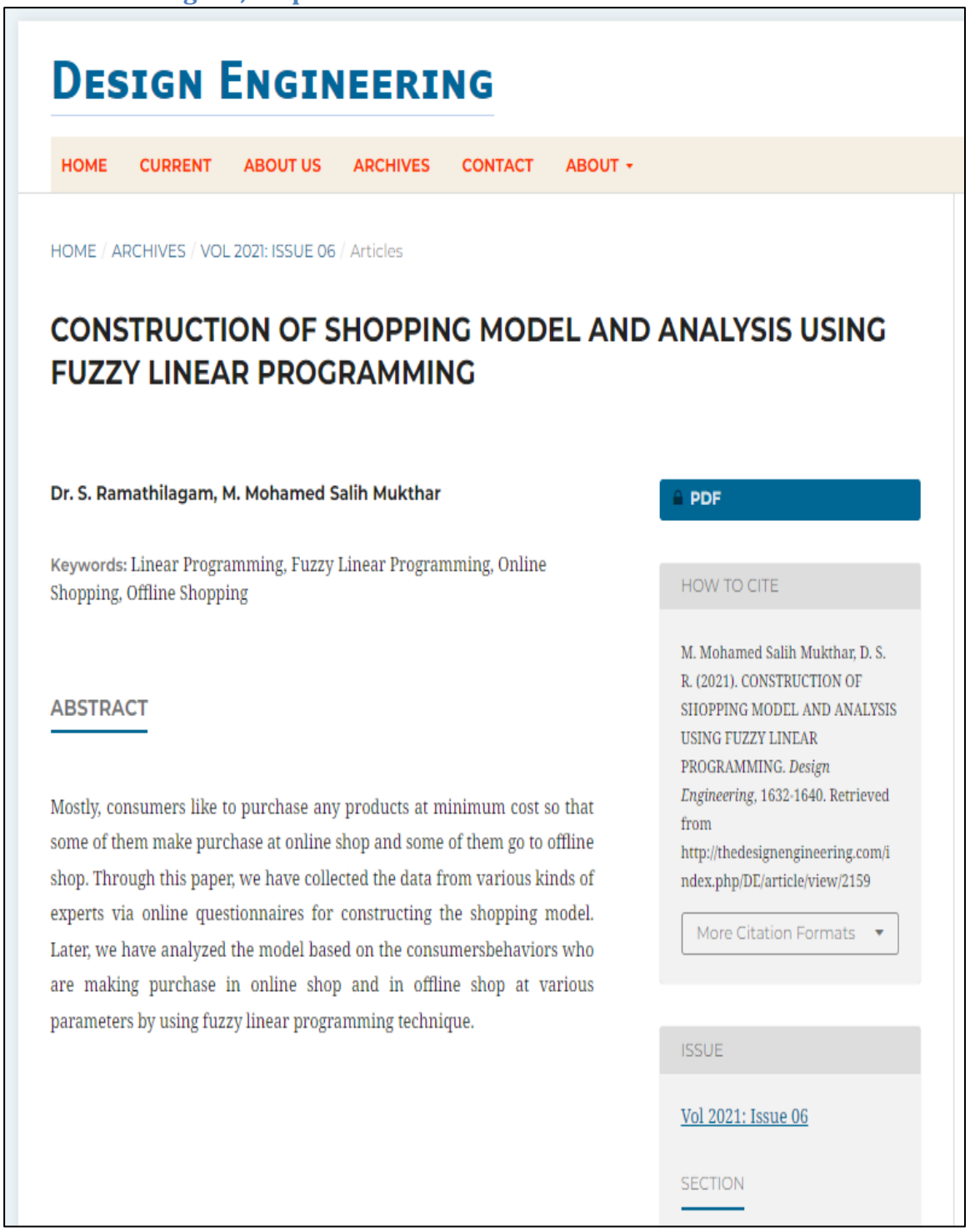

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CONSTRUCTION OF SHOPPING MODEL AND ANALYSIS USING FUZZY LINEAR PROGRAMMING

Dr. S. Ramathilagam, M. Mohamed Salih Mukthar

PDF

Keywords: Linear Programming, Fuzzy Linear Programming, Online Shopping, Offline Shopping

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More Citation Formats

ABSTRACT

Mostly, consumers like to purchase any products at minimum cost so that some of them make purchase at online shop and some of them go to offline shop. Through this paper, we have collected the data from various kinds of experts via online questionnaires for constructing the shopping model. Later, we have analyzed the model based on the consumersbehaviors who are making purchase in online shop and in offline shop at various parameters by using fuzzy linear programming technique.

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Performance of ZnO-Nb_2O_5 core/shell and aluminium doped ZnO electron transporting layer with CdS/CdSe quantum dot-sensitized solar cells

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In the present investigation, solar cells have been fabricated using Cds/CdSe quantum dots sensitized ZnO photoanode for solar cell application. Photocurrent-voltage analysis and electrochemical impedance spectroscopy (EIS) measurements have been performed to investigate the electron transport and recombination of charge carriers in quantum dot-sensitized solar cells (QDSSCs) based on ZnO photoanodes. This dynamic study reveals that the CdS/CdSe sensitized aluminium (Al) doped ZnO NPs photoanode solar cell performs ultrafast electron transport and high charge collection efficiency (80 %). As a consequence, a power conversion efficiency as high as 5.32 % (J_{SC} = 12.86 mA/cm^2, V_{OC} = 600 mV, FF = 69 %) for aluminium doped ZnO NPs/CdS/CdSe photoelectrode based QDSSC is observed under one sun AM 1.5 G illumination (100 mW cm^{-2}). This result highlights the necessity of treating QD-sensitized solar cells from another perspective than dye sensitized solar cells, considering the fundamental differences in their behavior.

Keywords: Quantum dot solar cell, Core/shell structure, Doping, XRD, TEM, Photovoltaic, EIS

1 Introduction

Semiconductor quantum dots (QDs) afford a unique platform for designing an extensive array of optoelectronic applications due to quantum confinement and enhanced surface-to-volume ratios. These unique size-dependent properties allow for emergent electrical and optical phenomenon derived from QD−QD, and QD−ligand electronic coupling. Benefits and advantages of QDs include strong optical transitions (light absorption and emission), a huge range of tunable bandgap onset energies, control over band edge energies and work-function, facile synthesis, facile incorporation into matrices or deposition as thin films, and desirable excited state properties such as enhanced multiple exciton generation (MEG), long carrier lifetimes, and charge and energy transfer phenomenon with surface adsorbates[1].

Solar cells fabricated from QDs (QDSCs) have the potential to reveal higher power conversion efficiencies through enhanced MEG, but have not yet reached their full potential. Although MEG is enhanced in typical quasi-spherical QDs over the bulk and conventional thin film semiconductors, the threshold and efficiency of the MEG process can be improved through shape control, internal QD heterojunction interfaces, and further material exploration. Research toward increasing the MEG efficiency is an ongoing effort. However, to take advantage of these unique properties, researchers must also develop prototype energy conversion architectures that can serve as a test bed for advanced nanoscale phenomena. Incorporation of the topic of nanoparticles into the curriculum is important and becoming more prevalent. Besides their size-tunable luminescence color, their emission of light is bright and nearly monochromatic with a very narrow emission band, making them especially pleasing to the eye. Furthermore, their molar extinction coefficient is much larger than traditional organic dyes, making for strong absorbers to harness sunlight for photovoltaics, although the exact role that QDs play is still under investigation[2]. Solar cells harvest energy in the form of light, converting it to electrical energy. As the QDs are strong light absorbers, with extinction coefficients that surpass even the strongest organic absorbers, they are suitable for usage as light harvesters in dye sensitized solar cells. Among the various stuffs that are used for QDSCs,CdS,CdSe are alternative owing their high potential in light harvest

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Organic dye sensitized TiO_2–Nb_2O_5 electron collecting bilayer photoanode for efficient power conversion in solar cells

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ABSTRACT

This article describes the advantage of the organic dye sensitized TiO_2–Nb_2O_5 electron collecting bilayer photoanode for efficient power conversion in solar cell devices. The bilayer photoanodes were prepared using Nb_2O_5 coated TiO_2 nanoparticles/nanosticks composite film. The solar cell devices were fabricated using organic dye DIAC sensitized photoanodes with different types of electrolytes and cobalt sulphide counter electrode. The power conversion efficiency of 6.64% was achieved in the solar cell device fabricated with the bilayer photoanode and quasi-solid state electrolyte. This solar cell device exhibited high power conversion efficiency as compared to bare photoanode solar cell devices. The enhanced power conversion efficiency of the cell ascribes the bilayer photoanode improved the electron transport and reduced the recombination of charge carriers at photoanode/dye/electrolyte interface.

1. Introduction

In the increasing global energy crisis, it is necessary to develop new materials and processing methods in the field of photovoltaic. Dye sensitized solar cell (DSSC) is an alternative to conventional silicon based solar cell devices for sustainable energy growth [1,2]. The most essential components of the DSSC are transparent nanocrystalline metal oxide electron collecting layer (photoanode), sensitizer, electrolyte and counter electrode. The power conversion efficiency (PCE) of the DSSC depends on the nature of photoanode materials, sensitizer and electrolyte. The photoanode material should have a suitable band energy gap, particle size, porosity, surface morphology and film thickness. Titania is a well-known semiconductor photocatalyst, which has better chemical and electrical properties. In DSSCs, a better PCE have been achieved for the anatase TiO_2 nanoparticles (TNPs) photoanodes owing to admirable optoelectronic nature, the suitable energy band with different sensitizers and electrolytes [3]. The sensitizer should absorb the visible and infrared region of the solar radiation. Also, the LUMO energy level of the sensitizer must equal or above the conduction band of the photoanode [4]. To attain efficient power conversion in DSSCs, the electron collecting layer of the photoanode must have a suitable band gap arrangement with sensitizing dye for assisting fast electron transport and charge extraction. As well, the recombination of charge carriers should be reduced at the interface of the photoanode/sensitizer/electrolyte and enable swift electron transport at the photoanode surface. Till date, one of the most significant shortcomings of lower PCE of the DSSC is the recombination of charge carrier taking place at the photoanode/dye/electrolyte interface. During the illumination of light, the excited electrons in the conduction band of the photoanode may be recombined with the oxidized sensitizer or the redox couple of the electrolyte. Hence, the quantity of electrons in the photoanode decreases, consequently the DSSC has a lesser value of PCE. This problem can be resolved by employing a bilayer structure in the photoanode film [5–7]. The bilayer structure creates an energy barrier between the photoanode and sensitizer, which can reduce the recombination of charge carriers at the photoanode/dye/electrolyte interface [8,9]. In the present work, combination of TNPs and TNRs (TiO_2 nanosticks) was used for the photoanode preparation with the Nb_2O_5 coating. These two metal oxides form a bilayer structure in the photoanode. The charge recombination can be reduced at the photoanode/dye/electrolyte interface by surface modification of the photoanode. The surface modification in the photoanode can be achieved by applying a thin layer of Nb_2O_5 over the TiO_2 surface, which acts an effective blocking layer in the solar cell devices. The distinctive properties of Nb_2O_5 are wide optical band gap, a high refractive index and low absorption in the visible & near infrared spectral regions [10–12].

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Studies in Indian Place Names
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"A STUDY OF POLITICAL IMPACT AND POLICIES ON FINANCIAL INCLUSION."

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Annamalai University,
Dr. Godage Dattatray Sitaram.
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Nashik.

Abstract.

The quest of providing accessibility to financial services at an affordable cost to all individuals in the nation is the concept of **'financial inclusion'**. Reserve Bank of India first released a formal definition of financial inclusion in 2008 and after that various researchers have tried to explain the concept.

Lets understand the basic operation and services offered by the Commercial Bank.

Keeping money safe while also allowing withdrawals when needed.

Issuance of cheque books so that bills can be paid.

Provide personal loans, commercial loans, and mortgage loans (typically loans to purchase a home, vehicle, property or business).

Issuance of credit cards and processing of credit card transactions and billing.

Issuance of debit cards for use as a substitute for cheques.

Allow financial transactions at branches or by using automatic teller machines (ATMs).

Provide wire transfers of funds and electronic fund transfers between banks.

Facilitation of standing orders and direct debits, so payments for bills can be made automatically.

Provide overdraft agreements for the temporary advancement of the bank's own money to meet monthly spending commitments of a customer in their current account.

Provide internet banking system to facilitate the customers to view and operate their respective accounts through internet.

Accepting the deposits from customer and provide the credit facilities to them.

Sell investment products like mutual funds, Share Trading Etc.

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Our Heritage
(UGC Care Journal)
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A PILOT STUDY ON NON-VOTING BEHAVIOUR IN INDIA, STATE MAHARASHTRA WITH SPECIFIC TO NASHIK DISTRICT'.

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Abstract.

In a democracy , Voting is a basic process that keeps the Nations Government System work. India is a vibrant Democracy. It enables citizen to choose their own Government. It also allows the people to choose their representatives in the Government. The purpose of Government is to develop and implement various policies for the benefit of its citizens.

Voting Behaviour pertains to the actions or inactions of citizens in respect of participating in the elections that take place for members of their local, regional, or National Governments. The behaviour results either in support for political candidates or parties or abstention from the voting process.

The behaviour of a voter is influenced by several factors such as religion, caste, movie Stars, community , language, ideology, purpose of the polls, extent of franchise and the like political parties and groups make use of these variables for the sake of winning the battle of the ballot box.

Many people even decide to vote for a particular leader or particular party without analysing the ability of the candidate. The enthusiasm and competition among candidates to get party tickets for contesting shows the prominence of political parties in also determining the voting behaviour in India.

In 2019, the total Indian General Election expenditure for the Election process is approximately 6.5 Billion USD. But still almost 34% of Voting Population is not participating in the Election Voting Process. A study of these 34% non-voting people's behaviour may help us to understand for taking necessary steps which helps in increasing the Voting percentage.

Objectives.

The objective of this Research is to study the Non-Voting Behavior of the people.

The Primary Data Collection method used in this Research Paper.

A simple questionnaire was used to collect the necessary data.

We are trying to understand the basic reasons of Non Voting which in turn will help us in leading the next Research for more involvement of people in Election Voting process in the coming years.

Key Words.

Qualitative, Democracy, Questionnaire, Election, Participation, Parliament, Voting Behavior, Results, Electorate, Election Commission, Psephologists, ballot box

Introduction.

Psephology is a branch of Political Science that deals with the statistical analysis of elections and polls. People who practice psephology are called Psephologists.

Psephologists have put forward competing theories of voting behaviour to explain why people vote the way they do. Once such model is the Sociological Model of voting behaviour and is closely related to the Party Identification Model of voting behaviour.

Indian Voting Population is comprising of 60% youngsters less than 35 years of age. The attitudes and orientations that affect voting behaviour are related to a number of social and demographic characteristics. Thus, social groups differ in their voting patterns.

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A STUDY ON COMPARISON OF VOTING BEHAVIOR OF UNITED STATES OF AMERICA, UNITED KINGDOM & INDIA

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Abstract.

US is the World's oldest democracy. The 1788–89 United States presidential election was the first quadrennial presidential election. It was held on December 15, 1788 to Saturday, January 10, 1789, under the new Constitution ratified in 1788. GeorgeWashington was unanimously elected for the first of his two terms as president, and John Adams became the first vice president. This was the only U.S. presidential election that spanned two calendar years (1788 and 1789).

The Parliament of the United Kingdom of Great Britain and Northern Ireland, commonly known as the **UK Parliament, British Parliament or Westminster Parliament**, as well as domestically simply as Parliament or Westminster, is the supreme legislative body of the United Kingdom, the Crown dependencies and the British Overseas Territories. India was ruled by Great Britain for almost 200 years. India's Bicameral Parliamentary System was mostly inspired and derived from United Kingdom Parliamentary System.

India is the World's largest democracy. The Indian general election of 1951–52, held from 25 October 1951 to 21 February 1952, was the first election to the Lok Sabha since India became independent in August 1947. The 1st Lok Sabha lasted its full tenure of five years and was dissolved on 4 April 1957. First Session of the Lok Sabha commenced on 13 May 1952.Total Lok Sabha seats were 489 and total eligible voters were 173 million.

In 2019 Indian General Election, about 900 million people were eligible to vote and voter turnout was over 67 per cent – the highest ever as well as the highest participation by women voters.

The comparison of these three above mentioned democracies will help us to understand the Voting behavior and non-Voting behavior of the people. Just a few percentage of Votes could have the turned the results of Election in the either way. The Country's History in-making could have changed.

Objectives.

My Objective of this Research Paper is to Study on the comparison the Voting percentage to Non-Voting percentage of the United States of America, United Kingdom and India.

Secondary Data Research Methodology is used.

Key Words

Democracy, Election, Participation, Parliament, Voting Behaviour, Bicameral, Results, Recession,

Electorate, Election Commission, Ballot Box, Women Voters, Legislative body, President,

Introduction

The basic question which creeps the mind is what is the cost of these Elections and whether the result of these Elections are the 'True Reflection' of the people. Whether the People who are not participating in the Voting Process also influencing the Results.

About $6.5 billion was spent during the U.S. presidential Elections in 2016, according to OpenSecrets.org, which tracks money in American politics. India has also spent around the same amount of money for conducting such large scale elections in 2019. During first Indian election in the year 1952, Indian citizens over the age of 21 were eligible to vote, around 173m voters. Both Female and Male can franchaisee their Vote, unlike in England only Men were eligible to Vote till the Year 1928. Around 85% of the Indian population could not read or write. This widespread illiteracy posed a challenge to the Indian Election commission in organizing the election. This was overcome by allotting each candidate a differently-coloured ballot box at the polling booth, on which each candidates name and symbol were written. 16,500 clerks were appointed on a contract of 6 months to type and collate the electorate rolls and 380,000 reams of paper were used for printing the rolls.

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SECULARISM IN INDIA AND ITS INDIAN CONTEXT : A OVERVIEW

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Abstract:

Secularism teaches spirit of tolerance, catholicity of outlook, respect for each other's faith and willingness to abide by the rules of self-discipline. A state is called "secular" when it has no official established religion and it does not discriminate among its citizens on the basis of religion. India, a secular and world's largest democratic state, terrorizing Muslim minorities in India as well as held-Kashmir. Muslim actors and actresses have married to their Hindu counterparts under the aegis of secularism and democracy. The concept of secularism arose in India as a reaction of nationalist forces to the sordid tactics of some communal forces which wanted to divide India on religious basis and gain the political mileage.

Key words:

The Constitution of India, Legislation on Change of Religion, Religion And State In India, Modernity, conclsion.

Indrotuction:

Though Jews faced discrimination for centuries throughout Europe, in the present state of Israel, Arab minorities, both Christian and Muslims, are excluded from social, political and economic benefits available to Jewish citizens. Subtle forms of discrimination also continue to persist against non-Christians in several parts of Europe. The condition of religious minorities in the neighbouring states of Pakistan and Bangladesh has also generated considerable concern. Such examples remind us of the continuing importance of secularism for people and societies in today's world.

When different cultures and communities exist within the same country, how should a democratic state ensure equality for each of them? This is the question that emerged in the previous chapter. In this chapter we will try and see how the concept of secularism may be applied to answer that concern. In India, the idea o secularism is ever present in public debates and discussions, yet there is something very perplexing about the state of secularism in India. On the one hand, almost every politician swears by it. Every political party professes to be secular.

The goals of this article are similarly threefold. First, I will argue that regardless of the various ways secularism can be implemented a the levels of constitutional decree or daily practice there is only one way we can make sense of th term itself, and that is to understand it a referencing both the nonestablishment of a stat religion and the desire to keep religion and stat separate.2 While I acknowledge that secularisr in practice will perforce look different everywher in this first section I hope to establish tha secularism in principle must remain a constant we are to retain conceptual clarity for the term The second section of the article asks whether, light of this conceptual precision, India is a secul state—and answers that, increasingly, it is not. Th third and final section proposes that (Constitue Assembly debates and the Forty-Secor Amendment notwithstanding) India was nev meant to be a strictly secular state, for whic choice there were good and reasonable ground

The English word 'secular' comes from th Latin 'saeculum', which means 'an age' or 'th

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A Digital Court monopolization of the facilities in Indian judicature and new judicial culture in Covid period

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Abstract:

During this period of Covid 19, the time has come to make fundamental changes in how we pursue digital work in India and ensure that the judicial system continues uninterrupted and the rule of law is upheld. Covit-19, which has captured the entire world, has no doubt shocked prosecutors, lawyers, judges and judicial administrators. It will empower empowered legal professionals across the country to provide efficient services to those in need at drastically reduced costs.

The Hon'ble Supreme Court on April 6, 2020 passed a number of guidelines for the extensive use of video-conferencing for judicial proceedings in all courts across the country. The Hon'ble Supreme Court of India also took an initiative in this regard and issued guidelines and accepted video-conferencing for the matters of inquiry listed for final arguments. However, we have to admit some failures during this period as e-court planning has not been successfully completed in the district courts and lower courts. From an Indian perspective, it will already be developing e-courts, which will allow judges and lawyers to conduct proceedings through video-conferencing. E-courts need proper, efficient and fair management. E-records must be legally formatted. They must act in accordance with well-announced rules. The courts enforce the rule of law and there is no other way of protection for the community. Any circumstance that denies a citizen access to justice will have serious consequences for the rule of law. In these articles I suggested my positives by quickly moving to online courtrooms.

Objectives: It's all analysing the current position in Indian e-Govern and E-Court monopolization of the facilities in Indian judicature and new judicial culture in Covid period development and its present issues.

Keywords: E-Court, cases, trial, Supreme Court, E-Governance, digitalisation, Judiciary, Covid-19, Challenges on trial Court, development of E-filing

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STOCHASTIC MODEL FOR EXPECTED TIME USING GENERALIZED EXPONENTIAL DISTRIBUTION

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Abstract - ***Alcohol intake is a modifiable lifestyle factor that may affect prostate cancer risk. Alcohol alters the hormonal milieu and contains chemical substances such as flavonoids (red wine), which may alter tumor cell growth.. Alcohol is causally connected to cancers of the esophagus, kidney, larynx, lung, mouth etc. During this study, a non-linear system of differential equations is used to model the dynamics of a population, which incorporates alcoholic. The parameters of the model are obtained from data revealed by cancer institute's, health and government organizations. The typical variety of people United Nations agency become alcoholic associated with the reduction of this average by an education program are determined.***
Keyword: ***Prostate cancer, alcohol, Tumor growth, Expected lifetime, statistical modeling.***

I. INTRODUCTION

Prostate cancer is the most commonly diagnosed malignancy and the second leading cause of cancer deaths after lung cancer in United States men. Although age, ethnic origin and a positive family history of prostate cancer have been established as important risk factors for prostate cancer, its etiology is largely unknown. Migration studies have shown that prostate cancer incidence rates in immigrants moving from lower to higher incidence areas tend to shift toward the rates of the higher incidence country. The shift may be partly due to differences in screening and detection methods in different countries, but it also suggests a prominent role for environmental factors in the etiology of prostate cancer. The worldwide PCa burden is expected to grow to 1.7 million new cases and 499 000 new deaths by 2030 simply due to the growth and aging of the global population.

Environmental factors suspected to be associated with the risk of prostate cancer include diet (intake of fat, vegetables and fruits, dairy products and certain micronutrients and vitamins), occupation, smoking, alcohol consumption, sexual and physical activity, hormonal levels (androgens and estrogens), and body size. These factors are thought to influence the multi-step process of tumor promotion and progression either by acting directly in a causative pathway or indirectly, by acting on genes mediating disease susceptibility. Suggested indirect mechanisms are regulation of hormone level or regulation of metabolism of carcinogenic substances. Considering the slow growing character of most prostate cancers, environmental factors could presumably affect the course of the disease over a long time and in different phases of the disease process.

One environmental factor of interest is alcohol use, because especially heavy use clearly increases the risk of cancers of the oral cavity, larynx, pharynx and possibly other cancers. Inconsistent results have been reported, however, with regard to consumption of various levels and types of alcohol and the subsequent risk of prostate cancer.

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Development Of Hybrid Queuing Model

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Abstract- In modelling of parallel and distributed systems, the most successful implementation in many areas is Jackson networks. As the Jackson networks couldn't be applied for systems in which the constraints of population size are considered, the prediction of performance with the changes of a system is remained as an open question. The steady state systems with exponential service centers and the discipline of FCFS queuing are assumed in the Jackson networks product-form solution. Based on the integration of M/M/2 with M/M/1 models that are tested on open Jackson network, the model of Hybrid queuing is improved in this paper. Specifically, the presentation of Hybrid priority has been done. In the open Jackson network, some processes are having the implementation of a first-come-first-served discipline and other processes are considered a priority discipline. The reduction of waiting time will be achieved with the inclusion of more urgent concerns. Without compromising on the sacrifice for lower-priority classes, the proposed model of pooling and prioritizing customer class is provided effective outcome in minimization of waiting times for higher-priority classes.

Keywords: *M/M/1, M/M/2, Hybrid model, Jackson network.*

I. INTRODUCTION

Theory of queuing is one of the branches in mathematics and it studies and models the queue lines waiting process [1].The structure, models and the implementation of tail theory are discussed shortly in this paper. The M / M/1 standard is a queuing method, with an independent and exponential distribution of intercom and service times with one server [2]. The server serves customers on a standard M/M/1 system, when customers are available on the system one by one. If no customer exists on the system, the server becomes idle. As queue is not existed, the customer is moved into service instantly if a customer reaches the system during an idle period. From the current active server, a new client couldn't be removed during a busy time but it should have to wait for server in the queue.

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A Case Study of Queuing Model in a Restaurant

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ABSTRACT: **This study aims to show the queuing theory of the stochastic model that applied in a practical scenario. Collected data from a famous restaurant in Tirupatur. The various performance measures as utilization rate, waiting time queue length and probability of potential customers to back based on the data have been studied balk using little's formulae. Study in one way is helpful to increase the quality of service in the restaurant by anticipating many customers in the queue; on the otherhand the restaurant can set a target profit that should be achieved on daily basis. By our numerical value we have shown mathematically that the service time is should be improved in preventing customers balking and competitive restaurant. The study gives more significance than the simulation models.**

Keywords: **Simulation models, Little's theorem, Poisson distribution, utilization factor.**

I. INTRODUTION

The study of waiting lines is one of the oldest and most widely used quantitative analysis techniques, waiting lines are an everyday occurrence, affecting people shopping for groceries buying gasoline, making a bank deposit, or waiting on the telephone for the first available airline reservations to answer. The word queue comes via French and the Latin cauda meaning "tail". Queuing theory is also known as the theory of overcrowding; it is the branch of operations research.

Waiting lines are common phenomenon in restaurants especially during lunch and dinner time. On Saturday and Sundaya huge congestion of customers has been observed in most of the familiar restaurants of the big cities. Restaurants would avoid losing their customers due to a long wait on the line.

Various researches have already used queuing theory to model the restaurant operation. Most of these researchers have applied simultaneous approach in restaurant operation. Bromn&kulick (2002), Farahm and Mortinez (1996).Curin, vosko, etal (2005) made an attempt in reducing cycle time in a busy fast food restaurant. Kharwat(1991) attempt was to increase the through put and efficiency through computer simulation in a fast food restaurant. Rust (2008) estimated cycle time and cost using little's formula. Whyte & Starks (1996) investigated a decision tool for restaurant managers. Dharmbirya& Erwin (2011) studied numerical model for a Raja Rani Residency at Tirupatur. In our study, we presented the applications of queuing theory in Stochastic environment in a real case situation using mathematical formulae by obtaining data from a famous Raja Rani Residency at Tirupatur.

The main objective of our study is to reduce the waiting line and maximize the profit. For this porpose the performance measures like the expected queue length, that the servers are idle and the probability that the server's busy time are needed.

II.LITTLE'S FORMULA

In queuing theory was developed by D. C. Little (1966). Little related the steady state mean system sizes to the steady state average customers waiting times.

Where

T_q → Time a customer spends waiting in queue prior to entering service

T_s → Total time a customer spends in the system

S → Service time T

T_q and S are random variables

By Little's formula

Thus it is necessary to find only one of the four expected value measures, in view of Little's formula & the fact that

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Expected Time Using Alpha–Poisson Distribution Under Stochastic Model

S. Jothimanickam & P. Pandiyan

ABSTRACT - Today, cigarette smoking causes 85 percent of lung cancer deaths. Cigarette smoking is causally connected to cancers of the cervix, bladder, oesophagus, lung, mouth, kidney, abdomen and pancreas. During this study, a non-linear system of differential equations is used to model the dynamics of a population, which incorporates smokers. The parameters of the model are obtained from data revealed by cancer institute's, health and government organizations. The typical variety of people United Nations agency become smokers associated with the reduction of this average by an education program are determined.

Index Terms- Lung cancer, Smoking, Tumour growth, Expected lifetime, statistical modelling.

1. INTRODUCTION

Cancers remaining that most important killer among all cancers within the world. It kills additional individuals of each gender than the cancers of breast, colon and prostate combined, and more women than breast cancer. An amazing majority of cases is expounded to exposure to Polycyclic Aromatic Hydrocarbons (PAH), like benzo pyrene, within the tobacco smoke; however, genetic predisposition also plays a major role. A comprehensive random model of lung cancer ought to involve genetic and behavioral determinants of susceptibility, the progression of the disease from precursor lesions through early-localized tumors to disseminated disease, detection by varied modalities, and medical intervention. The model ought to be ready to predict mortality reduction caused by early detection programs, below completely different situations, in presence of competitive death causes. It will be necessary to utilize the genetic indicators of condition to lung cancer to define the high-risk behavior population (smokers). Cigarette smoking is that the single greatest preventable risk issue for mortality and morbidity. According to a 2004 surgeon General report, cigarette smoking is causally linked to cancers of the bladder, cervix, esophagus, kidney, larynx, lung, mouth, pancreas, and stomach. Furthermore, there exists a causative relationship between smoking and coronary heart disease, cerebrovascular disease, coronary artery disease, various respiratory diseases and a number of other reproductive maladies. 440,000 deaths are attributed to smoking within the United States annually. Health problem from smoking is calculable to feature $157 billion annually to national health expenditures. In short, a 2004 united states Surgeon General Report on smoking concludes by stating: Smoking harms nearly each organ of the body, inflicting several diseases and reducing the health of smokers generally. Smoking is that the leading preventable cause of death within the United States. In the United States alone, 44.5 million adults, or 20.9% of the adult population, were smokers in 2004. The foremost tragic consequence is that the 440,000 annual premature deaths because of smoking. Different consequences include, however do not seem to be restricted to, $75.5 billion smoking related medical expenditures and $92 billion in mortality related annual productivity losses. Worldwide, smoking related mortality is about to rise from 4.9 million annually to ten million by 2030. Smoking may be a major explanation for an outsized variety of diseases, together with cancers of the respiratory organ, larynx, mouth, pharynx, esophagus, pancreas, and bladder as coronary cardiovascular disease, stroke and chronic obstructive pulmonary disease (COPD). Although the prevalence of adult smoking within the united states born from 42.4% in 1965 to 25.5% in 1990, progress has been low since the 1990s (26.5% in 1992, 24.7% in 1995, and 23.3% in 2000). This is often part due to high rates of relapse following quit tries among smokers. This is often revealed by the actual fact that the prevalence of bring to an end within the united states accumulated from 24.3% in 1965 to 49.6% in 1993 and then flattened to 48.8% in 2000. Surveys show that top smoking prevalence is a minimum of partly because of high rates of relapse among smokers World Health Organization attempt quitting. A major problem once learning addiction behavior is that participants generally build many quit attempts before they with success quit. Thus, for economic development, targeting, and analysis of interventions, it is necessary to differentiate transient cessation (temporarily smoking-free however relapse later) from permanent cessation (lifelong smoking-free) and establish the chance factors related to permanent cessation. Our objectives are to identify and quantify baseline factors related to success of permanent smoking cessation and describe the complete stochastic nature of the smoking addiction pattern. With in the remainder of this section, we have a tendency to describe the dataset, covariates, and modeling strategy to attain these objectives. There has been a recent progress in lung cancer detection techniques. Computed tomography (CT) allows the visualization of terriblytiny nodu les within the lungs and thus it is the potential to detect malignant tumors after they still are in associate early stage. It detects in the main peripheral tumors, an oversized proportion of that is

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ORIGINAL ARTICLE

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Assessing the Infant Breastfeeding experience of Women in Cuddalore District of Tamilnadu, India

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Breastfeeding,
Social support,
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Infants,
Lactating mothers

ABSTRACT

Breastfeeding is useful for both the mother and child, and it is known as an effective method to reduce childhood morbidity and mortality. This study intended to reveal the infant breastfeeding experience of women in Cuddalore district, Tamilnadu, India, as well as to explore the problems from breastfeeding among them. A Qualitative study design was adopted, and 20 breastfeeding women in the Pediatric ward of Rajah Muthiah Medical College & Hospital (RMMCH), Cuddalore district, Tamilnadu, India were selected using purposive sampling. Data on demographic variables, physical and social dimensions of breastfeeding mothers were collected using a semi-structured interview schedule and analyzed using descriptive statistics. Results showed that 95% of mothers had no previous education about breastfeeding. All the selected mothers had experienced latching difficulty and burping problem and also received adequate family support from their mother and relatives. Other breastfeeding difficulties such as lack of milk secretion, pain over the breast, breast engorgement, headache, fatigue and disturbed sleep were also identified among mothers. All 20 mothers did not participate in any social gathering about breastfeeding. This study revealed the difficulties faced by mothers in physical and social dimensions and recommended the need for social initiatives to encourage breastfeeding.

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INTRODUCTION

Breastfeeding is an effective way that provides the best nutrition for a baby in the first six months of

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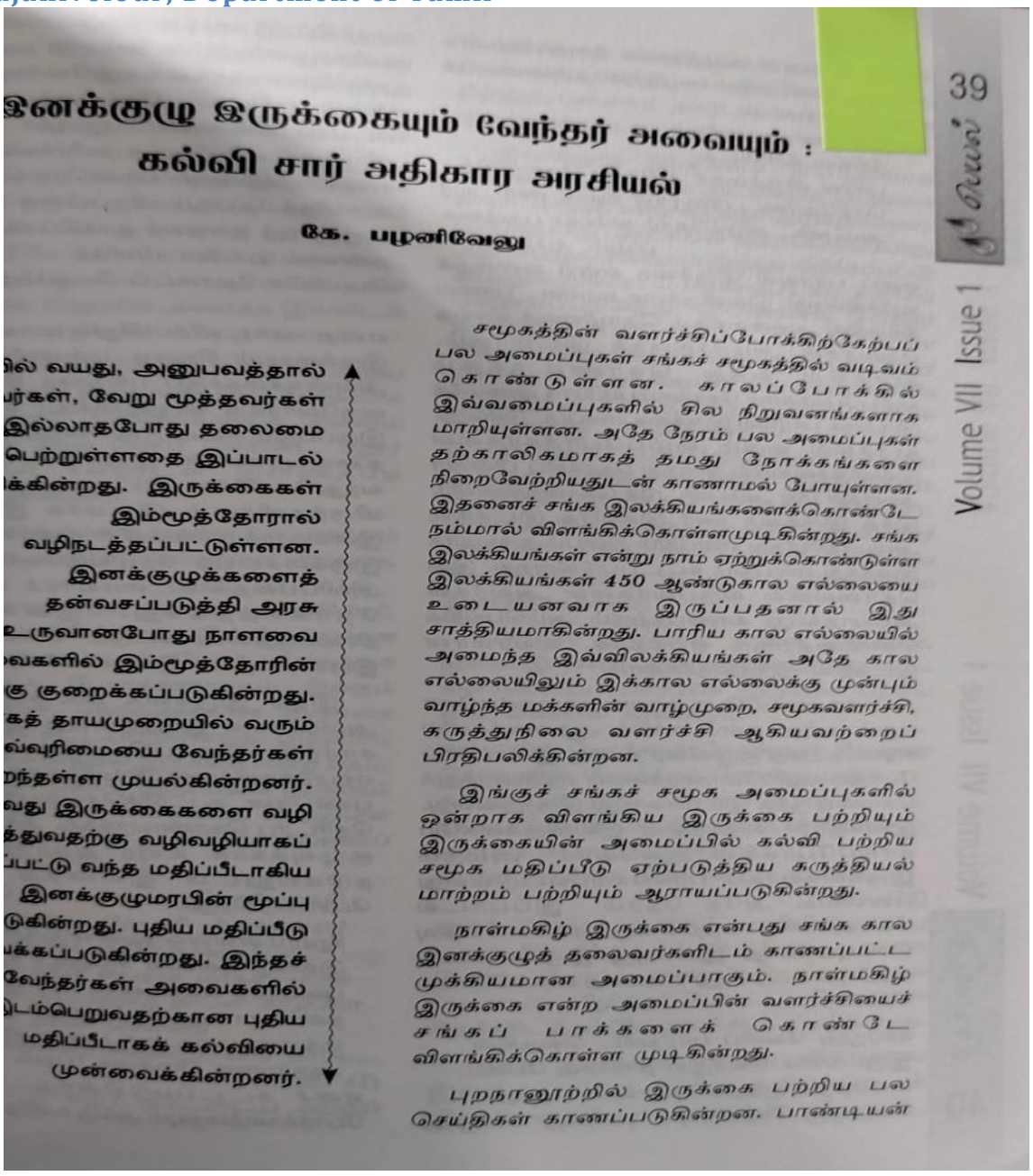

இனக்குழு இருக்கையும் வேந்தர் அவையும் :
கல்வி சார் அதிகார அரசியல்

கே. பழனிவேலு

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சமூகத்தின் வளர்ச்சிப்போக்கிற்கேற்பப் பல அமைப்புகள் சங்கச் சமூகத்தில் வடிவம் கொண்டுள்ளன. காலப்போக்கில் இவ்வமைப்புகளில் சில நிறுவனங்களாக மாறியுள்ளன. அதே நேரம் பல அமைப்புகள் தற்காலிகமாகத் தமது நோக்கங்களை நிறைவேற்றியதுடன் காணாமல் போயுள்ளன. இதனைச் சங்க இலக்கியங்களைக்கொண்டே நம்மால் விளங்கிக்கொள்ளமுடிகின்றது. சங்க இலக்கியங்கள் என்று நாம் ஏற்றுக்கொண்டுள்ள இலக்கியங்கள் 450 ஆண்டுகால எல்லையை உடையனவாக இருப்பதனால் இது சாத்தியமாகின்றது. பாரிய கால எல்லையில் அமைந்த இவ்விலக்கியங்கள் அதே கால எல்லையிலும் இக்கால எல்லைக்கு முன்பும் வாழ்ந்த மக்களின் வாழ்முறை, சமூகவளர்ச்சி, கருத்துநிலை வளர்ச்சி ஆகியவற்றைப் பிரதிபலிக்கின்றன.

இங்குச் சங்கச் சமூக அமைப்புகளில் ஒன்றாக விளங்கிய இருக்கை பற்றியும் இருக்கையின் அமைப்பில் கல்வி பற்றிய சமூக மதிப்பீடு ஏற்படுத்திய கருத்தியல் மாற்றம் பற்றியும் ஆராயப்படுகின்றது.

நாள்மகிழ் இருக்கை என்பது சங்க கால இனக்குழுத் தலைவர்களிடம் காணப்பட்ட முக்கியமான அமைப்பாகும். நாள்மகிழ் இருக்கை என்ற அமைப்பின் வளர்ச்சியைச் சங்கப் பாக்களைக் கொண்டே விளங்கிக்கொள்ள முடிகின்றது.

புறநானூற்றில் இருக்கை பற்றிய பல செய்திகள் காணப்படுகின்றன. பாண்டியன்

ில் வயது, அனுபவத்தால்
ர்கள், வேறு மூத்தவர்கள்
இல்லாதபோது தலைமை
பெற்றுள்ளதை இப்பாடல்
க்கின்றது. இருக்கைகள்
இம்மூத்தோரால்
வழிநடத்தப்பட்டுள்ளன.
இனக்குழுக்களைத்
தன்வசப்படுத்தி அரசு
உருவானபோது நாளவை
வகளில் இம்மூத்தோரின்
கு குறைக்கப்படுகின்றது.
கத் தாயமுறையில் வரும்
வ்வுரிமையை வேந்தர்கள்
றந்தள்ள முயல்கின்றனர்.
வது இருக்கைகளை வழி
த்துவதற்கு வழிவழியாகப்
ப்பட்டு வந்த மதிப்பீடாகிய
இனக்குமுமரபின் மூப்பு
டுகின்றது. புதிய மதிப்பீடு
க்கப்படுகின்றது. இந்தச்
வேந்தர்கள் அவைகளில்
டம்பெறுவதற்கான புதிய
மதிப்பீடாகக் கல்வியை
முன்வைக்கின்றனர்.

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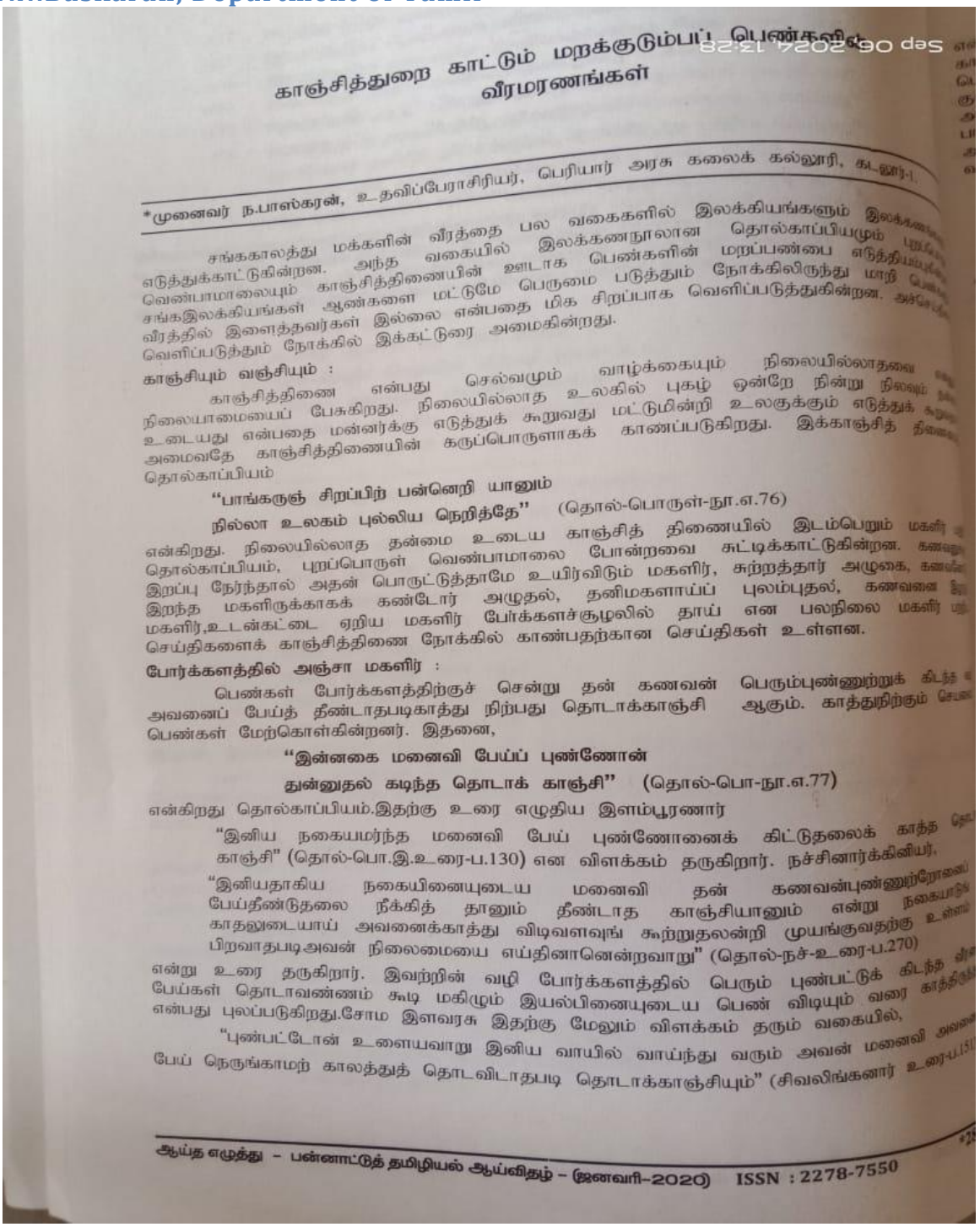

காஞ்சித்துறை காட்டும் மறக்குடும்பப் பெண்களின் வீரமரணங்கள்

*முனைவர் ந.பாஸ்கரன், உதவிப்பேராசிரியர், பெரியார் அரசு கலைக் கல்லூரி, கடலூர்-1.

சங்ககாலத்து மக்களின் வீரத்தை பல வகைகளில் இலக்கியங்களும் இலக்கணங்களும் எடுத்துக்காட்டுகின்றன. அந்த வகையில் இலக்கணநூலான தொல்காப்பியமும் புறப்பொருள் வெண்பாமாலையும் காஞ்சித்திணையின் ஊடாக பெண்களின் மறப்பண்பை எடுத்தியம்பியுள்ளன. சங்கஇலக்கியங்கள் ஆண்களை மட்டுமே பெருமை படுத்தும் நோக்கிலிருந்து மாறி பெண்களின் வீரத்தில் இளைத்தவர்கள் இல்லை என்பதை மிக சிறப்பாக வெளிப்படுத்துகின்றன. அச்செய்தியை வெளிப்படுத்தும் நோக்கில் இக்கட்டுரை அமைகின்றது.

காஞ்சியும் வஞ்சியும் :

காஞ்சித்திணை என்பது செல்வமும் வாழ்க்கையும் நிலையில்லாதவை நிலையாமையைப் பேசுகிறது. நிலையில்லாத உலகில் புகழ் ஒன்றே நின்று நிலவும் உடையது என்பதை மன்னர்க்கு எடுத்துக் கூறுவது மட்டுமின்றி உலகுக்கும் எடுத்துக் கூறுவதே அமைவதே காஞ்சித்திணையின் கருப்பொருளாகக் காணப்படுகிறது. இக்காஞ்சித் திணை தொல்காப்பியம்

"பாங்கருஞ் சிறப்பிற் பன்னெறி யானும்
நில்லா உலகம் புல்லிய நெறித்தே" (தொல்-பொருள்-நூ.எ.76)

என்கிறது. நிலையில்லாத தன்மை உடைய காஞ்சித் திணையில் இடம்பெறும் மகளிர் தொல்காப்பியம், புறப்பொருள் வெண்பாமாலை போன்றவை சுட்டிக்காட்டுகின்றன. கணவன் இறப்பு நேர்ந்தால் அதன் பொருட்டுத்தாமே உயிர்விடும் மகளிர், சுற்றத்தார் அழுகை, கணவன் இறந்த மகளிருக்காகக் கண்டோர் அழுதல், தனிமகளாய்ப் புலம்புதல், கணவனை இழந்த மகளிர்,உடன்கட்டை ஏறிய மகளிர் பேர்க்களச்சூழலில் தாய் என பலநிலை மகளிர் மற்ற செய்திகளைக் காஞ்சித்திணை நோக்கில் காண்பதற்கான செய்திகள் உள்ளன.

போர்க்களத்தில் அஞ்சா மகளிர் :

பெண்கள் போர்க்களத்திற்குச் சென்று தன் கணவன் பெரும்புண்ணுற்றுக் கிடந்த அவனைப் பேய்த் தீண்டாதபடிகாத்து நிற்பது தொடாக்காஞ்சி ஆகும். காத்துநிற்கும் செயலை பெண்கள் மேற்கொள்கின்றனர். இதனை,

"இன்னகை மனைவி பேய்ப் புண்ணோன்
துன்னுதல் கடிந்த தொடாக் காஞ்சி" (தொல்-பொ-நூ.எ.77)

என்கிறது தொல்காப்பியம்.இதற்கு உரை எழுதிய இளம்பூரணார்

"இனிய நகையமர்ந்த மனைவி பேய் புண்ணோனைக் கிட்டுதலைக் காத்த தொடாக் காஞ்சி" (தொல்-பொ.இ.உரை-ப.130) என விளக்கம் தருகிறார். நச்சினார்க்கினியர்,

"இனியதாகிய நகையினையுடைய மனைவி தன் கணவன்புண்ணுற்றோனை பேய்தீண்டுதலை நீக்கித் தானும் தீண்டாத காஞ்சியானும் என்று நகையாடு காதலுடையாய் அவனைக்காத்து விடிவளவுங் கூற்றுதலன்றி முயங்குவதற்கு உள்ளம் பிறவாதபடிஅவன் நிலைமையை எய்தினானென்றவாறு" (தொல்-நச்-உரை-ப.270)

என்று உரை தருகிறார். இவற்றின் வழி போர்க்களத்தில் பெரும் புண்பட்டுக் கிடந்த வீரன் பேய்கள் தொடாவண்ணம் கூடி மகிழும் இயல்பினையுடைய பெண் விடியும் வரை காத்திருந்து என்பது புலப்படுகிறது.சோம இளவரசு இதற்கு மேலும் விளக்கம் தரும் வகையில்,

"புண்பட்டோன் உளையவாறு இனிய வாயில் வாய்ந்து வரும் அவன் மனைவி அவனை பேய் நெருங்காமற் காலத்துத் தொடவிடாதபடி தொடாக்காஞ்சியும்" (சிவலிங்கனார் உரை-ப.151)

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REPRODUCTIVE CYCLE OF THE FRESHWATER LOACH LEPIDOCEPHALICHTHYS THERMALIS FROM THE RIVER THAMIRABARANI, TIRUNELVELI, SOUTH INDIA.

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INTRODUCTION

Lepidocephalichthys thermalis (Valenciennes) is a small, burrowing shallow-water tropical cobitid fish species of economic importance in Tamil Nadu. The fish is hardy, sensitive to minor changes in the environment and at the same time can adjust well under laboratory conditions. Despite its small size (upto 7.5 cm) it is considered to be very nutritious. These highly valued food fish are brought to the market in live condition and sold. Being a burrowing fish, *Lepidocephalichthys thermalis* use less energy for maintenance compared to other fish species.

Most of the bonny fishes reproduce in a cyclical or seasonal phenomenon and spawning occurs only during a particular stage of the reproductive cycle. Some of the fishes breed annually, and some breed at regular intervals throughout the year (Mollah, 1986). The annual reproductive cycle and spawning season of a fish can be easily determined by studying the reproductive and body indices such as gonadosomatic index (GSI) Nelson *et al,* (2018), condition factor (K), fecundity, and length at first maturity (Lp_{50}), hepatosomatic index (HSI), length and weight-frequency relationship and sex-ratio (Marcano *et al.* (2007), Sarkar *et al.* (2012), and Gupta and Banerjee (2013).

The weight and size of the gonads vary seasonally as well as at various stages of development which is used to study the sexual maturation in fishes (Delgado and Herrera, 1995; Wootton and Smith (2015)). In order to understand the energy allocation and energy stored in liver it is essential to study the seasonal ovarian and biochemical changes with regard to reproduction (Patil and Kulkarni, 1994).

Fecundity is an indicator of the reproductive potential of a fish (Maia *et al.,* 2013). The estimation of fecundity and its relationship with the body measurements give an idea about the clutch size of the fish species (Hossain *et al.*, 2012; Adebiyi, 2012; Wootton and Smith, 2015). Typically, increased fish size is associated with increased fecundity, and presumably smaller eggs increase the potential for high clutch size (Marcano *et al.* (2007), Sarkar *et al.* (2012), and Gupta and Banerjee (2013)). The highest fecundity indicates the spawning peak of the fish. Yet another parameter essential to identify the reproductive strategy of a fish species is size at first maturity. It indicates the maturity stage of the male and female fish, and is useful to ascertain the breeding months of the species (Marshall, 1979). Usually seasonal morphological studies are carried out to analyze the relationships between the reproductive features with relevance to seasonal sexual changes and individual variations (Katano, 1990). The sex-ratio of the population is analysed to find out whether it deviates significantly from the hypothetical distribution of 1:1 or not (Marcano *et al.* 2007). The preponderance and synchronized activity of females and males during spawning are also revealed through sex-ratio (Katano, 1990).

The onset of maturation and synchronization of spawning in tropical waters are associated with the monsoon rains, and the cyclic development of gonads is influenced by photoperiod and temperature (Marcano et al., 2007; Maia *et al.*,2013). Effects of seasonal cycles on fish, in particular on their reproductive biology, have been studied by many authors (Pen *et al.*, 1993; Marcano et al. (2007), Sarkar et al. (2012), Gupta and Banerjee (2013)).

So in the present study, seasonal changes in various reproductive traits such as gonadosomatic index (GSI), condition factor, relative abundance of fish stages, fecundity, mean egg size (MES), size at first maturity, length and weight-frequency distribution of adult fish, and sex-ratio were analyzed to determine the exact spawning season and annual reproductive cycle of *Lepidocephalichthys thermalis* in relation to the seasonal climatic changes. Formerly the chosen fish was *Lepidocephalus thermalis* but now it is renamed as *Lepidocephalichthys thermalis.*

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English Textbook Evaluation at Higher Secondary Level – A Study

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ABSTRACT

In this study the researcher focused on the Evaluation of English Language Textbook at Higher Secondary Level. The evaluation process is made on the students who are studying in the select schools in and around Thiruvannamalai district. The major objective of the study is to assess the quality of the textbook by using personal variables such as male and female students, and locality of the students. Institutional variables such as types of schools, type of school management, and medium of study. Research variable is textbook evaluation.

Quantitative Survey method was adopted in this study. Some 200 Students from 04 schools in Thiruvannamalai district who are studying in XI standard have been taken as the samples. The questionnaire taken for Students which covered the two major sections (General Attributes and Teaching Learning Content) of the textbook. The researcher used the standardized questionnaire which was vetted by Jayakaran Mukundan, Reza Hajimohammadi, Vahid Nimehchisalem, (2011)[4], and to collect the data. The findings are: There is no significant difference between Students who are studying Eleventh Standard in respect to Gender, Type of School, Type of School Management, and Locality. And there is significant difference in medium of study in respect to their English Textbook.

Key Words: Textbook Evaluation, Quantitative Method, Variables, General Attributes, and ELT Content.

INTRODUCTION

Textbook plays an important role in the language curriculum. It serves as a rich source of topics, texts, visuals and language as well as helps to form syllabus of the course, and tends to define and limit

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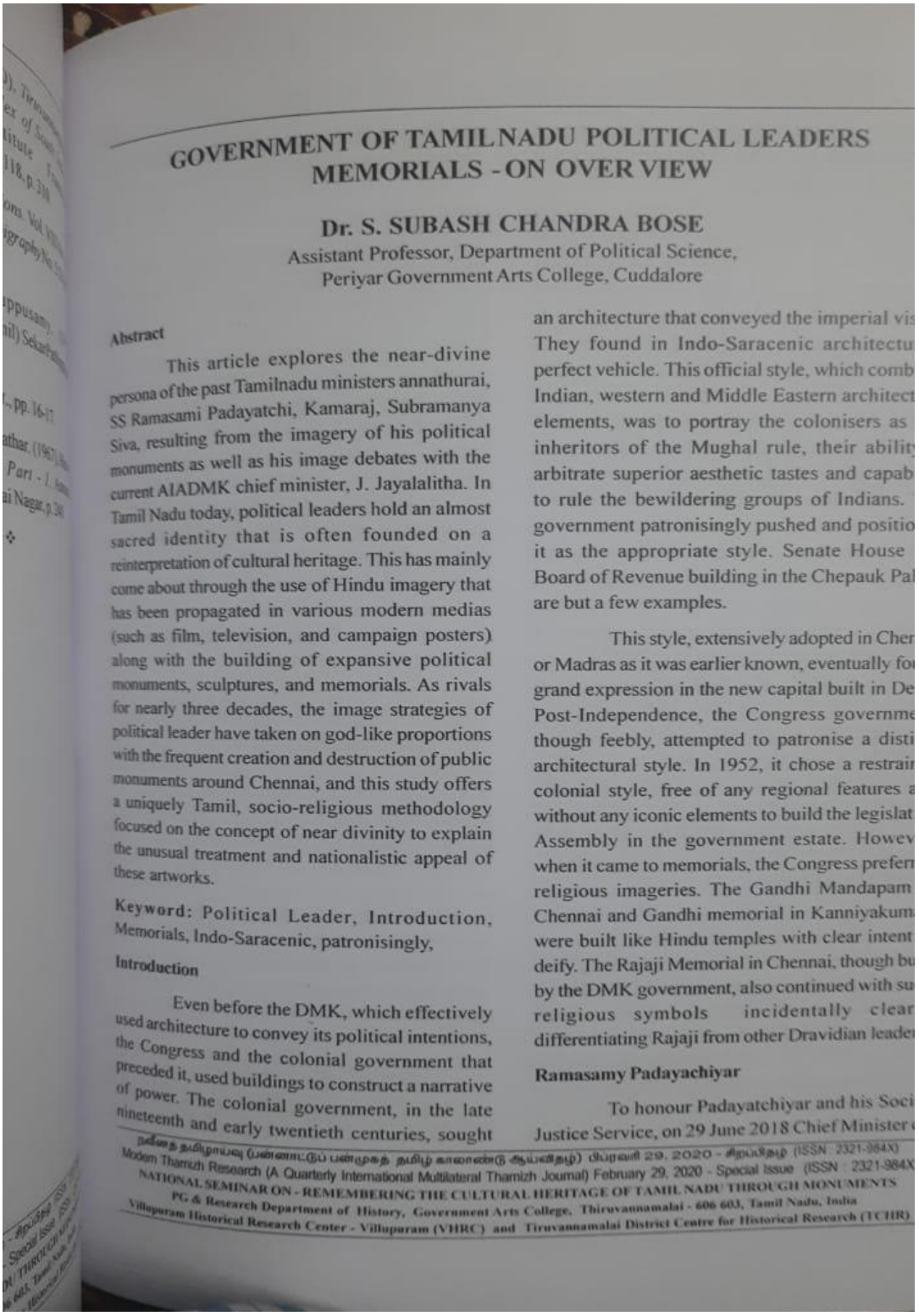

GOVERNMENT OF TAMILNADU POLITICAL LEADERS MEMORIALS - ON OVER VIEW

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Abstract

This article explores the near-divine persona of the past Tamilnadu ministers annathurai, SS Ramasami Padayatchi, Kamaraj, Subramanya Siva, resulting from the imagery of his political monuments as well as his image debates with the current AIADMK chief minister, J. Jayalalitha. In Tamil Nadu today, political leaders hold an almost sacred identity that is often founded on a reinterpretation of cultural heritage. This has mainly come about through the use of Hindu imagery that has been propagated in various modern medias (such as film, television, and campaign posters) along with the building of expansive political monuments, sculptures, and memorials. As rivals for nearly three decades, the image strategies of political leader have taken on god-like proportions with the frequent creation and destruction of public monuments around Chennai, and this study offers a uniquely Tamil, socio-religious methodology focused on the concept of near divinity to explain the unusual treatment and nationalistic appeal of these artworks.

Keyword: Political Leader, Introduction, Memorials, Indo-Saracenic, patronisingly,

Introduction

Even before the DMK, which effectively used architecture to convey its political intentions, the Congress and the colonial government that preceded it, used buildings to construct a narrative of power. The colonial government, in the late nineteenth and early twentieth centuries, sought an architecture that conveyed the imperial vi They found in Indo-Saracenic architectu perfect vehicle. This official style, which comb Indian, western and Middle Eastern architect elements, was to portray the colonisers as inheritors of the Mughal rule, their abilit arbitrate superior aesthetic tastes and capab to rule the bewildering groups of Indians. government patronisingly pushed and positio it as the appropriate style. Senate House Board of Revenue building in the Chepauk Pal are but a few examples.

This style, extensively adopted in Cher or Madras as it was earlier known, eventually fo grand expression in the new capital built in De Post-Independence, the Congress governme though feebly, attempted to patronise a disti architectural style. In 1952, it chose a restrai colonial style, free of any regional features a without any iconic elements to build the legislat Assembly in the government estate. Howev when it came to memorials, the Congress prefer religious imageries. The Gandhi Mandapam Chennai and Gandhi memorial in Kanniyakum were built like Hindu temples with clear intent deify. The Rajaji Memorial in Chennai, though bu by the DMK government, also continued with su religious symbols incidentally clear differentiating Rajaji from other Dravidian leade

Ramasamy Padayachiyar

To honour Padayatchiyar and his Soci Justice Service, on 29 June 2018 Chief Minister

நவீனத் தமிழாய்வு (பன்னாட்டுப் பன்முகத் தமிழ் காலாண்டு ஆய்விதழ்) பிப்ரவரி 29, 2020 - சிறப்பிதழ் (ISSN : 2321-984X)
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Research Article

APPLICATION OF HAMMETT EQUATION ON SPECTROSCOPIC DATA OF SOME ARYL SULPHONAMIDES

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ABSTRACT

Some N-(4-Chloro-1-naphthyl) substituted benzene sulphonamides have been synthesized by Ultrasound assisted condensation of 4-chloro-1-naphthylamine with various benzene sulfonyl chlorides in ethanol medium in room temperature. Infrared and NMR spectra of these sulphonamides were recorded. From the infrared spectra the SO_2 and NH vibrations (ν, cm^{-1}) were assigned. From the NMR spectra, the chemical shifts (δ, ppm) of NH protons and C-N carbons were assigned. These data were correlated with Hammett equation and various electronic effect coefficients through regression analysis. From the statistical analysis findings, the prediction of influence of electronic effects on the above functionalities in the sulphonamides was discussed.

Keywords: N-(4-chloro-1-naphthyl) substituted benzene sulphonamides, Ultrasonication, Hammett equation.

1. INTRODUCTION

Sulphonamides are the organo nitrogen-sulphur compounds containing -SO_2-NH- moieties between alkyl-alkyl or alkyl-aryl or aryl-aryl groups. They possess numerous pharmaceutical and medicinal activities illustratively ideal sulpha drugs, antibacterial, antifungal, and antioxidants [1-3]. Hammett QSAR and QPR linear relationships are very useful for analyzing the influence of substituents on the functional groups of the compounds through statistical single and multi-regression analysis [4-6]. This analysis was studied from the spectral data or kinetic data or equilibrium constants or medicinal or pharmaceutical data with Hammett electronic coefficients through both single and multi-regression equations [7, 8]. Infrared functional vibrations such as NH, SO_2 and NMR chemical shifts were subjected to investigate this study. Thirunarayanan and his co-workers investigated the regression analysis of functional group vibrations and NMR chemical sifts of various organic substrates. Recently, Muthuvel et al., [9] have predicted the electronic effects on the spectral functionalities on 4-(substituted phenyl sulphonamide) benzoic acids and they observed satisfactory and poor correlation coefficients. Complete literature inspection reveals that there is a non-accountable report visible for this type of investigations with N-(4-chloro-1-naphthyl) substituted benzene sulphonamides. Hence, authors engaged and exerted for analyzing the electronic effects of substituents on the spectral functionalities of said compounds by preparing and recording IR and NMR spectras.

2. MATERIALS AND METHODS

2.1. General

Chemicals employed in this investigation were procured from Sigma-Aldrich Chemical company. The melting points of the sulphonamides were determined in open capillaries method. The Shimadzu spectrophotometer in KBr disc was utilized for recording infrared spectra. The Bruker AV 400 and 500 spectrometers were employed for recording NMR spectra of all sulphonamides in DMSO solvent using TMS as standard. Thermo Finnigan CHN analyzer was used for finding the micro analysis of all sulphonamides.

2.2. Typical procedure for synthesis of N-(4-chloro-1-naphthyl) substituted benzene sulphonamides

An equimolar quantity of 4-chloro-1-naphthylamine and various substituted benzene sulfonyl chlorides, 20 mL of ethanol and 0.5 mL of 1M sodium acetate were Ultrasonicated (CITIZEN Ultrasonicator, 120W, 40Hz, 240V, Ac) for 8-15 minutes at the room temperature (Scheme 1).

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Conformational study of some 3t, 5t-Dimethyl -*N*-nitroso-2r, 6c-diarylpiperidin-4-one oximes using NMR spectra

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Conformation

ABSTRACT

Stereochemistry of 3t,5t-Dimethyl-*N*-nitroso-2r,6c-*bis*(o-chlorophenyl) piperidin-4-one oxime (**1**) and 3t,5t-Dimethyl-*N*-nitroso-2r,6c-*bis*(*p*-chlorophenyl) piperidin-4-one oxime (**2**) has been studied using ^1H, ^{13}C and two-dimensional NMR spectra. Analysis of the spectral data shows that both the compounds seem to exist largely in boat conformations with one aryl group in the flagpole position and also among the two methyl groups one is in axial and other one is in equatorial orientations. Analysis on the reported spectral data on 3t-alkyl-*N*-nitroso-2r,6c-diphenylpiperidin-4-one oximes suggests that these compounds largely exist in boat conformations with one phenyl group in the flagpole position. Chair conformation with axial substituents may contribute and their order of stability depends on the nature of alkyl substituent at C-3. The relative populations of the conformations have been supported by the observed vicinal coupling constants and NOEs in their NOESY spectra.

1. Introduction

NMR spectroscopy has been used as a powerful tool in studying the conformations of six-membered ring compounds in solution [1–8]. Vicinal proton–proton coupling constants have been widely used in deriving information about the conformations of heterocyclic compounds [1–7]. 2r,6c-Diarylpiperidin-4-ones [4] and their oximes [5] have been shown to exist largely in chair conformation with equatorial orientations of the substituents.

Substituted piperidines adopt chair conformation with equatorial orientations of the bulky substituents because in these compounds nitrogen is in sp^3-hybridized state and adopts tetrahedral geometry. However, in *N*-acyl piperidines and *N*-nitrosopiperidines the nitrogen of the piperidine ring should be in sp^2-hybridized state so that there could be resonance between the nitrogen lone pair and the p-electrons of the CO or NO group. Hence, in *N*-acylpiperidines and *N*-nitrosopiperidines the nitrogen of the piperidine ring should adopt trigonal planar geometry. In such cases there will be a steric interaction between the *N*-nitroso group and the adjacent equatorial substituent (Fig. 1). This interaction introduces a strain in the molecule called $A^{1,3}$ strain. This $A^{1,3}$ strain is relieved in chair conformation with axial orientations of the substituents and in boat conformation with one substituent in the flagpole position (Fig. 2). (see Figs. 3–5)

Indeed several conformational studies [2,3,7,9–15] have been made on such compounds. This subject has been reviewed [16]. *N*-acyl-2r,6c-diphenyl-piperidin-4-ones oximes [20] *N*-nitroso-2r,6c-diphenyl-piperidin-4-ones oximes [21] have been analysed in detail in terms of their conformational behaviour in solution. In *N*-nitroso compounds [13–15,21] there is complication due to the observation of separate signals for syn and anti forms. This is due to a higher energy barrier for rotation of N–NO moiety. In order to understand the conformational behaviour of the more complex *N*-nitroso compounds it is desirable to study some more substituted

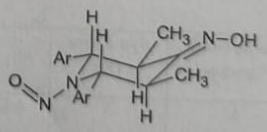

Fig. 1. $A^{1,3}$ strain in chair conformation with equatorial substituents.

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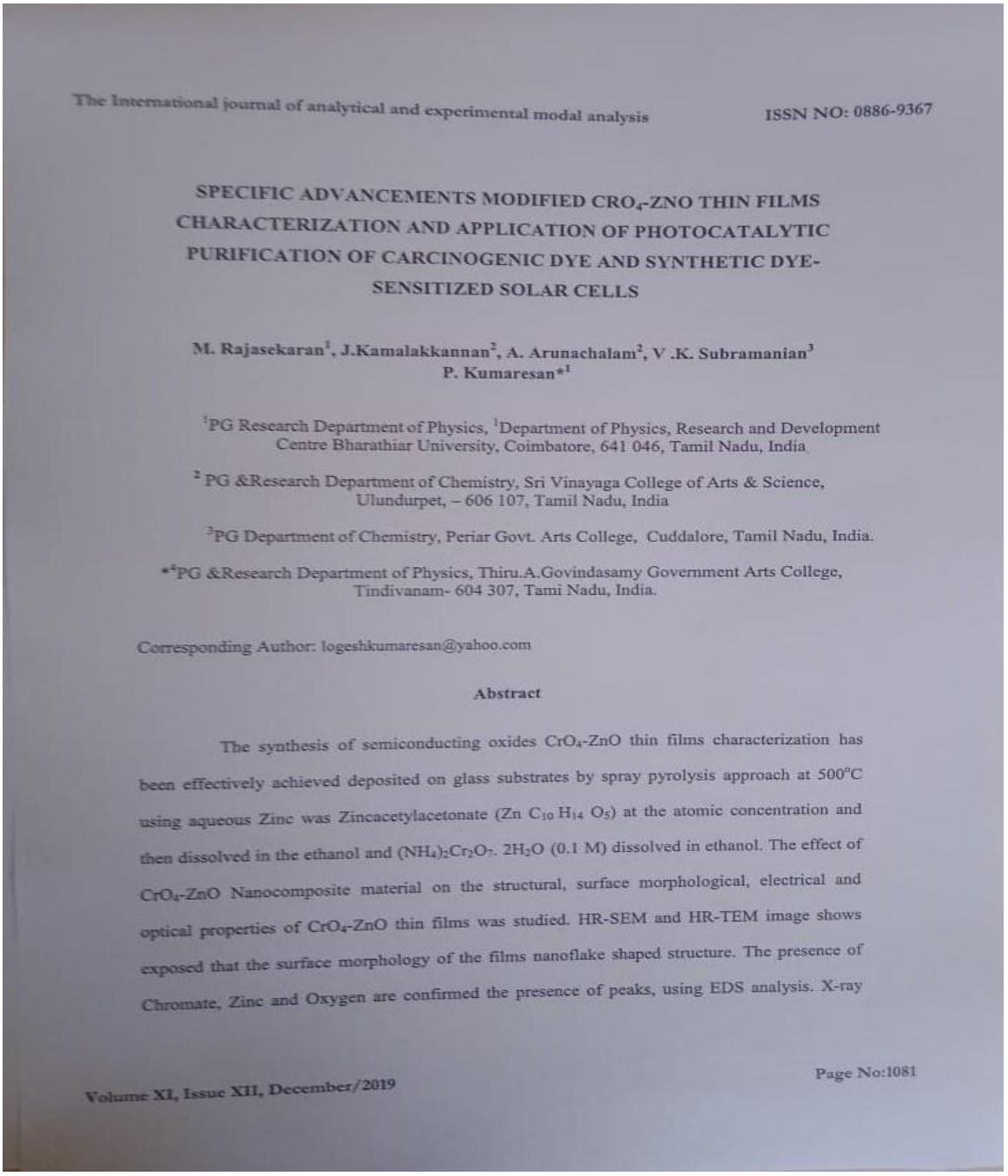

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SPECIFIC ADVANCEMENTS MODIFIED CRO_4-ZNO THIN FILMS CHARACTERIZATION AND APPLICATION OF PHOTOCATALYTIC PURIFICATION OF CARCINOGENIC DYE AND SYNTHETIC DYE-SENSITIZED SOLAR CELLS

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Abstract

The synthesis of semiconducting oxides CrO_4-ZnO thin films characterization has been effectively achieved deposited on glass substrates by spray pyrolysis approach at 500°C using aqueous Zinc was Zincacetylacetonate (Zn $C_{10}H_{14}O_5$) at the atomic concentration and then dissolved in the ethanol and $(NH_4)_2Cr_2O_7$. $2H_2O$ (0.1 M) dissolved in ethanol. The effect of CrO_4-ZnO Nanocomposite material on the structural, surface morphological, electrical and optical properties of CrO_4-ZnO thin films was studied. HR-SEM and HR-TEM image shows exposed that the surface morphology of the films nanoflake shaped structure. The presence of Chromate, Zinc and Oxygen are confirmed the presence of peaks, using EDS analysis. X-ray

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Quality of Service Analysis on Wrp and DSR Protocols in Mobile Ad-Hoc Network

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Abstract: In recent years' mobile ad hoc networks became highly regarded and plenty of analysis is being done on totally different aspects of MANET. Mobile ad hoc Networks (MANET)-a system of mobile nodes (laptops, sensors, etc.) interfacing while not the help of centralized infrastructure (access points, bridges, etc.). There are totally different aspects that are taken for analysis like routing, synchronization, power consumption, information measure issues etc. This paper concentrates on routing techniques that is that the most difficult issue because of the dynamic topology of ad hoc networks. There are totally different methods projected for economical routing that claimed to produce improved performance. There are totally different routing protocols projected for MANETs that makes it quite troublesome to work out that protocol is appropriate for various network conditions. There are various different routing protocols and it is difficult to choose routing protocol for different situations as there is tradeoff between various protocols. This system provides a summary of routing protocols projected in literature and conjointly provides a comparison between WRP and DSR. The result of the protocols helps to analysis the performance of the routing protocols on MANET with TCP.
Keywords: MANET, DSR, AODV, NS-2.

I. INTRODUCTION

MANET stands for collection of mobile nodes [1] connected by wireless links. MANET is an ad-hoc network which doesn't require any infrastructure support for carrying data packets between two nodes. Mobile hosts are communicating with each other without any central coordinator and it can dynamically change the location of the network at any time. Mobile ad-hoc networks are working in distributed environment. Examples of MANET's are networks from building-to-building, vehicle-to-vehicle, ship-to-ship, etc.,

Figure 1. Manet Architecture

1.1 Challenges In Manet

In MANET, [2] there are many challenges are facing the network.

- Energy saving
  - It gives only a limited amount energy saving facility available in MANET.
- Limited Bandwidth
  - The bandwidth provided by a MANET is limited.
- Transmission Error
  - The transmission errors are generally large due to the lack of centralized administrator.

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Enhancement of TCP/IP Performance Through Split Mechanism in 4G Wireless Networks

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Abstract: Nowadays the impact of 4G mobile services through mobile carriers are a considerable phenomenon due to our vast data accessing features and capability through feasible providers. Wireless systems are a composition of autonomous domains, which are most probably open and dynamic. Wireless network mobile systems handle large number of users, who are frequently changeable, and different domains have their own policies. The existing identity based wireless models are open and flexible. Delay and missing packets for distributed control have unfortunately not extended well to resource access-control policies and wireless network communication mechanism. This paper deals with the issues raised by TCP/IP performance measures such as number of users, protocols, applications, network elements in a wireless topological constraints, and functionality expectations. The proposed enhancement method is a unification approach with the unique individual implementation towards the fine tuning of TCP/IP performance improvements. The results and discussions of our proposed method lead to the implementation of enhancement of TCP/IP performance mechanism in wireless networks.

Index Terms: TCP/IP, Wireless, Networks, performance, Enhancement

I.INTRODUCTION

The most common network protocol used on the internet is the Transmission Control Protocol [1], or TCP. TCP uses a "congestion window" to determine how many packets it can send at one time. The larger the congestion window size, the higher the throughput. The TCP "slow start" and "congestion avoidance" algorithms determine the size of the congestion window [3]. The maximum congestion window is related to the amount of buffer space that the kernel allocates for each socket [4]. For each socket there is a default value for the buffer size, which programs can change by using a system library call just before opening the socket. For some operating systems there is also a kernel-enforced maximum buffer size [6]. You can adjust the buffer size for both the sending and receiving ends of the socket. To achieve maximum throughput, it is critical to use optimal TCP socket buffer sizes for the link you are using. If the buffers are too small [2], the TCP congestion window will never open up fully, so the sender will be throttled. If the buffers are too large, the sender can overrun the receiver, which will cause the receiver to drop packets and the TCP congestion window to shut down [8]. This is more likely to happen if the sending host is faster than the receiving host. An overly large window on the sending side is not a big problem as long as you have excess memory [10].

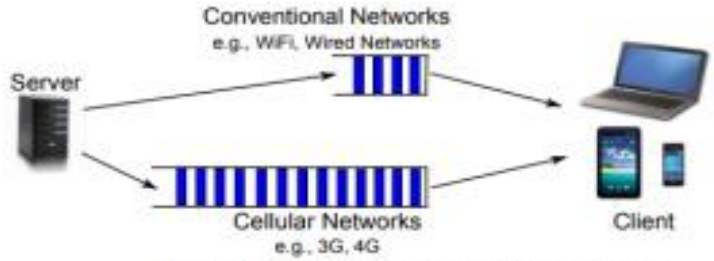

Figure-1.1:3G/4G-Wireless Mobile network data transmission

II. METHODOLOGY REQUIREMENT

Performance Issue:

Performance does not focus on the size alone but also improving the local autonomy by delegating functionality to end nodes has led to effective wireless networks. Performance and feature distribution control are not enhanced well in the past for wireless network access-control policies and mechanisms. Moreover network security management is becoming an increasingly challenging problem, due to widening measures such as number of users, protocols, applications, network elements, topological constraints, and expected functionalities. The upgraded wireless network system must be implemented, deployed and applied in a manner such that the network management, maintenance and operational costs do not increase as the number of wireless system components (users, applications, policies and enforcement points) increases [9].

The final Upgradation for the Enhanced TCP/IP performance consists of the following requirements,

1. Feasible architecture for TCP/IP.
2. Handling wireless network Administrative Complexity [7].
3. Modifications in Bandwidth Management.
4. Safety and Secured access for proper utilization of wireless network resources [5].

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Optimized Link Level Snoop State Transfer for TCP/IP Performance Tuning in Recent Wireless Networks

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Abstract:
The exponential growth of wireless communication in which the next generation is in the exciting state of optimized 4G/5G mobile communication strategies. Development in the communication medium towards the multiplicity of devices is never an achievement until the quality of communication must be ensured by both the users and the wireless service providers. The TCP/IP performance tuning plays a vital role in the efficient communication mode in any wireless networking system. Due to the latest emergence of wireless technologies, apart from Splitting strategies the TCP/IP performance tuning will be handled by the proper focusing on the Data Link layer level solution proceeding to the care on network layer transmissions. This paper deals with the Link level snoop state transfer on base stations for TCP/IP performance tuning. The proposed optimization method is a heuristic approach with the unique individual implementation towards the fine tuning of TCP/IP performance improvements. The results and discussions of our proposed methodology lead to the optimized intensification in TCP/IP performance tuning for next generation wireless networks.

Index Terms: Mobile, Wireless networks, TCP/IP, Performance and Optimization

1. Introduction

The recent mobile devices not only handle voice but also with the Data, such that the data comprises the Surfing, Email, Application, and Video call, File transfers, AV downloads etc. Maintaining the customer satisfaction by the service provider in this subsequent years are very tedious and serious issues in the near future unless they follows certain nomenclatures in their transmission technologies[8].The challenges associated with providing service guarantees are numerous, but the biggest challenge for traditional networks has been congestion. However, many more challenges exist for wireless and mobile networks above those in traditional networks [10]. For this reason, a completely different set of QoS techniques are required for wireless networks than for wired networks. The Mobile network service architecture and role of QoS are represented in Figure 1.1 and Figure 1.2 respectively.

Figure 1. Mobile Network Service Architecture

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Feedback Based Congestion Control For TCP/IP Performance Enhancement in Wireless Networks

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Abstract: The growth of wireless network services and service providers directly proportional to the immense requirement of shared resource accessing feature among the wireless service consumers. wireless network systems are a mixture of autonomous network domains, which are always open and dynamic. Wireless network systems treats large number of users with its services, who are often changeable, and different domains has their individual policies. The existing identity based wireless network models are not scalable, closed, infeasible and inflexible. TCP/IP performance tuning in next generation wireless networks is a heuristic process to handle it with proper care due to the immense effect and exponential quantification. This paper deals with the feedback based congestion control for TCP/IP performance enhancement in wireless networks. The proposed enhancement method is a unification approach with the unique individual implementation towards the fine tuning of TCP/IP performance improvements. The results and discussions of our proposed method lead to the implementation of enhancement of neuro fuzzy based TCP/IP performance improvement in wireless network computing.

Index Terms: **Wireless network, TCP/IP, Feedback, Performance, Enhancement**

I.INTRODUCTION

A *service* is an implementation of well defined functions that are able to interact with other functions. The *service oriented architecture* (SOA) is composed of a set of services that can be realized by technologies such as the web services [4].

A *domain* can be defined as a protected computer environment, consisted of users and resources under an access control policy. The collaboration which can be established among domains leads to the formation of a virtual organization.

A *user* in a Wireless network environment can be a set of user identifiers or a set of invoked services that can perform on request one or more operations on a set of resources. Furthermore, we identify two types of users. These are the resource requestor and the resource provider [9]. The former type of user acts like a resource access or usage requestor, and the latter type of user acts like a provider of its own sharable resources. All users are restricted by the policies enforced in their participating domains and virtual organization [6].

A *resource* in a Wireless network environment can be any sharable hardware or software asset in a domain and upon which an operation can be performed [5].

Access control's role is to control and limit the actions or operations in the Wireless network system that is performed by a user on a set of resources. In brief, it enforces the access control policy of the system, and at the same time it prevents the access policy from subversion. Access control in the literature is also referred to as access authorization or simply authorization [2].

A Wireless network *access control policy [3]* can be defined as a Wireless network security requirement that specifies how a user may access a specific resource and when. Such a policy can be enforced in a Wireless network system through an *access control mechanism*. The latter is responsible for granting or denying a user access upon a resource. Finally, an *access control model* can be defined as an abstract container of a collection of access control mechanism implementations [8], which is capable of preserving support for the reasoning of the system policies through a conceptual framework [1]. The Wireless network service architecture is represented in Figure 1.1.

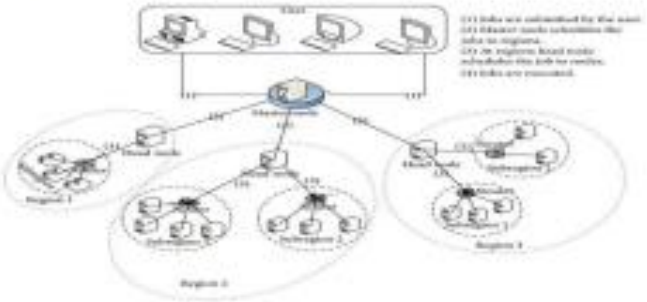

Figure 1.1: Wireless network Service Architecture [10]

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A HYBRID APPROACH FOR IMPROVING ACCESSIBILITY IN DATA GRID ENVIRONMENT USING DYNAMIC REPLICATION AND CONSISTENCY METHODS

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ABSTRACT

Data Grid is a geographical-based distributed environment that deals with the extensive data-oriented applications. Data replication is used for reducing the data access latency and managing effective processing of huge data in the distributed environment. This research work presents a hybridized Modified Dynamic Hierarchical Replication Algorithm (MDHRA) and Efficient Replica Consistency Model (ERCM) for the data grid environment. The location of the best file replica is chosen based on the data transfer time, storage access latency, replica requests in the queue and distance between the nodes in the data grid environment. The ERCM model requires minimum execution time for the reading and writing operations that ensures high data availability. The main contributions of the ERCM approach are optimal allocation of replica and maintenance of the replica consistency. The experimental analysis shows that the combined approach requires minimum Effective Network Usage (ENU), storage usage, replication frequency, number of communications and maximum hit ratio than the existing replication techniques.

Keywords: data availability, data grid, data replication, dynamic hierarchical replication, effective network usage, replica consistency, replica management, replica placement.

1. INTRODUCTION

Nowadays, huge amount of data is generated around the world in the information technology enterprises, scientific field and engineering applications. Hence, management of large distributed data resources becomes more necessary. Data Grid is a solution for this issue. The grid can be classified as computational grids that require minimum data and data grids that deal with the applications that require analysis of the massive datasets [1-6]. Data grids combine a collection of distributed resources across the globe for enabling the users to share the data and computing resources [7].

A distributed system is a group of computing devices that appear as a single computing device to the users [8]. Two types of distributed system are grid and Peer-to-Peer (P2P). Grids can provide replication transparency that allows replication of software/data on multiple machines invisibly. In the P2P-based applications, data replication and caching are applied to improve the scalability and network performance. But, least attention has been paid to maintain the data consistency in the P2P systems [9]. In the P2P networks, data replication is a solution to ensure availability of a file when required and load-balance. Replica integrity is a main requirement. Hence, it is necessary to manage update of the replicas to maintain the consistency of the replicas and propagate the update messages containing information about the updates on the network [10]. The consistency of the replica is essential only in each peer. When a read or write operation is issued by a peer, the operation is performed to a replica held by the peer [11].

Though, the memory and storage size of the computers are increasing every year, there is a need to cope up with the request for storing huge data. Data replication is the process for managing enormous amount of data in the database by replicating the data stored in various replica sites. The main challenge is to decide the number of data replicas to be created and store the replicas. There is a need to develop new methods for creating the replicas that increase the availability without requiring unnecessary storage and bandwidth capacity. As it is highly expensive to maintain a huge number of data replicas, the number of data copies should be restricted. Apparently, finding a proper balance between the optimization of the access cost of the data requests and reduction of the replication cost is an important task. Each grid site has its own capabilities and characteristics. The process of selecting an appropriate site is an important decision. In the data grid environment, reduction in the turnaround time of job depends on the resource for assigning the job and location to obtain the required data files.

This paper presents a hybridized MDHRA-ERCM approach to improve the file access time. The MDHRA strategy maintains the valuable data replicas only and replaces the less significant replicas. The files are deleted when it is found that the free space is not sufficient for the new replica. Due to the storage space issue in the data grid environment, the size of replica is a valuable parameter in deciding whether the replica should be stored or not. But, the MDHRA approach does not address the replica consistency issues. To solve this issue, the ERCM is applied to maintain the consistency of replica. The main contributions of the ERCM approach are optimal allocation of replica and maintenance of the replica consistency. The aim of the ERCM approach is to reduce the job execution time in the data grid environment and ensure replica consistency.

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Kernel Induced Possiblistic Unsupervised Clustering Techniques in Analyzing Breast Cancer Database

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***Abstract*— The challenge in medical breast cancer database is to differentiate the sub types of cancers in the data. Analyzing the medical breast cancer database is most important one in identifying cancer types which cause deaths. Therefore in order to analyze the types of diseases in cancer databases this paper develops fuzzy set based unsupervised effective clustering technique and implements it with breast cancer database to divide it into available subtypes. This paper introduces the objective function of unsupervised effective proposed clustering technique by incorporating kernel induced distance, kernel functions, and possibilistic memberships. Through the experimental part of this paper the efficiency of proposed method is proved.**

***Keywords*— Clustering, Fuzzy C-Means, Kernel Distance, Breast Cancer Data**

I. INTRODUCTION

The main aim of this paper is to analyze the high dimensional Breast cancer database into the available subtypes of cancers. Breast cancer is one of the main leading causes of death among women since the last decades, the breast cancer is curable cancer types if it can be identified early[10]. Through the report of US for woman cancer accessed in September 2009, the death rate of breast cancer is higher than any other cancer, approximately 40,480 deaths among 182,460 diagnosed breast cancer cases. Early recognition of the types either cancerous or non-cancerous can help in the diagnosis of the disease for woman and it can help strongly to enhance the expectancy of survival. As per the World Health Organization the early diagnosis of the types of cancerous can reduce one-third of the cancer deaths[7]. High dimensional gene expression breast cancer database is considered as a best technique in analyzing the types of cancers [1]. Due to missing attributes and overlapping of objects, analyzing the types in high dimensional gene expression cancer database is considered as difficult task. Handling the missing attributes in gene expression databases with improper techniques can easily lead to biased outcome. Therefore design of an effective diagnosis model is an important issue in breast cancer data for finding available types of cancers. Researchers have introduced clustering based algorithms to analyze the available subtypes of cancers in breast database [2, 3, 5, 6, 11]. Clustering is an important and powerful tool in analyzing the large dimension of the databases in various data analyzing process[12, 26, 27] and it is capable of recognizing the unknown patterns in high dimensional database [5, 6, 8, 9]. The unsupervised fuzzy clustering technique is performed well in high dimensional medical databases for analyzing the available subtypes of diseases [11, 13, 14, 16, 17, 18]. The existed fuzzy clustering techniques are receiving low accuracy in analyzing high dimensional databases with heavy noise. Hence this paper introduces effective fuzzy clustering techniques by incorporating the fuzzy membership function, typicality of possibilistic c-means, weighted bias field information, and kernel distance functions into the objective function of fuzzy c-means. The proposed objective function finds successfully the relations between the centers and the objects in the breast cancer database which has missing attributes. The kernel induced distance of the proposed objective functions transforms the original lower dimensional pattern space into the higher dimensional feature space in order to obtain reliable membership to the object in the. The paper is organized as follows. Section 2 proposes the proposed method. Section 3 presents the experimental results on Breast cancer databases. Section 4 concludes the paper.

II. PROPOSED METHOD

A. Exponential Kernel Induced Fuzzy Possibilistic C-Means (EFPCM)

To evaluate correct feature of data substructure in clustering the high dimensional breast database, this subsection

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Effective kernel-based possibilistic fuzzy clustering techniques: analyzing cancer database

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S. R. Kannan, M. Siva, R. Devi, S. Ramathilagam & Mark Last

Abstract

This paper aims to present optimal clustering techniques for analyzing high-dimensional cancer databases with missing attributes and overlapped objects. Analyzing the high-dimensional database with missing values is considered as most difficult task, and so far, there is no optimal cluster technique available for clustering the cancer database. Therefore, this paper develops the effective fuzzy clustering techniques that incorporate Cauchy kernel induced distance, rudimentary centroids, possibilistic memberships, fuzzy memberships, and prototype equation. To reduce the computing time of algorithms, this paper introduces a method for finding reasonable initial cluster centers. Experimental results indicate that the proposed methods are suitable for the breast cancer databases with missing attributes, and the results indicate that the methods outperform in clustering the databases into available subclasses.

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Title

DISPERSION OF SOLUTE WITH CHEMICAL REACTION IN BLOOD FLOW.

Authors

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Abstract

A mathematical model is developed to study the influence of an externally applied magnetic field and chemical reaction on the flow characteristics of blood in the presence of mild stenosis. The equations of momentum are solved under appropriate boundary conditions using Hankel transform. Taylor's dispersion model [17] is used to obtain dispersion of solute in blood flow. The effects of various parameters entering into the problems are discussed numerically and explained graphically.

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Research Article

PADDY GROWTH ANALYSIS AND DISEASE PREDICTION USING FUZZY LOGIC CONTROLLER SYSTEM

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Abstract

Agriculture is the primary source of livelihood for about 60% of Indian population. Indian agriculture needs set of solutions for improvisation of both the farmers and the agricultural land. Agriculture contributes only 16% GDP for the country but it is the largest sector for employment. Apart from economy, Indian agriculture needs sustainable, efficient, technical and mainly productive farming. In this project, Paddy is taken as the field to be improvised. Paddy is categorized as 3 different varieties. Using the basic parameters of an agricultural land has membership function inputs such as temperature, humidity, sunlight and soil moisture, the respective membership outputs viz., water irrigation, plant growth and plant diseases are to be found. Membership functions come under the concept of fuzzy logic. Fuzzy logic basically uses membership functions to determine outputs for all calculations. Using IR cameras, plant growth can be easily monitored and analysed. Using this technique, basic necessities of an agricultural land can be satisfied and is also useful for productive farming. The main concentration of this idea is based on the cultivation of three different varieties of paddy.

Keywords: Agriculture, Fuzzy logic, Rule base, MATLAB, disease prediction, irrigation, paddy, sensors.

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Structural, optical, mechanical and dielectric property studies of adduct single crystal 2,4,6-trinitrobenzene-1,3-diol-2-methylimidazole: A spectroscopic and theoretical approach

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ABSTRACT

A novel single crystals of 2,4,6-trinitrobenzene-1,3-diol-2-methylimidazole were synthesized by slow solvent evaporation method. Single crystal X–ray diffraction technique has been utilized to elucidate the crystal structure of the grown crystal. The vibrational modes of various functional groups were identified by the FT-IR spectral analysis. UV–Visible study was performed to analyze the optical transparency by identifying the cut–off wavelength and it is found to be 210 nm of the crystal. Second harmonic generation efficiency of the crystal was evaluated by using Kurtz–Perry powder technique. Thermal behavior of the crystal has been studied using TG/DTA analysis. Vicker's microhardness test was carried out to examine the mechanical strength of the crystal. The value of work hardening coefficient is 1.17 asserting that the grown crystal belongs to soft material category. Optimized structural geometry, vibrational wavenumbers, frontier molecular orbitals energy, chemical reactivity indices and density of states were also computed using DFT method. The Fukui function was also carried out to investigate the reactive nature of the TNDMI molecule. Nonlinear optical property of the molecule was explored by the first–order hyperpolarizability calculation. These experimental and theoretical studies reveal that the molecule can be suitable to use in optoelectronic devices.

1. Introduction

The delocalized electronic structure of π-conjugated system having much potential, exclusively for their adoption in high nonlinearities, optical storage mechanism, optical communication, optical signal processing, frequency amplification and electro optic modulation [1–8]. The magnitude of the optical property in crystal depends on strength of the donor–π–acceptor system. 2,4,6-trinitrobenzene-1,3-diol is an analog of the picric acid and it is also known as styphnic acid or trinitroresorcinol. Styphnic acid consists of three nitro (electron-withdrawing) and two hydroxyl (electron-donating) groups is an exceptional option to act as a Lewis acid. It has been reported that the intramolecular hydrogen bonding interactions are absent in most of the picrate salts [9] and picric acid derivatives are interesting candidates, due to their existence of phenolic –OH and nitro groups enhances the formation of salts with various organic compounds such as *N,N*-dimethylanilinium picrate [10], 3-methyl anilinium picrate [11], 2-chloroanilinium picrate [12], anilinium picrate [13], *p*-toluidinium picrate [14] and 8-hydroxyquinolinium picrate [15]. In the synthesis process of some organic compounds and their utilization in the fields such as agrochemicals, pharmaceuticals, dyes, photographic emulsions, adhesives etc., the imidazole and its derivatives are extensively used as intermediates [16,17]. The imidazole moiety (electron–donor) favors the formation of charge transfer complexes among themselves due to its durable interaction with diverse of electron–acceptors group. The inter- and intra-molecular interactions lead to the inflation of the molecular dipole and dielectric anisotropy [18]. Recently, Ahmed F. Al-Hossainy and co-workers have studied the optical, semiconducting and

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sciendo

Synthesis, growth and characterization of semiorganic nonlinear optical single crystal bis(thiourea) barium nitrate (BTBN) for frequency conversion

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A novel semiorganic nonlinear optical (NLO) crystal, bis(thiourea) barium nitrate (BTBN) was synthesized and grown by slow evaporation method. Structure of the new crystalline compound was confirmed by single crystal X-ray diffraction analysis and it showed that BTBN belongs to orthorhombic crystal system. The crystalline nature of the BTBN was confirmed by powder X-ray diffraction study. Important functional groups of BTBN were identified by FT-IR spectroscopic analysis. UV-Vis-NIR spectral study showed that the grown crystal is transparent in the entire visible region with low cut off wavelength of 304 nm. BTBN exhibits a SHG efficiency which is nearly 2.38 times higher than that of KDP. The BTBN crystal has high mechanical strength and belongs to soft category, which was confirmed by micorhardness study. The thermal stability of BTBN was determined from TGA and DTA thermal study which revealed that the BTBN crystal has thermal stability up to 243.1 °C. The surface properties and presence of elements was analyzed by SEM and EDAX study, respectively.

Keywords: *crystal growth; semiorganic crystal; optical material; SHG; microhardness; TGA; DTA study*

1. Introduction

The current research is focused on nonlinear optical (NLO) materials because of their vital applications in the field of optical modulation, optical switching, optical logic frequency shifting and optical data storage. It is the most interesting research field connected with the optical phenomena such as second harmonic generation (SHG) and third harmonic generation (THG). The emerging fields, such as telecommunication, signal processing, photonics and optoelectronics, are highly dependent on NLO materials [1–4]. Therefore, there is a challenge faced by materials scientists to discover new variety of NLO materials. In the recent past, many researchers have shown extreme interest in semiorganic crystals because of the combination of hyperpolarizability, low angular sensitivity, excellent mechanical properties and the ease to alter their molecular structure in order to maximize their nonlinear properties [5, 6]. Generally, semiorganic NLO materials have better physical and chemical properties than their constituent elements and they are highly suitable to growing crystals with required dimensions [7, 8]. The literature shows that the research and development is focusing on a new class of NLO materials known as semiorganic materials [9, 10]. In semiorganic material, polarizable organic molecules are stoichiometrically bound within an inorganic host. In fact, considerable efforts have been made to combine thiourea with various interesting inorganic matrices to produce materials having a noncentrosymmetric cell, large polarizability, and a strong nonlinear optical coefficient. When thiourea is combined with inorganic matrix it creates

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Application of Density Functional Theory(DFT) in Soil and Geo Science

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Abstract : Soil is the basis for life and soil science is regarded as the final frontier; however, as compared to chemistry, physics, biology, and other disciplines, soil science undergoes an obviously slower development and remains almost stagnant in the past few decades, mainly due to two reasons: (1) wrong and outdated perceptions for a large portion of soil researchers; (2) complexity of soil systems that are difficult to characterize by current experimental tech- niques. Computer simulations have unique advantages to handle complex systems while currently, its role during soil researches is far from being recognized. In this chapter, several examples are given with respect to application of density functional theory (DFT) calculations to soil science, focusing on the adsorption of uranyl ion and SO2 onto mineral surfaces and reaction mechanisms to form acid rain. In this way, insightful clues at the atomic level are provided for the adsorption, interaction, and reactions regarding soil systems. We believe that computer simulations including DFT are the right key to unravel the complicated processes occurring in soils. More efforts of computer simulations are anticipated for soil science with aim to decipher the experimental results and probe the uncharted principles that may result in a revolutionary in the near future.

IndexTerms **- soil science, computer simulations, density functional theory, interfacial adsorption, reaction mechanism, complex systems**

I. INTRODUCTION

The surface of the Earth exhibits many features and processes that directly reflect processes originating in the Earth's interior. Volcanic eruptions and earthquakes, for instance, are the violent and impressive manifestations of large-scale convective processes that occur because the Earth cannot release its heat by conduction alone. The magnetic field that, among other things, protects us from harmful solar rays and provides a navigational tool is also the result of large-scale convection, in this case in the Earth's liquid outer core. The time scale of these processes is far longer than the sudden events (earthquakes, volcanic eruptions) that have such an impact on humans, but nevertheless, to understand them properly we must understand the underlying properties and processes causing them. There is no realistic chance of ever directly sampling much of the interior of the Earth and certainly no chance of visiting it. All of our understanding of the inner regions of the planet is, therefore, the result of interpreting remote measurements. Of these, seismology has certainly had the greatest impact and continues to provide increasingly detailed and precise data on the seismic structure of the mantle and core. But taken alone, seismic data are of little use without the mineral physics data to interpret them. To do this, the elastic properties of all the possible minerals across the full range of pressures and temperatures in the Earth must be known. The interior could then be mapped out in terms of mineralogy, composition, and temperature (Figure 1). But to go further, transport properties such as diffusion, viscosity, and thermal-conductivity data are needed to make inferences about the dynamical behavior of the planet. And, to make things even more complex, a large range of chemical composition must be considered. Mineral physics data are very hard to obtain through experiment alone, simply because the pressures and temperatures are so extreme. This is particularly true of the lower mantle and core, where experimental pressures can only be achieved in diamond anvil cells or shock experiments (see a review by Mao and Hemley1). First of all, it is very difficult to achieve simultaneously the pressures and temperatures with the desired precision using these techniques; second, the sample must be probed at the same time with x-rays, infrared, Raman, or some other spectroscopic measurements. Although some techniques have become more achievable in the last few years using large national facilities with very bright sources, measuring transport properties under lowermantle or core conditions still remains challenging. For this reason, mineral physicists have used density functional theory (DFT) methods and other simulation techniques to provide estimates of these fundamental data. Although DFT has been used in other areas of the geosciences—for example, in understanding the atomistic-scale mechanisms of pollutants in groundwater—its greatest impact has been made in studies of the deep Earth, as perhaps evidenced by the large number of publications in high-impact journals such as Nature and Science. For that reason, this review concentrates on how DFT has helped in understanding the properties of the Earth's mantle and core. Somewhat arbitrarily, we will begin at the deepest part of the Earth (the core).

According to Natural Resources Conservation Service (NRCS), soil is defined as a natural body comprised of solids (mainly minerals and organic matters), liquids, and gases that occurs at the intermediate surface of the Earth, occupies space and is

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Perovskite sensitized erbium doped TiO_2 photoanode solar cells with enhanced photovoltaic performance

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ABSTRACT

The strategy of ion doping in metal oxide is generally used to enhance the photoanode film feature, attain a suitable energy band and enhance carrier mobility. Here, a rare earth element erbium was doped into TiO_2 electron transport layer (ETL) by adding erbium nitrate into the titanium precursor solution. In the present investigation, an attempt has been made to fabricate perovskite sensitized erbium doped TiO_2 nanoparticle (Er^{3+}@TNPs) photoanode solar cell with different hole transport materials (HTMs) and graphite coated counter electrode. The perovskite sensitized solar cell (PSSC) built with $CH_3NH_3SnI_3$ sensitized Er^{3+}@TNPs photoanode and spiro-MeOTAD HTM shows an impressive photovoltaic performance had the power conversion efficiency (PCE) of 11.54% when compared to the undoped TiO_2 photoanode PSSC. The results of this investigation indicate that the rare earth ion doping could be a promising method for producing effective ETL and enhanced performance PSSCs.

1. Introduction

Photovoltaic is a promising technology for the upcoming power scarcity and for helpful to the global climate change [1]. New photovoltaic technologies include dye-sensitized solar cells with the reported power conversion efficiency (PCE) above 13% and Si-based solar cells with a predicted PCE of above 22% [2,3]. The newly developed perovskite solar cells provided a very prospective technique for solar power conversion. The solid-state solar cells constructed with organometallic trihalide perovskite have attracted a great attention because of their simple fabrication, low cost and better PCE [4,5]. Currently, perovskite-based solar cell devices have achieved a PCE exceeding 20% [6]. Perovskite materials (ABX_3) have been identified as excellent light-harvesting materials for solar cell devices [7,8]. The recent perovskite solar cells were constructed with different mesoporous metal oxide materials (such as TiO_2, ZnO and Al_2O_3), which can be sensitized with perovskite light-absorbing agent [9,10]. Current limitations impeding the commercialization of lead-based halide perovskite solar cells are (1) the toxicity, bioavailability, and possible carcinogenicity of lead (2) the water solubility of lead that might pollute water supplies, and (3) the chemical instability under ambient conditions, especially in the presence of air, humidity, and/or light. These shortcomings are currently tackling by huge research efforts and progress could already be made in these fields. Many research groups took up the challenge to substitute lead (Pb) with other elements to find new non-toxic and environmentally benign perovskite materials suitable as efficient solar cell absorbers [7,11–14].

TiO_2 is a hopeful electron transport material for perovskite solar cells because of its high transparency, better carrier separation ability, environmental stability and easy preparation process [15]. TiO_2 is characterized by a wide band gap (3.2 eV for anatase) and is photocatalytically active only under UV irradiation (< 387 nm), which corresponds to just 3–5% of the solar spectrum [16]. Much effort is being dedicated to improving the spectral sensitivity of photocatalysts to visible light; the main approach is doping TiO_2 with metals [17], nonmetals [18] and rare earth metals [19]. Rare-earth ions act as a medium for converting NIR to visible light via two-photon or multi-photon upconversion processes [20]. Doping of rare earth metals in TiO_2 has been reported to be one of the most effective methods to improve its photocatalytic activity, related to the vacant f-orbital of the rare earth metal ions that allow for intermediate energy states, reducing the band gap and improving pollutant adsorption onto the nanoparticle surface and thus enhancing the photoactivity [21]. Most of the useful functions of rare earth elements begin from the electron transitions within the 4f shell, and are highly sensitive to the composition and structure of the rare earth compounds, especially to the coordination state and the crystal field of the matrix in which rare earth ions are trapped [22]. Erbium ions have a ste p energy level that enables efficient

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Performance of perovskite and quantum dot sensitized solar cell based on ZnO photoanode structure

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Abstract

Perovskite sensitized solar cell (PSSC) and quantum dots sensitized solar cells (QDSSC) were fabricated through Al doped ZnO based photoanode with different hole transport materials (HTMs). The PSSC achieved a PCE of 9.41% with short circuit current (Jsc) of 16.52 mA/cm2, which was higher than that of QDSSC. This enhancement is attributed to the significant Al-ion doping into ZnO nanostructures, competent CH3NH3SnCl3 perovskite, which might improve the high charge collection and the transfer of electrons at the interfaces of Al doped ZnO layer and the spiro-MeOTAD HTM layer.

Introduction

The increase in consumption of energy and its terrible effect on the environment has led to finding renewable energy sources. In this scenario, the solar energy is a prominent and

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Erbium doped anatase TiO_2 nanoparticles for photovoltaic applications

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Abstract
Doping of rare earth metal erbium (Er) into the nanocrystalline titanium dioxide (TiO_2) was identified to enhance the performance of photocatalytic and photovoltaic applications. Herein, TiO_2 was doped with different concentrations of erbium through hydrothermal method and then employed to photocatalytic and photovoltaic applications. XRD, FT-IR, TEM, AFM, UV–visible DRS and photocatalytic measurements were carried out to examine the impact of erbium doping on TiO_2. The photovoltaic study revealed that the Er doped TiO_2 exhibited the better power conversion efficiency with high short-circuit current density (J_{sc}) and open-circuit voltage (V_{oc}). This enhancement may be due to the reduced charge recombination, increased dye absorption ability and fast photoelectron injection.

Keywords Er doped TiO_2 · XRD · FT-IR · TEM · Photocatalytic · Photovoltaic

1 Introduction

Doping of rare earth metal erbium (Er^{3+}) into the nanocrystalline titanium dioxide (TiO_2) was identified to enhance the performance for photocatalytic and photovoltaic applications. The research on rare earth ions is gaining importance on account of their photoluminescent properties. The rare earth ions have spectroscopic properties which make them exceptional applications in biosensors, image generators, telecommunication systems, solid state lasers, solar cells, etc. (Whitley et al. 1991). Currently, most importance of luminescent rare earth ions has focused on Er^{3+} due to its exclusive electronic and optical properties (Reszczynska et al. 2015). The photocatalytic activity semiconductors have been a great deal importance from the outlook of photovoltaic applications (Mwabora et al. 2004). The photocatalytic activity of TiO_2 has been explored generally for environmental applications, for instance, water and air treatment, because of its powerful oxidizing ability, enhanced photocatalytic property, bactericidal and detoxification activity. (El-Bahy et al. 2009). The photocatalytic activity of TiO_2 depends on its phase. There are three crystalline forms of TiO_2 namely anatase, rutile and brookite. Among various phases of titania, anatase shows

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ELSEVIER

Journal of Magnetism and Magnetic Materials

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Structural, morphological, enhanced magnetic properties and antibacterial bio-medical activity of rare earth element (REE) cerium (Ce^{3+}) doped $CoFe_2O_4$ nanoparticles

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Research articles

Enhanced magnetic property and antibacterial biomedical activity of Ce^{3+} doped $CuFe_2O_4$ spinel nanoparticles synthesized by sol-gel method

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Highlights

- Rare earth element Ce^{3+} doped $CuFe_2O_4$ NPs prepared by simple sol-gel route.
- Ce^{3+} ions were fruitfully substituted into $CuFe_2O_4$ matrix without any distortion.
- XRD and SEM along with EDX studies confirmed the spinel phase formation.

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Full length article

Effect of morphology on the formation of CdO nanostructures for Antibacterial and Hemolytic studies

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Cadmium oxide
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ABSTRACT

Cadmium Oxide is an inorganic compound with the formula CdO. Its crystal structure is Cubic. It has an excellent industrial application in the area of catalysis, photocatalysis, electrodes for storage batteries and biomedicine. In this work Cadmium oxide (CdO) nanostructures with various morphologies were investigated for antibacterial activity. The effects of pyridine concentration on the formation CdO were investigated. The X-ray diffraction analysis confirms the creation of Cubic structures. The HRSEM and TEM studies confirm the creation of face-centered nanosheet with the size of about 100–200 nm. FTIR and ETR methods confirmed the existence of Pyridine on the composition. The morphology and optical property of synthesized material were affected by Pyridine molecule and annealing temperature. Pyridine capped CdO$_2$ and CdO nanostructures showed enhanced Antibacterial activity. The Antibacterial activity and Hemolytic activity of CdO nanostructures were studied and discussed in detail.

1. Introduction

The metallic oxide semiconductor materials such as ZnO, InO and CdO have fascinated abundant attention due to their possible applications in electronic, optical devices and biomedical, among these metal oxides have more attention [1]. In contrast with noble metals, such as silver and gold, the synthesis of Cadmium (Cd) nanoparticles is much more challenging, since these nanoparticles are fairly unstable in aqueous solution. However, cadmium oxide (CdO) nanoparticles cost significantly less than silver and gold; therefore these are economically attractive [2]. Cadmium Oxide nanoparticles find many applications as mentioned. The recent trend particularly focuses on biomedical applications, for example, in antibacterial activity and anticancer activity [3,4]. Cadmium based nanoparticles like CdS, CdTe, CdSe are used to in conjugation with biomolecules to alternate the organic fluorobes [5,6]. CuO, ZnO and, TiO nano structures have wide applications as antibacterial agents [7–9]. Recently, many researchers have examined the Antibacterial properties of Cadmium Oxide nanostructures. The antibacterial properties of nanostructures differ commonly with size and shape [10,11]. Therefore, it is anticipated to improve procedures for the formation of CdO nanostructures of different shapes and sizes. CdO nanostructures are active for both Gram+ve and -ve bacteria. Examining the antimicrobial activity of CdO requires a ligand that passivates the nanostructure surface and is simply separated from the surface. In the present work, organized investigations were carried out to know the role of pyridine in the morphological evolution of CdO. In addition to that, antibacterial activity of synthesized uncapped, Pyridine capped CdO$_2$ and CdO nanostructures against six micro-organism namely; *Staphylococcus epidermidis*, *Escherichia coli*, *Bacillus subtilis*, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* and *Enterococcus faecalis*. Results show that cadmium oxide nanostructures toxicity be reliant on the target and is also size and shape-dependent. Further, cytotoxicity effect of Cadmium Oxide nanostructures was studied by hemolytic activity.

2. Experimental procedure

The Chemicals used were of analytical grade without additional purification. The formation of Cadmium Oxide nanostructures were as follows. 0.2 M of Cadmium Nitrate Cd $(NO_3)_2$ and 0.1 M of Sodium

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5

Our Heritage

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POLITICAL IMPACT ON THE RECENT TRENDING IN ECONOMICS WITH SPECIAL REFERENCE TO GST AND DEMONETISATION

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Abstract
France was the first country to introduce GST - Goods and Services Tax system in 1954. In India GST came into effect in July 2017.India got its Independence from British rule in 1947 and could able to design and establish its own Constitution in 1950. Let's start with the Diversity of India. India is having a population of approx. 130 Cr. or 1.3 billion People. The Eighth Schedule of the Indian Constitution lists 22 languages, but on reality India speaks more than 1500 dialects and approx.. 150 languages. *India is a well diverse country which has Urban, Semi Urban, Costal, Rural, Forest and Hilly tribal population. We have more than dozen religions with majority of population being Hindus. India being a diverse country, to bring any changes is a challenge in itself. Tax Reforms and Demonetization is totally very big idea to our Country. There was lot of resistance while introducing these reforms in our Country. On 8 November 2016 8pm , the Government of India announced the demonetization of all ₹500 and ₹1,000 banknotes of the Mahatma Gandhi Series. The values of circulation roughly equals USD 215 billion. It also announced the issuance of new ₹500 and ₹2,000 banknotes in exchange for the demonetized banknotes. The Prime minister of India Narendra Modi claimed that the action would curtail the shadow economy and reduce the use of illicit and counterfeit cash to fund illegal activity and terrorism. Now in the subsequent chapters we will see the Economic and Political impact of both GST & Demonetization.*

Objectives

The Objective of this Research is to bring in the 'Impact of GST and Demonetization' to both Government and common man. Here we would like to highlight how the Opposition parties are trying to take Political mileage and the how the present Modi Govt. is countering and defending on its agenda of GST and Demonetization.

Key Words
Tax, Demonetization, Services, Goods, Banknotes, Diverse, Political, Constitution, Council, Counterfeit, Economy, illegal, Diversity, evasion, black money,

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Nature Resources Based Sustainable Development with Special Reference to Tribal Community Rights

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Abstract.

India is a well diversed country which has Urban, Semi Urban, Rural, Forest and Hilly tribal population. Our Nation is the second largest tribal concentration in the world spread across various parts of the country mainly in forests and hilly regions. The most characteristics of these communities are their particular geographical location, distinct culture and practices from the society at large. Most of them have very less to formal Education. The constitution of India grouped these ethnic groups together "as targets for social and economic development. Since that time the Adivasi of India have been known officially as Scheduled Tribes."[1] Article 366 (25) defined scheduled tribes as "such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution".

It is given in Article 14 of the Indian Constitution: "The State shall not deny to any person equality before the law or the equal protection of the laws within the territory of India." In India, since these people are considered low and are not treated well the Constitution of India provides several rights to these people for safeguarding their interests. There are a number of social problems which are associated with these people like untouchability, illiteracy etc. Article 17 of the Constitution of India states: "Untouchability is abolished and its practice in any form is forbidden." Here, we are working out to bring in Nature Based Sustainable Development without losing the Tribal Rights.

Objectives.

The Objective of this Research is to bring in the 'Sustainable Development for Tribals without losing their Rights'. Also the same needs to be achieved thro' Nature based.

Key Words.

Tribal, Communities, Education, Culture, Equality, Protection, Un-touchability, Forest, Rights,Nature, Sustainable, Development.

Introduction.

The tribal people or Forest Land people were socially distanced and often used to face violence from the society. Apart from the encounter of the tribes with the various civilizations,

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Structure of Supreme Court Building in the Styles of Delivering Good Justices

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Abstract

India would be traveling along with an image of Secular, Democratic and Republic, in this journey it may happen to face multi problems from its multicultural people's regarding to fundament rights, duties, social and economic problems .For all these problems judiciary alone is entitled and empowered to provide fair and good justices toward resolve all those people's problems in genuine and unbiased way. For this purpose style of judiciary building was designed and constructed in massive western styles, this style of judiciary construction reveals India's historical emblem, symbol and image of noble and covenant leaders with an aim to make believe people judiciary's verdict and judgments. So, this study is analyzing about emergency and purpose of the judiciary's building and infrastructure in deciding of various difficult issues with an aim to deliver appreciatable and recordable judgments .To learn law, decide about issues, perceive patterns of issues and provide neat and necessary judgments, court infrastructure is much vital part of the effective court administration.

Keywords: Good building Construction, Embellishments, Fixing Noble Images and Arrangement of Modern Facilities

Backdrop

India has attained its sovereign power on 28 January 1950 along with image of Democratic and Republic. Name of federal court of India was renamed as a Supreme Court of India, the first phase of judicial legal proceeding was held in the chamber of princes at India's parliament. Honble Dr.rajendra Prasad, the president of India inaugurated Supreme Court of India on 4 August 1958, he quoted some points regarding Supreme Court Inaugural functions, this judiciary has to be always temple of people's justice. Actual land size of supreme court of India is 17 acres Mr.Ganesh Bhikaji Deolalikar designed the structure of Supreme Court. He was as first head of the CPWD and made Supreme Court in the style of Britain Architecture.

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The styles of building in Supreme Court of India shows its architectural splendor, costly ornamentations and feelings of liberty and equality .Altogether it's an elegant looks expose about India's Independence and self ruling power. The entire outlook of this court was designed in the pattern of delivering quality justice, its justice style building was coined by talented engineers and architecture .These people are trained in constructing judiciary and other governing institutions according to the western styles as it exposes its nature of duty. Obviously India's judiciary administrations and building were designed in the styles of reflecting of justice, legal proceedings and judicial governance because it must engross people's attentions and public opinion.

At the edge of each ending is a half round structure model was designed. It represents the pans that are annexed to the central pillar of the top level. This centre pillars are accommodating the entire Court rooms in which the Hon'ble senior Judges would be seated while delivering judgment. The main pillars from the bottom to top level has been structured just like the scales are hanging, consisting of the senior Justice's of the Court at the core hall with two judiciary cabins on both side. The other Wright handed part of the configuration currently comprising of the winning hall, the offices of the Attorney general, law officers, registrar, advocates and judges are neatly planed and constricted as per the western architectural model. Additional spacious building were established at initially constructed in initial phase of the first years in 1979, then in 1994, once again in 2015 constructed .Addition hall was constructed during 1979,1994 and 2015 with an intentions to facilitate advocates and judges for provide and deliver pleasing and trustworthy judgments .

Semi circular image and administrative structure has been given at the end of building, two wings are made in the styles of western justice delivering and in front of court the outer of look the court construction building was decorated in red sand stone, understanding with the building style of present central hall. Another additional to this building was made In the year 1994, next wide building was established, linking the east part and the west part of the first extension building. The bottom space established in the office. In the First floor, Court rooms are certain judiciary cabins and senior Judges Assembling air conditioned hall/general seating and listening hall. One Conference hall are

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A Maximum Likelihood Approach to Least Absolute Deviation Regression

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Abstract

Least Absolute Deviation (LAD) regression is an important tool used in numerous applications throughout science and engineering, mainly due to the intrinsic robust characteristics of LAD. In this paper, we show that the optimization needed to solve the LAD regression problem can be viewed as a sequence of maximum likelihood estimates (MLE) of location. Requiring weighted medians only, the new algorithm can be easily modularized for hardware implementation, as opposed to most of the other existing LAD methods which require complicated operations such as matrix entry manipulations.

Introduction

Least absolute deviation (LAD) regression is an important tool used in numerous applications throughout science and engineering, mainly due to the intrinsic robust characteristics of LAD. In this paper, we show that the optimization needed to solve the LAD regression problem can be viewed as a sequence of Maximum Likelihood Estimate (MLE) of location. Requiring weighted medians only, the new algorithm can be easily modularized for hardware implementation, as opposed to most of the other existing LAD methods which require complicated operations such as matrix entry manipulations. One exception is Wesolowsky's direct descent algorithm, which among the top algorithms is also based on weighted median operations. Simulation shows that the new algorithm is superior in speed to Wesolowsky's algorithm, which is simple in structure as well. The new algorithm provides a better trade off solution between convergence speed and implementation complexity.

Model

The simple LAD regression problem is formulated as follows. Consider N observation pairs (X_i, Y_i) modelled in a linear fashion

$$Y_i = aX_i + b + U_i,\ i = 1, 2,\ldots,N \quad \ldots (1.1)$$

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ESTIMATION OF THE GENERAL LINEAR AND NONLINEAR REGRESSION MODELS WITH AUTOCORRELATED ERRORS

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ABSTRACT

For estimating the coefficient vector of a linear regression model with disturbances following a first order autoregressive scheme, several estimators have been analyzed with the help of empirical methods. Nowadays, nonlinear regression model building is new and very fascinating filed of research in Applied Statistics. In Mathematics, or in any other scientific discipline, a research worker is certainly facing the problem of formulation of a nonlinear model. A large number of nonlinear regression models have been specified in the literature and successfully applied to different situations in the real world relating to several research problems in the various fields of Statistics. For linear regression models refers to Kramer (1980), Maeshiro (1976),Park and Mitchell (1980) and Spitzer (1979). The main contributions in the field of nonlinear regression models have been made by Gallant,Rossi and Tauchen (1933),Levenberg (1944), Hartley (1965), Jenrich (1969) etc. In this paper it is proposed to discuss estimation of general linear and nonlinear regression models with autocorrelated errors have been discussed. The problem of autocorrelation can be studied with linear and nonlinear regression models with illustration.

Keywords: Linear Regression, Nonlinear Regression, Autocorrelation Errors, First Order Autoregressive Scheme.

1.1.1 INTRODUCTION

For estimating the coefficient vector of a linear regression model with disturbances following a first order autoregressive scheme, several estimators have been analyzed with the help of empirical methods. Refers to Kramer (1980), Maeshiro (1976), Park and Mitchell (1980) and Spitzer (1979). Rothenberg (1984) considered the case when the error covariance matrix depends on a finite number of parameters and derived the approximate expression for the distribution of the two-step Generalized Least Square (GLS) estimator. Magee (1985) also adopted a general method to derive expansions for iterative estimators and applied it to obtain the approximation dispersion matrices for the iterated Prais-Winsten and Maximum Likelihood Estimators. While several families of improved or shrinkage estimators with superior properties in terms of a quadratic loss function have been developed for the linear regression model with i.i.d disturbances refer to Judge and Bock (1978) and Vinod and ullah (1981). The development of many estimators of parameters of linear regression model is traceable to non-validity of the assumptions under which the model is formulated, especially when applied to real life situation. The notwithstanding, regression analysis may aim at prediction. Nowadays, nonlinear regression model building is new and very fascinating filed of research in Applied Statistics. In Mathematics, or in any other scientific discipline, a research worker is certainly facing the problem of formulation of a nonlinear model. A large number of nonlinear regression models have been specified in the literature and successfully applied to different situations in the real world relating to several research problems in the various fields of Statistics. However, there are a large number of situations, which have not yet been nonlinearly modeled because of the situation may be complex or they are mathematically or statistically intractable.

The main contributions in the field of nonlinear regression models have been made by Gallant, Rossi and Tauchen (1933), Levenberg (1944), Hartley (1965), Jenrich (1969), Goldfeld and Quandt (1970), Biggs (1971), Ross (1971), Chambers (1973), Gallant (1975a, 1975b). Bates and Watts (1980,2008),Dennis,Gay and Welsch (1981).Hiebert (1981), McCullagh (1983), Ratkowsky (1983),Taylor and Uhlig (1990), Ord, Koehler and Snyder (1997), Davindson and Mac Kinnon (1999), Popli (2000), Fox (2002), Smyth (2002), Vasilyev (2008), Fox and Wiesberg (2010), Potocky and Stehlik (2010), Grafarend and Awange (2012) and others.

When all these assumptions of the classical linear regression model are satisfied, the Ordinary Least Square (OLS) estimator given as

$$\hat{\beta} = (X'X)^{-1}X'Y \qquad \ldots(1.1)$$

is known to possess some ideal or optimum properties of an estimator which include linearity, unbiasedness and efficiency. These had been summed together as Best Linear Unbiased Estimator (BLUE). However, these

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ACCELERATED FAILURE TIME MODEL FOR SURVIVAL ANALYSIS

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Abstract

Accelerated failure time (AFT) models allowing for random effects are linear mixed models under the log-transformation of survival time with censoring and describe dependence in correlated survival data. As cited in the literature in the statistical area of survival analysis, accelerated failure time model (AFT) is a parametric model that provides an alternative to the commonly used proportional hazards models, whereas a proportional hazards model assumes that the effect of a covariate is to multiply the hazard by some constant. The accelerated failure time model is widely used for analyzing censored survival times often observed in clinical studies. It is well-known that the ordinary maximum likelihood estimators of the parameters in the accelerated failure time model are generally sensitive to potential outliers or small deviations from the underlying distributional assumptions. In this paper, we propose and explore a robust method for fitting the accelerated failure time model to survival data. A real example is also provided as an illustration.

Keywords: *Accelerated failure time model, Gehan-Type Weight Function*

1. Introduction

The accelerated failure time model or accelerated life model relates the logarithm of the failure time linearly to the covariates for a more detailed study refer to Kalbfleisch and Prentice (1980); Cox and Oakes, (1984). As a result of its direct physical interpretation, this model provides an attractive alternative to the popular Cox (1972) proportional hazards model for the regression analysis of censored failure time data. The presence of censoring in failure time data creates a serious challenge in the semi parametric analysis of the accelerated failure time model. Several semi parametric estimators were proposed around 1980, Buckley and James (1979) providing a modification of the least-squares estimator to accommodate censoring and Prentice (1978) proposing rank estimators based on the well-known weighted log-rank statistics. The asymptotic properties of the Buckley James and rank estimators were rigorously studied by Ritov (1990), Tsiatis (1990), Lai and Ying (1991a, 1991b) and Ying (1993) among others. As cited in the literature in the statistical area of survival analysis, accelerated failure time model (AFT) is a parametric model that provides an alternative to the commonly used proportional hazards models, whereas a proportional hazards model assumes that the effect of a covariate is to multiply the hazard by some constant.

AFT model assumes that the effect of a covariate is to accelerate or decelerate the life course of a disease by some constant. This is especially appealing in a technical context where the 'disease' is a result of some mechanical process with a known sequence of intermediary stages. If the effects of treatment are to accelerate (or delay) the event of interest rather than having a longer term impact, the accelerated failure time model should replace the proportional hazards model as the model of choice. Accelerated failure time (AFT) models allowing for random effects are linear mixed models under the log-transformation of

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A New Area-Biased Distribution with Applications in Cancer Data

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Abstract: In this paper we introduced a new generalization of Aradhana distribution called as area biased Aradhana distribution. The statistical properties of this distribution are derived and the model parameters are estimated by maximum likelihood method of estimation. Finally, an application to real life-time data set is fitted and the fit has been found to be good.

Keywords: Aradhana distribution, Weighted distribution, Reliability analysis, Order Statistics.

1. INTRODUCTION

The concept of weighted distributions was given by Fisher (1934) to model the ascertainment bias. Later Rao (1965) developed this concept in a unified manner while modelling the statistical data when the standard distributions were not appropriate to record these observations with equal probabilities. As a result, weighted models were formulated in such situations to record the observations according to some weighted function. The weighted distribution reduces to length biased distribution when the weight function considers only the length of the units. The concept of length biased sampling was first introduced by Cox (1969) and Zelen (1974). More generally, when the sampling mechanism selects units with probability proportional to some measure of the unit size, resulting distribution is called size-biased. There are various good sources which provide the detailed description of weighted distributions. Different authors have reviewed and studied the various weighted probability models and illustrated their applications in different fields. Weighted distributions are applied in various research areas related to reliability, biomedicine, ecology and branching processes. Weighted distributions are required when the recorded observation from an event cannot randomly sample from actual distribution. This happens when the original observation damaged as well as an event occur in non observability manner. Due to these inappropriate situations, resulting values are reduced, and units or events do not have same chances of occurrences as if they follow the exact distribution. The weighted distributions are applied in various research areas related to biomedicine, reliability, ecology and branching processes. In many applied sciences like engineering, medicine, behavioural science, finance, insurance and others, it is very crucial to modelling and analyzing lifetime data. For modelling this type of lifetime data, a number of continuous distributions are for modelling like weibull, lindley, exponential, lognormal and gamma. Afaq *et* al (2016) have obtained the length biased weighted version of lomax distribution with properties and applications. Rather *et al* (2018) obtained a new size biased Ailamujia distribution with applications in engineering and medical science which shows more flexibility than classical distributions.Recently, Rather and Subramanian (2018) discussed the characterization and estimation of length biased weighted generalized uniform distribution.

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A NEW WEIGHTED DISTRIBUTION WITH PROPERTIES AND APPLICATIONS TO REAL LIFE DATA IN SURVIVAL ANALYSIS

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Abstract

In this article, we have introduced a new generalization of one parameter Rama distribution using weighting technique called weighted Rama distribution. Important mathematical and statistical properties of the distribution have been derived and discussed. The expression for reliability measures and order statistics has been obtained. The maximum likelihood method of estimation of the parameters and the Fisher's information matrix has been obtained. Finally, an application to real data set is presented to examine the model performance.

Keywords: Weighted distribution, Rama distribution, Reliability analysis, Maximum likelihood estimator, Order statistics, Entropies.

1. Introduction

The concept of weighted distributions was firstly introduced by Fisher (1934) and later it was introduced and formulated in general terms by Rao (1965), in connection with modeling statistical data where the usual practice of using standard distributions for the purpose was not found to be appropriate. Weighted distributions provide an approach to deal with model specification and data interpretation problems. In Rao's paper (1965), he identified various situations that can be modelled by weighted distributions. These situations refer to instances where the recorded observations cannot be considered as a random sample from the original distributions. This may occur due to non observability of some events or damage caused to the original observation resulting in a reduced value or adoption of a sampling procedure which gives unequal chances to the units in the original. These distributions arise in practice when observations from a sample are recorded with unequal probability and provide unifying approach for the problems when the observations fall in the non-experimental, non-replicated and non-random categories. The weighted distribution reduces to length biased distribution when the weight function considers only the length of the units. Different authors have reviewed and studied the various weighted probability models and illustrated their applications in different applied fields. Weighted distributions were applied in various research areas related to reliability, biomedicine, ecology and branching processes. For survival data analysis, Jing (2010) introduced the weighted inverse

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Level Dependent Quasi-Birth and Death Processes of $M/(M_1,M_2)/2/(B_1,B_2)$ queues with Stalling

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Abstract- This Paper analyses a two server $M/(M_1,M_2)/2/(B_1,B_2)$ queueing system with stalling where customers are served by one fast server and one slow server. The servers are allowed to work in parallel. It has provided a finite buffer B_1 of size `K$<\infty$' to stall customers in queue-1 which is meant to feed the fast sever only. There is one more buffer B_2 of infinite capacity, called the waiting space to accept further arrivals in queue-2 when the buffer B_1 is full. The primary task of B_2 is to feed customers to queue-1 and to the slow server as and when it is warranted. An arriving customer who finds the queue-1 is full and queue-2 is empty joins the slow server. If the queue-2 is non-empty at a time epoch when the slow server finishes a service, he accepts a customer from the head of the queue-2. Both arrival and service rates of customers are assumed to be state dependent parameters for the first (K+2) states starting from state `0'. Formulating the queue length (queue +service) process of the whole system as a QBD processes, steady state results to state probabilities and mean queue length have been obtained using matrix-analytical methods.

Keywords- Quasi-Birth and Death Processes, Fast server, Slow server, Stalling and Level dependent.

1. INTRODUCTION

Let $X_1(t)$ be the number of customers present with Server-1 and in queue-1 at time $t>0$. Also let $X_2(t)$ for $t>0$ be the number of customers present with Server-2. Thus $X_1(t)+X_2(t)$ gives the total number of customers present in the whole system at time t>0. Further the vector process { $X(t)=(X_1(t), X_2(t): t\geq 0)$ } is a continuous time non-homogeneous Markov process on the two-dimensional space { (n,j): n=0, 1,2,… and j=0,1 } that is portioned into levels L(0), L(1), … where

$$L(n)=\{(n,0),(n,1)\} \quad for \quad n=0,1,\ldots,K,(K+1),(K+2), \tag{1}$$

Assumptions: The transitions out of the state {(n,j):n=0, 1,2,{…} and j=0,1 } is dependent on the level L(n). Arrivals occur according to a Poisson process with mean arrival rate λ_n. Servers are working with exponential service rates $\mu_1(n)$ and $\mu_2(n)$, ($\mu_1(n) > \mu_2(n)$) respectively. Two buffers B1 and B2 are installed to accommodate customer arriving in queue-1 and queue-2 respectively: Buffer B1 is bounded by a maximum of 'K' which stalls customers in queue-1 and if the buffer B1 is full then the buffer B2 which is unbounded receives further arrivals to form queue-2. Thus queue-1 is the queue of stalling customers who must go to the faster server only, to get served. However queue-2 feeds both queue-1 and the slow server whichever could first accept the head-of-the-line customer of queue-2. Each customer who arrives when the system is idle is served by the fast server. If the fast server is busy at the time of a customer's arrival, then that customer joins queue-1 if it has less than K customers, is served by the slow

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A Discrete-Time Gated Vacation Queue with a Bulk Service

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Abstract. This paper investigates a discrete-time gated vacation queue with a general bulk service rule (L, K) subject to a single-vacation policy.There are two queues separated by a gate. Arriving packets first join the secondary queue located before the gate in order of arrival and move at the end of the last slot of a single-vacation period in batches of minimum size L packets and maximum size K to the primary queue which is spaced after the gate, whenever the gate opens. Using a probability generating function approach, the steady state analysis is carried out under the assumption that service times of batches are independent of the number of packets in any batch.

Keywords: Discrete-time queue, Vacation, Gate, Slot, Packets, Batch service, Departure epochs, Vacation termination epochs, Busy cycle, Queue content and System Occupancy.

INTRODUCTION

This presentation scrutinises a discrete-time gated single-vacation queue of packets with a bulk service rule (L, K). 'Time' is divided into intervals of equal lengths called slots. There are two queues separated by a gate named as (i) secondary queue and (ii) primary queue. Both of these queues have an infinite capacity. All arriving packets first join the secondary queue before the gate in order of arrival (FIFO) and move in batches of minimum size L packets and maximum size K to the primary queue whenever the gate opens. It occurs at the end of the last slot of a vacation period in batches on the basis of size $\eta(L \leq \eta \leq K)$ before leaving the primary queue.

A vacation starts when the primary queue empties, (i.e., since the end of the last vacation) and it opens at the end of each vacation and closes as and when at least one batch arrives in the primary queue. If there are no batches of packets, present in the primary queue upon returning from a vacation, the server waits until the primary queue receives the batch of exactly L packets i.e., a single-vacation policy.The basic assumption is that service times of batches are independent of the number of packets in any batch and that service is synchronized with slot boundaries, i.e., service of a packet cannot start while the packets arrive. Both the number of packets arriving in the consecutive slots and the service times (in slots) of these consecutive batches of packets constitute series of i.i.d. random variables with common probability mass functions $a_n(n \geq 0)$ and $s_n(n > 0)$ respectively and with corresponding probability generating functions $A(z)$ and $S(z)$ respectively. The consecutive vacation lengths (in slots) are decided by means of a series of independent random variables with probability mass functions $v_n(n > 0)$ and corresponding probability generating functions $V(z)$. The focus is on various performance measures of the steady state distribution of the batch server such as moments of queue contents. These measures are functions of a constant value obtained numerically, for some specific cases of $A(z), S(z)$ and $V(z)$.

This paper is an analysis of 'Discrete Time Analysis (DTA)' for a queue of packets of information in binary encoded (digital) form which has applications in the study of ATM (Asynchronous Transfer Mode) networks. These queueing of packets can be modeled even when time is divided into units (slots) of discrete length. The reader is referred to Phuoc Tran-Gia [20] for further study regarding DTA.

Vacation models due to Doshi [11] and Takagi [26] have proved to be a useful abstraction of server unavailability. The model considered in this paper extends the results of Sumita [25] regarding service rules. Gated vacation systems

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THEORETICAL ARTICLE

Quasi-birth and death processes of two-server queues with stalling

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Abstract
This paper investigates an optimal K-policy for a two-server Markovian queueing system $M/(M_1,M_2)/2/(B_1,B_2)$, with one fast server S_1 and one slow server S_2, using the matrix analytic method. Two buffers B_1 and B_2 are organized to form waiting lines of customers in which, buffer B_1 is of finite size $K(<\infty)$ and buffer B_2 is of infinite capacity. Buffer B_1 stalls customers who arrive when the system size (queue + service) is less than $(K+1)$ and dispatches a customer to the fast server S_1 only after S_1 completes its previous service. This K-policy is of threshold type which deals with controlling of informed customers and hence the customers have better choice of choosing the fast server routing through the buffer B_1. The $(K+2)$-nd customer who arrives when the number of customers present in the system is exactly $(K+1)$ has the Hobson's choice of getting service from the slow server S_2. Buffer B_2 accommodates other customers who arrive when the number of customers present in the system is $(K+2)$ or more and feeds them one after another to either buffer B_1 or the sever S_2 whichever event can first accept the customer at the head-of-the-line in B_2. Queue length processes of interest are (1) $q_1 = \lim_{t\to\infty} X_1(t)$ and (2) $q_2 = \lim_{t\to\infty} X_2(t)$, where $X_1(t)$ represents the number of customers who are in the buffers B_1 and B_2 and also in the service with server S_1 at time 't' and $X_2(t)$ represents the number of customers available with server S_2 only. The bi-variate random sequence $\mathbf{X}(t) = (X_1(t), X_2(t))$ of the system size (queue + service) forms a quasi-birth and death process (QBD). Steady state characteristics, and some of the performance measures such as the expected queue length, the probability that each server is busy etc are obtained. Numerical illustrations are provided based on the average cost function to explore the methodology of finding the best K-policy which minimizes the mean sojourn time of customers.

Keywords QBD processes and $M/(M_1,M_2)/2/(B_1,B_2)$ · Fast server · Slow server · Matrix analytic method · Stationary distribution

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On Weighted Quasi-Sujatha Distribution with Properties and Applications to Blader Cancer Data in Survival Analysis

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Abstract: In this paper we have introduced a new version of Quasi sujatha distribution known as Weighted Quasi sujatha distribution. The weighted quasi sujatha distribution has three parameters. The different structural properties of the newly model have been studied. The maximum likelihood estimators of the parameters and the Fisher's information matrix have been discussed. Finally a real life data set has been analysed, where it is observed that weighted Quasi Sujatha distribution has a better fit compared to Quasi sujatha distribution.

Keywords: Weighted distribution, Quasi Sujatha distribution, Reliability Analysis, Order statistics, Maximum likelihood Estimation.

1. INTRODUCTION

Fisher (1934) introduced the concept of weighted distributions to model the ascertainment bias.This concept was later on developed by Rao (1965) in a unified manner while modeling the statistical data when the standard distributions were not appropriate to record these observations with equal probabilities. Warren (1975) was the first to apply the weighted distributions in connection with sampling wood cells. Patil and Rao (1978) introduced the concept of size biased sampling and weighted distributions by identifying some of the situations where the underlying models retain their form. The statistical interpretation of weighted and size biased distributions was originally identified by Buckland and Cox (1964) in the context of renewal theory. As a result, weighted models were formulated in such situations to record the observations according to some weighted function. Different authors have reviewed and studied the various weighted probability models and illustrated their applications in different fields. Weighted distributions were applied in various research areas related to reliability, biomedicine, ecology and branching processes. For survival data analysis, Jing (2010) introduced the weighted inverse Weibull distribution and beta-inverse Weibull distribution as a new lifetime models. Ayesha, (2017) discussed the Size Biased Lindley Distribution as a new life time distribution and discussed its various statistical properties. Shanker & Shukla (2018) discussed a generalized size-biased Poisson-Lindley distribution and Its Applications to model size distribution of freely forming small group. Recently, Rather and Subramanian (2018) discussed the characterization and estimation of length biased weighted generalized uniform distribution.

A Quasi sujatha distribution is a newly proposed life-time model formulated by shanker (2016) for several medical applications and calculated its important mathematical and statistical properties as its hazard function, Bonferroni and Lorenz curves, stress strength reliability, stochastic ordering and mean residual life functions.The newly proposed two parameters life time distribution called as Quasi sujatha distribution has better flexibility in handling lifetime data as compared to sujatha, exponential and lindley distributions.

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Novel Machine Learning Methods to Accurately Classify Celestial Bodies

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***Abstract*—A celestial body is a celestial object that floats in space. It's tough for astronomers to categorize these things. Classifiers that use evolutionary optimization to improve their performance focus on this paper, which outlines a groundbreaking new approach to identifying celestial objects. The Sloan Digital Sky Survey database was used to acquire the information needed for this investigation. A new machine learning model for categorizing stellar spectra from stars, quasars, and galaxies will be developed in this work. The input data are standardized and then put via principal component analysis to reduce their dimensionality. Classifiers' optimum parameters may then be discovered using an evolutionary method that applies to data. We constructed an accurate and robust classification system using five classifiers and a five-fold cross-validation procedure. Nineteen of the twenty-one models were enhanced by our new model. Classification accuracy, precision, recall, and F1-score were accomplished using an evolutionary approach based on voting classifiers with 99.16 % accuracy. Astronomers may benefit from the machine learning prototype that was developed. The suggested evolutionary technique may be used in different sectors where it is essential to categorize many classes reliably.**

Keywords - Logistic Regression, Decision Tree, Machine learning, Evolutionary systems, Heavenly bodies, Celestial bodies.

I. INTRODUCTION

A. Mobile Ad-hoc Networks

Astronomers have endeavoured to investigate, appraise, and grasp the limitless variety of celestial objects in the universe throughout history. Due to the disparate distances, light-emitting intensities, and spatial placements of celestial objects, it is not easy to discern them when photometric data from telescopes are used to record them. As a result, astronomers depend on the classification to collect usable samples for further study and better understand the cosmos' complex and baffling past, present, and future [1]. This inquiry focused on classifying three categories of celestial objects: stars, galaxies, and quasars.

We conducted our research in this paper using the Sloan Digital Sky Survey (SDSS) database [2]. This international collaboration brought together astronomers, physicists, and mathematicians. Currently, complicated algorithms developed in the Matlab environment SDSS are heavily used to categorize things in the SDSS database. Numerous scientists have automated the identification of heavenly bodies using machine learning methods. These studies suffer from the following shortcomings:

1. Prior research built categorization models with either highly sophisticated frameworks or basic techniques.
2. Managing large volumes of data is difficult and time-consuming.
3. Managing many attributes increases the model's computational complexity.

We proposed a novel machine learning technique that used a genetic algorithm to select the best model with the optimal hyperparameters collection to address the drawbacks as mentioned earlier. We utilized principal component analysis to reduce the number of features to speed up the computations. Following that, we used the default values of 21 classifiers as a starting point for training. We employed a genetic algorithm to fine-tune their hyperparameters. A genetic algorithm was used to find the best way to combine the individual model outputs into a single voting classifier. Fivefold cross-validation [3] is used throughout learning. As a consequence, the following are some of the most distinctive elements of this work:

1. We developed a novel and more effective method of classifying three sorts of cosmic objects using machine learning models.
2. Developed a genetic algorithm optimization approach to achieve high accuracy with a limited number of features.
3. 2 out of the 5 classifiers evaluated had the most outstanding results (above 98 % accuracy).
4. Put the model's performance to the test by examining various clinical variables.

II. RELATED WORK

Hydrogen and helium constitute the bulk of the mass of stars, which is why they are very hot to the touch. They are the product of millions of years of chaotic clouds of gas and dust clumping together and eventually collapsing under the weight of their mass (Nebulae and Stars). Studying celestial objects and our Sun is crucial to understanding the cosmos.

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CALCULATING THE SURVIVAL TIME OF CANCER PATIENTS THROUGH EXPONENTIATED WEIBULL DISTRIBUTION

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Abstract

In this a paper a model is obtained for the expected time of breakdown point to reach the threshold level of cancer patient. The time to cross the threshold of the infected person is a vital event in cancer patient. With the model description study for the survival time of cancer patient is found through the exponentiated weibull family

Keywords: Exponentiated weibull distribution, cancer patient, threshold, survival time

1. Introduction

Exponentiatedweibull distribution (EWD) family not only cover the one parameter exponential family exponentiated exponential family as a sub-family, but also covers the most popular used two-parameter weibull family as a special sub-family one of the nice feature of EWD family is the gift close non-monotonic hazard function success unimodal shaped and bathtub shaped, appeared in science, engineering and medical Fields. Our goal is to determine how the infectiousness of semen of Cancer infected men various by stage of disease. The actual infection s will vary from person to person so we will compute an average. It will also depend on the type of smoking drinking and etc., higher for some type than for others. Mathematical model is obtained for the expected time of break down point to reach the threshold level. In the context of cancer, the assumption that the times between decision periods are independent and identically distributed (i.i.d)random variable. One can see for more detail about the expected time to cross the threshold level of stages period in pandiyan et al., 2018.

These assumptions are somewhat artificial, but are made because of the lack of detailed real-world information on one hand and in order to illustrate the proceedings on the other hand. Smoking, drinking contacts are the only source of Cancer infection. The threshold of any individual is a random variable. If the total damage crosses a threshold level Y which itself is a random variable, the interarrival time between successive contact, the sequence of damage and the threshold are mutually independent.

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Analysis of discrete – time Geo/Geo/1 queue with negative customers

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Abstract: This paper considers a Geo/Geo/1 queueing system with negative arrival customers in which killing strategies considered are removal of customers at the head (RCH). The arrival of a negative customer to a queueing system which causes one positive customer to be removed if present. Negative arrival of a customer have no effect if the system is empty. Negative arrivals are used as a control mechanism in many telecommunication and computer network. It is known that discrete – time queues are more suitable for analyzing digital communication including mobile and broad integrated service digital networks based on asynchronous transfer mode technology. Thus we carry out a complete study of these systems including the ergodicity conditions as well as exact formulae for the stationary distribution. Finally some numerical examples are provided to explore the effect of some related parameters on the system performance measure.

Keywords: Discrete – Time queue; Geo/Geo/1; Negative customer, RCH; Ergodicity.

I. INTRODUCTION

In recent years queueing system with negative arrivals has been an increasing interest in queueing system and networks with negative arrivals and their applications. Erol Gelenbe [1] introduced a queueing networks in which customers are either negative or positive.A negative customer arrival reduces the queue size by one.If the queue length is empty it has no effect in the queueing system. In this model he use exponential service times and poisson arrivals.

Harrison and Pitel[2] introduced sojourn times in single – server queue with negative customers and derived the expression for laplace transformation of the sojourn time density of negative customers. In discrete – time queueing system with negative arrivals, Atencia and P.Moreno[3] obtained some results in Removal of

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தன்முனைப்பும் கருத்துத் திருட்டும் : தமிழவனின் "சிந்தனைத் தோற்றமும் கருத்துத் திருட்டும்" என்ற கட்டுரைக்கான எதிர்வினை

கே. பழனிவேலு

திரு. தமிழவன் அவர்கள் 2018 ஜூலை - செப்டம்பர் மாதச் "சிற்றேடு" இதழில் "சிந்தனைத் தோற்றமும் கருத்துத் திருட்டும்" (பக். 38 - 42) என்ற கட்டுரை ஒன்றை எழுதி இருக்கின்றார். அக்கட்டுரை இரண்டு பகுதிகளைக் கொண்டிருக்கின்றது. முதல் பகுதி இரண்டாம் பகுதிக்கான முன்னுரையாக அமைக்கப்பட்டுள்ளது. ஆய்வியல் நெறிமுறைகளைப் பற்றியதாக அமைக்கப்பட்டுள்ள முதல் பகுதி, மூலத் தகவல் (Source), அறிதகவல் (Resource) களைப் பயன்படுத்தும்போது மேற்கொள்ளவேண்டிய நெறிமுறைகளைச் சுட்டுகின்றது. மேலும், *MLA Handbook for Writers of Research Papers* நூலில் குறிக்கப்பட்டுள்ள *Plagiarism* பற்றிய பகுதிகளை எடுத்துக்காட்டி, எத்தனை பேர் இவ்விதிமுறைகளைப் பின்பற்றுகின்றார்கள் என்ற கேள்வியைக்கேட்கிறது. பின்னர் ஆய்வு நெறியைப் பின்பற்றாத ஆய்வுக் கட்டுரைக்கான எடுத்துக்காட்டுக்கு எனது கட்டுரையைக் காட்ட முற்பட்டு, எனது கட்டுரையைப் பற்றி எழுதியுள்ள பெ. மாதையனின் கட்டுரையைக் காட்டுகின்றது. பெ. மாதையனுக்கு மூலத்தைக் காட்டாத என்னுடைய செயலைக் கருத்துத் திருட்டாகச் சுட்டுகின்றது (எந்தெந்தக் கருத்துகள் திருடப்பட்டிருக்கின்றன என்பதை நேரடியாகக் காட்டாமல்; எதற்காக இப்படிச் சுற்றி வளைக்கவேண்டும் எனத் தெரியவில்லை).

அக்கட்டுரையில் ஆய்வுலகில் நிகழ்ந்துவரும் கருத்துத் திருட்டுகளைப் பற்றிப் பேசும் தமிழவன், தமிழில் எத்தகைய உத்திகளுடன் கருத்துத் திருட்டு நடைபெறுகின்றது என்ற 'குசிகரத்தைக்' காட்டுவதற்காக எழுதியதாகக் குறித்துள்ளார். குறிப்பாகத் திரு. பெ. மாதையன் தனது "தொல்காப்பியப் பொருளதிகார ஆராய்ச்சி வளர்ச்சி வரலாறு" (2018) என்ற நூலில் எனது (கே. பழனிவேலு) "கூற்று எனும் தமிழ்க் கவிதையியல் : தொல்காப்பியரும் மிகையீல் பக்தினும்" (2009), "தொல்காப்பியக் கூற்று : கவிதை விவரணை"; "கூற்றுக்கோட்பாடு : தொல்காப்பியரும் மிகெய்ல் பக்தினும்" ஆகிய கட்டுரைகளை முன்வைத்து எழுதிச்செல்லும் கருத்துகளுக்கு எதிர்வினையாற்றவே இக்கட்டுரையைத் தமிழவன் எழுதியுள்ளார். பெ. மாதையன் நூலில் திணைக் கவிதையியலும் நவீன இலக்கிய வாசிப்பும் என்ற பகுதியில் இடம்பெற்றுள்ள எனது, "தொல்காப்பிய ஒளியில் நவீன கவிதைகளை வாசித்தல்" என்ற கட்டுரையைப் பற்றிய கருத்துகளைத் தமிழவன் காணத் தவறிவிட்டார். அதையும் சேர்த்து எழுதியிருந்தால் இன்னும் குசிகாத்தைக் கூட்டியிருக்கலாம்.

தமிழவன் சிற்றேடு கட்டுரையில் குறிப்பிட்டுள்ள கருத்துகளைக் கீழ்வருமாறு தொகுத்துக்கொள்ளலாம். (தொகுத்துக் கூறினால் தான் சரியாகப் புரிந்துகொள்ளப் படும்; இல்லை என்றால், திரும்பத்திரும்ப வாசிக்கவேண்டியிருக்கும்).

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சிலப்பதிகாரத்தில் தமிழ்ப்பெண்களின் வாழ்வியல் கூறுகள்

*முனைவர் பா.கீதா, உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார்கலைக்கல்லூரி, கடலூர்-1.

இலக்கியம் என்பது வாழ்க்கையைப் படம் பிடித்துக்காட்டும் கண்ணாடி என்பர். அவ்வகையில், பண்டைய தமிழரின் வாழ்வியலை எடுத்துரைக்கும் ஓர் ஒப்பற்ற காப்பியம் சிலப்பதிகாரமாகும். 'குடிமக்கள் காப்பியம்' என்று போற்றப்படும் இக்காப்பியத்தில் வரும் முதன்மை மற்றும் துணைக்கதாபாத்திரங்களை விடுத்து, இக்காப்பியத்தில் காணப்படும் பிற பெண் கதாபாத்திரங்களை மட்டுமே இவ்வாய்வுக் கட்டுரைக்குரிய களமாகக் கொண்டு ஆய்வு செய்யப்பட்டுள்ளது. இதன் வாயிலாக சிலப்பதிகார காலத்தில் பொதுவாகப் பெண்களின் வாழ்வியல்போக்கு எவ்வாறு இருந்தது என்பதனை அறிவதே இவ்வாய்வின் நோக்கமாகும்.

அறிவிப்புப்பணியில் பெண்கள்

யானைப்பிடரியில் அழகிய அணிபுனைந்த மகளிரை இருக்க வைத்துப்புகார் நகரெங்கும் உள்ளவர்களுக்கு கோவலன் கண்ணகியின் மணவினைச் செய்தியை அறிவித்தனர் என்பதை,

"யானை எருத்தத்து, அணி இழையார் மேல்இரீஇ
மா நகர்க்கு ஈந்தார் மணம்" - மங்கல வாழ்த்துப்பாடல், பா.அ.43,44

என்ற பாடலடிகள் வாயிலாக அறிவதோடு, மகளிர் திருமணச்செய்தியினை பொதுமக்களுக்குத் தெரிவிக்கும் அறிவிப்புப் பணியைச் மேற்கொண்டனர் என்பதனை அறியமுடிகிறது.

ஆடல், பாடல் கலைகளில் பெண்கள்

ஆடல் அரங்குகளில் நாடக மகளிர் கூப்பிய கையினராக, அழகுடன் திகழ்ந்தனர் என்பதை,

"நாடக மடந்தையர் ஆடரங்கு யாங்கணும்
கூடையிற் பொலிந்து" - கால்கோட் காதை, பா.அ.68, 69

என்ற பாடல் அடிகள் குறிப்பிடுகின்றன.

மேலும் ஆடல் மகளிர் குரவைப்பாட்டு பாடி ஆடினர் என்பதனை,

"காஅர்க் குரவையொடு கருங்கயல் நெடுங்கண்
கோற்றொடி மாதரொடு குடகர் தோன்ற" - கால்கோட்காதை, பா.அ.120, 121

என்ற சிலப்பதிகாரப் பாடலடிகளால்

அறியலாம். அதோடு, சேரன் செங்குட்டுவனிடம் வாயிற்காவலன், நாடக மகளிர் நூற்று இரு வந்துள்ளனர் என்று கூறுவதை,

"நாடக மகளிர்ஈர் ஐம்பத் திருவரும்" - கால்கோட்காதை, பா.அ.128

என்று சிலம்பு எடுத்தியம்புகிறது. இது காப்பியக்காலத்தில் பெண்கள் நாடகம், நடனம் மற்ற பாடற்கலைகளில் சிறந்து விளங்கினர் என்பதை அறிவதோடு இக்கலைகளைச் சமுத நிகழ்விலும் வெளிப்படுத்தினர் என்பதனை அறியமுடிகிறது.

தோரிய மகளிர் (பின்பாட்டு பாடுபவர்கள்) நாட்டில் நன்மைகள் சிறக்கவும், நன்மையற்ற நீங்கவும் வேண்டி, ஒரொற்றுவாரம், ஈரொற்றுவாரம் என்னும் தெய்வத்திற்குரிய பாடல்களைப்பாடி என்பதை,

"தொன்னெறி இயற்கைத் தோரிய மகளிரும்
சீஇயல் பொலிய, நீர் அல நீங்க
வாரம் இரண்டும் வரிசையிற் பாடப்
பாடிய வாரத்து ஈற்றில் நின்று இசைக்கும்" அரங்கேற்ற காதை, பா.அ.133-137

என்ற அடிகளால் அறியலாம்.

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*முனைவர் பா.கீதா, உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார் அரசு கலைக்கல்லூரி, கட
607001. அலைபேசி : 9486683380.

செம்மொழியாகிய தமிழ்மொழியில் எண்ணற்ற நீதிநூல்கள் உள்ளன. இந்நூல் அனைவரும் நல்வாழ்வு பெற வழி கூறுகின்றன. அனைவரும் நல்வாழ்வு பெற இறைநம்பி வழிவகுகின்றது. இதனை,

எழுத்துக்களெல்லாம் அகரத்தை முதலாக உடையது. அதுபோல உலகம் கட அடிப்படையாகக் கொண்டது என்பதை,

"அகர முதல எழுத்தெல்லாம் ஆதி
பகவன் முதற்றே உலகு"

என்று திருவள்ளுவரும் கூறுகின்றார்.

ஔவையார் தமது நீதிநூல்களான ஆத்திச்சூடி, கொன்றைவேந்தன், மூதுரை, நல் ஆகிய நூல்களில் ஆன்மீகம் குறித்துக் கூறியுள்ளார். இதனை ஆய்வு செய்வதே இக்கட்டுரை நோக்கமாகும்.

சிவன், விநாயகர்

இந்துக்கள் அனைவரும் எச்செயலையும், விநாயகப் பெருமானை வழி தொடங்குகின்றனர். எழுதும் போதும் பிள்ளையார் சுழி போட்டே தொடங்குகின்றனர். இவ் செய்தால் செய்யும் செயல்கள் நல்லவிதமாகவும் வெற்றிகரமாகவும் அமையும் என்ற உறுதி நம்பிக்கையை மக்கள் கொண்டுள்ளனர். இந்நம்பிகையுடன் ஔவையாரும் விநாயகரை வழி தன் செயலைத் தொடங்கியுள்ளார். பொதுவாக மனிதர்களுக்கு தன் வாழ்க்கையின் எந்த கூறும் நல்லவிதமாக அமைய ஒரு நேர்மறையான எண்ணமும், நம்பிக்கையும், உந்து தேவைப்படுகின்றது. அதற்கு விநாயகர் வழிபாடு துணை செய்கின்றது.

ஆத்தி மலர் மாலை அணிந்த சிவபெருமான் விரும்புகின்ற விநாயகப் பெருமா போற்றி போற்றி வணங்குவோம் என்பதனை,

"ஆத்திசூடி அமர்ந்த தேவனை
ஏத்தி ஏத்தித் தொழுவோம் யாமே"

என்ற ஆத்திச்சூடி அடிகள் எடுத்துரைக்கின்றன. பொதுவாக விநாயகப் பெ முழுமுதற் கடவுள் என்றும், எவ்வொரு காரியமும் அவரை வழிபட்டே தொடங்க வே என்பதும் நடைமுறையில் உள்ளது. இதனை மெய்ப்பிக்கும் வகையில், இந்துமத உச்சக்கடவுளாகக் கருதப்படும் சிவபெருமானே விரும்புகின்ற கடவுளாக விநாயகர் திகழ்கி

கொன்றை மலர்களைச் சூடிய சிவபெருமானின் புதல்வனாகிய விநாயகப் பெரும திருவடியை நாம் எப்பொழுதும் போற்றி வணங்குவோம். என்பதனை,

"கொன்றை வேந்தன் செல்வன் அடியினை
என்றும் ஏத்தித் தொழுவோம் நாமே"

என்ற கொன்றை வேந்தனின் அடிகள் வெளிப்படுத்துகின்றன.

தினமும் மலர்கொண்டு, தும்பிக்கையை உடைய விநாயகப் பெருமானின் திருவ வணங்குபவர்க்கு, சொல்வன்மை மற்றும் நற்சிந்தனையோடு செந்தாமரை மலரில் வீற்றி திருமகளின் அருட்பார்வை உண்டாகும். மேலும், விநாயகரை வழிபடுபவரின் உடலை அண்டாது என்பதனை.

N.Baskaran, Department of Tamil

குறுந்தொகையில் அறிவியல் பதிவுகள்

முனைவர் ந.பாஸ்கரன்
உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார் அரசுகலைக் கல்லூரி, கடலூர்

பழந்தமிழர் வாழ்வில் அணுவில் தொடங்கி அண்டம் வரையில் அறிவியல் ஒன்றியுள்ளது. அறிவியல் கண்டுபிடிப்பாளர்கள் அணுவைப்பிளக்க முடியும் என்ற கண்டுபிடிப்புக்கானத் தொடக்க சிந்தனையைப் பல காலங்களுக்கு முன்பே தமிழ்ப்பாவலர்கள் பிரகடனப் படுத்தியுள்ளனர். திருக்குறளின் பா வடிவம் மற்றும் பொருட்செறிவுக்கானச் சிறப்பை வெளிப்படுத்திய ஔவையார், 'அணுவை துளைத்து எழுகடல் புகுத்தி குறுகத்தறித்த குறள்' என குறிப்பிடுவதன் வழி இதனை உணரமுடிகின்றது. தமிழிலக்கியங்கள் பரவலாக அறிவியல் கருத்துகள் பேசினாலும் சில கருத்துகளை இக்கட்டுரை முன் வைக்கின்றது.

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சிறப்பிதழ்: 2
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அறிவியலும் இலக்கியமும்

அனைத்து கூறுகளும் உள்ளடங்கியதாக இருப்பதே சிறந்தமொழி ஆகும். அம்மொழி பயிற்றுமொழி ஆவதற்கான அடிப்படை தகுதிகளாக சிலவற்றைப் பெற்றிருக்க வேண்டும். அவையாவன,

1. நவீன சக்திகளை வெளிப்படுத்துதல்
2. கலைச்சொல்லாக்கத் தொகுப்பு இருத்தல்
3. பார்வை நூல்கள் அதிகம் இருத்தல்.

என்பனவாகும். தமிழில் இம்மூன்று தகுதிகளும் சிறப்பாக உள்ளன. இயல்இசை, நாடகம் போல அறிவியல் தமிழும் இயல் தமிழுக்கு ஏற்புடையதாக விளங்கி வருகிறது. காலந்தோறும் எம்மொழிமாற்றத்திற்கு உட்படுகிறதோ அது வளரும் தன்மை உடையதாக விளங்கும். அவ்வடிப்படையில் தமிழ்மொழி இன்றைய நிலையில் அறுபதுக்கும் மேற்பட்ட இலக்கண நூல்களைப் பெற்று விளங்கி வருவது தமிழின் சிறப்பாக உள்ளது. தமிழிலக்கியம் அறிவியல் செய்திகளையும் அறிவியல் கலைச்சொற்களையும் பெற்றுள்ளது.

தொல்காப்பியத்தில் அறிவியல் சிந்தனை

தமிழ்மொழிக்கு இலக்கணத்தை மட்டுமன்றி அறிவியல், தத்துவம், மருத்துவம், வானவியல், சோதிடம், கணிதம் போன்ற பல்வேறு துறைசார்ந்த கருத்துகளை விளக்கும் நூலாகவும் தொல்காப்பியம் விளங்குகிறது.

"நிலம்தீநீர்வளிவிசும்பொடுஐந்தும்
கலந்தமயக்கம்உலகம்ஆதலின்" (தொல்.பொருள் – நூ. எ - 1589)

என்பது உலகத்துப் பொருள்களின் கலவையினால் ஏற்படும் மாற்றங்களையும் விளைவுகளையும் வேதியியல் ஆய்வுக்கு உட்படுத்துகின்றது. நிலம், நீர், தீ, வளி, விசும்பு ஆகிய ஐந்தும் கலந்து உருவானதே உலகம் என்னும் கருத்தினை இரண்டாயிரம் ஆண்டுகளுக்கு முன்னமே தொல்காப்பியம் ஐந்திணையாகவகுத்து அவற்றை நிலம், காலம், கருப்பொருளோடு பொருத்திக் கூறியுள்ளது. இத்திறத்தால் நிலவியற்கை, காலவியற்கை, பொருளியற்கை ஆகியவற்றை அறிந்திருந்தனர். மேலும், நிலநூல், காலநூல், இயற்கைநூல்,

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*முனைவர் ந.பாஸ்கரன், உதவிப்பேராசிரியர், பெரியார் அரசு கலைக் கல்லூரி, கடலூர்-1, பேசி-9443397249, tamilbaskaran47@gmail.com.

இருபதாம் நூற்றாண்டு தமிழ்ப்படைப்புகளில் புதினப்படைப்புகள் குறிப்பிடத்தக்க இடத்தைப் பிடித்துள்ளது. புதின படைப்புகள் இன்றைய வாழ்வியல் தளத்தைக் கதைக்களனாக தேர்ந்தெடுத்துச் சித்தரிக்கின்றன. சமுதாயத்தைக் கூர்ந்து நோக்குகின்றவர்கள்புதின படைப்பாளிகளாக இருப்பது நடைமுறை சாத்தியமாகியுள்ளது. சு.தமிழ்ச்செல்வி புதினங்களில் கதைகள் விளிம்பு நிலையிலும் வறுமைநிலையிலும் உள்ள உழைக்கும் பெண்களின் வாழ்வியல் பிரச்சனைகளை மிக எதார்த்தமாக பதிவு செய்கின்றன. இதற்கு முதல்மையாவ காரணம் கதையைக் கற்பனைவெளியில் தேடாமல் தமது வாழிடத்திற்கும் தனது பார்வைக்கும் எட்டிய தூரத்தில் உணர்ந்து உரைப்பதாக உள்ளதுவே ஆகும். அத்துடன் படைப்பாளியும் பெண்ணாக இருப்பதால் கதையம்சத்தில் ரத்தமும் சதையுமாக கலந்த உயிரோட்டத்தைக் காணமுடிகிறது

பெண்ணியம் சில விளக்கங்கள்

ஆணுக்குச் சமமாகப் பெண் மதிக்கப்படவேண்டும் என்னும் சிந்தனை போக்குப் பெண்ணியத்தின் அடிப்படையாக (Feminism) உணரமுடிகிறது. சமுதாயத்தின் இயக்கத்தில் பெண் தங்களுக்கான வாழ்வியலை வடிவமைப்பதில் தன்னிச்சையாக செயல்பட்டு முடிவெடுக்க வேண்டும். இதனை,

"பெண்ணியச் சிந்தனையின் தாக்கத்தால் பெண்கள் தங்கள் வாழ்க்கையைத் தாங்களே தீர்மானித்துக் கொள்ள ஆரம்பித்திருக்கின்றனர்"[1]

என்று கூறுகின்ற கருத்து தெளிவுபடுத்துகின்றது. மேலும்,பெண்கள் தங்களுக்கான சமுதாய அங்கிகாரத்தைக் கல்வி, அரசியல், சமயம், சாதி, திருமணம் போன்ற தளங்களில் தாங்களே உருவாக்கிக்கொண்டும்பாதுகாத்துக்கொண்டும் வளரவேண்டும். பெண்களுக்கு வரும் சோதனைகளும் இன்னல்களும் அவர்களாலேயே தீர்த்துக்கொள்ளவும் முறியடிக்கவும்பட வேண்டும். இதன் காரணமாகவே ,

"பெண்ணியம் என்ற சொல்லுக்குப் பெண்மை மீட்டெழுச்சி இயக்கம்"[2]

என்று கூறுகின்ற கருத்தை இதனுடன் ஒத்துநோக்க முடிகின்றது எனலாம்.இதன் அடிப்படையில் பெண்ணுரிமைக்காகப் போராடுவது, பெண்களின் தனிப்பட்ட குடும்ப வாழ்க்கை, ஆண்களுக்குச் சமமானவர்கள் போன்ற உயர் நெறிகளை நிலை நாட்டும் நோக்கத்தைக் கருவாகக் கொண்டு இயங்கி வருவது பெண்ணியம் என்னும் அமைப்பு என்பதை உணரமுடிகிறது. மேலும், பிரச்சனைகளை எப்படி எதிர்கொள்வது?, அடக்கு முறைகளுக்கு எதிராக எப்படி போராடுவது?, விழிப்புணர்வு பெறுவது எப்படி?, சக பெண்களுக்கு விழிப்புணர்வை ஏற்படுத்துவது எப்படி? போன்ற பன்முக வினாக்களுக்கு விடைகாணும் நோக்கில் பெண்ணியக் கருத்துகளை விளக்குவதையும் அறியமுடிகிறது.

19-ஆம் நூற்றாண்டின் இறுதியில் இந்தியாவின் பெண்ணிய சீர்திருத்தவாதிகள் பெண்களின் பிரச்சனைகளைக் கருத்தில் கொண்டு அவர்கள் முன்னேற்றத்திற்காகப் பாடுபட்டுள்ளனர். இதன் பலனாக பெண் அமைப்புகள் பெண்களாலேயே தோற்றம் பெற்றுள்ளன. 1886 இல் கல்கத்தாவில் சுவர்ணகுமாரி தேவி என்பவரின் தலைமையில் "பிரம்ம சமாஜ்" என்னும் பெண்கள் கூட்டமைப்பு ஏற்படுத்தப்பட்டுள்ளது. இதனை தொடர்ந்து பூனாவில் ரமாபாய் ராணடே என்பவர் "சேவாசதன்" அமைப்பையும், வங்காளத்தில் "சரோஜ் நளினி" என்பவர் "மகிளா சமிதி" என்ற அமைப்பையும், 1917 இல் "இந்திய பெண்கள் குழு" என்பதும், 1926 இல் "அகில இந்தியப் பெண்கள் மாநாடு" என்பதும் நிகழ்ந்துள்ளன.பின்பு

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முல்லைப்பாட்டில் இனவரைவியல் பதிவுகளும் ஆயர் பண்பாட்டு மரபுகளும்

Ethnography records and pastoral cultural traditions in Mullaippattu

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Abstract: This article examines the internal life styles of sheperd's in Mullaippattu. It difine that Mullaippattu is included the ethnic life of sheperds. It has a collection of practices, rituals, war patterns, economical backrounds and the culture of the sheperds. These are the ethnic concepts of their life. The study of this article concludes the following concepts. 1.The Oman of Mullaipattu is shown as the main ritual Sheperd's culture. 2.Most often of rituals and the omens are act as diversion of women's suffering andworries. 3.Shepherds are separated the main cause of the war and economic sectors. But they obviously returned home in rainy season. 4.Women who are adored are constructed by the social structures of the chastity. 5.In the sheperd's culture, the women are constructed as a second gender.

Keywords: Mullaippattu, practices, rituals, war patterns, economical backrounds, நப்பூதனார், முல்லை, வாழ்வியல், போர்ப் பாசறை அமைப்பு, சட்ட விதிமுறைகள், இனவியல், அதிகார உறவுகள்.

"யுத்த வீரனும், வேட்டையாடுபவனும் பெண்ணுக்கு முதலிடம் கொடுத்து அவன் இரண்டாம் பட்சமாகத்தான் இருந்தான். ஆனால், ஆடு, மாடு மேய்ப்பவனோ, தன் சொத்துரிமையைக் கொண்டாடி தான் முதலிடத்தில் அமர்ந்து கொண்டு, பெண்ணை இரண்டாம் பட்சமாகத் தள்ளிவிட்டான். அவளும் குறைகூற முடியாமல் போய் விட்டது. வேலைப் பிரிவினை அவளுக்கு இந்த அவல நிலையை ஏற்படுத்தியது. ஆண் வெளியிற் சென்று உணவையும் சொத்தையும் சம்பாதித்தான். பெண்ணோ வீட்டு வேலைகளைக் கவனிப்பதும், சமையல் செய்வதும், அவள் வேலைகள் அனைத்தும் ஆணுக்கு அடிமைப்பட்டிருப்பதுமாயிற்று." (ஏ.எல்.கே. ப.57)

காவிரிப் பூம்பட்டினத்துப் பொன் வணிகனார் மகனார் நப்பூதனார் எழுதிய முல்லைப்பாட்டு எவர் மீது பாடப்பட்டது என்பது அறியப்படவில்லை. ஆயினும், இவ்விலக்கியத்துள் ஆயர் சமூகப் பண்பாட்டுப் பதிவுகள், முல்லை நிலத்தலைவன் தலைவியரின் வாழ்வியல், போர்க்களத்தின் தன்மை, போர்ப் பாசறை அமைப்பு, பாதுகாவலர்களின்

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"அடிமைச் சமூகத்துக்கு அதன் நிலைத்திருப்புக்கு ஆதாரம் பலப் பிரயோகம் இல்லாத தலைமைச் சக்திதான தூண்டும் சக்தியும் பொது ஒப்புதலும் தான். அடிமைச சமூகத்தின் நிலைத்திருப்புக்கு ஆதாரமான இந்த 'விதி மறுப்புகளை'யும் பொது ஒப்புதல்களையும் தூண்டல் சக்திகளையும் போன்ற அனைத்தையும் 'ஹெஜிமனி' (இ.எம்.எஸ். நம்பூதிரிபாட், பி. கோவிந்தப் பிள்ளை, ப.27)

இத்தாலியச் சமூகப் பண்பாட்டில் நடந்தேறிய அரசாட்சி முறையின் திரித்தை. அரசுகள் தங்களின் ஆட்சியதிகாரத்தை வன்முறையால் மட்டுமன்றி தமது ஆளுமை பற்றிய நம்பகத்தன்மையை மக்களிடையே ஏற்படுத்தி அமைதியான வழியிலும் நிலைநிறுத்திக் கொள்கின்றன என்று அந்தோனியா கிராம்ஷி விளக்கினார். இத்தகைய நம்பகத்தன்மையை ஒரு ஆட்சியாளன் நிலைநிறுத்த வேண்டுமானால் அவன் தான் ஆட்சி செலுத்த முனையும் சமூக அமைப்பு சார்ந்த முழுமையான அறிவினைப் பெற வேண்டியிருக்கிறது. அவனுக்குத் தேவைப்படும் சமூகம் சார்ந்த இவ்வகை முழுமையான அறிவை இனவரைவியல் (நுவாமெபசயிால) போக்குகள் தெளிவுபடுத்தியுள்ளன.

இனவரைவியலின் முக்கியக் கூறுகளாக இடம், காலம், சுற்றுச் சூழல் எனும் கொள்கைகள் தொல்காப்பியத்தில் முதல், கரு, உரிப்பொருள் கோட்பாடுகளாக வெளிப்படுகின்றன. இந்த இடம், காலம், சூழல் ஆகியவற்றின் மாற்றங்களுக்கு ஏற்பவே குடிமக்களும் அரசும் உருவாகின்றன எனக் கருதிய கிராம்சியின் சிந்தனையும் இவற்றோடு தொடர்புறுகின்றன. இவை புதிய சிந்தனைப் போக்குகளாக உணரப்பட்டாலும் தமிழ்ச் சமூக அமைப்பில் மிகப் பழங்காலம் முதலாகக் காணப்பட்ட ஒன்றுதான் என்று நிறுவ முடியும். பழந்தமிழரின் வாழ்வியல் பதிவுகளாக அமைந்துள்ள செவ்வியல் இலக்கியங்களில் மட்டுமல்லாமல் இலக்கணங்களிலும் இதன் பதிவுகளைக் காணமுடியும். அவ்வழியில், தொல்காப்பியரின் புறத்திணைக் கோட்பாடுகளில் இவ்விரு தத்துவங்களில் சாரங்கள் பரவலாகியிருந்தமை இங்கு விளக்கம்பெறுகின்றன.

தொல்காப்பியர் காலச் சமூகக் கட்டமைப்பு

தொல்காப்பியர் காலத்தில் அரசர், அந்தணர், வைசியர், வேளாளர், ஆயர், வேட்டுவர், அரசோர், வினைவலர், ஏவல் மரபினர், கூத்தர், பாணர், விறலியர், போன்ற முதலான பல்வகை சமூகத்தினர் இருந்தமையை அவரின் [illegible]

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தலைவி என்றால் தலைமைப்பெண் என்று பொருள்படும். முல்லைப்பாட்டில் கூறும்தலைவி தன்னிகரில்லா தலைவியாகவோ, பேரோற்றல் பெற்றவளாகவோ காட்டப்படவில்லை. பெண்ணிற்கு உரியதான அச்சம், மடம், நாணம், பயிர்ப்பு உடையவளாகவே காட்டப்படுவாள். முல்லைப்பாட்டில் வரும் தலைவி தலைவனைப் பிரிந்து தூயரூற்றுக் காணப்படுகிறாள். அவளின் வருத்தத்தை மிகுவிக்கும் பொருட்டு கார்காலமும், மாலைப் பொழுதும் சேர்ந்து அவளை மீண்டும் மீண்டும் வாட்டி வதைக்கின்றது. பிரிவு ஆற்றாமையால் தலைவி படும் துயரத்தையும் அதற்காக விரிச்சிக் கேட்டு அவளது துயர் துடைப்பதைக் கூறுவதே இக்கட்டுரையின் நோக்கமாகும்.

"நாணமும் அச்சமும் நாய்கட்கு வேண்டுமாம்"

என்று பாரதி சாடினாலும் பெண் என்பவள் பெண்மைக்கும், மென்மைக்கும் உரியவளாகவே காட்டுகின்றார்கள். முல்லைப்பாட்டில் வரும் தலைவியும் மென்மைத் தன்மை மிக்கவளாகவே உள்ளாள். வள்ளுவர்,

"நன்னீரே வாழி அணிச்சமே நின்னினும்
மென்னீரள் யாம்வீழ் பவள்"

என்று பெண்ணின் மென்மையைக் கூறுகிறார்.

இதில் சாயல் என்பது மெய், வாய், கண், மூக்கு, செவி என்னும் ஐம்பொறிகளாலும்உணரப்படும். இயல்பாகவேமென்மையுடையவளாகவே காணப்படும் பெண் தலைவனைப் பிரிந்திருந்தால் அவள் உடலினையும் உள்ளத்தினையும் சொல்வதற்கில்லை. இங்ஙனம் வருத்தமுற்றுக் காணப்படுகையில் மாலைப்பொழுதும் சேர்ந்து அவள் வருத்தத்தை மிகுவிக்கிறது. பகலும், இரவும் மயக்குகின்ற பொழுதை மயக்கும் மாலைப்பொழுது, மயங்குதல் என்பதே மாலை என்று முல்லைப்பாட்டு (5-24) கூறுகிறது.

முல்லைப்பாட்டில் தலைவன் குறித்த காலத்தில் வருவதாகச் சொல்லிய கார்காலமும் வந்துவிட்டது. ஆனால் தலைவன் வரவில்லை. அதனால் ஏற்பட்ட வருத்தம் ஒருபுறம்; தலைவனைப் பிரிந்த தலைவியை மாலைக்காலம் வாட்டுவதால் ஏற்பட்ட வருத்தம் மறுபுறம். இவ்விரண்டும் தலைவியின் மனஅழுத்தத்திற்கான காரணமாக அமைந்தது.

தலைவன் குறித்த காலத்தில் வராததால் பிரிவுத் துயரினால் தனிமையில்,

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*முனைவர் சீ.பிரேமகுமாரி, உதவிப் பேராசிரியை (தமிழ்த்துறை), பெரியார் அரசுக் கலைக்கல்லூரி, கடலூர்.

வைணவ பக்தி இலக்கியங்களில் திருப்பாவை தமிழுக்கு கிடைத்த கருவூலமாகும். தெய்வீகக் காதலை வெளிப்படுத்திய ஆண்டாளின் இந்த திருப்பாவையின் ஒவ்வொரு வரியும் இனிமை பயக்கும் பாசுரங்களாக அமைந்துள்ளது. இந்நூலைப் படிப்பதும், ஆராய்வதும் திருமாலை நேரில் கண்டு வழிபடுவதற்குச் சமம். கண்ணனுடைய தன்மைகளைக் குறிப்பிடும் போது பாகவதத்தில் பாவை நோன்பு பற்றிய குறிப்பும் இடம்பெற்றுள்ளது. சங்க இலக்கியங்கள் தமிழரது பண்பாட்டையும், நாகரிகத்தையும் விளக்கும் பெட்டகங்களாக திகழ்கின்றன. பேரியகன இளவெயினி என்ற பெண்பால் புலவர் புறநானூற்றில் வைகறையில் அதிகாலைப் பொழுதில் நீராடும் பெண்கள் நீர்நிலையிலுள்ள நுண்ணிய மணலில் பாவை உருவம் செய்து வணங்கியதாகக் குறிப்பிட்டுள்ளார்.
இச்செய்தியை,

"செய்வுறு பாவைக்குக் கொய்பூத் தைஇத்
தண்கலி மாடு மகளிரொடு" (புறம்-243)

என்று புறநானூற்றுப் பாடல் மூலம் விளக்குகின்றது. இதே கருத்தினை ஐங்குறுநூறும் (84) கூறுகிறது. திருமால் வழிபாட்டிற்கு ஓர் எல்லை திருப்பாவை என்றால் சிவ வழிபாட்டிற்கு எல்லை பாவை நோன்பு என்பதைப் பழந்தமிழர்கள் மார்கழி மாதத்தில் மேற்கொண்டுள்ளனர். பெண்கள் மழைவேண்டியும், நாடுசெழிக்கவும் தகுந்த கணவனாக மணக்க வேண்டியும் ஆற்றுக்குச் சென்று நீராடி அங்குள்ள ஈரநுண்மணலால் பாவையொன்றைப் பிடித்து அதை வழிபடுவர். முப்பது பாடல்களைக் கொண்ட திருப்பாவை மார்கழித்திங்கள் முதல்நாள் தொடங்கி ஒவ்வொரு நாளும் ஒவ்வொரு பாடலாக முப்பது நாட்கள் பாடப்படுகின்றது. ஒவ்வொரு பாட்டின் இறுதிச்சீர் "எம்பாவாய்" எனமுடிவதும், வெண்தளையாய் வரும் நான்கு சீர்களைக் கொண்டு எட்டு அடிகளாக அமைந்து, ஒரே எதுகையுடன் வருவதும், பெண்கள் அதிகாலையில் எழுந்து ஒருவரை ஒருவர் எழுப்பும் தன்மையில் இருத்தலும் பாவை நோன்பின் இலக்கணமாகும்.

திருப்பாவையில் 1 முதல் 5 வரை உள்ள பாசுரங்கள் திருப்பாவைக்கு ஒரு முன்னுரையைப் போலத்திகழ்கின்றது. இவை பரம்பொருள் தத்துவத்தை விளக்குகிறது. 6 முதல் 15 பாசுரங்கள் நோம்பு நோற்ற பெண்களைத் துயிலெழுப்புவதாய் அமைந்துள்ளது. 16 முதல் 22 வரை உள்ள வரை பாசுரங்கள் கண்ணனைத் துயிலெழுப்புவது அவனது மாளிகைக்குச் செல்வது. வாயிற்காப்பேன், நந்தகோபன், யசோதை, பலராமன், நப்பின்னை போன்றோரைத் துயிலெழுப்புவதாய் உள்ளன. 23 முதல் 29 வரை உள்ள பாசுரங்கள் கண்ணனுக்கும் கோபிகைகளுக்கும் நிகழும் உரையாடல்களையும், 30ஆம் பாசுரம் திருப்பாவையை இசைப்பதால் உண்டாகும் பலனை விவரிப்பதுமாய் திருப்பாவை கட்டமைக்கப்பட்டுள்ளது.

திருப்பாவையில் ஆண்டாள் பிருந்தாவனத்தில் தானும் ஒரு கோபிகையாக இருப்பதாகவே கருதுகிறாள். விழித்தெழுமாறும் நீராடுமாறும் அவள் கூப்பிடுவோர் வெறும் சகதோழிமாரல்ல. அவர்கள் யாவரும் கோபிகைக் கன்னியரே. திருப்பாவையில் துயிலெழுப்பும் உரையாடல்கள் மட்டுமில்லாமல் உயிரோட்டமாகத் திகழ்கின்றது.

"எல்லே இளங்கிளியே இன்னம் உறங்குதியோ"

திருப்பாவையில் உள்ள பாக்கள் ஒரு பெண்ணை மற்றொரு பெண்ணை முன்னிலைப்படுத்தும் கூற்றுகள் பல அவற்றில் ஒரு சில,

"கோயில் காப்பான், வாயில் காப்பான்" (பா.எ.16)
"நப்பின்னையை விளித்துப் பேசல்" (18)

இந்த கூற்றுகள் மட்டுமில்லாமல், இன்னும் பல கூற்றுகள் பல. அவை எல்லாம் நாடகத்தன்மை போன்று அமைந்துள்ளது.

ஆண்டாளின் பாக்கள் தற்சார்புக் கவிதைகள் அவளது சொந்த ஆவல்கள், ஆசைகள் போன்றவற்றைச் சொல்லும் ரொமண்டிக்கவிதைகள், கோபிகையாகத் தன்னையே புனைந்துகொள்ளும் புனைவுக்கவிதைகள். எனவே கவர்ச்சி மிக்கவையாக விளங்குகிறது.

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புறநானூற்றில் பெண் பற்றியசிந்தனைகள்

*முனைவர் ஜா.பூரணி, உதவிப் பேராசிரியர், தமிழ்த் துறை, பெரியார் அரசு கலை கல்லூரி, கடலூர் [illegible]
[illegible]85234

இலக்கியம் என்பது மனிதவாழ்வியலை கூறும் [illegible] அமைகிறது. இது மனித உணர்வு தொடர்புடையதாகவும், காலத்தை பிரதிபலித்துக் காட்டும் கண்ணாடியாகவும் திகழ்கிறது. சங்ககால மக்கள் [illegible]தலோடு, வீரமும் பொதிந்த வாழ்வினை வாழ்ந்துள்ளனர். அந்த வாழ்க்கை சங்க இலக்கியத்தோடு நின்றுவிடாமல் என்றும் பல நிலைகளில் பதிவிடப்படுகின்றன தமிழில் கிடைத்த முதல் இலக்கண நூலான தொல்காப்பியத்தில் உள்ள பொருளதிகாரம் மக்களுடைய வாழ்வியல் குறித்த செய்திகளைப் பற்றி விளக்கமாக [illegible]த்துரைக்கின்றது. தொன்மைநூலான தொல்காப்பியம் தமிழின் [illegible] கூறும் முதன்மையான இலக்கண நூலாகும். இந்த நூலில் கூறப்படும் சமூகம் ஆண்களால் உருவாக்கப்பட்டதாகும்.எனவே ஆண்களால் தோற்றுவிக்கப்பட்ட சமூகத்தில் உருவாக்கப்பட்ட சட்டதிட்டங்களும் அவர்களுக்கு சாதகமாகவே [illegible]றுவாக்கப்படுகின்றன அவ்வாறு உருவாக்கப்பட்ட விதிமுறைகளின் தொகுப்பாக விளங்குவது தொல்காப்பிய பொருளதிகாரம் மடலேறுவது, பாசறைசெல்வது [illegible] உழுதல் போன்றவை பெண்களுக்கு கூடாது என்றும் [illegible] நாணம், மடம் என்று கூறப்படுகின்ற அறியாமை,கற்பு,ஒழுக்கம்,பொருத்துபோதல் ஆகியன பெண்களிடத்தில் எப்போதும் இருக்கவேண்டிய நல்லகுணங்கள் என்று எடுத்துரைக்கின்றார். இவற்றை மீறி சங்க இலக்கியமான புறநானூற்றில் ஆண்களுக்கு நிகராக பெண்கள் வீரம் கொண்டவர் என்பதைப்பெண் புலவர்கள் [illegible]யாகப் பெண்ணியச் சிந்தனையை எடுத்துரைத்துள்ளது. பெண் பற்றிய இப்போக்கினை ஆராய்வதே இக்கட்டுரையின் நோக்கமாகும்.

பெண்ணியம் பொருளும் விளக்கமும்

ஆங்கிலத்தில் பெமினிஸம் என்று வழங்கும்சொல்லே தமிழில் பெண்ணியம் என்று கூறுகிறோம். 1890க [illegible] பெமினிஸம் என்றசொல் பிரான்சில் உருவாக்கப்பட்டது.பெமினிஸம் என்ற ஆங்கிலச் சொல்பெமினா என்ற [illegible] சொல்லிலிருந்து உருவானதாகும். பேமினா என்ற சொல்லுக்கு பெண்ணியம் பண்புகளை கொண்டுள்ளது என்பது பொருளாகும். ஆரம்பத்தில் பெண்களின் பாலியல் பண்புகளைக் குறிப்பிடப்படவே வழங்கப்பட்ட சொல்லாகும். பின்னர் பெண்களின் உரிமைகளைப் பேசுவதற்கான சொல்லாகமாறியது என்றே கூறலாம். பெமினிஸம் என்ற சொல்லுக்கு பதிலாக பெண்களுக்கான விடுதலையை முன்னிறுத்தும் சொல்லாக பெமினிஸ் என்ற சொல்லை பயன்படுத்தியுள்ளனர்.

பெண்ணியம் என்பது"ஆண்களோடு பெண்களும் சரிநிகர்" என்ற கொள்கையை வலியுறுத்துவதே [illegible] ஆகும். ஆண்களுக்கு நிகரானது பெண்மை என்க் கூறுகிறது.பெண்களுக்கான உரிமையை [illegible] பெண்ணியம் பற்றிய விளக்கத்தை [illegible] பெண்களின் உரிமையை [illegible] ஓர் இயக்கம் பெண்களின் தேவைகளை நிறைவேற்ற அவர்கள் [illegible] போராடுவதும்தான் பெண்ணியம் என்று கூறலாம்.

தொல்காப்பியர் கூறும் பெண்ணுக்குரிய இலக்கணம்

பெண் என்பவள் அக்காலம் முதல் இக்காலம் வரை அவள் கட்டுப்பாட்டுடன் இருக்கவேண்டும் என்று தொல்காப்பியர் இலக்கணம் வகுத்துள்ளார். ஒரு உலகை ஆக்கவும் அழிக்கவும் சக்தி படைத்தவள் பெண். அவளை

> "அச்சமும் நாணும் மடனும் முந்துறுதல்
> நிச்சமும்பெண்பாற்குஉரியஎன்ப" (தொல். பொருள் -96)

[illegible] என்பவள் அச்சம், நாணம்,மடம் ஆகிய பண்புகளோடு இருக்கவேண்டும் என்று தொல்காப்பியர் [illegible] இலக்கணம் வகுத்துள்ளார். மேலும்,

> "செறிவும் நிறைவும் செம்மையும் செப்பும்
> அறிவும் அருமையும் பெண்பாலான" (தொல். பொருள். 206)

இந்நூற்பாவில் பெண் என்பவள் எல்லோரிடத்திலும் அடங்கி ஒழுகும் தன்மையும்,அமைதிகாக்கும் பண்பும், [illegible]வரிடத்தும் கோபம் இல்லாதிருத்தலும்,சொல் வன்மையும் நன்மை தீமை அறிந்து ஒழுகும் அறிவுதிறமும், பிறர் [illegible] கருத்தறியும் அறிய இயல்பும் கொண்டிருக்கவேண்டும் என்கிறார் தொல்காப்பியர்.

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இன்பக்கேணி புதினத்தில் பெண்ணியம்

*முனைவர் கி.கவிதா, உதவிபேராசிரியர், தமிழ்த்துறை, பெரியார் அரசு கலைக
கைப்பேசி: 9994202774.

1996 ஆம் ஆண்டு கவிதா பதிப்பகத்தில் பிரபஞ்சனின் இன்பக்கேணி பெ
அப்புதினத்தில் பெண்ணியம் பற்றிய கருத்துகளும், பெண்கள் அடிமைத்த
ஆணாதிக்கத்திலும் இருந்து மீண்டு சொந்தக் காலில் நின்று மற்றவர்களுக்
வகையில் இருக்க வேண்டும் என்பதை எடுத்துக்காட்டுகிறது.

பிரபஞ்சனின் இன்பக்கேணி எனும் புதினத்தில் தலைமை பாத்தி
பெண்ணை படைத்திருக்கின்றார் இதன்மூலம் பெண்களுக்கு அதிக முக்கியத்
திகழ்கிறார்.

அன்னம்

இன்பக்கேணி புதினத்தில் இடம் பெறுகின்ற ஆயியின் சினேகமானவளாக
சொர்ணத்தின் உடன்பிறந்தவள். சொர்ணம் ஆயியின் அம்மா. கற்றுப்பட்ட ஆல
கிராமங்களில் அவள் போல அழகி இல்லை என்கிற பேச்சு எழுந்தது. "ஊசியு
போல" (பக். 62) பாட்டும் ஆட்டமும் அவளுக்கு அத்துப்படி பாட்டு வந்தாலுங்க
என்பது பொதுவிதி. அன்னம் விஷயத்தில் அது பொய்.

அன்னத்தின் அக்கா சொர்ணம், *"அடியே அன்னம் பருவமும் பூரிப்பு
நீடிக்கும்? பார்த்துக் கொண்டிருக்கும் போதே இருள் கவியும், அந்திப் பொழுது
தளதளப்பும்? சட்டுப்புட்டென்று யாரையாவது சேர்த்துக் கொண்டு, தல
தேடு."*(பக்.64) என்றாள். அன்னம் அதனைக் கேட்டு வெள்ளையாய் சிரித்தாள்.

அன்னத்திற்கு அகரம் ஐயாவு என்கிற சமூசாரியுடன் பழக்கம் ஏற
அதனால் அவர்களுக்கு ஒரு ஆண் குழந்தையும் பிறந்தது. அதன் பிறகு ஐயா
ஆனால் அன்னம் தாசி குலத்தில் பிறந்தாள் என்பதற்காக அவளைப் பார்க்க வி

சொர்ணத்தை விட சிறந்த அம்மாவாக திகழ்கிறாள் அன்னம். எனவே
அவளுடைய செயல்களும் என்ன வலியுறுத்திகிறது என்றால் எந்த சூழ்நிலை
நிலையில் இருந்து மாறாமல் யாருக்கும் அதிகாரத்தின் தன்மையால் அடிப் பணி
சுயமாக முடிவெடுத்து வாழ வேண்டும் என்ற பெண்ணியக் கருத்தினை தெளிவாக

பரிமளம்

இன்பக்கேணி புதினத்தில் இடம்பெறும் மாதவனின் அத்தை, மகள் பரி
கொண்டவள்.

பரிமளத்தை மாதவனுக்கு திருமணம் செய்து வைக்க வேண்டும் என்று
அனைவரும், அத்தை ஆகியோர் ஆசைப்பட்டனர். ஆனால் அவனுக்கு ஆயியைப் பி
தாசி குலத்தில் பிறந்தாள் என்பதற்காக அவர்களது குடும்பத்தில் அவளை ஏற்க
இவர்கள் எல்லாரையும் விட பரிமளம் மன உறுதியுடன் இருந்து திரு
காத்திருந்ததைப் போல் உங்களுக்கு நான் காத்திருப்பேன் என மனதில் ஒரு மு
முடிவில் தீர்க்கமாய் இருக்க வேண்டும் என்றக் கருத்தினை கூட்டிக்காட்டுகிறது.

எனவே பெண்கள் ஒரு முடிவினை எடுத்தால் யாருக்காகவும் அந்த முடி
பரிமளத்தைப் போல் வெற்றி காண வேண்டும் கடைசியாக பரிமளம் உறுதியாக
திருமணம் செய்து கொள்வாள்.

ஆயி

பிரபஞ்சனின் இன்பக்கேணி புதினத்தில் தலைமை பாத்திரமாக விளங்கு
அவனின் அம்மா சொர்ணம். ஆடுவாள் குலத்தில் பிறந்தவள். தன்னுடைய
உடம்பும், அதன் லாவகமும், கற்றுப்புறுத்து எட்டு ஜூர்களும் பிரசித்தம்.

*"கூரிய நாசி, குவிந்த உதடுகள், திமிறும் முகவாய், சந்தனக் கிண்ண
பெருகிய எடுப்பு அதே வார்ப்புதான் சொர்ணம். இப்போ ஆயி."*(பக்.86).

ஆயியின் அம்மா சொர்ணம் தனதுடைய மகளை எப்படியாவது பண
வாய்ந்தவளாகவும் இருக்க வேண்டும் என்று ஆசைப்பட்டாள். ஆனால்
சுமங்கலியாகவும், நல்லப் பெண்மணியாகவும் வாழ வேண்டும் என்று ஆசை இருந்
ஆயியின் அழகில் பலரும் மயங்கி அவளை எப்படியாவது அடைய வே
செய்தனர். பலபேர் அவளை ஏளனமாகப் பேசினார்கள். ஆயி பாடல்களையும், ஆ
கற்றாள்.

ஒருமுறை ஒழுகரை பெரியதனக்காரர் ஆயியின் கச்சேரிக்கு வந்தார். ஆ
பிறகு அந்த பெரிய தனக்காரருக்கு மரியாதை செலுத்த வேண்டும் என்
கூறினார்கள். ஆயியின் கையில் சந்தனக்கிண்ணத்தை நீட்டி அதனை எடுத்து ம
என்றனர் அதற்கு ஆயி கலை நிமித்தவும் சக்தி இன்றி, தலைகுனிந்து வெகுந
நின்றிருந்தாள் சொர்ணம் அவளைப் பின்னால் இருந்து கிள்ளி தாம்பூலம் பூ வை

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புறநானூற்றில் அறம்

*முனைவர் கி.கவிதா, உதவிப்பேராசிரியர், தமிழ்த்துறை. பெரியார் அரசு கலைக்கல்லூரி – 1. கைப்பேசி: 9994202774.

அறம், பொருள், இன்பம், வீடு என்ற நாற்பொருளுள் முதலாவதாகச் சுட்டப்படுவ அறமே எல்லாவற்றுக்கும் தொடக்கமாக அமைகின்றது. அறம் மனித வாழ்வியலுக்கு உ கொடுத்து உதவுவதோடு வாழ்வில் நலத்தை நிலைநாட்டுகிறது. "அறம் என்பது மனித உயர் மதிப்பீடான விழுமியங்களை உருவாக்குவதாக அமைகிறது.(தமிழ் செவ்வியல் [illegible] அறம் - அறிவியல் - சமூகம் பக். 93-94).

அறம் என்ற சொல்லிற்கு, அறுத்துச்செல்வது, வழியை உண்டாக்குவது என்பன பொருள்களாகும். மனித இனத்தின் நலத்திற்கும் முன்னேற்றத்திற்கும், மனித வரையறுத்துக் கொண்ட ஒழுக்க நெறி அறம் என்பதாகும். மனித வாழ்க்கை [illegible] அமைதியும், அன்றாட வாழ்வில் பின்பற்றக்கூடியவை அறம் என்ற சொல்லை [illegible] தனிமனிதன் உணர்ச்சி வெளிப்பாடுகளில் எழுவன முரண்பாடுகள் அவற்றை நீக்குவதற்கும், மாற்றுவதற்கும், போக்குவதற்கும், அனுபவம் வாய்ந்த சான்றோர்களால் கொடுத்த வாழ்க்கை நெறி அறமாகும். "அறம் என்ற சொல்லிற்கு வழக்கம், ஒழுக்கமு கடமை,ஈகை, புண்ணியம் என்று பல பொருள்களை கொண்டுள்ளது எனலாம்.(பன்முகத் தமிழிலக்கியம், ப. 266.)

"அறம் என்ற சொல் காலந்தோறும் பொருள் மாற்றம் கண்டுள்ளது. அறம் சொல்லை சங்கப் புலவர்கள் நேர்மை, உண்மை, நடுநிலைமை என்னும் ஆண்டுள்ளனர். சங்கமருவிய கால இலக்கியத்தில் அறம் என்பது பிறருக்கு உதவி போது 'தருமம்' என்று பொருள் மாற்றம் கண்டது."(தரணிபோற்றும் தமிழர் பண்பாடு. ப.

அறம் என்பதற்கு வள்ளுவர்,

"அன்றறிவாம் என்னாது அறஞ்செய்க மற்றது
பொன்றுங்கால் பொன்றாத் துணை." (குறள். 36.)

அறம் செய்வதற்கு காலம் நேரம் பார்க்க வேண்டியதில்லை என்பது தான் [illegible] ஆழமான கருத்தாக இருந்திருக்கின்றது. இந்த அறம் தனிமனித பிரதிபலிக்கப்படுகின்றது.

மனிதன் தோன்றிய நாட்கள் தொட்டே தனக்கான அறங்களை [illegible] வாழக்கற்றுக் கொண்டான். மன்னன் எவ்வழியோ மக்கள் அவ்வழி என்பதால், மக்களின் கோட்பாடுகளையும், அறக்கருத்துக்களையும், மன்னனின் வழியாக நெறி என்பதைத்தான். "அரசியல் பிழைத்தோர்க்கு அறம் கூற்றாகும்" என்று சிலப்பதி மையப்பகுதி அறத்தை வலியுறுத்துகிறது.

புறநானூற்றில் அதிகப்பாடல்கள் அறத்தைப் பற்றியே வலியுறுத்துகிறது. சில அறம் என்ற சொல் இடம் பெறாமல் அறத்தின் தன்மையை விளக்குகிறது. [illegible] பாடல்களில் அறம் என்ற சொல் பதினெட்டு பாடல்களில் இடம் பெற்றுள்ளன.

ஈதல் அறம்

செல்வம் பெற்றதன் பயன் ஈதல் பழுத்தமரத்தை நாடும் பறவைகள் செல்வது [illegible] குணமுடையவரை நோக்கி செல்வர்.

"ஈதல் இசைப்பட வாழ்தல் அதுவல்லது
ஊதியம் இல்லை உயிர்க்கு" (குறள். 231.)

என வள்ளுவர் குறிப்பிடுகிறார்.

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ஐங்குறுநூற்றில் மருதத்திணை பாடல்களில் பறவைகள்

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அகப்பொருள் முதல், கரு, உரிப்பொருள் என்ற மூன்று பொருட்களை உள்ளடக்கியது ஆகும். இவற்றுள் முதற்பொருள் என்பது கருப்பொருளும், உரிப்பொருளும் உண்டாவதற்கு முதன்மையாக அமையும் பொருளாகும். நிலம், பொழுது ஆகியவற்றின் இயல்புகளைக் கூறுவதே முதற்பொருள் என்பதை,

"முதல் எனப்படுவது நிலம்பொழுது இரண்டின்
இயல்பென மொழிப இயல்புணர்ந்தோரே"

(தொல்.பொருள்.இளம்.அக.4)

என்ற நூற்பாவில் தொல்காப்பியர் வரையறுக்கின்றார். நில அடிப்படையில் நிலவகைகள் ஐந்தாகப் பிரிக்கப்பட்டுள்ளன. அவை குறிஞ்சி, முல்லை, மருதம், நெய்தல், பாலை என்பனவும். ஐவகை நிலங்களைக் குறிப்பிடுவதோடு அந்தந்த நிலங்களுக்குரிய பொழுதுகளையும் தொல்காப்பியர் இணைத்தே கூறியுள்ளார். இத்திணைப் பாகுபாட்டினைப் பற்றி அறிஞர் பலரும் பல்வேறு வகையான கருத்துக்களைக் கூறுகின்றனர்.

கருப்பொருள்

தொல்காப்பியர் கருப்பொருள்களைப் பற்றி அகத்திணையியலில்,

"தெய்வம் உணாவே மாமரம் புள்பறை
செய்தியாழின் பகுதியோடு தொகைஇ
அவ்வகை பிறவும் கருவென மொழிப"

(தொல்.பொருள்.இளம்.அக.20)

என்னும் நூற்பாவின் மூலம் எல்லாத்திணைக்கும் தெய்வம், உணவு, விலங்கு, மரம், புள், பறை, செய்தி, யாழ் என்பனவும் அவை போல்வனபிறவும் கருப்பொருள்களாக வருமெனக் கூறியுள்ளார்.

ஐங்குறுநூற்று மருதத்திணைப்பாடல்களில் விளக்கப்பட்டுள்ள கருப்பொருள்கள் தொல்காப்பியர் கூறியுள்ள தெய்வம், உணவு, மா, மரம், புள், பறை, செய்தி, யாழ் ஆகிய பிரிவுகளில் எவ்வாறு அடங்கி அமைகின்றன என்பது கூறப்பட்டிருக்கிறது. மருதத்திணைப் பாடல்களில் புள் (பறவை) எத்தனை இடங்களில் வந்துள்ளது, பெயர்களாலும், அடைகளாலும் இவை எவ்வாறு விளக்கப்பட்டுள்ளன என்பதை ஆராய்வதே இக்கட்டுரையின் நோக்கமாகும்.

ஐங்குறுநூற்று மருதப்பாடல்களில் ஆறு வகையான பறவைகள் விளக்கப்பட்டுள்ளன. அவை, குருகு, சேவல், தும்பி, நாரை, மயில், வண்டு ஆகியவையாகும். முன்னர் அடைந்த பின்னர் வருணனையால் விளக்கப்படும் கருப்பொருளே மிகுதியான இடங்களில் புலப்படுத்தப்பட்டுள்ளது. முன்னர் அடையின்றிப் பின்னர் வருணனையால் விளக்கப்படும் கருப்பொருள் என்னும் பிரிவே குறைவான இடத்தில் விளக்கப்பட்டுள்ளது.

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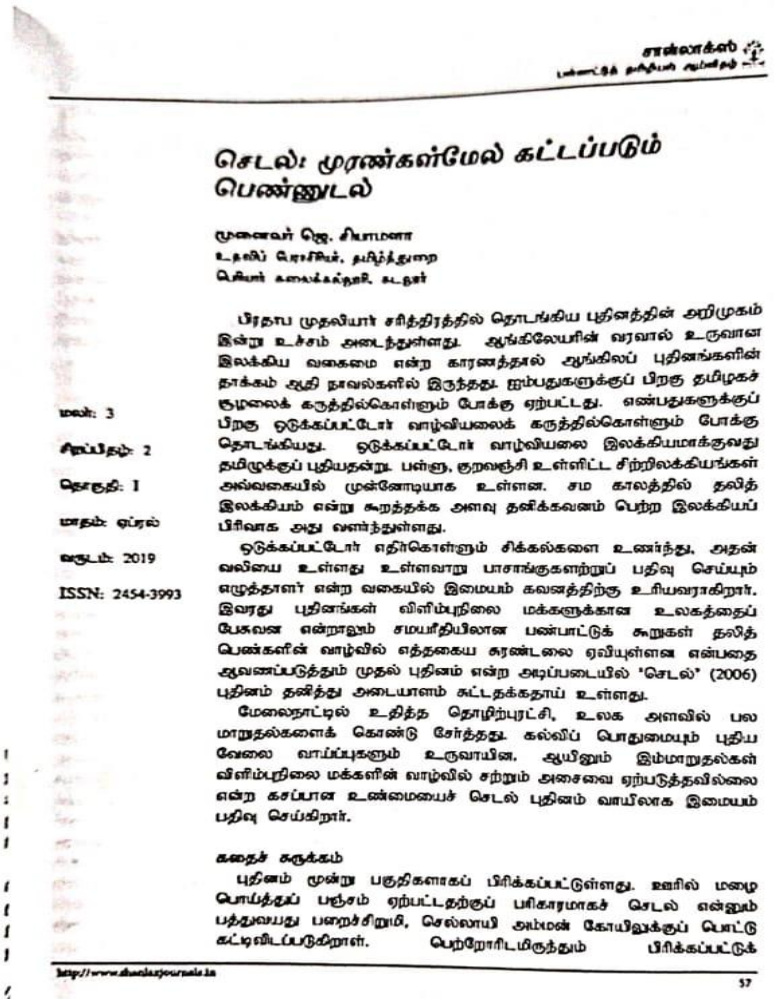

சான்லாக்ஸ்

செடல்: முரண்கள்மேல் கட்டப்படும் பெண்ணுடல்

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தொகுதி: I
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பிரதாப முதலியார் சரித்திரத்தில் தொடங்கிய புதினத்தின் அறிமுகம் இன்று உச்சம் அடைந்துள்ளது. ஆங்கிலேயரின் வரவால் உருவான இலக்கிய வகைமை என்ற காரணத்தால் ஆங்கிலப் புதினங்களின் தாக்கம் ஆதி நாவல்களில் இருந்தது. ஐம்பதுகளுக்குப் பிறகு தமிழகச் சூழலைக் கருத்தில்கொள்ளும் போக்கு ஏற்பட்டது. எண்பதுகளுக்குப் பிறகு ஒடுக்கப்பட்டோர் வாழ்வியலைக் கருத்தில்கொள்ளும் போக்கு தொடங்கியது. ஒடுக்கப்பட்டோர் வாழ்வியலை இலக்கியமாக்குவது தமிழுக்குப் புதியதன்று. பள்ளு, குறவஞ்சி உள்ளிட்ட சிற்றிலக்கியங்கள் அவ்வகையில் முன்னோடியாக உள்ளன. சம காலத்தில் தலித் இலக்கியம் என்று கூறத்தக்க அளவு தனிக்கவனம் பெற்ற இலக்கியப் பிரிவாக அது வளர்ந்துள்ளது.

ஒடுக்கப்பட்டோர் எதிர்கொள்ளும் சிக்கல்களை உணர்ந்து, அதன் வலியை உள்ளது உள்ளவாறு பாசாங்குகளற்றுப் பதிவு செய்யும் எழுத்தாளர் என்ற வகையில் இமையம் கவனத்திற்கு உரியவராகிறார். இவரது புதினங்கள் விளிம்புநிலை மக்களுக்கான உலகத்தைப் பேசுவன என்றாலும் சமயரீதியிலான பண்பாட்டுக் கூறுகள் தலித் பெண்களின் வாழ்வில் எத்தகைய சுரண்டலை ஏவியுள்ளன என்பதை ஆவணப்படுத்தும் முதல் புதினம் என்ற அடிப்படையில் 'செடல்' (2006) புதினம் தனித்து அடையாளம் சுட்டதக்கதாய் உள்ளது.

மேலைநாட்டில் உதித்த தொழிற்புரட்சி, உலக அளவில் பல மாறுதல்களைக் கொண்டு சேர்த்தது. கல்விப் பொதுமையும் புதிய வேலை வாய்ப்புகளும் உருவாயின. ஆயினும் இம்மாறுதல்கள் விளிம்புநிலை மக்களின் வாழ்வில் சற்றும் அசைவை ஏற்படுத்தவில்லை என்ற கசப்பான உண்மையைச் செடல் புதினம் வாயிலாக இமையம் பதிவு செய்கிறார்.

கதைச் சுருக்கம்

புதினம் மூன்று பகுதிகளாகப் பிரிக்கப்பட்டுள்ளது. ஊரில் மழை பொய்த்துப் பஞ்சம் ஏற்பட்டதற்குப் பரிகாரமாகச் செடல் என்னும் பத்துவயது பறைச்சிறுமி, செல்லாயி அம்மன் கோயிலுக்குப் பொட்டு கட்டிவிடப்படுகிறாள். பெற்றோரிடமிருந்தும் பிரிக்கப்பட்டுக்

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குன்றியனார் பாடல்களில் இயற்கைப் புனைவுகள்

*முனைவர் ஆ.திருமேனி, உதவிப்பேராசிரியர், பெரியார்அரசு கலைக் கல்லூரி, கடலூர்-1.

முன்னுரை

சங்க காலப் பெண்பாற் புலவர்கள் நாற்பதுக்கு மேற்பட்டோர் என ஆய்வாளர்கள் கருதுகின்றனர். நாற்பதுக்கு மேற்பட்ட புலவர்களில் பெண்பாற் புலவரான குன்றியனாரும் ஒருவர் ஆவார். இவர் அகநானூற்றில் இரண்டு பாடல்களிம், குறுந்தொகையில் ஆறுபாடல்களும் , நற்றிணையில் இரண்டு பாடல்களும் ஆகமொத்தம் பத்து பாடல்களைப் பாடியுள்ளார்.

சங்க காலப் புலவர்கள் இயற்கையின் பால் கொண்டபற்றினை அவர்களின் பாடல் வழி அறியலாம். பெண்பாற் புலவரான குன்றியனார் இயற்கையின் மீது கொண்ட ஆர்வம் இவரின் பாடல்களில் எங்ஙனம் இடம்பெற்றுள்ளது. என்பதை இக்கட்டுரை ஆய்வுப்பொருளாகக் கொண்டுள்ளது.

"ஐயவி அன்ன சிறுவீ ஞாழல்
செவ்வி மருதின் செம்மலொடு தாஅய்த்
துறை அணிந்தன்று அவன் ஊரே." (குறுந்-50)

வெண்சிறு கடுகினைப் போன்ற சிறிய பூக்களையுடைய ஞாழல் மரத்தின் பூ அழகிய மருத மரத்தின் வாடிய பூக்களுடன் பரவி தலைவனுடைய ஊரில் உள்ள நீர்த்துறையை அழகு செய்தது என்பர் வி.நாகராசன்.

நெய்தல் நிலத் தலைவனிடம் யானும் காதலுடையேன் என்னும் தலைவியின் மனத்துள் தோன்றும் செய்தியைத் தோழி எடுத்துரைப்பர் .அதாவது,

"கூன் முள் முண்டகக் கூர்ம்பனி மாமலர்
நூல் அறு முத்தின் காலொடு பாறித்
துறைதொறும் பரக்கும் தூமணற் சேர்ப்பனை
யானும் காதலென், யாயும் தனி வெய்யள்
எந்தையும் கொடீகியர் வேண்டும்
அம்பல் ஊரும் அவனொடு மொழிமே" (குறுந்-51)

"முண்டகம்" என்றும் சொல்லுக்கு தமிழ் அகராதி முள், தாமரை, நீர்முள்ளி, கள், நெற்றி என விளக்கம் தருகிறது. அதாவது வளைய்ந்த முள்ளையுடைய கழிமுள்ளியின் பனிக்காலத்தில் பூத்த கரிய லர் கோத்த நூல் அற்ற முத்துக்களைப் போல, காற்றினால் சிதறி வீழ்ந்து, நீர்த்துறைகள் தோறும் ாயமணற் பரப்பினை, அழகுடையதாக ஆக்கும். இத்தகைய நெய்தல் நிலத் தலைவனின் ஊரினை லவர் அழகுறக் காட்சிப்படுத்தியுள்ளார். மேலும் குளிர்ந்த பனித்துளியின் அழகினை, வேறொரு லவர் எடுத்தியம்புவதனை,

"நூல் அறு முத்தின் தண்சிதர் உறைப்ப" (குறுந்-104)

என்னும் வரியின் மூலம் அறியலாம். நூல் அறுப்பட்ட முத்து எவ்வாறு சிதைந்து கிடக்குமோ? தைப் போல குளிர்ந்த பனித்திளி இருப்பதனைக் காணலாம்.

நெய்தல் திணைப்பாடல் ஒன்றில் மாரிக்காலத்து ஆம்பல் மலரைப் போன்ற தோற்றத்தையுடைய காக்கின் பார்வையைக் கண்டு அஞ்சிய துன்பத்தையுடைய;ஈரமான உடலையுடைய நண்டு,

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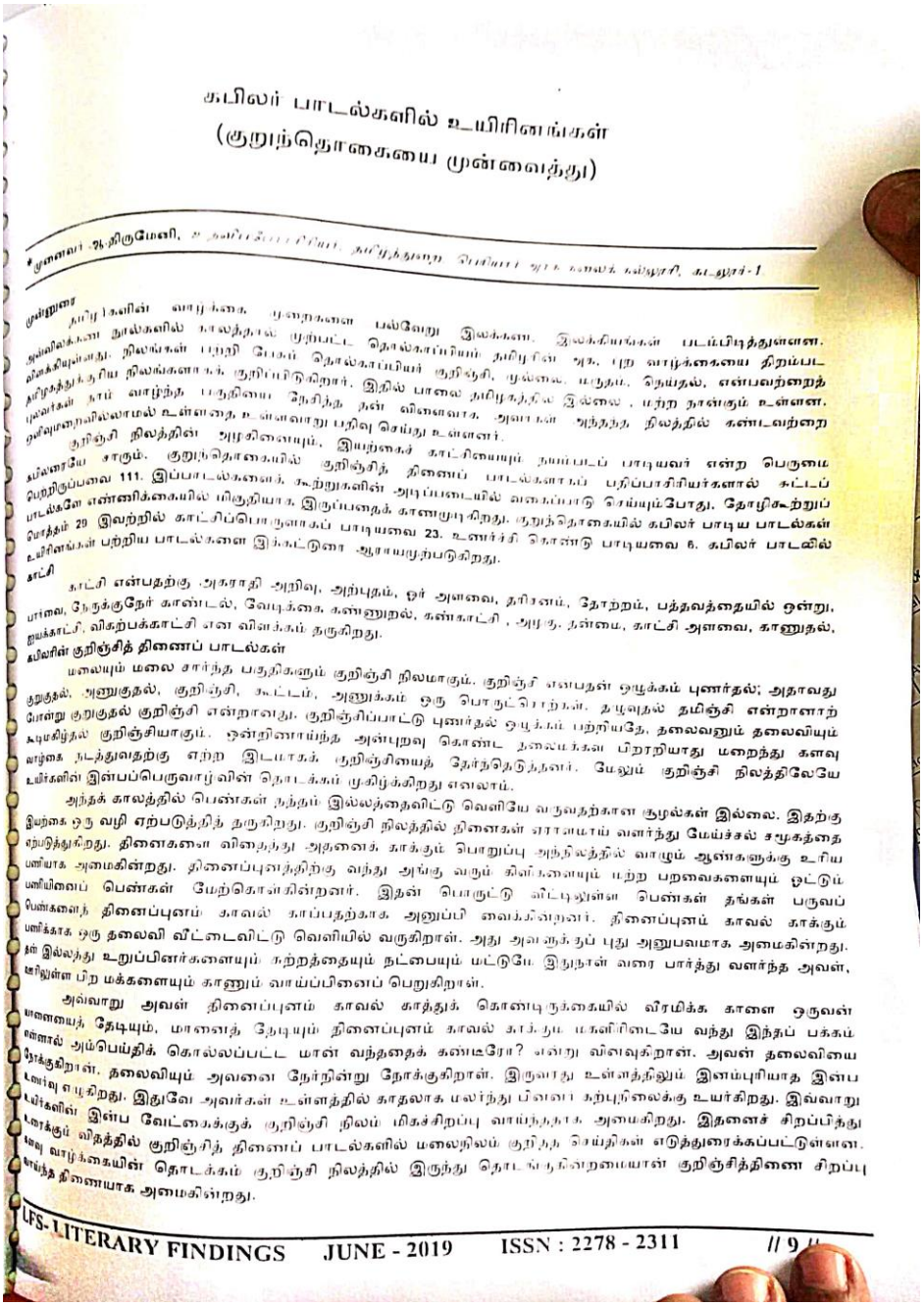

கபிலர் பாடல்களில் உயிரினங்கள்
(குறுந்தொகையை முன்வைத்து)

*முனைவர் ஆ.திருமேனி, உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார் அரசு கலைக் கல்லூரி, கடலூர்-1

முன்னுரை

தாவரங்களின் வாழ்க்கை முறைகளை பல்வேறு இலக்கண, இலக்கியங்கள் படம்பிடித்துள்ளன. அவ்விலக்கண நூல்களில் காலத்தால் முற்பட்ட தொல்காப்பியம் தமிழரின் அக, புற வாழ்க்கையை திறம்பட விளக்கியுள்ளது. நிலங்கள் பற்றி பேசும் தொல்காப்பியம் குறிஞ்சி, முல்லை, மருதம், நெய்தல், என்பவற்றைத் தமிழகத்தார்திய நிலங்களாகக் குறிப்பிடுகிறார். இதில் பாலை தமிழகத்தில் இல்லை , மற்ற நான்கும் உள்ளன. பல்வகைகள் நாம் வாழ்ந்த பகுதியை நேரித்த நல் விளைவாக, அவைகள் அந்தந்த நிலத்தில் கண்டவற்றை தன்னுணர்வில்லாமல் உள்ளதை உள்ளவாறு பதிவு செய்து உள்ளனர்.

குறிஞ்சி நிலத்தின் அழகினையும், இயற்கைக் காட்சியையும் நயம்படப் பாடியவர் என்ற பெருமை கபிலரையே சாரும். குறுந்தொகையில் குறிஞ்சித் திணைப் பாடல்களாகப் பதிப்பாசிரியர்களால் கட்டப் பெற்றிருப்பவை 111. இப்பாடல்களைக் கூற்றுகளின் அடிப்படையில் வகைப்பாடு செய்யும்போது, தோழிகூற்றுப் பாடல்களே எண்ணிக்கையில் பெரும்பகுதியாக இருப்பதைக் காணமுடிகிறது. குறுந்தொகையில் கபிலர் பாடிய பாடல்கள் மொத்தம் 29 இவற்றில் காட்சிப்பொருளாகப் பாடியவை 23. உணர்ச்சி கொண்டு பாடியவை 6. கபிலர் பாடலில் உயிரினங்கள் பற்றிய பாடல்களை இக்கட்டுரை ஆராயமுற்படுகிறது.

காட்சி

காட்சி என்பதற்கு அகராதி அறிவு, அற்புதம், ஓர் அளவை, தரிசனம், தோற்றம், பத்தவத்தையில் ஒன்று, பாவை, நேருக்குநேர் காண்டல், வேடிக்கை, கண்ணுறல், கண்காட்சி , அழகு, நன்மை, காட்சி அளவை, காணுதல், நுவக்காட்சி, விகற்பக்காட்சி என விளக்கம் தருகிறது.

கபிலரின் குறிஞ்சித் திணைப் பாடல்கள்

மலையும் மலை சார்ந்த பகுதிகளும் குறிஞ்சி நிலமாகும். குறிஞ்சி எனபதன் ஒழுக்கம் புணர்தல்; அதாவது குறுகுதல், அணுகுதல், குறிஞ்சி, கூட்டம், அணுக்கம் ஒரு பொருட்சொற்கள். தழுதெல் தமிஞ்சி என்றாளாற் போன்று குறுகுதல் குறிஞ்சி என்றாவது. குறிஞ்சிப்பாட்டு புணர்தல் ஒழுக்கம் பற்றியதே, தலைவனும் தலைவியும் கூடுமகிழ்தல் குறிஞ்சியாகும். ஒன்றினாய்ந்த அன்புறவு கொண்ட தலைமக்கள் பிறரியாது மறைந்து களவு வாழ்கை நடத்துவதற்கு ஏற்ற இடமாகக் குறிஞ்சியைத் தேர்ந்தெடுத்தனர். மேலும் குறிஞ்சி நிலத்திலேயே உயிர்களின் இன்பப்பெருவாழ்வின் தொடக்கம் முகிழ்க்கிறது எனலாம்.

அந்தக் காலத்தில் பெண்கள் நந்தம் இல்லத்தைவிட்டு வெளியே வருவதற்கான சூழல்கள் இல்லை. இதற்கு இயற்கை ஒரு வழி ஏற்படுத்தித் தருகிறது. குறிஞ்சி நிலத்தில் தினைகள் ராஜமாய் வளர்ந்து மேய்ச்சல் சமூகத்தை ஏற்படுத்துகிறது. தினைகளை விதைத்து அதனைக் காக்கும் பொறுப்பு அந்நிலத்தில் வாழும் ஆண்களுக்கு உரிய பணியாக அமைகின்றது. தினைப்புனத்திற்கு வந்து அங்கு வரும் கிளிகளையும் மற்ற பறவைகளையும் ஓட்டும் பணியைப் பெண்கள் மேற்கொள்கின்றனர். இதன் பொருட்டு வீட்டிலுள்ள பெண்கள் தங்கள் பருவப் பெண்களைத் தினைப்புனம் காவல் காப்பதற்காக அனுப்பி வைக்கின்றனர். தினைப்புனம் காவல் காக்கும் பணிக்காக ஒரு தலைவி வீட்டைவிட்டு வெளியில் வருகிறாள். அது அவளுக்குப் புது அனுபவமாக அமைகின்றது. தன் இல்லத்து உறுப்பினர்களையும் நற்றத்தையும் நட்பையும் மட்டுமே இதுநாள் வரை பார்த்து வளர்ந்த அவள், ஊரிலுள்ள பிற மக்களையும் காணும் வாய்ப்பினைப் பெறுகிறாள்.

அவ்வாறு அவள் தினைப்புனம் காவல் காத்துக் கொடிருக்கையில் வீரமிக்க காளை ஒருவன் மானையைத் தேடியும், மானைத் தேடியும் தினைப்புனம் காவல் காக்கும் மகளிரிடையே வந்து இந்தப் பக்கம் வள்ளால் அம்பெய்தி, கொல்லப்பட்ட மான் வந்ததைக் கண்டீரோ? என்று விளவுகிறாள். அவள் தலைவியை நோக்குகிறாள். தலைவியும் அவளை நேர்நின்று நோக்குகிறாள். இருவரது உள்ளத்திலும் இனம்புரியாத இன்ப உணர்வு எழுகிறது. இதுவே அவர்கள் உள்ளத்தில் காதலாக மலர்ந்து பின்னர் கற்புநிலைக்கு உயர்கிறது. இவ்வாறு உயிர்களில் இன்ப வேட்கைக்குக் குறிஞ்சி நிலம் மிகச்சிறப்பு வாய்ந்ததாக அமைகிறது. இதனைச் சிறப்பித்து உரைக்கும் விதத்தில் குறிஞ்சித் திணைப் பாடல்களில் மலைநிலம் குறித்த செய்திகள் எடுத்துரைக்கப்பட்டுள்ளன. உலவு வாழ்க்கையின் தொடக்கம் குறிஞ்சி நிலத்தில் இருந்து தொடங்குவதையால் குறிஞ்சித்திணை சிறப்பு வாய்ந்த திணையாக அமைகின்றது.

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அகநானூற்றில் தாய்த்தெய்வ வழிபாடு

*முனைவர் ஆ.திருமேனி, உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார் அரசு கலைக் கல்லூரி, கடலூர் - 607001.

முன்னுரை

தமிழ்நாடு திருக்கோயில்கள் நிறைந்த நாடு அந்நாட்டில் பழங்காலந்தொட்டே ஊர்தோறும் கோயில்கள் நிறைந்துள்ளன. அவ்வூரில் விநாயகர், முருகன் கோவில்களோடு அம்மன் கோவில்களும் அழகு செய்கின்றன. தாய்த்தெய்வவழிபாடு தொன்மையான வழிபாடு, அத்தாய்த்தெய்வ வழிபாடு தமிழகத்தில் ஊர்தோறும் கால்கொண்டுள்ளது. அம்மன் ஆலயங்கள் ஊர்மக்களுக்கு அனைத்து நலங்களையும் அருளுவதாக மக்கள் நம்பி வழிபடுகின்றனர். இருக்கு(ரிக்) வேதத்தில் தாய்த்தெய்வவழிபாடு பற்றிய செய்தி காணப்படுகின்றது. அதில் உள்ள 'தேவி சூக்தம்' என்னும் பகுதியில் உஷஸ், இராத்ரி,அதிதி, வாகி, புரந்தி, ஈளா, வாகுனி, திஷு போன்ற பெண் தெய்வங்கள் குறிக்கப்பெற்றுள்ளன. எனவே தாய்த்தெய்வவழிபாடு ரிக் வேதத்திற்கு முற்பட்டது என்பது தெளிவு.

தாய்வழிபாடு இந்திய நாட்டுள் மட்டுமின்றி உலகில் பல பகுதிகளிலும் பரவி இருந்துள்ளது புலனாகின்றது. தாய்த்தெய்வவழிபாட்டை இந்து மதம் மட்டுமின்றி, கிறித்துவ மதமும், புத்த மதமும் போற்றுகின்றன. கிறித்துவ மதம் அன்னை மரியாளையும், புத்த மதம் சாரா தேவியைப் போற்றுவதன் மூலம் தாய்வழிபாட்டின் சிறப்பை அறியலாம். சங்க இலக்கிய நூல்களில் ஒன்றான அகநானூற்றில் காணப்படும் தாய்த்தெய்வங்களைப் பற்றி இக்கட்டுரை ஆராய முற்படுகின்றது.

தாய்த்தெய்வ வழிபாடு

பழந்தமிழர்களின் தாய்த்தெய்வம் முதலில் கொற்றவையென்றும், அடுத்து இந்திய-ஆரியரது கலப்பால் (indo Aryan) தோன்றிய தாய்த்தெய்வமான காளியென்றும் கூறுகின்றனர். இதற்கு முன்னரே இந்தியாவில் குடியிருந்த பழங்குடி மக்களான(Austric) பழங்குடி இனத்தாரிடையே வழங்கிய தாய்த்தெய்வத்தைப் பற்றி பழந்தமிழிலக்கியத்தில் காணலாம்.

தமிழில் மோடி என்ற தாய்த் தெய்வம் எல்லோரையும் பெற்ற தாய் என்ற கருத்து காணப்படுகிறது. மோடு என்றால் வயிறு என்று பொருள். மோடு என்பதற்கு எல்லோரையும் பெற்ற வயிறு என்று பெரும்பாணாற்றுப் படையில் பயின்று வருவதைக் காணலாம்.

"பைம் பூண் சேஎய் பயந்த மா மோட்டு" [1]

என்னும் வரியின் மூலம் அறியலாம்.

இதேப்போல பெருங்கதையிலும்,

"மோடேந்தரிவை" [2]

என்றும் அழைக்கப்படுவதைக் காணலாம். மேலும் தனிப்பாடலில் "பெருமோட்டுக்காடுகிழாள்" என்று கூறுகிறது. தகடூர் யாத்திரையில் "பெருமோட்டாள்" என்று கூறுகிறது. பிற்காலத்தில்

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சங்க இலக்கியத்தில்நடுகல் வழிபாடு

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சமூக பண்பாட்டுக்கூறுகள் குறித்த ஆய்வுக் களங்கள் நிறைந்தும் உறைந்தும் கிடக்கும் துறையாக விளங்கும் நாட்டுப்புறவியல் இன்று திகழ்கிறது. பல்வேறு துறைகளின் தோற்றுவாயாக, பல்வேறு கூறுகளுக்கு நிலைக்களனாக விளங்குவது நாட்டுப்புறவியலேயாகும். அந்த வகையில் நம் வழிபாடு குறித்த பலத்தோன்மங்கள் நமது நாட்டுப்புறவியலின் வழியே ஆய்வுசெய்யப்படுதல் வேண்டும்.

இன்றைய நிலையில் தமிழ்ச்சமூகத்தின் வழிபாடு என்பது பெரும்பாலான பெருந்தெய்வ வழிபாடாகவே உள்ளது. குலதெய்வ வழிபாடு, சிறுதெய்வ வழிபாடு என ஆங்காங்கே காணப்படினும், அவையும் பெருந்தெய்வ வழிபாட்டு முறைகளைநோக்கியே நகர்ந்துவருகின்றன. சிறுதெய்வ வழிபாட்டிற்கு உரியவை என்று குறிப்பிடப்படும் நடைமுறைகள் விரைவாக மறைந்து வருகின்றன. ஆயினும் நம் முந்தை வழிபாடான நடுகல் வழிபாட்டினை இன்றைய அனைத்து வழிபாட்டிற்கும் தாய் என்பதில் மாற்றுக்கருத்திருக்க முடியாது.

இந்த நாட்டுப்புறவியல் தன்மை கொண்ட நடுகல் வழிபாடு குறித்து ஆய்வுசெய்யப்படுகிறது. புறநானூற்றில் இடம்பெறும் நடுகல் குறித்தப் பாடல்களைத் தரவுகளாகக் கொண்டு இக்கட்டுரை அமைகிறது.

செவ்வியல்தன்மை

இலக்கியங்கள் தோன்றிய காலம், சிறப்பு, நீத்த இருப்பு, தூய்மை, எளிமை, இனிமை என்று பல்வேறு காரணங்களால் செவ்வியல் தன்மைகொண்ட இலக்கியங்கள் குறிப்பிடப்படுகின்றன. இது மொழிக்கு மொழி வேறுபடும். ஒரு மொழிக்கு ஒன்றாம் நூற்றாண்டில் தோன்றிய இலக்கியம் செவ்வியல் தன்மை கொண்டது எனில் இன்னொரு மொழிக்கு ஆறாம் நூற்றாண்டில் தோன்றிய இலக்கியம் செவ்வியல் தன்மைக் கொண்டதாக கருதப்படும். ஆனால் அனைத்து மொழிகளிலும் செவ்வியல் தன்மை கொண்ட இலக்கியம் என்பது அந்த மொழியில் வழங்கப்பெறும் நாட்டுப்புற இலக்கியங்களையே குறிப்பிட வேண்டும். மொழி தோன்றிய காலம் தொட்டு அந்த மொழியில் வழங்கப்படும் இலக்கியங்கள் நாட்டுப்புற இலக்கியங்களே. ஆனால் செவ்வியல் இலக்கியங்கள் என்று அடையாளப்படுத்தப்படும் கருதிகளை வரையறை செய்வது இயலா என்பதும் இங்கு குறிப்பிடப்பட வேண்டியதாகும்.

வழிபாடு

வழி - படுதல் என்பதுதான் வழிபாடு என்றாயிற்று. படுதல் என்ற அழிந்துபோதல் என்னும் பொருளும் உண்டு என்பது நினைவில்கொள்ள வேண்டும். வழி செல்லுதல் என்னும் பொருளும் இங்கு நினைவுகூரத் தக்கது. "நிரைவழிப் படும் புணைபோல" என்பது புறநானூற்று வரியாகும். அழிந்துபோன அல்லது இறந்துபோன ஒருவரின் வழியில் செல்லுதல் என்பது வழிபடுதல் என்னும் சொல்லின் உட்கிடக்கை என்றாலும் இறந்துபோன ஒருவரை

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" மடல் ஏறிய மங்கை"

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மரபு வழிப்பட்ட தமிழ்ச்சமூகத்தின் வாழ்வியலில் சமயம், இலக்கியம், வழிபாடு என பல்வேறு கூறுகள் சமூகக்கட்டுப்பாடுகளைக் கட்டமைக்கின்றன. தமிழர்களின் தொன்மை வரலாற்றுப் பெட்டகமாகத் திகழும் தொல்காப்பியத்திலும் இக்கட்டுப்பாடுகள் இடம்பெறக் காணலாம். இக்கட்டுப்பாடுகள் பெரிதும் விளிம்புநிலையினருக்கே உரியதாக அமைகிறது. இக்கட்டுப்பாடுகளில் தளர்வினையும் - மீறலையும் முன்னெடுப்பவர்கள்"கலகக்காரர்கள்" என்றும் "புரட்சிக்காரர்கள்" என்றும் அடையாளப் படுத்தப்படுகிறார்கள்.

அதிகார மையத்திலிருந்து விலக்கி வைக்கப்பட்ட விளிம்பு நிலை மக்களில் பெண்கள் குறிப்பிடத் தக்கவர்கள். 'சாதி' வழியான சமூகப் படிநிலையில் உயர்தட்டு சமூகப் பெண்களானாலும் 'பாலியல்' வழியான சமூகப் படிநிலையில் விளிம்புநிலையினரே.

இலக்கியம் படைப்பதிலிருந்து, கடல்கடந்த பயணம் தொட்டு, தன் மனவிழைவினை வெளிப்படுத்தும் நிலைவரை ஒரு கட்டுப்பாடுடனே பெண்கள் இயங்கவேண்டி உள்ளது. இக்கட்டுப்பாடுகளில் மீறலையோ தளர்வினையோ முன்னெடுத்தவர்கள் தண்டிக்கப்பட்ட வரலாறும் உண்டு. இப்படியான தண்டித்தலில்போது அவர்களுக்கான பாதுகாப்பை உறுதி செய்யும் அமைப்புகளில் 'சமயங்கள்' குறிப்பிடத்தக்கதாகும். ஒரு நிகழ்வு சமயங்களின் பெயரால் சமய நிறுவனங்களின் பெயரால் நிகழ்த்தப்டும்போது அது பாதுகாப்படவும், சரியென வாதிடப்படவும் செய்கிறது.

பாதுகாக்கும் சமய அமைப்பு

"பன்பாட்டின கூறுகளில் ஒன்றான சமயம் வெறும் சடங்குளால் ஆனதல்ல. ஒழுக்க நெறிகளாலும் அறச்சிந்தனைகளாலும் வார்த்தெடுக்கப்பட்டதாகவே அமைய வேண்டும்" என்பது சமய மறுப்பாளர்களும் ஏற்றுக்கொள்ளும் கருத்தாடல். உலகச் சமயப் பெருவெளியில் இந்திய சமய மரபு குறிப்பிடத்தக்க தாக்கத்தை ஏற்படுத்தியது. ஆன்மா, பல்பிறவி கோட்பாடு, பழமை, பண்பாடு, அறம், எளிமை,தொண்டு என்ற அடித்தளத்தின் மீது கட்டப்பட்டவைகளே இந்திய சமயங்கள்.

இந்தியத் துணைக்கண்டத்தின் சமய மரபில் குறிப்பிடத்தக்க அழுத்தத்தை தந்தது வைணவம். நிறுவனமயமான 'இந்து' மதத்தின் ஒரு கூறாக மாறிப்போன வைணவம் ஆதியில் தனித்தே இயங்கியது. தமிழ் பண்பாட்டுத் தளத்திலும் வழிபாட்டுத் தளத்திலும் இன்றளவும் தனித்தே இயங்கி வருகிறது வைணவம்.

சமயங்கள் யாவும் மரும் என்று நிறுவன மயப்படுத்தப்பட்டதன் மிக முக்கிய காரணிகளில் ஒன்றாக சமயத்தைப் பரப்புதல் அமைந்தாலும், சமயவாதிகளின் பாதுகாப்பும் மிக முக்கியமானதாக அமைகிறன்றது. அரசன், மன்னன், ஆலயங்கள், மடங்கள், மடத்தலைவர்கள் என்று சகல நிலையிலும் ஆதிக்கம் செலுத்தும் அதிகார மையமாக சமயம் இருந்துவருவதை இன்றும் காணலாம். சமயவாதிகள், சமயத் தலைவர்கள், சமயத்தைப் பின்பற்றுவோர் என்று சமயமும் பெருந்திரள் அமைப்பாக மாறி, குறிப்பிட்ட சமயத்தவரின் பாதுகாப்பை உறுதிசெய்கிறது. சமூகக்கட்டுப்பாடுகளை மீறுகிறபோது அவர்களின் மீதும் மீறலின் மீதும் வைக்கப்படும் விமர்சனங்கள் சமயத்தின் மீது வைக்கப்படும் விமர்சனமாகக் கருதப்பட வாய்ப்புள்ளது. ஆகேவே, பொதுத்தளத்தில் சமய அமைப்புகளை விமர்சிக்கவும் சுட்டிக்காட்டவும் ஒரு தயக்கம் இருப்பதை அறியலாம். சமயங்கடந்த நடுவுநிலை விமர்சனங்கள் இவ்வாகையான தயக்கத்தைக் கொண்டிருப்பதில்லை என்தையும் இங்கு சுட்டிக்காட்டுதல் வேண்டும். இந்தப் பின்புலத்தில் திருமங்கை ஆழ்வார் முன்னெடுத்த 'பெண் மடலேறுதலை' ஆய்வு செய்கிறது இக்கட்டுரை.

மடலேறுதல்

"பனை மடலைக் குதிரையாக ஆக்கி, எறியூர்தலை "மடன்மா ஏறுதல்' என்றும் ' மடல்' என்றும் சுட்டினர். இச்செயலை மேற்கொள்வதன் மூலம், தலைவனின் காதல் வன்மையை ஊருக்கு உணர்த்துதல், அதன் வழியாக தான் விரும்பிய தலைவியை மணத்தல் என அமைகிறது".(ம.பெ.சீனிவாசன்,2002) மடலேறி மணம்முடித்தலை,

"ஏறிய மடல்திறம் இளமை தீர்திறம்
தேறுத லொழிந்த காமத்து மிகுதிறம்" –(தொல்.பொருள் அகம். 54)

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"கைப்புணைந்தியற்றா கவின் பெரு வனப்பு" எனக் குறிப்பிடப்படுவது இயற்கை. அடர்ந்த வனங்கள் அழிக்கப்பட்டு மாளிகைகளும் உல்லாச விடுதிகளும் கட்டப்படுகின்றன. அவ்வாறு கட்டப்பட்ட மாளிகைகளின் வாசலில் செயற்கை மரங்கள் நடப்படுகின்றன. மனிதன் மரத்தினை விட்டு வாழ முடியாது என்பதற்குச் இவை சான்றாகும். காரணம் மனிதன் இயற்கையின் படைப்பு இயற்கையின் படைப்பே மனிதனும் பிற உயிரினங்களும். இயற்கையைத் துய்த்தும் இயற்கையைப் பயன்படுத்தியுமே உணவு உள்ளிட்ட அனைத்தும் பெறுகிறோம். இன்று இயற்கையும் இயற்கை சார்ந்த கூறுகளும் பயன்பாட்டுக்கும் நுகர்வுக்கும் மட்டுமே என்னும் மனநிலையில் மனித சமூகம் வாழ்த் தொடங்கிவிட்டது. இதனால் இயற்கையை எல்லை மீறி அனுபவித்தும் அழித்தும் வருகிறோம். இதன் விளைவாக பல மாறுபாடுகள் சீரழிவுகள் நடைபெறுகின்றன. ஆனால், தமிழ்ச்சமூகத்தின் வாழ்வியல் என்பது இயற்கையைத் துய்த்து வாழும் வாழ்க்கை முறையல்ல. மாறாக, இயற்கையோடு இணைந்து வாழும் வாழ்க்கை முறையினைக் கொண்டது. மனிதன் சக மனிதனோடு இணைந்து வாழ்வதைப்போல இயற்கையோடும் இணைந்து வாழ்ந்த வாழ்க்கை முறை தமிழர்தம் வாழ்க்கை முறை. இதனை மூன்று சான்றுகளோடு நிறுவுகிறது இக்கட்டுரை.

திணைப்பகுப்பும் சூழலியல் வாழ்வும்

திணைவழிச் சமூகமான சங்ககால சமூகம் இயற்கையோடு இயைந்த வாழ்க்கை முறையினைக் கொண்டது. இதற்கு குறிஞ்சி முல்லை, மருதம், நெய்தல், பாலை என்னும் ஐந்திணைப் பகுப்பு முறையும் அதனை ஒட்டிய முதல் - கரு - உரி என்னும் முப்பொருள் வகைபாட்டிற்கும் அதன் நிலவியல் சார்ந்தே வடிவமைக்கப்பட்டுள்ளன.

முதற்பொருளில் வரும் நிலம் - பொழுது, கருப்பொருளில் இடம்பெறும் தெய்வம், உணவு, மா, மரம், புள், பறவை போன்றவையும், உரிப்பொருளில் இடம்பெறும் உளவியல் உணர்வும் அத்திணை சார்ந்த நிலவியல் கூறுகளை அடிப்படையாகக் கொண்டதாகும். சான்றிற்கு குறிஞ்சித் திணையில், நேடுக்க மலைகளின் முகடுகளுக்குச் செல்லும் தலைவனும் தலைவியும் தற்செயலாக நிலையினாலும் தனிமையினாலும் புணர்தலும் புணர்தல் நிமித்தமும் நிகழ்கிறது. இவ்வாறே, ஆநிரைகளை மேய்க்கச் சென்ற தலைவன் திரும்ப வரும்வரை இருத்தலும் இருத்தல் நிமித்தமும் முல்லையில் நிகழ்கிறது. உடனமர் சமூகமும் உபரி உற்பத்தியும் மிகை விளைச்சலும் கொண்ட மருதத்தினையில் ஊடல் இடம் பெறுகிறது. கடல்சார் உணவுத் தேடலும் பாதுகாப்பற்ற கடல்பயணமும் நெய்தல் திணையில் இரங்கலும் இரங்கல் நிமித்தமும் ஏற்படுகிறது. எவ்வித வருவாயும் அற்ற வறட்சி மிகுந்த பாலைத் திணையில் பிரிதலும் பிரிதல் நிமித்தமும் என்று உரிப்பொருளும் கருப்பொருளும்

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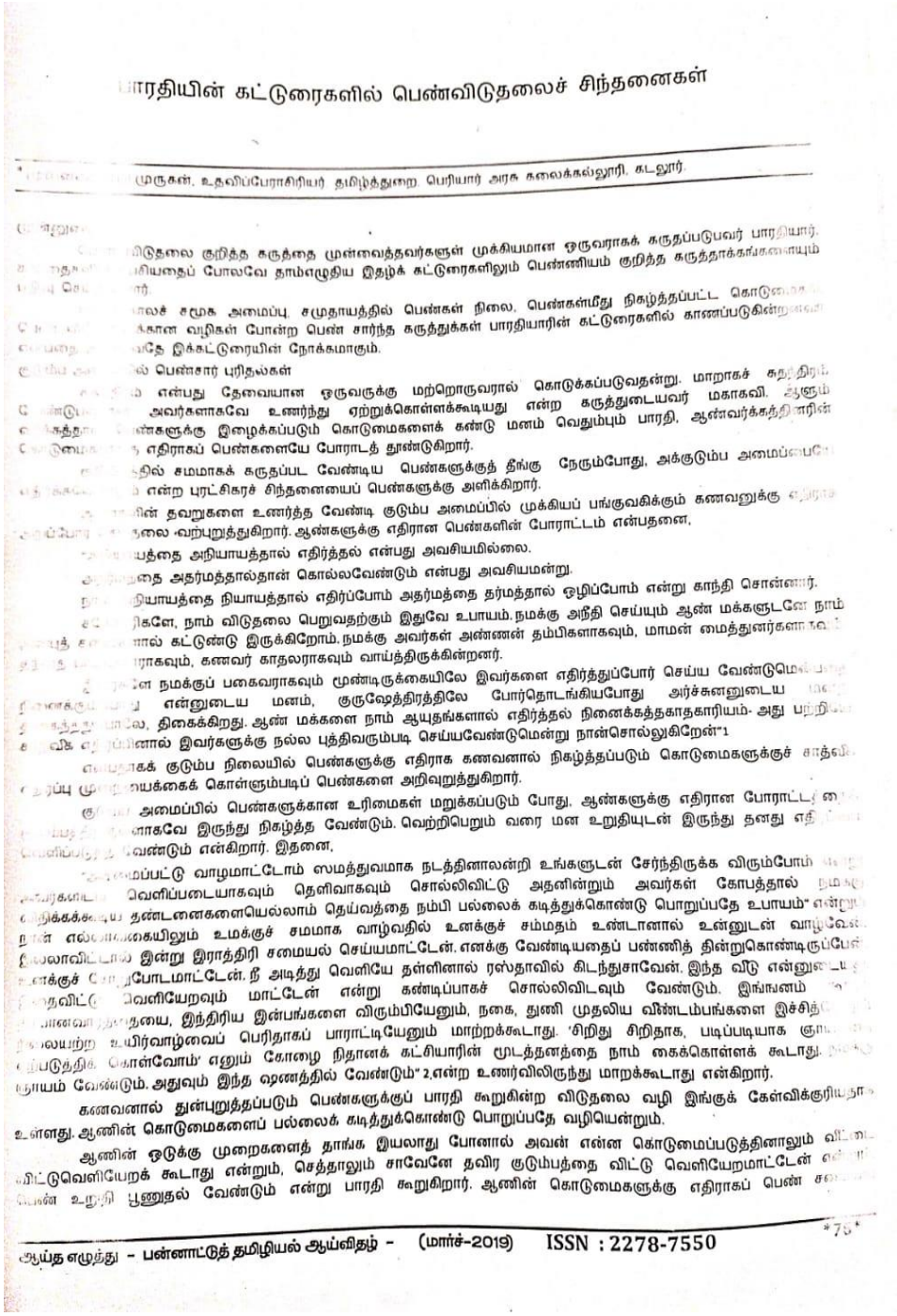

ாரதியின் கட்டுரைகளில் பெண்விடுதலைச் சிந்தனைகள்

முருகன், உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார் அரசு கலைக்கல்லூரி, கடலூர்.

விடுதலை குறித்த கருத்தை முன்வைத்தவர்களுள் முக்கியமான ஒருவராகக் கருதப்படுபவர் பாரதியார்.
தியதைப் போலவே தாம்எழுதிய இதழ்க் கட்டுரைகளிலும் பெண்ணியம் குறித்த கருத்தாக்கங்களையும்
ார்.
ாலச் சமூக அமைப்பு, சமுதாயத்தில் பெண்கள் நிலை, பெண்கள்மீது நிகழ்த்தப்பட்ட கொடுமை
க்கான வழிகள் போன்ற பெண் சார்ந்த கருத்துக்கள் பாரதியாரின் கட்டுரைகளில் காணப்படுகின்றன
தே இக்கட்டுரையின் நோக்கமாகும்.
ல் பெண்சார் புரிதல்கள்
என்பது தேவையான ஒருவருக்கு மற்றொருவரால் கொடுக்கப்படுவதன்று. மாறாகச் சுதந்திரம்
அவர்களாகவே உணர்ந்து ஏற்றுக்கொள்ளக்கூடியது என்ற கருத்துடையவர் மகாகவி. ஆளும்
ண்களுக்கு இழைக்கப்படும் கொடுமைகளைக் கண்டு மனம் வெதும்பும் பாரதி, ஆண்வர்க்கத்தினரின்
எதிராகப் பெண்களையே போராடத் தூண்டுகிறார்.
தில் சமமாகக் கருதப்பட வேண்டிய பெண்களுக்குத் தீங்கு நேரும்போது, அக்குடும்ப அமைப்பை
என்ற புரட்சிகரச் சிந்தனையைப் பெண்களுக்கு அளிக்கிறார்.
ின் தவறுகளை உணர்த்த வேண்டி குடும்ப அமைப்பில் முக்கியப் பங்குவகிக்கும் கணவனுக்கு எதிரான
லை வற்புறுத்துகிறார். ஆண்களுக்கு எதிரான பெண்களின் போராட்டம் என்பதனை,
த்தை அநியாயத்தால் எதிர்த்தல் என்பது அவசியமில்லை.
தை அதர்மத்தால்தான் கொல்லவேண்டும் என்பது அவசியமன்று.
நியாயத்தை நியாயத்தால் எதிர்ப்போம் அதர்மத்தை தர்மத்தால் ஒழிப்போம் என்று காந்தி சொன்னார்.
ிகளே, நாம் விடுதலை பெறுவதற்கும் இதுவே உபாயம். நமக்கு அநீதி செய்யும் ஆண் மக்களுடனே நாம்
ால் கட்டுண்டு இருக்கிறோம். நமக்கு அவர்கள் அண்ணன் தம்பிகளாகவும், மாமன் மைத்துனர்களாகவ
ாகவும், கணவர் காதலராகவும் வாய்த்திருக்கின்றனர்.
ள நமக்குப் பகைவராகவும் மூண்டிருக்கையிலே இவர்களை எதிர்த்துப்போர் செய்ய வேண்டுமென்
என்னுடைய மனம், குருஷேத்திரத்திலே போர்தொடங்கியபோது அர்ச்சுனனுடைய
லே, திகைக்கிறது. ஆண் மக்களை நாம் ஆயுதங்களால் எதிர்த்தல் நினைக்கத்தகாதகாரியம்- அது பற்றி
னால் இவர்களுக்கு நல்ல புத்திவரும்படி செய்யவேண்டுமென்று நான்சொல்லுகிறேன்"1
ாகக் குடும்ப நிலையில் பெண்களுக்கு எதிராக கணவனால் நிகழ்த்தப்படும் கொடுமைகளுக்குச் சாத்வி
யக்கைக் கொள்ளும்படிப் பெண்களை அறிவுறுத்துகிறார்.
அமைப்பில் பெண்களுக்கான உரிமைகள் மறுக்கப்படும் போது, ஆண்களுக்கு எதிரான போராட்டமு
ாகவே இருந்து நிகழ்த்த வேண்டும். வெற்றிபெறும் வரை மன உறுதியுடன் இருந்து தனது எதி
வண்டும் என்கிறார். இதனை,
மைப்பட்டு வாழமாட்டோம் ஸமத்துவமாக நடத்தினாலன்றி உங்களுடன் சேர்ந்திருக்க விரும்போம்
வெளிப்படையாகவும் தெளிவாகவும் சொல்லிவிட்டு அதனின்றும் அவர்கள் கோபத்தால்
தண்டனைகளையெல்லாம் தெய்வத்தை நம்பி பல்லைக் கடித்துக்கொண்டு பொறுப்பதே உபாயம்" என்
எல்லாகையிலும் உமக்குச் சமமாக வாழ்வதில் உனக்குச் சம்மதம் உண்டானால் உன்னுடன் வாழ்வே
லாவிட்டால் இன்று இராத்திரி சமையல் செய்யமாட்டேன். எனக்கு வேண்டியதைப் பண்ணித் தின்றுகொண்டிருப்பே
க்குப் போடமாட்டேன். நீ அடித்து வெளியே தள்ளினால் ரஸ்தாவில் கிடந்துசாவேன். இந்த வீடு என்னுடை
விட்டு வெளியேறவும் மாட்டேன் என்று கண்டிப்பாகச் சொல்லிவிடவும் வேண்டும். இங்ஙனம்
னவாழ்நாளையை, இந்திரிய இன்பங்களை விரும்பியேனும், நகை, துணி முதலிய வீண்டம்பங்களை இச்சித்
லையற்ற உயிர்வாழ்வைப் பெரிதாகப் பாராட்டியேனும் மாற்றக்கூடாது. 'சிறிது சிறிதாக, படிப்படியாக
ழ்படுத்திக் கொள்வோம்' எனும் கோழை நிதானக் கட்சியாரின் மூடத்தனத்தை நாம் கைக்கொள்ளக் கூடாது.
நாயம் வேண்டும். அதுவும் இந்த ஷணத்தில் வேண்டும்" 2,என்ற உணர்விலிருந்து மாறக்கூடாது என்கிறார்.
கணவனால் துன்புறுத்தப்படும் பெண்களுக்குப் பாரதி கூறுகின்ற விடுதலை வழி இங்குக் கேள்விக்குரியதா
உள்ளது. ஆணின் கொடுமைகளைப் பல்லைக் கடித்துக்கொண்டு பொறுப்பதே வழியென்றும்.
ஆணின் ஒடுக்கு முறைகளைத் தாங்க இயலாது போனால் அவன் என்ன கொடுமைப்படுத்தினாலும் வீட்டை
விட்டுவெளியேறக் கூடாது என்றும், செத்தாலும் சாவேனே தவிர குடும்பத்தை விட்டு வெளியேறமாட்டேன் என்
பெண் உறுதி பூணுதல் வேண்டும் என்று பாரதி கூறுகிறார். ஆணின் கொடுமைகளுக்கு எதிராகப் பெண்

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"தோல்" நாவல் சித்தரிக்கும் தொழிலாளர் வாழ்வியல்

த.சுமிதா
முனைவர் பட்ட ஆய்வாளர் (பகுதி நேரம்), கௌரவ விரிவுரையாளர்,
பெரியார் அரசு கலைக்கல்லூரி, கடலூர், தமிழ்நாடு, இந்தியா.

முனைவர் ப.குமரன்
நெறியாளர்
பெரியார் அரசு கலைக்கல்லூரி, கடலூர், தமிழ்நாடு, இந்தியா.

முன்னுரை

திண்டுக்கல் நகரத்திலுள்ள தோல் தொழிற்சாலைத் தொழிலாளர்களின் வாழ்க்கையினை எடுத்துக்காட்டும் விதமாக 'தோல்' நாவல் படைக்கப்பட்டுள்ளது. நாவலாசிரியர் செல்வராஜ் தமிழ்நாடு கலை இலக்கியப் பெருமன்றம், மக்கள் எழுத்தாளர் சங்கம், தமிழ்நாடு முற்போக்கு எழுத்தாளர் மற்றும் கலைஞர்கள் சங்கம் ஆகிய இடதுசாரி இலக்கிய இயக்கங்களோடு இணைந்து செயல்பட்டவர். இவரது தோல் நாவல் தமிழக அரசின் விருதுகளையும், அண்மையில் சாகித்திய அகாதெமி விருதினைப் பெற்றுள்ளது குறிப்பிடத்தக்கது. இந்நாவல் சித்தரிக்கும் தொழிலாளர் வாழ்வியல் பற்றி இக்கட்டுரை வெளிப்படுத்துகின்றது.

தோல்

'தோல்' நாவலானது, திண்டுக்கல் நகரத்திலுள்ள தோல் தொழிற்சாலைத் தொழிலாளர்களின் போராட்ட வாழ்க்கையினையும் அப்போராட்டத்திற்கு உறுதுணையாக இருந்த இடதுசாரி இயக்கத் தலைவர்களின் தலைமறைவு வாழ்க்கையினையும் எடுத்துரைக்கின்றது. காலனியாதிக்கக் காலத்தில் இந்தியாவில் தோல் தொழிற்சாலைகள் நிறுவப்பட்டன. வட இந்தியாவில் ஜலந்தர், தில்லி, ஆக்ரா, மும்பை, கோலாப்பூர் ஆகிய வட இந்திய நகரங்களிலும், வாணியம்பாடி, ஆம்பூர், இராணிப்பேட்டை, அம்பத்தூர், சென்னை ஆகிய தென்னிந்திய நகரங்களிலும் ஏற்படுத்தப்பட்டன.

தோலை ஊறவைத்தல், முடி நீக்குதல், தரம்பிரித்தல், வெண்மையாக்குதல் (Bleech), பதப்படுத்துதல் போன்ற பல்வேறு நிலைகளில் தோல் தயாரிக்கப்படுகின்றது. தோல் தொழிற் சாலைகள் தொடங்கப்பட்ட காலங்களில் சுண்ணாம்புக் குழிகளில் நனைய வைத்து, கடுக்காய், பட்டை குழிகளில் ஊறப்போட்டுத் தயாரிக்கப்பட்டன. தற்போது நவீன முறையில் குரோமியம் தோல் தொழிற்சாலைகள் உருவாகிவிட்டன. ஆயின் 'தோல்' நாவல் மரபான தோல் தொழிற்சாலைகளில் வேலை பார்த்த தொழிலாளர்களின் இன்னல்களைச் சித்திரிக்கின்றது.

எதார்த்த வாதம்

"சமுதாய யதார்த்தத்தை எழுதுவது அதை மாற்றுவது எப்படி என்பதற்காகத்தான்," என்று தம் ஏற்புரையைத் தொடங்கினார் படைப்பாளி. சுத்த இலக்கியவாதிகளின் புறக்கணிப்புகள் பற்றிய கவலை கொஞ்சமும் இல்லாதவராக, "வர்க்க உணர்வூட்டுவது முக்கியம். என்னைப் பொறுத்த வரையில் ஏற்றுக் கொண்ட லட்சியத்திற்காகப் போராட வேண்டும் என்பதற் காகவே வழக்கறிஞராகக் கறுப்பு அங்கி அணியத் தொடங்கினேன். இலக்கியத்திலும் அதையே செய்கிறேன்," என்றார்

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காட்சிப் பொருளும் கருத்துப்பொருளும் ஆகிய ஒவ்வொன்றிற்கும் தனித்தனி வரலாறு உண்டு. ஆயின், ஒரு நாட்டின் அல்லது மக்கள் வரலாறே பொதுவாக வரலாறு எனப்படும். மக்கள் வரலாற்றை அறிய இலக்கியங்களே முக்கிய ஆதாரமாக விளங்குகின்றது. பண்டைய இலக்கியம் தொட்டு புதுமை இலக்கியம் வரை வரலாற்றிற்கான ஆதாரமாக அமைகின்றன. இவற்றுள் டி.செல்வராஜ் அவர்களின் நாவல்கள் உழைக்கும் மக்களின் வரலாற்றைக் கூறும் வகையில் அமைந்துள்ளன. இவரது நாவல்கள் உழைக்கும் வர்க்க மக்களும், அவர்களை வழிநடத்தும் முதலாளித்துவத்தையும் விளக்குகின்றன. உடல் உழைப்பைக் கொட்டி, வறுமையில் அவதிப்படும் இன வரலாற்றை நன்கு செப்பனிட்டுக் காட்டும் வகையில் டி.செல்வராஜ் அவர்களின் மலரும் சருகும், தேனீர், தோல் என்னும் மூன்று நாவல்களும் அமைந்துள்ளன.

மலரும் சருகும்

மலரும் சருகும் என்னும் தலித்திய சமூக நாவல் வேளாண்மைத் தொழில் செய்து வாழும் மக்களின் வாழ்வியலைச் சித்தரித்துள்ளது. தனக்கென்று சிறு அளவு நிலம் வைத்து பயிர் செய்வோர், பயிர் செய்வோர் என இரு தரத்தார் வாழ்வியலைக் கூறியுள்ளது. இம்மக்களின் அன்றாட வாழ்வில் காணப்படும் இன்பம், துன்பம், காதல், கலவரம் என பல்வேறு சூழல்களை வெளிப்படுத்துகின்றது.

உறவுகளிடையே காணப்படும் சூதுகள், ஏற்றத்தாழ்வுகள், சாதியம், சமயம், மதமாற்றம் போன்றவை இந்நாவலில் பேசப்பட்டுள்ளது. எளிய மக்களின் வறுமை நிலையைப் பயன்படுத்திக் கொண்டு அவர்களின் நிலங்களை ஏமாற்றும் மேல்சாதியப் போக்கும் கூறப்பட்டுள்ளது.

குடும்ப உறவு

மனித இனம் தோன்றியது முதல் குழு வாழ்வையே மேற்கொண்டனர். அக்குழு வாழ்க்கை முறையானது கூட்டுக்குடும்ப முறைக்கு வழி வகுக்கிறது. மனிதனின் வாழ்வியல் நெறிமுறைகளை வரலாற்று அடிப்படையில் ஆய்வு செய்வதற்கு குடும்ப வாழ்வியல் நிலைகொண்டு காலத்தை வென்ற உறவுகளையே இன்றளவும் பேசப்பட்டு வருகிறது. அப்படிப்பட்ட குடும்ப உறவானது அன்பையும் அன்பின் வழி பண்பாட்டையும் பாரம்பரியத்தையும் பறைசாற்றுகிறது.

குடும்பம் என்பத வழிவழியாக மனிதப் பண்பாட்டையும் மரபையும் வளர்த்தெடுத்து, ஒரு மனித இனத்தின் அடையாளத்தை நிலைநிறுத்தியுள்ளது. அவ்வகையில் டி.செல்வராஜ் அவர்களின் நாவல்கள் உழைக்கும் மக்களின் குடும்ப உறவு முறையினை கண்முண் காணும் காட்சிகளாக தம் எழுத்தின் வழி வடித்துள்ளார்.

அன்பு

அன்பு என்பது எல்லா உயிர்களிடத்தும் இருப்பது ஆகும். எவ்வுயிரும் தமக்கென்று உறவுகளை உருவாக்கிக் கொள்கின்றன. ஓரறிவு உயிர் முதல் ஆறறிவு உடைய மனிதன்

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படைப்பாளனுக்கும் வாசகனுக்கும் இடையில் இறுக்கமான தொடர்பை ஏற்படுத்தி, பனுவலை வெற்றிபெறச் செய்வதில் மொழி முக்கிய இடம்பெறுகிறது. எந்த ஒரு பனுவலின் வெற்றிக்கும் எழுத்தாளன் கையாளும் மொழி முக்கிய காரணியாக அமைந்திருக்கின்றது. மொழியின் மூலமாகவே பனுவலின் கருத்து வாசகனைச் சென்று சேர்கிறது. எனவே, மொழியில் இலக்கியப் படைப்பாளர்கள் ஆதிகக் கவனம் செலுத்த வேண்டிய தேவை உள்ளது. கதைக்கரு, கதை நிகழும் களம், கதை மாந்தர் பண்பு போன்ற பல்வேறு கூறுபாடுகளும் மொழிநடையின் வாயிலாகவே புலப்படுத்தப்படுகின்றன. இதனால் பனுவலின் வெற்றிக்கு அதன் மொழி திறம்பட அமைந்திருக்க வேண்டும் என்பதை அறியமுடிகின்றது. எஸ்.ரா.வின்புதின இலக்கியத்தைப் பற்றிய மதிப்பீட்டில் அவரது மொழியாளுமைத்திறம் காண்பதும் முக்கியக் கூறாக அமைவதனால் அவர் தனது புதினங்களில் பயன்படுத்தியுள்ள மொழி ஆளுமை குறித்தக் கருத்துக்கள் இக்கட்டுரையில் இடம்பெறுகிறது.

மொழிநடை குறித்த அறிஞர் கருத்துகள்

ஒரு பனுவலுக்கு அழகும் வலிமையையும் சேர்க்கும் மொழிநடை குறித்து பல்வேறு அறிஞர்கள் கருத்துரைத்துள்ளனர். அவற்றுள்.

> **"மொழிநடை எழுதுவோரின் தன்மையையும், மனப்பான்மையையும் மொழிவது எழுத்தாளரின் உளப்பாங்கும், உணர்ச்சியும் எப்படியோ, அப்படியே எழுதும் மொழிநடையும் அமையும் என்பதில் ஐயமில்லை"**

என்பார் அ.கி.பரந்தாமனார். அதைப்போன்றே.

> **"நடை அழகு இல்லா இலக்கியம், நிற வண்ணமில்லாச் சேலையையும், மெய்ப்பாடில்லா நடிகனையும், வெள்ளாடை உடுத்திய பெண்ணையும் ஒக்கும்"**

என்ற ஆரம் மாணிக்கனாரின் கூற்று மொழிநடையின் வலிமைமையைப் பறைசாற்றும். மேலும், ஒரு கதையைப் படிக்கின்றபோது வாசகர்களின் மனதில் இக்கதைகள் உண்மையில் நிகழ்ந்தனவாகக் கருத அதன் மொழிநடை துணைபுரிய வேண்டும். இதனை.

> **"நாவலைப் படிக்கும் ஒருவனுக்கு இதே பிரமை தனிமையில் இருக்கும் போதும் எளிதில் உண்டாகிறது. கூட்டமாயிருந்து நாடகம் பார்க்காமலே நூலில் நாடக அனுபவத்தைப் பெற வாய்ப்பு உண்டாகிறது. நாவலில் இந்தப் பிரமையைச் சிருஷ்டிப்பதற்காக ஆசிரியர்கள் எத்தனையோ உத்திகளைக் கையாளுகின்றனர், வாசகனுக்குப் பழக்கமான மொழிநடையைப் பயன்படுத்துவது இப்பணியைச் சுலபமாக்குகிறது"**

என்பார் க. கைலாசபதி.

J.Poorani, Department of Tamil

66. தொல்காப்பியத்தின் வழி சிலம்பில் கண்ணகியின் புனைவுகள் - போக்குகள்

முனைவர் ஜா.பூரணி
உதவிப் பேராசிரியர், தமிழ்த்துறை,
பெரியார் கலைக்கல்லூரி,
கடலூர்-1

சிலப்பதிகாரம் ஒரு புரட்சிக் காப்பியம் என்ற பெருமையோடு, முத்தமிழையும் தன்னுள் அடக்கிய முத்த தமிழ்க் காப்பியமாகவும், விழுமிய கருத்துப் பெட்டகமாகவும் திகழ்கிறது. வணிகம் செய்த பெருமக்கள் மன்னனைவிட மேம்பட்டு வாழ்ந்த வாழ்வை எடுத்துக் கூறுவதாகச் சிலம்பு அமைகிறது. குடிமக்கள் காப்பியம் என்றாலும், அறம், பொருள், இன்பம் என்ற முறையில் நூல்களை இயற்றும் அக்காலக்கட்டத்தில் இளங்கோவடிகள் தமது படைப்பினை அறம், பொருள், துன்பம் என்ற நிலையில் உருவாக்கியுள்ளார்.

ஒவ்வொரு கதாப் பாத்திரங்களையும் அவரவரின் இயல்புக்கு ஏற்ப படைக்கப்பட்டுள்ளது என்பது குறிப்பிடத்தக்கது. இந்நிலையில் கண்ணகி என்கின்ற பாத்திரத்தை மட்டும் இளங்கோவடிகள் தொல்காப்பியரின் வழி அவளைப் பெண்மைக்குரிய இலக்கணத்தோடு புகார்க் காண்டத்தில் படைத்துப் பிறகு மதுரைக் காண்டத்தில்; கண்ணகியின் கணவனான கோவலன், பொற்கொல்லனின் சூழ்ச்சியால் கொலை செய்யப்படுகிறான். இதனை அறிந்த கண்ணகி தீராத் துயரால் மனம் உருகி, பாண்டியனின் அரண்மனைக்கு வந்து அவன் முன் வழக்குரைத்துக் கோவலன் மேல் குற்றமின்மையை மெய்ப்பிக்க, பாண்டியன் தனது குற்றத்தை உணர்ந்து உயிர் துறக்கிறான்.

இதுவரை ஆண்களிடம் எந்த கேள்வியும் கேட்காமல் அடிபணிந்தே வந்த பெண், முதன் முதலாக மன்னனிடம் வழக்குரைத்து நீதி தவறியதைத் தெரிவிக்கிறாள். வஞ்சிக் காண்டத்தில் இளங்கோவடிகள் கண்ணகியைத் தெய்வசக்தி உடையவளாகவே உருவாக்கி விடுகின்றார் என்பதனைப் பெண்ணிற்குரிய இலக்கணத்தோடு உருவாக்கி, பிறகு கற்புமாண்பை நிறுவி, தெய்வத்திறம் நிறைந்தவள் என்ற சிந்தனை குறித்த செய்திகளை வெளிப்படுத்தும் நோக்கில் இக்கட்டுரை அமைகின்றது.

தொல்காப்பியரின் இல்வாழ்க்கைச் சிறப்பு

தமிழர்கள் இயற்கையோடு இணைந்த வாழ்வை வாழ்ந்;துள்ளவர். அதனால்; தான் அகம், புறம் என்ற இரண்டு கூறுகளை மட்டுமே வாழ்வின் பாடுபொருளாகக் கொண்டுள்ளனர். காதல் என்ற நிலையில் யார் யாருடன் வேண்டுமானாலும் காதல் கொண்டு வாழலாம் என்பது இல்லாமல் எந்தெந்த வகையில் தலைமக்கள் ஒத்திருக்க வேண்டும் என்பதைத் தொல்காப்பியர் சுட்டிக் காட்டியுள்ளார்.

"பிறப்பே குடிமை ஆண்மை ஆண்டோடு
உறவு நிறுத்த காம வாயில்
நிறையே அருளே உணர்வோடு திருஎன
[illegible]"

(தொல்.நூ.269)

தலை மக்களுக்கு உரிய ஒப்புமைகளாகத் தொல்காப்பியர், பிறப்பு, குடிமை, ஆண்மை, ஆண்டு, உருவு (வனப்பு), நிறுத்த காம வாயில் - ஒருவரிடத்து ஒருவர்க்கு நிகழும் அன்பு, நிறை-அடக்கம், அருள் (கருணை), உணர்வு (அறிவு), திரு(செல்வம்) ஆகிய பத்துப் பொருத்தங்கள் தலைவன் தலைவியாகிய தலைமக்களுக்குத் தேவையான ஒப்புமைகள் என்கிறார் தொல்காப்பியர். இந்த ஒப்புமைகளுடன் திகழ்ந்தால் தலைமக்கள் வாழ்வில் எந்நாளும் இன்பமே என்று கூறுவது குறிப்பிடத்தக்கதாகும்.

இதனை அடிப்படையாகக் கொண்டே இளங்கோவடிகள்,

"போதிலார் திருவினாள் புகழுடை வடிவு
என்றும்
தீதிலா வடமீனின் திறம் இவள் திறம் என்றும்
மாதரார் தொழுதேத்த வயங்கிய
பெருங்குணத்துக்
காதலாள் பெயர் மன்னும் கண்ணகியென்
பாள் மன்னோ (சிலம்பு : 26-30)

மாநாய்கன் குலம் விளங்கத் தோன்றிய கண்ணகி, பூங்கொம்பு போன்றவள், அழகு மிக்கதான வல்லிக்கொடி அனையாள், பன்னிரண்டு ஆண்டு வயதினள், செந்தாமரை மலரில் உறையும் திருமகளின் புகழுடைய வடிவு இவள் வடிவை ஒக்கும் என்றும், அருந்ததியின் கற்பு இவள் கற்பை நிகர்க்கும் என்றும் பெருங்குணங்களை விரும்பும் பண்பினள் என்றும் வனப்பு, அன்பு, அடக்கம், கருணை, அறிவு, செல்வம் அனைத்தும் பொருந்தியவளாகக் படைக்கப் பட்டுள்ளாள்.

இருநிதிக் கிழவன்மகன் ஈரெட்டாண்ட
கவையான்;
மண்தேய்த்த புகழினான் மதிமுக மடவார்தம்
பாராட்டிக்
கண்டேத்துஞ் செவ்வேளென்று
இசைபோக்கிக் காதலாற்
கொண்டேத்துங் கிழமையான்
கோவலனென்பான் மன்னோ'
(சிலம்பு : 35-40)

மாசாத்துவான் அறநெறியில் பொருளை ஈட்டுபவன், அதனை வறியோர்க்கு வழங்குபவன், சங்கநிதி, பதும நிதி என்றும் இருநிதிக்கு உரியவன். அவன் மைந்தன் கோவலன், பூமி சிறிதாகுமாறு மிக வளர்ந்த புகழுடையவன். திங்களைப் போல முகத்தையுடையவன், உலகில் கண்டுகளிக்கக் கண்டு துதித்துத்தரும் முருகவேள் இவன் என்று பாராட்டும் அழகைக் கொண்டவன், தம் மனத்துள் காதல் கொண்டு போற்றதற் குரியவன் என்று தொல்காப்பியர் கூறும் பத்துப் பொருத்தங்கள் நிறைந்தவர்களாக இருவரும் பார்ப்பான் மறைவழிகளைக் காட்டி ஒன்று சேர்க்க, மணந்து அவனுடன் தீ வலம் வந்து இன்பமாக வாழ்ந்தவர் என்று புகார்க் காண்டத்தில் குறிப்பிடப்பட்டுள்ளது.

பெண்மைக்குரிய ஆளுமைத்திறன்

ஒரு ஆண்மகன் இல்லத்திலும், சமுதாயத்திலும் எவ்வாறு பங்கு கொள்கிறான், அவனுடைய அறிவுத் திறன், நற்குணங்களும், கொள்கைப் பிடிப்பும், துணிச்சலும், வீரமும் அவசியம் என்பதைத் தொல்காப்பியர் குறிப்பிடுகின்றார். அதே போல் வீட்டில் தலைமை ஏற்கும் பெண்ணுக்கும் சில ஆளுமைப் பண்புகளைக் குறிப்பிடுகின்றார்.

'அச்சமும் நாணும் மடனும் முந்துறுதல்
நிச்சமும் பெண்பாற்குரிய என்ப'
(தொல்.பொருள்.96)

அக்காலச் சமுதாய அமைப்பைத் தெரிந்து கொள்வதோடு, பெண் என்பவள் அச்சம், நாணம், அடம் ஆகிய பண்புகளோடு

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சூழலியல் நோக்கில் புறப்பாடல்கள்

*முனைவர் இரா.முருகன், உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார் அரசு கலைக் கல்லூரி, கடலூர்-1.

முன்னுரை

இயற்கையை எதிர்த்து வாழும் முயற்சியில் தோல்வி கண்ட மனிதன் இயற்கையோடு தன்னை இணைத்துக் கொள்ள நினைத்தான். இயற்கை தருவளங்களையும், இயற்கையினால் உண்டாகும் மாற்றங்களையும் கண்ணுற்றதன் விளைவாக இயற்கையை நேசிக்கத் தொடங்கினான். காலப்போக்கில் மானுட இனத்தின் அழிவைப் போலவே இயற்கையும் காப்பார் யாருமில்லாமல் கொஞ்சம் கொஞ்சமாக அழியத் தொடங்கியது.

இயற்கையின் மீதான மனிதனுக்குண்டான நேசம் அதன் அழிவைத் தாங்கிக் கொள்ள மறுத்தது. அதன் விளைவாக இயற்கையைப் பாதுகாக்கும் பல்வேறு செயல்பாடுகளில் மனிதன் தன்னை ஈடுபடுத்திக் கொண்டான். எனவே மானுட இனத்தின் நலன் காக்கும் இயற்கை மனித வாழ்வில் பிரித்துப் பார்க்க முடியாத அங்கம் ஆனது. இதன் காரணமாக மனிதன் தன் வாழ்வின் அனைத்து நிலைகளிலும் இயற்கையைச் சேர்த்துக் கொண்டான். இயற்கையின் மீதான பற்றுதலின் விளைவாக, அதனை அழிவிலிருந்து காக்கத் தொடங்கினான். இலக்கியப் பதிவுகளும் இதனை உறுதி செய்கின்றன. அவ்வகையில் சங்க இலக்கியப் புறநூலகளான புறநானூறு மற்றும் பதிற்றுப்பத்தில் இயற்கைச் சூழலைப் பாதுகாக்கும் முயற்சிகள் மேற்கொள்ளப் பட்டுள்ளனவா என்பதனை ஆராய்வதே இக்கட்டுரையின் நோக்கமாகும்.

1. நாட்டைப் பாதுக்காத்தல்

குழுவாகக் கூடிவாழும் மக்களுக்குத் தலைமை வகிக்கும் குழுத் தலைவன் அல்லது மன்னனே அக்குழுவைப் பாதுகாக்கும் பொறுப்பேற்கிறான். நோய் காரணமான இழப்பு, இயற்கைச் சீற்றத்தினால் உண்டாகும் பேரழிவு, பகைப்புலத்திலிருந்து வரும் தாக்குதல்கள் போன்றவற்றினால் வரும் ஆபத்துகளிலிருந்து மக்களைப் பாதுகாக்க வேண்டிய நிலைக்கு மன்னன் ஆளாகிறான். இயற்கைச் சீற்றத்தை எதிர்கொள்ள முடியாது என்பதால், அதைத் தவிர்த்த நோய் மற்றும் பகைவரால் உண்டாகும் அழிவு போன்றவற்றிலிருந்து மக்களைப் பாதுகாத்துக் கொள்ளும் முன் எச்சரிக்கைச் செயல்பாடுகளில் மன்னன் ஈடுபடுகிறான்.

அ. பாதுகாப்பு அரண் அமைத்தல்

தம்முடைய தலைமையின் கீழ் வாழும் மக்களைப் பகை அரசர்கள் துன்புறுத்தாமல் பாதுகாக்க மன்னன் காட்டரண், அகழி போன்ற பாதுகாப்பு நிலைகளை உருவாக்குகிறான். மாற்றரசர்கள் ஒரு நாட்டின் மீது போரிடும் போது கடக்க வேண்டிய தடைகளுள் முக்கியமானது காட்டரண். பகை அரசர்கள் தம் நாட்டில் எளிதில் உட்புகமுடியாதபடி நாட்டைச் சுற்றிக் காடு வளர்ப்பதே காட்டரண் எனப்படும். இக்காடுகளில் உள்ள மரங்களைப் பாதுக்காத்து வளர்ப்பதால் நேரடியான நிலையில் பகை அரசர் உட்புகாமலும் , மறைமுகமான நிலையில் மரம் வளர்ப்பது என்பது மரங்களால் வெளியிடப்படும் ஆக்ஸிஜன் மூலமாகக் காற்று மாசடைதல் தடுக்கப்படுவதோடு மழை பெய்வதற்கான காரணியாகவும் விளங்குகிறது. இயற்கைச் சூழலை மாசடையாமல் பேணிப் பாதுகாக்கும் எண்ணத்தின் அடையாளமே காட்டரண் எனில் மிகையாகா.

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பாரதியின் கட்டுரைகளில் பெண்விடுதலைச் சிந்தனைகள்

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முன்னுரை

பெண் விடுதலை குறித்த கருத்தை முன்வைத்தவர்களுள் முக்கியமான ஒருவராகக் கருதப்படுபவர் பாரதியார். கவிதைகளில் பேசியதைப் போலவே தாம்எழுதிய இதழ்க் கட்டுரைகளிலும் பெண்ணியம் குறித்த கருத்தாக்கங்களையும் பதிவு செய்துள்ளார்.

பாரதி காலச் சமூக அமைப்பு, சமுதாயத்தில் பெண்கள் நிலை, பெண்கள்மீது நிகழ்த்தப்பட்ட கொடுமைகள், பெண் விடுதலைக்கான வழிகள் போன்ற பெண் சார்ந்த கருத்துக்கள் பாரதியாரின் கட்டுரைகளில் காணப்படுகின்றனவா என்பதை ஆராய்வதே இக்கட்டுரையின் நோக்கமாகும்.

குடும்ப அமைப்பில் பெண்சார் புரிதல்கள்

சுதந்திரம் என்பது தேவையான ஒருவருக்கு மற்றொருவரால் கொடுக்கப்படுவதன்று. மாறாகச் சுதந்திரம் வேண்டுபவர்கள் அவர்களாகவே உணர்ந்து ஏற்றுக்கொள்ளக்கூடியது என்ற கருத்துடையவர் மகாகவி. ஆளும் வர்க்கத்தால் பெண்களுக்கு இழைக்கப்படும் கொடுமைகளைக் கண்டு மனம் வெதும்பும் பாரதி, ஆண்வர்க்கத்தினரின் கொடுமைகளுக்கு எதிராகப் பெண்களையே போராடத் தூண்டுகிறார்.

குடும்பத்தில் சமமாகக் கருதப்பட வேண்டிய பெண்களுக்குத் தீங்கு நேரும்போது, அக்குடும்ப அமைப்பையே எதிர்க்கவேண்டும் என்ற புரட்சிகரச் சிந்தனையைப் பெண்களுக்கு அளிக்கிறார்.

ஆண்களின் தவறுகளை உணர்த்த வேண்டி குடும்ப அமைப்பில் முக்கியப் பங்குவகிக்கும் கணவனுக்கு எதிராக அறப்போர் செய்தலை வற்புறுத்துகிறார். ஆண்களுக்கு எதிரான பெண்களின் போராட்டம் என்பதனை,

"அநியாயத்தை அநியாயத்தால் எதிர்த்தல் என்பது அவசியமில்லை.

அதர்மத்தை அதர்மத்தால்தான் கொல்லவேண்டும் என்பது அவசியமன்று.

நாம் அநியாயத்தை நியாயத்தால் எதிர்ப்போம் அதர்மத்தை தர்மத்தால் ஒழிப்போம் என்று காந்தி சொன்னார்.

சகோதரிகளே, நாம் விடுதலை பெறுவதற்கும் இதுவே உபாயம். நமக்கு அநீதி செய்யும் ஆண் மக்களுடனே நாம் அன்புத் தலைகளால் கட்டுண்டு இருக்கிறோம். நமக்கு அவர்கள் அண்ணன் தம்பிகளாகவும், மாமன் மைத்துனர்களாகவும், தந்தை பாட்டனாராகவும், கணவர் காதலராகவும் வாய்த்திருக்கின்றனர்.

இவர்களே நமக்குப் பகைவராகவும் மூண்டிருக்கையிலே இவர்களை எதிர்த்துப்போர் செய்ய வேண்டுமென்பதை நினைக்கும்போது என்னுடைய மனம், குருஷேத்திரத்திலே போர்தொடங்கியபோது அர்ச்சுனனுடைய மனது திகைத்ததுபோலே, திகைக்கிறது. ஆண் மக்களை நாம் ஆயுதங்களால் எதிர்த்தல் நினைக்கத்தகாதகாரியம். அது பற்றியே சாத்வீக எதிர்ப்பினால் இவர்களுக்கு நல்ல புத்திவரும்படி செய்யவேண்டுமென்று நான்சொல்லுகிறேன்"1

என்பதாகக் குடும்ப நிலையில் பெண்களுக்கு எதிராக கணவனால் நிகழ்த்தப்படும் கொடுமைகளுக்குச் சாத்வீக எதிர்ப்பு முறையைக்கைக் கொள்ளும்படிப் பெண்களை அறிவுறுத்துகிறார்.

குடும்ப அமைப்பில் பெண்களுக்கான உரிமைகள் மறுக்கப்படும் போது, ஆண்களுக்கு எதிரான போராட்டத்தைக் குடும்பத்திற்குள்ளாகவே இருந்து நிகழ்த்த வேண்டும். வெற்றிபெறும் வரை மன உறுதியுடன் இருந்து தனது எதிர்ப்பை வெளிப்படுத்த வேண்டும் என்கிறார் இதனை,

"அடிமைப்பட்டு வாழுமாட்டோம் ஸமத்துவமாக நடத்தினாலன்றி உங்களுடன் சேர்ந்திருக்க விரும்போம் என்று அவர்களிடம் வெளிப்படையாகவும் தெளிவாகவும் சொல்லிவிட்டு அதனின்றும் அவர்கள் கோபத்தால் நமக்கு விதிக்கக்கூடிய தண்டனைகளையெல்லாம் தெய்வத்தை நம்பி பல்லைக் கடித்துக்கொண்டு பொறுப்பதே உபாயம்" என்றும் நான் எல்லாவகையிலும் உமக்குச் சமமாக வாழ்வதில் உனக்குச் சம்மதம் உண்டானால் உள்ளுடன் வாழவேன். இல்லாவிட்டால் இன்று இராத்திரி சமையல் செய்யமாட்டேன். எனக்கு வேண்டியதைப் பண்ணித் தின்றுகொண்டிருப்பேன். உனக்குச் சோறுபோடமாட்டேன். நீ அடித்து வெளியே தள்ளினால் ரஸ்தாவில் கிடந்துசாவேன். இந்த வீடு என்னுடையது. இதைவிட்டு வெளியேறவும் மாட்டேன் என்று கண்டிப்பாகச் சொல்லிவிடவும் வேண்டும். இங்ஙனம் கூறும் தீர்மானவார்த்தையை, இந்திரிய இன்பங்களை விரும்பியேனும், நகை, துணி முதலிய விஷயங்களை இச்சித்தேனும் நிலையற்ற உயிர்வாழ்வைப் பெரிதாகப் பாராட்டியேனும் மாற்றக்கூடாது 'சிறிது சிறிதாக, படிப்படியாக ஞாயத்தை ஏற்படுத்திக் கொள்வோம்' எனும் கோழை நிதானக் கட்சியாரின் மூடத்தனத்தை நாம் கைக்கொள்ளக் கூடாது. நமக்கு ஞாயம் வேண்டும். அதுவும் இந்த ஜன்மத்தில் வேண்டும்" 2 என்ற உணர்விலிருந்து மாறக்கூடாது என்கிறார்.

கணவனால் துன்புறுத்தப்படும் பெண்களுக்குப் பாரதி கூறுகின்ற விடுதலை வழி இங்குக் கேள்விக்குரியதாக உள்ளது ஆணின் கொடுமைகளைப் பல்லைக் கடித்துக்கொண்டு பொறுப்பதே வழியென்றும்.

ஆணின் ஒடுக்கு முறைகளைத் தாங்க இயலாது போனால் அவன் என்ன கொடுமைப்படுத்தினாலும் வீட்டை விட்டுவெளியேறக் கூடாது என்றும், செத்தாலும் சாவேனே தவிர குடும்பத்தை விட்டு வெளியேறமாட்டேன் என்றும், பெண் உறுதி பூணுதல் வேண்டும் என்று பாரதி கூறுகிறார். ஆணின் கொடுமைகளுக்கு எதிராகப் பெண் சமையல்

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ஐங்குறுநூற்றில் வேளாண்மை

முனைவர் சீ. பிரேமகுமாரி
உதவிப்பேராசிரியர், தமிழ்த்துறை, பெரியார் அரசு கலைக்கல்லூரி,
கடலூர் -1, தமிழ்நாடு, இந்தியா.

செவ்வியல் கூறுகளைச் சிறப்பாக தாங்கி நிற்கின்ற செம்மொழியான சங்க இலக்கியத்தில் பத்துப்பாட்டு, எட்டுத்தொகை, பதினெண்கீழ்க் கணக்கு போன்ற நூல்களின் தொகுப்பாக அமைந்துள்ளது அவை அனைத்தும் தமிழர்களின் பண்பாட்டு கருவூலங்களாகத் திகழ்கின்றன.

சங்க இலக்கியப் பாடல்கள் கருத்துச் செறிவும் பொருட்செறிவும் அமைந்துள்ளன. சங்க காலத்தில் வாழ்ந்த மக்களின் பழக்கவழக்கங்களையும் பண்பாடுகளையும் எடுத்தியம்பும் வகையில் எட்டுத்தொகை நூல்கள் அமைந்துள்ளன என்பதை,

"நற்றிணை நல்ல குறுந்தொகை நூங்குறுநூறு
ஒத்த பதிற்றுப்பத்து ஓங்கு பரிபாடல்
கற்றறிந்தார் ஏத்தும் கலியோடு அகம் புறமென்று
இத்திறத்த எட்டுத் தொகை."

என்ற பாடலடி கூறுகின்றது.

எட்டுத்தொகையுள் மூன்றாவதாக அமைந்த நூல் ஐங்குறுநூறாகும். இந்நூல் அகம் பற்றி ஐந்திணைகளால் பாடப்பட்டதாகும். அகப் பாடல்களில் அடியளவில் மிகவும் குறுகிய அடியளவினைக் கொண்டமைந்துள்ளமையால், ஐங்குறுநூறு என்னும் பெயரேற்பட்டிருக்கின்றது. திணைதோறும் நூறு என்ற பாடலிலக்கம் ஐந்து திணைக்கு ஐநூறு பாடல்களைக் கொண்டமைந்துள்ளது. ஒவ்வொரு திணையும் பத்துப் பிரிவாகவும், ஒவ்வொரு பிரிவும் பத்துப்பத்துப் பாடல்களாகவும் கொண்டமைந்துள்ளது. இவ்வமைப்பு திருக்குறள் அதிகார அமைப்பினை நினைவுபடுத்துகின்றது. இந்நூலின் சிறப்பினைக் குறித்து,

"எட்டுத் தொகையெனும் இன் தமிழ்க்கடலுள்
கட்டிக்கரும்பில் வைங்குறு நூறாம்
ஒவ்வொரு திணைக்கும் ஒருநூறு செய்யுளாய்
ஒவ்வொரு சான்றோர் உரைத்திந் நூலாம்."

என்று பாராட்டுகிறார் புலியூர்க்கேசிகன். "சங்க இலக்கியம் என்னும் பழந்தமிழ்ச் சோலையில் நூங்குறுநூறு ஒரு வண்ண நறுமலர்க்கொடி" நூங்குறுநூற்றைச் சிறப்பிக்கின்றார் பேராசிரியர் ஆறு.அழகப்பன்.

முதற்பொருள்

"முதலெனப் படுவது நிலம்பொழுதிரண்டின்
இயல்பென மொழிய இயல்புணர்ந்தோரே."
(தொ.பொருள். அகம்.நூ.4)

என்ற நூற்பா முதற்பொருள் பற்றிக் குறிப்பிடுகின்றது. ஆதலால் நிலமும், பொழுதும் முதற்பொருள் ஆகும்.

வயலும் வயல்சார்ந்த இடமும் மருதநிலம் என்று தொல்காப்பியர் கட்டுகின்றார் என்பது முன்னரே குறிப்பிடப்பட்டது. நூங்குறுநூற்றில் மருதத்திணைப் பாடல்கள் மருத நில இயற்கை மிகச்சிறப்பாகப் பாடப்பட்டுள்ளது. மருதத்திணைப் பாடல்களில், மருத நிலமான வயல், பழனம், கழனி என்ற சொல்லாட்சிகளில் குறிப்பிடப்படுள்ளது. வயல் சார்ந்த இடம் துறை என்னும் பொருளையும், பெருந்துறை, தண்டுறை, வண்டுறை, மணித்துறை என்னும் சொல்லாட்சிகளாலும் குறிப்பிடப்பட்டுள்ளது.

மருதத் திணை உணவும் வேளாண்மையும்

மனித இனம் தோன்றிய காலம் முதல் உணவுத் தேவைக்காக உழைக்க வேண்டிய காலக்கட்டத்திற்கு மனிதன் தள்ளப்பட்டான்.

Vairamuthu and B.Kumaran, Department of Tamil

எஸ்.ராவின் துயில் நாவலில் பாத்திரமும் கதைக்களமும்

*அ.வைரமுத்து, முனைவர்பட்ட ஆய்வாளர், தமிழ்த்துறை, பெரியார் அரசு கலைக்கல்லூரி, கடலூர்.

*முனைவர் ப.குமரன், பேராசிரியர் மற்றும் தலைவர், தமிழ்த்துறை, பெரியார் அரசு கலைக்கல்லூரி, கடலூர்.

முன்னுரை

"சென்றிடுவீர் எட்டுத்திக்கும் கலைச் செல்வங்கள் யாவும் கொணர்ந்திங்கு சேர்ப்பீர்" என்ற பாரதியார் கூற்றுக்கிணங்க, பல நாடுகளுக்கும் சென்று பல நூல்களையும் கற்றறிந்து உணர்ந்து எழுதும் மிகச்சிறந்த எழுத்தாளர் எஸ்.ராமகிருஷ்ணன். நவீன இலக்கியத்தில் நாவல்களில் தனக்கென ஒரு தனி பாணியை உருவாக்கியப் பெருமைக்குரியவர். நாள்தோறும் பயணம் செய்தும் எழுதிக் கொண்டும் இருப்பவர். இவர் நிகழ்ச்சிகளைக் காட்சிப்படுத்துவதில் வல்லவர். இவரது சமூக அக்கறை இவரது படைப்புகளில் இழையோடுவதை உணர முடிகின்றது. இவருடைய நாவல்களில் ஒன்றான துயிலில் வெளிப்படும் பாத்திரங்கள் பற்றியும் அப்பாத்திரங்கள் இடம்பெறும் கதைக்களத்தினைப் பற்றியும் விளக்குவதாக இக்கட்டுரை அமைகின்றது.

கதைக்களம்

களம் என்பது ஒரு குறிப்பான இடத்தைச் சுட்டுவது. புவியியல் எல்லைகளைக் கொண்டது. இலக்கியத்தின் பின்னணியில் களமானது முக்கிய இடத்தைப் பெறுகின்றது. வெளிப்படை அல்லது குறிப்பு நிலை வெளியீட்டு முறைகளில் சொல்லப்படுதவற்குக் களமானது முக்கியப் பங்கினை வகிக்கின்றது. சில இலக்கியங்கள் காலத்தை அழுத்தமாக மையப்படுத்தி எழுதப்படுகின்றன. களச் சித்திரிப்பில் இயற்கையழகும், சுற்றுப்புற விளக்கமும் தவிர்க்க முடியாத நிலையில் அமைந்து விடுகின்றன. மேலும், அதன் அளவு மிகாமல் இருக்கும் போது அதுவே மனிதச் சுதந்திரத்தைக் கட்டுப்படுத்தும் வெளிச்சக்திகளை வெலுப்படுத்துவதாகவும் மானிடம் பகுத்தறிவையும் அறப்பொறுப்புணர்வையும் மட்டுப்படுத்தும் உள் சக்திகளை வலுப்படுத்துவதாகவும் இயல்பு நவிற்சி அமைகிறது எனக் கூறுகின்ற நிலையில் இயற்கைச் சித்தரிப்பின் மிகைத்தன்மையைக் கருத்தில் கொண்டதே என்பது புலனாகின்றது. ஒரு பொருளின் இயல்புத் தன்மையை மீறி மிகைத்தன்மையை மட்டுமே கணித்துப் பொருள் கூறுவது சரியான மதிப்பீடாக அமைவதில்லை. எனவே, இயல்பு நவிற்சி என்பதை யதார்த்தம் என்னும் பொருளுக்கு மறு சொல்லாகக் கொள்ளுதலே பொருத்தமுடையதாகின்றது. இந்த வகையில் தன் மண்ணின் மணம் பொருந்திய களத்தை மையமாகக் கொண்டு படைக்கப்படும் இலக்கியம் தனது படைப்பு நிலைக் கூறுகளால் இயல்பு நவிற்சி உடையதாகவும் கதைக்களம் அமைவதைக் காண முடிகின்றது. துயில் நாவலில் பாத்திரங்களின் வழி கதைக்களம் எவ்வாறு அமைந்துள்ளது என்பதைப் பின்வருமாறு அமைத்துக் காண முடிகின்றது.

எட்டூர் மண்டபத்தில் உள்ள நோயாளி

நோளாளிகள் பயணம் மேற்கொள்ளும் போது வழியல் உள்ள எட்டூர் மண்டபத்தில் தங்கிச் செல்வது வழக்கம். கொண்டலு அக்கா என்பவர் நோயாளிகளைப் பராமரிப்பதற்காகவே தன் வாழ்வை அர்ப்பணித்துக் கொண்டவள். அங்குவரும் நோளாளிகளுக்குக் கஞ்சி காய்ச்சித் தருவது, அவர்களுடைய புண்ணுக்கு மருந்திடுவது போன்ற சேவைகளைச் செய்து வந்தாள். நோயாளி ஒருவன் அழுது கொண்டிருந்தான். அக்கா அவனைத் தேற்றுவதற்காக அவன் அழுகைக்கான காரணத்தைக் கேட்டாள். அவன் கஞ்சியைக் குடித்தபடியே தன் தாயைப் பற்றிய நினைவுளைப் பகிர்ந்து கொண்டான். அவனது மனத்துயரை,

> "நீங்கள் தந்த கஞ்சி என் தாய் சிறுவயதில் செய்து தந்தது போலவே இருந்தது. ஒரு மிடறு குடிப்பதற்குள் மனது கனமாகிவிட்டது. தாய் இறந்து போன பிறகு தாய் தந்த சுவையும் நம்மைவிட்டுப் போய்விடுகிறது. அதை மறுபடி சுவைக்கையில் என்னால் தாங்க முடியவில்லை. இந்தத் துயரம் தான் என் கேவலுக்குக் காரணம் அக்கா என்றான்" (துயில்,ப.276)

என்ற பகுதி விளக்கி நிற்கிறது.

ஒவ்வொரு ஆணின் மனத்திற்குள்ளும் தாய்ப்பாசம் வேராக மறைந்து கிடக்கிறது. தாய் வற்றாத அன்பின் ஊற்று, கைம்மாறு கருதாமல் பிள்ளைகளைப் போற்றி வளர்க்கும் பெருந்தியாகி என்று போற்றப்பட்டாலும், ஒரு தாய் தன் மகனை எவ்வளவு தான் சீராட்டிப் பாராட்டி வளர்த்தாலும், அந்த மகன் தாய் இருக்கும் வரை தன் பாசத்தை வெளிக்காட்ட முயலுவதேயில்லை. தாய் இறந்த பிறகு அவன் விடும் கண்ணீரே அந்த பாச வேருக்கு நீருற்றி விடுகிறது. அப்போது தாய் அங்கே இருப்பதில்லை. வேதனை மட்டுமே மிஞ்சுகிறது.

எட்டூர் மண்டபத்தில் உள்ள ஓர் இளைஞன்

முப்பது வயது இளைஞன் ஒருவன் அச்சகத்தில் பணியாற்றிக் கொண்டு தனியே வாழ்ந்து வந்தான். திருமணமும் செய்து கொள்ளவில்லை. அண்டை அயலார் யாரிடமும் பேசுவதுமில்லை. அவர்களை எதிர்ப்பதும்

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சு.தமிழ்ச்செல்வியின் படைப்புகளில் நம்பிக்கைகளும் சடங்குகளும்

*க.புவனேஸ்வரி, முனைவர் பட்ட ஆய்வாளர் (பகுதிநேரம்), கௌரவவிரிவுரையாளர், பெரியார் அரசுகலைக்கல்லூரி, கடலூர்.

*நெறியாளர் முனைவர் ப.குமரன், பெரியார் அரசுகலைக்கல்லூரி, கடலூர்.

முன்னுரை

ஓரினத்தின் பண்பாட்டையும், பழமையையும் அவர்தம் நம்பிக்கைகளும், சடங்குகளும் வெளிப்படுத்துகின்றன. நம்பிக்கைகளை மையமாகக் கொண்டு இயங்குவது மனித வாழ்க்கை. எனவே, மனிதர்களின் பண்புகளும் பழக்கவழக்கங்களும் நம்பிக்கையின் அடிப்படையிலேயே இயங்குகின்றன. எந்த ஒரு செயலானாலும் வாழ்க்கையில் நன்மையே விளையவேண்டும் என்று விரும்புவது மனித இயல்பாகும். எனவே அதனடிப்படையில் மனித மனம் சிலசெயல்களைச் செய்கிறது. அச்செயல்களுக்குச் சில கற்பிதங்களை உருவாக்குகின்றது. அவ்வாறு உருவாக்கிய கற்பிதங்களே நம்பிக்கைகளாக எஞ்சி நிற்கின்றன எனலாம். நம்பிக்கைகள் மக்களால் உருவாக்கப்பட்டு, அதுமக்கள் சமுதாயத்தால் பாதுகாக்கப்படுகின்றன. மனிதனின் தன்னல உணர்வும், சமுதாய உணர்வுமே நம்பிக்கைகளை வளர்த்து வருகின்றன. அவ்வகையில் சு.தமிழ்ச்செல்வியின் படைப்புகளில் நம்பிக்கைகளும், அதனோடு தொடர்புள்ள சடங்குகளும் குறித்து அறிவது கட்டுரைப் பொருண்மையாக அமைகிறது.

நம்பிக்கைகளும் சடங்குகளும்

நம்பிக்கைகள், என்று தோன்றின என்பதை கண்டறிந்து கூற இயலாதஅளவிற்கு மிகவும் தொன்மையானதும். மரபுவழிப்பட்டதுமாகும். இயற்கைக்கும் மனிதனின் செயல்களுக்கும் தொடர்புண்டு என்ற கருத்தின் அடிப்படையில் அவை தோன்றியனவாகவே காட்சி தருகின்றன. "அச்சத்தின் காரணமாக மனிதன் இயற்கையின் தோற்றத்தினையும் செயற்பாடுகளையும் தனதுவாழ்வியல் நடப்புக்களோடு இணைத்துநோக்கியநிலையில் நம்பிக்கைகள் தோற்றம் கொண்டன". (க.காந்தி–தமிழர் பழக்கவழக்கங்களும் நம்பிக்கைகளும் ப.5) இன்றைய நாகரிகமனிதனிடம் காணப்படும் பலநம்பிக்கைகள் பழங்குடி மக்களிடமும் காணப்படுகின்றன. "மனிதனிடம் நம்பிக்கைகள் தோன்றுவதற்குப் பலகாரணங்கள் உள்ளன. நாட்டுப்புற நம்பிக்கைகளுக்கு மூவகைக் காரணங்களை உரைக்கலாம். ஒன்று செய்வினை எனப்படும் மந்திரம் (Magic), இரண்டு நாட்டுப்புற மருத்துவம் (Folk Medicine), மூன்று விலக்குகள் (Taboos) இச்செய்வினை, மருத்துவம், விலக்கு ஆகியவற்றின் ஆதிக்கம் குறைந்தபோது அவை பற்றிய நம்பிக்கைகள் நாட்டுப்புற நம்பிக்கைகளாக எஞ்சுகின்றன". (தமிழவன்- நாட்டுப்புறநம்பிக்கைகள் ப.5) என்ற கருத்து இங்கு ஒப்பு நோக்கத்தக்கது.

மனித சமுதாயத்தில் நிலவி வருகின்ற பலவகை நம்பிக்கைகள் அதனோடு தொடர்புடைய சடங்குகளையும் அடிப்படையாகக் கொண்டுள்ளன. "சடங்கென்பது–

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REPROTOXIC EFFECT OF AMMONIA ON THE NUTRITION AND GROWTH OF THE FRESHWATER LOACH *LEPIDOCEPHALUS THERMALIS*

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ABSTRACT

The exposure of *L. thermalis* to sublethal concentrations of ammonia for 60 days impaired feed intake, and there was a significant decrease in conversion efficiency, specific growth rate (SGR), and daily growth rate (DGR). The liver and gonadal weight also decreased considerably, as indicated by reduced hepatosomatic index (HSI) and gonadosomatic index (GSI). Gonad maturation in *L. thermalis* was also impaired at sublethal experimental concentrations of ammonium chloride and ammonium sulphate. Moreover, chronic ammonia exposure induced several nuclear pathological conditions in primary oocytes, destruction of ovarian stroma, and reduction in the number of previtellogenic and vitellogenic oocytes, and degeneration of some of the vitellogenic oocytes in *L. thermalis*. The testes of ammonia-exposed fish also showed remarkable pathological changes in spermatocytes and spermatids, and also a reduction in the number of spermatids and spermatozoa. Furthermore, the present study strongly supports the concept that the level and type of dietary components can greatly alter the biologic response of an animal under toxicant exposure.

Keywords: *Lepidocephalus thermalis*, **reprotoxicology, fecundity, ammonia, growth.**

1.INTRODUCTION

Ammonia toxicity is one of the common causes of the death during fish and shell-fish culture. In intensive culture systems the problem of ammonia accumulation needs a careful monitoring and control (Campbell, 1973). The toxicity of ammonia may be a limiting factor in fish farm design and management (Sousa *et al.,* 1974; Hampson, 1976; Barimo and Walsh, 2006; Gena *et al.*,2009; (Ching *et al.*,2009; Chew *et al.*,2009; Chew *et al.*,2010; Braun *et al.*,2009; Barimo *et al.*,2007)), since this is the main nitrogenous excretory product of fish (Smith, 1972; Campbell, 1973). To be precise, ammonia is highly toxic to aquatic organism and is listed as a regulated toxic pollutant in effluents (Rue and Fava, 1981). Ammonia nitrogen and nitrate nitrogen values are considerably higher in raw sewage effluent. The raw sewage has a range of ammonia nitrogen of 21.7 to 31.5 mg/l and nitrate nitrogen of 2.32 to 6.1 mg/l (Ali, 1992). On the other hand, the values of ammonia and nitrate nitrogen in the fresh water are very low (0.18-0.4 and 0.1-1.0 mg/l respectively).

Ammonia is a chemical irritant, which in its unionized form, is primarily responsible for toxicity (Lloyd and Herbert, 1960). A direct contact with acute concentrations of ammonia causes marked deterioration in organs such as skin, gills and intestine (Eller, 1975). In aquatic environment higher concentrations of ammonia is a predisposition to bacterial gill disease (Wedemeyer and Yasutake, 1977). Unionized ammonia is readily soluble in lipid of cell membranes and so easily taken up by fish gills, whereas larger hydrated and charged ionic ammonia cannot readily pass through the charge-lined hydrophobic micropores of the cell membrane (Hampson, 1976).

Thus many studies have been made on the toxicity of ammonia on fishes because of their high economic value (Palanichamy *et al.,* 1985 a, b; Sarkar and Konar, 1985 a, b; Sarkar and Pramanik, 1987; Neeraja *et al.,* 1987; Sarkar, 1991 a, b; Das and Jana, 2000; Barimo and Walsh, 2006; Gena *et al.*,2009; (Ching *et al.*,2009; Chew *et al.*,2009; Chew *et*

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SEASONAL VARIATION IN THE INFESTATION OF DIGENEA IN THE INDIAN KILLIFISH *Aplocheilus lineatus*

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ABSTRACT

An overview of digenean trematode parasitology from the native killifish ***Aplocheilus lineatus*** is presented, cluding a discussion of the "design-like" features of these parasites .Infections of cercariae were found during the course of reproductive study of *Aplocheilus lineatus* a native killifish collected from the River Tamparabaranei. The frequency of occurrence and their effect on the killifish were calculated. It is observed that a large number of cercaria larvae were found in the liver than in the ovary of *Aplocheilus lineatus*. Testis were completely devoid of digenea. The fecundity was less in the infected fish than in a healthy normal individual.

Keywords: *Aplocheilus lineatus*, cercaria, digenea, trematode, Ascocotyle sps.

1.INTRODUCTION

A wide range of metazoan parasites are known to infect the fishes from the wild as well as artificial habitats. Digenetic, heterophyid trematode parasitic worm of the genus *Ascocotyle* infects certain snails as first intermediate hosts (*Littoradinops*) . They also infect certain cyprinodont and poeciliid estuarine fishes (*Cyprinodon, Poecilia, Fundulus, Gambusia, Aplocheilus*), as second intermediate hosts in a three-step life cycle, (Lumsden and Armitage, 1999). The apparent pathogenicity of the *Ascocotyle* genus have been reported by Stunkard and Uzman, 1955; Burton, 1956; Lenhoff *et al.*, 1960; Lumsden, 1963a; Schroeder and Leigh, 1965; Martin and Steele, 1970; Skinner, 1975; Font, Overstreet and Heard, 1984; Snyder *et al.*, 1989; Font, Heard and Overstreet, 1984.; Coleman, 1993; Ostrowski de Nunez, 1993, Kilian and Oldewage, 2013; Santos and Santos, 2013 and Renick *et al.*,2016 reported that though number of parasites were more no pathogenicity was observed.

The pathogenicity of metazoan parasites depends on the nature of the parasite, its density, host resistance and availability of vectors. The pathological symptoms include growth retardation, tissue destruction, metabolic disturbances, nervous disorders and even death in heavy infections. Control of metazoan infections relies on the better understanding of their biology, ecology and host parasite interactions.

The present study pertains to the clinical signs, frequency of infestations, pathogenesis and gross pathological changes in *Aplocheilus lineatus*.

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2.MATERIAL AND METHODS

Study area: The study was carried out in the River Tambraparnei (8° 30' N - 70° 45' E) situated at the heart of Tirunelveli District, India which has a vast freshwater biodiversity.

Study design: A total of 2400 live specimens of *Aplocheilus lineatus* were collected using a scoop net (2mm mesh size) net from the River Tambraparnei for a period of 12 months (August 2008 to July 2009) and were then transported to Animal Health Research Unit, St. Xavier's College, Palayamkottai. All these fishes were transferred to cement tanks and the investigation was carried out.

Parasitological techniques: At the laboratory fishes were sacrificed. Every fish was dissected and their gonads, liver, intestine and brain were examined under a dissection microscope. The fishes showing infestation of digenean larvae were recorded separately from the uninfected fishes. The fecundity, weight of the gonad, weight of the liver, no.of parasites present in liver and gonads and morphometric

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Antioxidant and antitumour activity of acid soluble collagen extracted from freshwater snakehead fish *Channa striatus*

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ABSTRACT

Fish have often been called the poor man's source of animal protein. The systematic use of fish concentrate has long proven advantageous in animal husbandry and there is growing recognition of its potential for improving human nutrition and health. *Channa striatus,* or snakehead murrel, is an obligate air-breathing freshwater fish which inhabits all types of water bodies. *C. striatus* is commonly consumed as a food fish. *C. striatus* is recorded as high medicinal properties containing fish. The popularity of *C. striatus* as a therapeutic agent is known to folk medicine in its efficacy in treating wounds, relieving pain and boosting energy in the sick and elderly. Hence in the present study effort has been made to study the antitumour and antioxidant activity of the acid soluble collagen isolated from the freshwater snakehead fish *Channa striatus*. The acid soluble collagen extracted freshwater snakehead fish was tested against cancer cells (human colon cancer (HT-29) and human breast adenocarcinoma) at different concentrations. Similarly the free radical scavenging capability was also tested for the acid soluble collagen. The result revealed that the acid soluble collagen extracted from freshwater snakehead fish *C. striatus* exerts both antioxidant and anticancer activity. Whereas at lower concentration the acid soluble collagen has not much effect on the normal Vero cell line having 95 % cell viability which shows a new way for using as medicine against cancer.

Key words: Channa striatus, antioxidant, antitumour, fish collagen.

Introduction

Aquaculture practice plays a major role in world providing more than 142 million tons of fish as human food. It gives direct employment for the farmers and provides more than 180 million jobs as whole in the global fish industry. Aquatic environment is a challenging source of variety of novel biological compounds. Aquatic animals are rich in biologically active secondary metabolites. The biosynthesis of secondary metabolites by these aquatic animals has been speculated as a result of their physical and biochemical adaptation to their environment. In the last two decades, many new compounds have been isolated from these organisms and promoted as candidates for the development of new drugs, especially as anticancer drugs [1].

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Antimicrobial and Hemolytic Activity of the Fish Collagen Extracted from Freshwater Snakehead Fish *Channa striatus*

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Abstract
Collagen is the most predominant, abundant and major protein of connective tissue present in the animal body. The collagens are widely used in many pharmaceutical industries, food, healthcare, cosmetics and scaffold tissue engineering. In the present study effort has been made to identify the antimicrobial and hemolytic activity of the collagen extracted from the freshwater snakehead fish *Channa stiriatus*. Extracted fish collagen were tested against the four pathogenic bacteria viz., *Escherichia coli*, *Staphylococcus aureus*, *Bacillus Subtilis* and *Klebsiella Pneumoniae*, four pathogenic fungi namely *Aspergillus flavus*, *Aspergillus nidulans*, *Candida albicans*, and *Fusarium moniliforme*. The hemolytic activity was tested on chicken and goat blood erythrocytes. The collagen extracted from freshwater fish shows a strong antibacterial and hemolytic activity.

Keywords
Collagen, snakehead fish, Channa striatus, hemolytic, antibacterial and antifungal.

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INTRODUCTION

Collagen is major extracellular protein of matrix plays a major role in maintaining physiological functions with diverse biomedical applications which include tissue engineering, food processing industry, manufacturing of cosmetics, biofilms and mostly in pharmaceutical industries. The bovine spongiform encephalopathy and transmissible spongiform encephalopathy initiate the researchers for the isolation of collagen from the alternative sources rather than from the cattle. One of the alternative sources is the invertebrates of which fishes are used for extracting the collagen. The fish collagens are having low melting temperature, lower gelling, fibrillar and non-fibrillar protein substances [1]. The collagen extracted from the fishes are heat sensitive due to labile cross links and reduced level of hydroxyproline [2]. The inertness structural ability and biocompatibility of collagen possess a promising anticancer activity and ophthalmic drug delivery system [3, 4].

Among the collagen alternatives, fishes are the best source because of its high availability, less risk in disease transmission, religious barrier and rich protein content. Substantial amount of collagen could be obtained from fish which provide an alternative source to bovine collagen in food, cosmetics and pharmaceutical applications.