लघु उद्योग भारती

SARDAR PATEL UNIVERSITY

RESEARCH SCHOLARS MEET
(SPURSM 2023)

30 – 31 DECEMBER 2023

Perspectives of Research & Innovation from NEP 2020

Organized by

RESEARCH & DEVELOPMENT CELL (RDC)
AND
INTERNAL QUALITY ASSURANCE CELL (IQAC)
IN ASSOCIATION WITH LAGHU UDHYOG BHARTI,
VADODARA

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SPURSM-2023

Research Scholars' Meet 2023
30-31 December 2023

Perspectives of Research & Innovation from NEP 2020

Sardar Patel University

Vallabh Vidyanagar, Anand, Gujarat

Prof. Niranjan P. Patel
Offg.Vice-Chancellor

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Message from Vice Chancellor

Dear Research Scholars,

It gives me immense pleasure to extend a warm invitation to all the research scholars to the Sardar Patel University Scholars' Meet (SPURSM-2023) which aims to unravel the myriad perspectives of research and innovation encapsulated within the National Education Policy 2020, fostering a dynamic discourse on its implications and possibilities for the academic and research community. As torchbearers of scholarly pursuit, your insights and perspectives are invaluable contributions to fulfill the far-reaching implications of the policy.

I believe that the research scholars' meet would provide a platform for meaningful discussions and exchanges of ideas among the vibrant research community in our institution and beyond. I urge all research scholars to participate actively and make the event intellectually stimulating and enriching.

Date : 30th December 2023
Place : Vallabh Vidyanagar

(Prof. Niranjan P Patel)
Vice Chancellor (Offg.)

From the Conveners

As office bearers of the Research & Development Cell (RDC) and the Internal Quality Assurance Cell (IQAC) of the university, it is a great opportunity for us to be at the helm of the 2nd season of the Sardar Patel University Research Scholar Meet and, contribute to the endeavors of the university to keep pace with the rapidly changing landscape of academics, research, and innovation at the national and international level. The meet that encompasses all the disciplines of knowledge was started with the motive of providing a platform to budding research scholars, not only for presenting their research but, also to give them a chance to experience and learn about different aspects of program organization in various capacities from organizing secretaries to volunteers for various committees. We are glad to mention that the research scholars of the university have the lion's share in the organization of SPURSM-2023.

Building upon the experience of the 1st Research Scholar Meet organized in August 2022, we have put in our best efforts to make improvements on various fronts. We got along with the association of small & medium scale industries in Vadodara – Laghu Udyog Bharti – for the organization of SPURSM 2023. To broaden the scope of the meet, SPURSM-2023 has been opened for research students from universities other than SPU. Also, provisions have been made so that the research students can voluntarily submit full-length research papers for publication in the SPU research journals after peer review. We hope the ongoing momentum of such activities prevails and, the RSM evolves as a self-sustained and high-quality annual event.

It is quite natural that organizing such a large-scale event with more than 300 research students from diverse backgrounds is challenging. It could not have been accomplished without the whole-hearted guidance, cooperation, and assistance from all the stakeholders – Vice Chancellor, Registrar, Dy. Registrars and Officers of different sections, Head of the Departments, Advisory and organizing committee members, faculty members, students, and the support staff. We humbly acknowledge the kind cooperation from all.

30th December 2023
Vallabh Vidyanagar

Prof. Sunil Chaki
Director, RDC
Sardar Patel University

Prof. Kirit N Lad
Coordinator, IQAC
Sardar Patel University

INDEX

Science

Applied and Interdisciplinary Science (CT)

Poster

Sr. No.	Code	Author(s)	Title	Page No.
1	PCT1	Dalwadi P. K., Bhatt V. D., Kunjadiya A. P.	Inclusive Evaluation of Glycyrrhiza glabra Extract: Unraveling its Antibacterial, Antioxidant, and Anticancer Potentials in the Context of Lactational Mastitis and Breast Cancer Risk	1

Biosciences (BI)

Oral

Sr. No.	Code	Author(s)	Title	Page No.
2	OBI1	Sargara P., Natraj M., Subramanian R.B., Thakkar A	Antioxidant, anticancer and apoptosis inducing effects of Carissa carandas L. leaves and fruit extracts in lung carcinoma cells	2
3	OBI2	Thakkar A. B., Subramanian R. B., Thakkar S. S., Thakkar V. R., Thakor P.	Isolation, Identification, and Characterization of α - asarone, from Hydromethanolic Leaf Extract of Acorus calamus l. and its Apoptosis-Inducing Mechanism in A549 Cells	3

Chemistry (CH)

Oral

Sr. No.	Code	Author(s)	Title	Page No.
4	OCH1	Sirach R., Dave P. N.	Biopolymer Carboxymethyl Cellulose/β-Cyclodextrin/Nickel Cobaltite: Synthesis and Adsorption Application	4
5	OCH2	Mukherjee S., Mishra M.K.	Surface-Engineered TiO_2 by Amine Adsorption for Efficient Visible Light-Driven Methylene Blue Degradation	5
6	OCH3	Rana V., Patel M. P.	Design & Synthesis of Soil Nutrient-Loaded Hydrogel Composite Based on Polysaccharide as a Sustained Release Carrier	6

7	OCH4	Padariya A., Savaliya N., Bhatt B., Bhatt V., and Patel M.	Organometallic Compounds of Rhenium(I) with Substituted Phenyl(2-(thiazol-4-yl)-1h-benzo[d]imidazol-1-yl)methanone: Synthesis, Characterization and Biological Approach	7
8	OCH5	Savaliya N., Padariya A., Bhatt B.	Synthesis of Novel Triazole Derivatives Through 1,3-Dipolar Cycloaddition "Click" Reaction: Spectral and Biomolecular Interaction Studies	8
9	OCH6	Lohar A. K., Dave P. N.	The Strategic Integration of Magnesium Chloride Hexahydrate and Choline Chloride Type-II Deep Eutectic Solvent as a Draw Solute in Forward Osmosis	9
10	OCH7	Upadhyay D., Patel H.	Indole-Based Derivatives: Efficiently Synthesized Cu-Catalyzed Compounds with Potent Antimicrobial and Antifungal Activity Surpassing Standard Drugs	9
11	OCH8	Bhalodiya S., Patel H.	One-pot Synthesis of Novel Tetrahydrobenzofuran-4(2H)-ones: *In vitro* Antimicrobial, Antimalarial Activity	10
12	OCH9	Agola A., Mishra M.	Solid Acid Catalysis: Hydration Effect on Catalytic Activity	10
13	OCH10	Patel H., Ram K.	Catalyst-free Synthesis of Biologically Relevant Novel Pyrazolo-Pyridine Fused Tetrazolo-Pyrimidines Derivatives as a Potent Anticancer Agent	11
14	OCH11	Parek J., Ram K.	Meglumine Supported Heterogeneous Catalyst for the Synthesis of 1,2,3-Triazole Tethered Spiro[indoline-pyrazolo[5,1-*b*]quinazoline]carboxylates	12
15	OCH12	Sata S., Vyas K. M. and Nair T. K. S. V.	Removal of Methylene Blue from Water Using Silica Supported Biosynthesized Silver Nanoparticles as Efficient Adsorbent and Photocatalyst	13
16	OCH13	Kanani D., Soni S. S.	Quasi Solid Polymer Gel Electrolytes for rechargeable Zinc- ion Battery	14
17	OCH14	Kapdi Y. G., Soni S. S.	Hierarchically porous Functionalized Silica Nanoparticles as Catholyte Hosts in Aqueous Rechargeable Zn-ion batteries	15
18	OCH15	Vahora F. Y., Makwana M. C., Vyas K. M.	Studies on Mechanism of Ammonia Capture by One-Pot Ni(II) Based Metallogel: A Chemoprobe and Reversible Adsorbent	16
19	OCH16	Bamaniya S.M., Dave P.N.	Effective Removal of Naproxen Sodium NSAID by Biopolymer Based Hydrogel Nanocomposite Gum Acacia-*g*-poly(N,N'-Dimethylacrylamide)/$CoFe_2O_4$	17

33	PCH9	Hirani B., Gurubaxani S.	A Review on Thiazole Derivatives: Recent Developments in the Green Synthetic Strategies and their Biological Activities	31
Computer Science & Technology (CS)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
34	OCS1	Kant K., Shah D.B.	Smile Prediction of Human faces from video sequence Using Deep Learning	32
Electronics (E)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
35	OE1	Patel Y. S., Patel S. S.	Smart Agricultural Management System Using Mobile Application	33
36	OE2	Yadav S. S., Patel S. S.	Characterizing and Mitigating Noise in Industrial Instrumentation: A Comprehensive Analysis Approach	34
Home Science (HS)				
Poster				
Sr. No.	Code	Author(s)	Title	Page No.
37	PHS1	Suthar D., Patel V. H.	In vitro Properties of Potential Probiotic Lactic Acid Bacteria from Human Fecal	35
38	PHS2	Neog R., Kola N.	Washing Efficacy of Natural Antimicrobial Finish on Eri Silk and its Union Fabric Against S. aureus	36
39	PHS3	Mall D. P., Patel V.H., Dave N.	Microbiological Assessment of Street Vended Vada Pav Samples Sold at Different Locations of Anand City, Gujarat	37
40	PHS4	Parmar N., Roghelia V.	The Functional Characteristics of Edible Film Developed from varying concentration of Raw Banana and Taro Root Starch	38
41	PHS5	Yadav A.H., Patel V.H., Dave N. R.	Phytochemical Profiling and Nutritional Analysis of Hemp Seeds (Cannabis Sativa L.)	39

66	PPH2	Soni K. G., Anadani J., Lad K. N.	Enhancing Glass-Forming Ability in Zr-Cu-Al Ternary Alloys: A Molecular Dynamics Approach for Optimal Composition	60
67	PPH3	Bhabhor G., Bhatt R., Lad K. N., Anand A.	Curvature and Strain Analysis of Human Red Blood Cell Membrane Using Parametric Models	61
68	PPH4	Vyas P.D., Dhorada D. R., Bhanderi K. K., Ka.Patel J. B., Gupta S. U. and Patel K. D.	Investigation of Junction Temperature of Germanium Diode	62
69	PPH5	Chaudhary N. A., Shah K. N., Prajapati A. N.	Refractometric and volumetric study of molecular interaction in binary mixture of carbon tetrachloride with methanol at constant temperature	63
Statistics (ST)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
70	OST1	Bhingikar M.K., Raykundaliya D.P	Comparative Study of Joint Ranked Set Sampling and Joint Simple Random Sampling for The Weibull Populations	64
71	OST2	Patel P., Bhimani G.	Study of awareness and enrolment process of Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) in Gujarat, India: A literature review	65
Poster				
Sr. No.	Code	Author(s)	Title	Page No.
72	PST1	Divecha J. M., Mane T. V.	Enhancing Change Point Detection in State-Related Brain Activity using Modified EWMA in fMRI Experiments	66

Social Sciences & Humanities

Business Studies (BS)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
73	OBS1	Parekh P. N., Shah K.	A Study on Customers Awareness and Satisfaction Towards Green Banking Practices of Selected Public Sector Banks in Anand District of Gujarat	67
74	OBS2	Akhil Bhatt, Kamini Shah	Comparison of Fintech Awareness and Perception Between Gen Y and Gen Z in Surat City	67
75	OBS3	Rathod B. and Shah K.	Role of Rural Postal Life Insurance Scheme in Rural Areas: An Empirical Study in Kheda District	68

88	OED3	Dave D. R., Acharya P. B.	The Challenges and Opportunities of Flipped classroom Implementation	79
History (H)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
89	OH1	आकांक्षा अग्निहोत्री	भारत की सांस्कृतिक विरासत में नारी	80
Library and Information Science (LS)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
43	OLS1	Mishra A. K., Mandalia, S. H.	Webometric Analysis of Indian Maritime University's Online Presence	81
44	OLS2	Chaudhary A. S., Mandalia, S. H.	Bibliometric Analysis based on Highly Cited Papers in Physics using a Dimension Database	82
Political Science (PS)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
90	OPS1	Patel S., Parmar B.	Election Stratergies of BJP-2014 to 2020	83
91	OPS2	Desai S.	Identifying the co-relationship between the vision of NEP 2020 and the Gujarat Public Universities Act 2023 in reference to academic freedom	84
Poster				
Sr. No.	Code	Author(s)	Title	Page No.
92	PPS1	Patel B., Vasava S.	The Political Campaign of Bhartiya Janta Party With Special Reference to Kheda District: A Study	85
Psychology (PY)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
93	OPY1	Patel P., Makvana S.	Cultural Anchors of Wellness: Unraveling the Nexus Between Enculturation and Mental Health Outcomes	86
94	OPY2	Gupta K., Patel S.	Psychosocial Influences on Coping during the Premenstrual Phase among College Girls: A Mixed Method Research	87

107	OSO5	Chavda L.N.	Harassment Experienced by Women in Industrial Areas -A Sociological Study (In Reference of Vadodara City)	98
108	OSO6	Ganava J.B.	A Sociological Study of Spirituality Among Young Women (In Reference of Anand City)	99
109	OSO7	Vaghela J. V.	A sociological study of young widow women (with reference to rural areas of Petlad, Sojitra, and Khambhat Talukas)	100

Languages and Arts

English (EG)

Oral

Sr. No.	Code	Author(s)	Title	Page No.
110	OEG1	Bhatt T., Popat P.S.	Metamorphosis: The Journey from Dysfunctionalism to Functionalism in the selected works of Tsitsi Dangarembga	101
111	OEG2	Joshi J.	The Changing Face of War: The Evolution of War from Metallic Arms to Nuclear Warfare	102
112	OEG3	Mehta M., Macwan A.	Constructivism: A Paradigm of Learning Actively	102
113	OEG4	Tandel R., Kotadia K.	Cultural Mosaic: Neil Bissoondath's Harmonious Reflection of 'Vasudhaiva Kutumbakam'	103
114	OEG5	Popat H., Popat P.S.	Towards a Neutral Language Society: A Study of *Mistress* by Anita Nair	104
115	OEG6	Tahenaz Parvin Biva	Revisiting Early History of English Language Education in the Indian Subcontinent	105

Gujarati (GJ)

Oral

Sr. No.	Code	Author(s)	Title	Page No.
116	OGJ1	Thakor Rajeshwari kumari Darasaheb	શોધપત્રનો વિષય ; ભારતીય નદીસંસ્કૃતિ : ઇતિહાસ અને સાહિત્યના સંદર્ભ	106
117	OGJ2	આરતી અનિલકુમાર પારેખ	બાળસાહિત્ય અને પર્યાવરણ	107
118	OGJ3	Charvi Bhatt	કચ્છ પ્રદેશના લોકગીતમાં રાષ્ટ્રીયતા, શૌર્ય અને સામાજિકતા	108
119	OGJ4	દરજી વિશાલકુમાર હસમુખભાઈ	વાલ્મીકિ રામાયણમાં નિરૂપિત સમાજવ્યવસ્થા	109
120	OGJ5	Abrarhusen Rangrej	'દિવ્યચક્ષુ બાળઘડતર અને ગુજરાતી શ્રાવ્ય-બાળસાહિત્ય'	110

121	OGJ6	ખુશ્બુબેન મુનીરએહમદ કુરેશી	જયવંતસૂરિ કૃત “શૃંગારમંજરી : શીલવતી કથા – પરંપરા”	111
122	OGJ7	સોલંકી મિત્તલબેન મોહનભાઈ	ગુજરાતી લોકસાહિત્યના પર્યાય ઝવેરચંદ મેઘાણી અંગે કનુભાઈ જાનીનું સંશોધન કાર્ય.	112
123	OGJ8	Chavda Kishan Vikrambhai	‘શામળભટ્ટકૃત રાવણ મંદોદરીસંવાદ’ સાહિત્ય અને સમાજના પરિપ્રેક્ષ્યમાં	113
124	OGJ9	મહિરથસિંહ પરમાર	ભારતીય રાજનીતિ અને ભારતીય તત્ત્વનું તરંગાવહન: ધાસિરામ કોટવાલ	114
125	OGJ10	રાઠવા મેહુલ	નરેશવેદનાં સાહિત્યમાં અધ્યાત્મનું નિરૂપણ	115
126	OGJ11	રશ્મિકા સોલંકી	પન્નાલાલની નવલકથાઓમાં માનવ સ્વભાવનું નિરૂપણ	116
127	OGJ12	Manishkumar Hirabhai Vankar	વિલિયમ શેક્સપિયરના ટ્રેજેડી નાટકો આધારિત હિન્દી ફિલ્મો	117
128	OGJ13	મહેન્દ્રકુમાર એમ. પરમાર	મનોવૈજ્ઞાનિક અભિગમથી ‘કાદંબરીની મા’ નવલકથાની સમીક્ષા	118
129	OGJ14	Mahavirbhai Rabari	‘મોહન પરમારની ટૂંકીવાર્તાઓમાં માનવસંબંધો’(સાહિત્ય અને સમાજશાસ્ત્રના પરિપ્રેક્ષ્યમાં)	119
130	OGJ15	Kuldeep Desai	સાહિત્યમાં મૃત્યુદંડના અવશેષો અને સાહિત્યિક સક્રિયતા	120
131	OGJ16	Kanubhai Bachubhai Baraiya	‘ભારતના સ્વાતંત્ર્ય સંગ્રામમાં સુભાષચંદ્ર બોઝનું યોગદાન એક સમીક્ષા’	121
Hindi (HN)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
132	OHN1	मुकेश चौधरी, हसमुख परमार	निरजा माधव कृत कोरोना उपन्यास की मूल संवेदना	123
133	OHN2	कुमार कुलदीप, परमार हसमुख	जेल में लिखी गयी हिन्दी कविताओं का सौन्दर्य निरूपण	124
134	OHN3	तिवारी, देवेंद्र प्रताप, दिलीप मेहरा	21वीं सदी के आदिवासी केंद्रित हिन्दी उपन्यासों में पर्यावरणीय चेतना: एक अध्ययन	125
Sanskrit (SN)				
Oral				
Sr. No.	Code	Author(s)	Title	Page No.
135	OSN1	Bariya Pravinkumar kalubhai	શોધપત્રનો વિષય: ‘પ્રવર્તમાન પરિપ્રેક્ષ્યમાં ભારતીય દાર્શનિકજ્ઞાન મુજબ મનુષ્યજીવન અને Artificial Intelligence	126

136	OSN2	અક્ષય કુમાર મહેન્દ્ર કુમાર પંડ્યા	ધર્મશાસ્ત્રમાં વર્ણિત અપરાધ-દંડવિધાન અને પ્રાયશ્ચિત્તનું વિવેચનાત્મક અધ્યયન	127
137	OSN3	વિશાલકુમાર મનોજકુમાર વાઘેલા	શાસ્ત્રાર્થનું સ્વરૂપ : શંકરાચાર્યના વિશેષ સંદર્ભમાં	129
138	OSN4	*શ્રેયાકુમારી બીપીનભાઈ પરમાર*	વેદાન્તદર્શન અને જીવન	130
139	OSN5	देवांशी शैलेश भिंडे	चारुदेवशास्त्री एवं भाषा	131
140	OSN6	પંચાલ પાયલ ,ડૉ.વિજયાનન્દજી. પટેલ	સંસ્કૃત વ્યાકરણશાસ્ત્રમાં વ્યાકરણપરંપરાના અભ્યાસીઓ	132
141	OSN7	Solanki B., Trivedi P.	सामाजिक जीवन में दर्शन की महत्ता	133
142	OSN8	Zala M., Trivedi P.	અદ્વૈત વેદાંતમાં બ્રહ્મતત્વનું નિરૂપણ	134

Keynote Address

Space Research and Innovation: India's Historic Journey to Moon

Nilesh M. Desai
Director
Space Applications Center
Indian Space Research Organization (SAC/ISRO)
Ahmedabad, Gujarat

Indian Space Research Organisation (ISRO), is involved in the design and realization of launch vehicles, satellite Payloads, Data Processing and Space Science & Applications related aspects. Space Applications Centre (SAC), a major ISRO centre located in Ahmedabad, Gujarat has developed expertise in the space-borne and air-borne electro-optical and microwave radar remote sensing missions, inter-planetary and space science missions as well as satellite communication and navigation programmes, and development & operationalization of space applications related to communication, broadcasting, navigation, disaster monitoring, meteorology, oceanography, environment monitoring to natural resources management.

ISRO had embarked on the follow-on Chandrayaan-3 mission under its inter-planetary space exploration programme, immediately after Chandrayaan-2 mission in 2019, wherein soft landing on moon could not be achieved. Based on the lessons learnt from Chandrayaan-2 mission, many hardware and software changes were incorporated in the lander configuration and soft landing as well as mission control strategies to take care of any perceived eventuality and leave no room for any failure, thereby increasing the overall confidence level of this moon soft landing mission. On 23rd August, 2023, India created history by becoming the first country in the world to land on the south polar region of moon and overall fourth country after USA, Russia and China to land safely on moon.

Space Applications Centre (SAC), Ahmedabad, Gujarat has also contributed very significantly and in a big way in Chandrayaan-3 mission with the design and development of total 11 systems for Vikram Lander of Chandrayaan-3 including camera and radar altimeter sensors as well as critical lander soft landing related landing site selection, signal processing and other real time computation tasks.

This keynote talk addresses the Space research and innovation in ISRO and SAC as well as the various significant features of ISRO/India's indigenous Chandrayaan-3 mission, which eventually brought a lot of glory and prestige for the country and also created tremendous euphoria and emotional integration of the whole country with the historic soft landing and touchdown of the Chandrayaan-3 lander on moon's surface followed by interesting movements and experiments of Indian Rover on moon's surface. It also highlights the significant indigenous developments by SAC team for this historic Indian Moon shot

Plenary Talk 1

Research Methodology and Its Significance

Prof. J. P. Pachauri
Former Vice Chancellor
Himalayiya University, Dehradun, Himachal Pradesh

Research methodology is a way to systematically solve research problems. How research is done scientifically? Which of the methods/techniques are relevant and which are not? What is the logic behind selecting a particular method? Therefore, it is necessary to give proper training to the researchers about research methodology. The study of research methodology gives the necessary training in gathering data and arranging them properly, card indexing, participation in fieldwork, training in the use of techniques for the collection of data, ability to evaluate the research results, and tools to look at things in life objectively.

Plenary Talk 2

Youth Entrepreneurship for Atma Nirbhar Bharat

Dr. Hina Shah
Director
International Centre for Entrepreneurship and Career Development
Ahmedabad, Gujarat

In the growing arena of unemployment, entrepreneurship development through micro/small medium enterprises has emerged as the most appropriate response. It is important to ensure that before the youth venture out into a job, the spirit of entrepreneurship should be inculcated to enable the young entrepreneurs to start their own businesses and become job givers rather than job seekers.

Anybody who starts a Business is called a Start-Up. It is not necessary to work only for business innovation. The promotion of viable and market-oriented PRODUCT to create enterprises/businesses is gaining wider acceptance in the developing world. Therefore, nurturing entrepreneurial qualities at the university level will pay great dividends to the country's economy. Entrepreneurial Training courses have become the need of the day for students, who can lead to contribute to the GDP of the country. Our ecosystem with the financial sector is ready with the support – to the youth – but unfortunately, there are no takers.

I see that there is a lot of scope for research in the following areas to lead the country toward productivity and employment.

- Our financial sector and government schemes are offering big funds. Why there are no takers for start-ups?
- What are the social constraints that do not encourage Entrepreneurship?
- What is the attitude of girls towards Entrepreneurship/Jobs?
- How effective is the ecosystem of the state/country working for Enterprise development?

ICECD is involved in sensitizing educational institutions for entrepreneurship development and as a result, several institutions have initiated courses on entrepreneurship. However, the non-availability of expertise and experience in teaching entrepreneurship has proved to be a major bottleneck for the faculty of polytechnics, science, engineering, and other colleges.

Plenary Talk 3
Academic Integrity and Research Ethics

Prof. Manoj Kumar Saxena
Dean, School of Education; Head, Department of Education
Central University of Himachal Pradesh
Dharamshala, Himachal Pradesh

Academic Integrity entails the idea of following and adhering to some core ethical values of academic culture. These core values guide academicians, researchers, and teachers to regulate their behavior within academic culture. According to the International Center for Academic Integrity 2021, six fundamental values form essential elements of Academic integrity. The six fundamental values are honesty, trust, fairness, respect, responsibility, and courage. These six values can further be extrapolated to the "a) use of honest and verifiable methods in proposing, performing and evaluating research, b) reporting research results with particular attention to adherence to rules, regulations, and guidelines c) following commonly accepted professional codes or norms". University Grants Commission has always taken a keen interest in promoting Academic Integrity and in its ambit for nurturing research culture, promoting academic and research integrity. In the neo-liberal times, the technology and emerging issues with the use of technology have not only affected the discourses on a global level but the academic communities have also been affected by the misuse of technology at the national level. There have been various instances in the academic culture which has highlighted some of the core problems in our institutions at higher levels of education. The core issues that have been highlighted by various scholars are compromised publication ethics, deteriorating academic integrity, unethical, deceptive practices in publishing articles, increased number of dubious journals, unethical behavior in research etc. For making India a world economy, it is a prerequisite to adhere to the principles of honesty and integrity. India has been an emerging contributor in book and article publication. The scholars in India are not contributing in the reputed international journals but the scholars are actively writing in the national platforms as well. This dimension becomes significant because India has one of the largest education systems in the world and the chances of malpractices and misconduct in academics are very high. To curtail this phenomenon, there have been various steps taken by the University Grants Commission. Academic integrity attained much focus and attention from the academicians scholars and national bodies in the country. There is a great interplay between research integrity and ethical consideration in any particular context. As already described research integrity reflects adherence to some core values while ethics entails an accepted code of conduct. Maintaining an ethical code of conduct is essential and required in academia. It provides the basic framework of how to conduct behavior and is an essential part of the larger community. Ethics has been the research interest of some of the eminent philosophers in the eighteenth century. Kant in the eighteenth century contributed to the theory of ethical theory. He highlighted that some imperatives give us an idea of how to behave in any context. He called these imperatives 'categorical imperatives'. He emphasized that "Commands you must follow, regardless of your desires, moral obligations are derived from pure reason". He emphasized rationality as the basis of ethical behavior. Not only these philosophers, but there has always been a keen interest in honesty, truth, and beauty in ancient Indian education as well. It is high time to look back to the ancient Indian values and simultaneously endow the academic culture with indigenous and modern values of honesty, truth, and beauty for academic growth and integrity.

Plenary Talk 4

Indian Research Methodology: A Reality

Prof. Neerja Gupta
Vice Chancellor,
Gujarat University,
Ahmedabad, Gujarat.

Trends in Bharatiya Research Methodology in India has a rich tradition of texts. The ancient Indian texts are so well written that they are beyond correction and editing. Each text contains not only a new subject but also a growth within the knowledge system. There is constant referencing, citation, and intertextuality in scriptures and scientific texts. This indicates that there has been a system of literature review, finding out research gaps, coining scientific definitions and following procedures to set the tradition. The data is validated through conventional and non-conventional methods. Each text establishes itself as a growth from the last one. The progression of knowledge has been systematic and well-documented. Thus precise theories, methodologies, techniques and tools are traceable in a number of ancient texts, which also include many belonging to research methodology.

Tradition of Scripture in India is found from the era which is not dated or recorded in modern tools of history. Scholars quote these scriptures time and again. Western publishing sources reject this referencing in the Indian method, as there is no prescribed Indian method. Developing a method that doesn't need an author, place of publication or page number is urgent and advisable. Create authenticity and propose a timeline to cover such scriptures. The traditional research methodology of India was based on the Indian traditional schools and disciplines of Mimaamsa, Vyaakarana, Nyaaya, Ayurveda etc. Based on Pramans Anubandh Chatushtayam.

We must identify, collect and systematize the definitions, procedures, and trends which may be as now followed by tools and techniques of Research, as prescribed in several Indian scriptures. In addition to that, a compendium of research standards aimed to be prepared out of this study which shall match the Indian knowledge system and Indian linguistic traditions. This shall help in the growth in the study of Indian texts and the universalization of Indian scriptures.

SPURSM-2023

Department of Applied and Interdisciplinary Science

Sardar Patel University

Vallabh Vidyanagar, Anand, Gujarat

Inclusive Evaluation of *Glycyrrhiza glabra* Extract: Unraveling its Antibacterial, Antioxidant, and Anticancer Potentials in the Context of Lactational Mastitis and Breast Cancer Risk

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Lactational mastitis is an acute inflammation of the intra-lobular connective tissue of the mammary gland that leads to discontinuation of breastfeeding. It is caused by multiple bacteria found in breast milk and is often treated with antibiotics. The issues with antibiotic usage are its residual effect can harm the health of newborns, multiple etiologies and the development of antibiotic resistance. Hence, exploring alternative treatments has become important, and using plant-based products has emerged as a promising treatment strategy. In this study, we have evaluated the antibacterial, antioxidant, and anticancer activities of *Glycyrrhiza glabra*. The antibacterial activity of methanolic extract of *Glycyrrhiza glabra* was evaluated using the agar well diffusion method and the average zone of inhibition obtained was > 20 mm with 100mg/ml concentration. The average minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of *Glycyrrhiza glabra* extract obtained were 25mg/ml and 50mg/ml respectively against mastitis-causing bacteria. Phytochemical assessments revealed a rich composition of phenols and flavonoids. Gas Chromatography-Mass Spectrometry (GC-MS) identified 'octanoic acid' as a significant bioactive compound within the methanolic extract. The quantity of octanoic acid was obtained 4020.54 µg/ml by performing High-Performance Thin-Layer Chromatography (HPTLC) with an Rf value of 2.42. The antioxidant potential of the extract was studied by performing DPPH, superoxide scavenging, and catalase assays. Significant antioxidant activity was observed, suggesting a possible role in mitigating oxidative stress-related complications. Further, the anticancer properties of *Glycyrrhiza glabra were studied by performing an* MTT assay against the MCF-7 (breast cancer cell line). The IC_{50} value obtained was 76.63 µg/ml, highlighting its potential as an anticancer agent. This study provides fascinating evidence supporting the methanolic extract of *Glycyrrhiza glabra* as a versatile plant-based remedy, offering potential solutions for lactational mastitis and contributing to the field of breast cancer prevention strategies.

Keywords: Lactational mastitis, Phytochemicals, *Glycyrrhiza glabra*, Antibacterial activity, Antioxidant potential, Anticancer properties

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Department of Biosciences

Sardar Patel University

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Antioxidant, anticancer and apoptosis-inducing effects of *Carissa carandas* L. leaves and fruit extracts in lung carcinoma cells

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Cancer is the second leading disease causing deaths worldwide. Various phytochemicals derived from plant sources are being used today in the treatment of cancer. Many scientific reports say it can be prevented through consumption of healthy diet or food. In the present study, we evaluated the antioxidant, anticancer and apoptosis-inducing ability of *Carissa carandas* L. leaves, young fruit, and ripe fruit on lung carcinoma cells (A549). Hydromethanolic extracts of *C. carandas* leaves (CCL), young red fruit (CCF-R) and ripe blue fruit (CCF-B) were assessed for the presence of secondary metabolites, total phenolic content and antioxidant activity. The anticancer activity was determined by the inhibition of proliferation of lung adenocarcinoma cells after treatment with the extracts. Phytochemical screening showed the presence of various active secondary metabolites in the extracts. Among the three extracts, CCL exhibited maximum phenolic content as well as antioxidant activity followed by CCF-R and CCF-B. In the MTT assay, CCL demonstrated effective inhibition of A549 cell proliferation at low concentration, with an IC_{50} of 11.77 ± 3.08 µg/ml. CCF-R and CCF-B also showed anti-proliferative activity at the IC_{50} concentration of 21.43 ± 5.33 µg/ml and 101.9 ± 3.81 µg/ml respectively. DAPI, AO/EB, and Giemsa staining assays confirmed the potential of these three extracts in inducing apoptosis in A549 cells. Elevated levels of reactive oxygen species (ROS) and loss of mitochondrial membrane potential was observed in cells treated with CCL indicating the induction of apoptosis. The findings show that *Carissa carandas* L. leaves and fruit extracts have antioxidant activity, suppress lung cancer cell proliferation and induce apoptosis. These findings emphasize the potential of *Carissa carandas* L. as a rich source of naturally occurring anticancer compounds.

Keywords: *Carissa carandas*; Antioxidant; Anti-proliferative; Apoptosis

References:

1. Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). https://doi.org/10.3322/caac.21660
2. Wild, C., Weiderpass, E., & Stewart, B. W. (Eds.). (2020). http://publications.iarc.fr/586.
3. Dua, D. E. E. P. T. I., & Srivastav, N. S. (2013). *Int. J. Integr. Sci. Innov. Technol. Sec.*, *2*(4), 15–19.
4. Arif, M., Kamal, M., Jawaid, T., Khalid, M., Saini, K. S., Kumar, A., & Ahmad, M. (2016). Asian, J. Biomed. *Pharmaceutical Sciences*, *6*(58), 14–19.
5. Espina, C., Herrero, R., Sankaranarayanan, R., Krug, E., Wild, C. P., & Schüz, J. (2018). Toward the world code against cancer. *Journal of Global Oncology*, *4*, 1–8. https://pubmed.ncbi.nlm.nih.gov/?term=30241265
6. Newman, D. J., Cragg, G. M., & Snader, K. M. (2003). Natural products as sources of new drugs over the period 1981–2002. *Journal of Natural Products*, *66*(7), 1022–1037. https://doi.org/10.1021/np0300961

Isolation, Identification, and Characterization of α - asarone, from Hydromethanolic Leaf Extract of *Acorus calamus* l. and its Apoptosis-Inducing Mechanism in A549 Cells

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Due to the presence of several active secondary metabolites, the traditional Indian and Chinese medicinal herb *Acorus calamus* L. has been utilized for both medical and culinary purposes since ancient times. A recent report has underscored the promising cytotoxic effect of *A. calamus* leaves extract against non-small cell lung cancer A549 cells. Thus, we want to separate the bioactive substance from the hydromethanolic extract of *A. calamus* leaves in the current investigation. Thin-layer chromatography was used to separate the compounds and different spectroscopic methods (UV, FTIR, NMR, and LC-MS/MS) were used for the structure prediction. α -asarone was found to be the main bioactive compound present and it was isolated from *A. calamus* leaves extract. It exerted a good cytotoxic effect with an IC_{50} value of 21.43 ± 1.27 µM against A549 cells and IC_{50} value of 324.12 ± 1.32 µM against WI-38 cells. The induction of apoptosis in A549 cells by α -asarone was reaffirmed by the diverse differential staining methods including DAPI, Acridine Orange/Ethidium Bromide, and Giemsa staining. Additionally, α -asarone induced mitochondrial membrane potential dissipation with a concomitant increase in the production of ROS. Furthermore, it also increased expressions of caspase-3, caspase-9, caspase-8, DR4, and DR5 genes in A549 cells. In conclusion, α -asarone-induced apoptotic cell death in non-small lung cancer cells (A549) as a result of loss of mitochondrial function, increased ROS production, subsequent activation of an internal and extrinsic caspase pathway, and altered expression of genes controlling apoptosis. As a whole, α -asarone is a plausible therapeutic agent for managing lung cancer.

Keywords: α- asarone; apoptosis; A549; cytotoxicity; *Acorus calamus* L.

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Department of Chemistry

Sardar Patel University

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Biopolymer Carboxymethyl Cellulose/β-Cyclodextrin/Nickel Cobaltite: Synthesis and Adsorption Application

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Wastewater contamination has been a longstanding concern for many decades, particularly due to the adverse effects of dyes on aquatic organisms and water quality. Adsorption, a simple and cost-effective method, has been widely recognized as an efficient approach to address dye contamination in wastewater. The preference for using biodegradable materials as adsorbents stems from their environmentally friendly characteristics. In this study, a new nanocomposite comprising biodegradable carboxymethyl cellulose, *β*-cyclodextrin, and succinic acid reinforced with nickel cobaltite ($NiCo_2O_4$) was employed as an adsorbent for removing malachite green (MG) contamination. The adsorption efficiency of the synthesized composite was investigated under various conditions. Artificial neural networking (ANN) was employed to predict the removal of malachite green using the composite material. Additionally, isotherm, thermodynamics, and kinetics analyses were conducted to assess the effectiveness of MG uptake by the composite. The findings suggest that the novel composite material shows promise in removing MG from aqueous streams.

Keywords: carboxymethyl cellulose, biopolymer, artificial neural networking, cobaltite, adsorption

Surface-Engineered TiO_2 by Amine Adsorption for Efficient Visible Light-Driven Methylene Blue Degradation

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TiO_2 is widely used as photocatalyst for degradation of aqueous organic pollutants from industrial effluents. However, its application is restricted to the ultraviolet (UV) region due to its large band gap (~3.2 eV) and rapid recombination of photoinduced charged ion pairs. To address this limitation and enhance the photocatalytic activity of TiO_2 under visible light, the photocatalyst was modified by adsorption of amines. Adsorbed aimines containing electron-donating groups, demonstrated significantly improved photocatalytic activity for methylene blue degradation (~80%). This observed enhancement in photocatalytic activity in amine-adsorbed TiO_2 can be ascribed to the narrowing of the band gap and the facile electron transfer process. In contrast, TiO_2 with adsorbed amines containing electron-withdrawing groups does not exhibit such enhancement in photocatalytic activity. This study underscores the potential of amine adsorbed TiO_2 as photocatalyst and the research findings suggest that the adsorption of amines with electron-donating groups onto TiO_2 is a promising strategy for reducing the band gap and recombination rate of charded ion pairs. The developed protocol for adsorbing amines with electron-donating groups could also be use for tailoring the band gap of other photocatalysts, thereby improving their ability to harvest visible light and enhancing their overall photocatalytic performance for visible light-responsive photocatalysis.

Keywords*:* TiO_2; Amine adsorbed TiO_2; Band gap narrowing; Visible light; Photodegradation; Methylene blue.

Design & Synthesis of Soil Nutrient-Loaded Hydrogel Composite Based on Polysaccharide as a Sustained Release Carrier

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In this study, we aimed to fabricate naturally derived polymer-based multifunctional hydrogel based on CTS-g-P(AMPS-co-AA) for sustained release of urea (UA) fertilizer for an extended period of time. Proposed formulation was synthesized by *in situ* free-radical graft copolymerization of chitosan (CTS), partially neutralized acrylic acid (AA) and 2-acrylamido-2-methyl-1-propane sulfonic acid-sodium salt (AMPS) in the presence of methylene bis-acrylamide (MBA) as a crosslinker. The synthesized product was confirmed using a set of techniques including FT-IR spectroscopy, TGA & XRD analysis. In addition, different surface microstructure of hydrogel and their respective composite was observed through scanning electron microscopy (SEM) & optical microscopy (OM) then recorded for the comparison purpose. Moreover, fabricated material was further analyzed by means of maximum water absorbency, pH_{pzc} test, in-soil degradation and water retention test. The sustained release behavior of designed material implies that integration of MMT into the raw crosslinked hydrogel network considerably enhanced the release time of Urea (UA) fertilizer and can be tuned by the degree of crosslinking of material. By concluding all it could be propose that; this new environment-friendly system has capability to perform multiple action in the farming sector (i.e., regulating fertilizer and moisture release in surrounding along with adsorption of heavy metals); which makes it modest candidate for use in agricultural and horticultural applications.

Keywords: Hydrogel, Chitosan, Composite, Sustained Release Fertilizer (SRF)

Organometallic Compounds of Rhenium(I) with Substituted Phenyl(2-(thiazol-4-yl)-1h-benzo[d]imidazol-1-yl)methanone: Synthesis, Characterization and Biological Approach

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Organometallic compounds of Re(I) based on substituted phenyl(2-(thiazol-4-yl)-1H-benzo[d]imidazol-1-yl) methanone were synthesized and characterized using spectroscopic methods. Absorption titration and viscosity measurement studies of CT-DNA under the influence of compounds were carried out to evaluate the binding capabilities and binding mode. The study suggests an intercalation mode of binding, which is also supported by molecular docking studies[1]. The BSA binding study was also carried out to find out the binding strength of all the synthesized compounds towards protein[2]. The antibacterial activity of the compounds was evaluated against two Gram-positive and three Gram-negative pathogens, which suggests that the organometallic compounds have better antibacterial activity than all the ligands[3]. Swiss ADME tools carried out an ADME study. The work focuses on computing the molecular orbital energies for the synthesized compounds using the density functional theory (DFT) [4]. The compounds were tested against the MCF-7 cell line to determine their anticancer effects. It was observed that their IC_{50} values were equivalent to those of the standard medication indicating they had a similar antiproliferative impact[5].

Keywords: Re(I) organometallic compounds, DNA/BSA binding, DFT, Molecular docking, ADMET study, Antibacterial/Anticancer activities.

References:

(1) Varma, R. R.; Pursuwani, B. H.; Suresh, E.; Bhatt, B. S.; Patel, M. N. *J. Mol. Struct.* **2020**, *1200*. https://doi.org/10.1016/j.molstruc.2019.127068.

(2) Mansour, A. M. *RSC Adv.* **2021**, *11* (63), 39748–39757. https://doi.org/10.1039/d1ra06559a.

(3) Patel, N. J.; Bhatt, B. S.; Vekariya, P. A.; Vaidya, F. U.; Pathak, C.; Pandya, J.; Patel, M. N. Synthesis, Characterization, Structural-Activity Relationship and Biomolecular Interaction Studies of Heteroleptic Pd(II) Complexes with Acetyl Pyridine Scaffold. *J. Mol. Struct.* **2020**, *1221*. https://doi.org/10.1016/j.molstruc.2020.128802.

(4) Ashok, D.; Gundu, S.; Aamate, V. K.; Devulapally, M. G. Conventional and Microwave-Assisted Synthesis of New Indole-Tethered Benzimidazole-Based 1,2,3-Triazoles and Evaluation of Their Antimycobacterial, Antioxidant and Antimicrobial Activities. *Mol. Divers.* **2018**, *22* (4), 769–778. https://doi.org/10.1007/s11030-018-9828-1.

(5) Dabhi, R. A.; Dhaduk, M. P.; Bhatt, V. D.; Bhatt, B. S. Synthetic Approach toward Spiro Quinoxaline-β-Lactam Based Heterocyclic Compounds: Spectral Characterization, SAR, Pharmacokinetic and Biomolecular Interaction Studies. *J. Biomol. Struct. Dyn.* **2022**. https://doi.org/10.1080/07391102.2022.2086176.

Synthesis of Novel Triazole Derivatives Through 1,3-Dipolar Cycloaddition "Click" Reaction: Spectral and Biomolecular Interaction Studies

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Novel triazole-hydroxyquinoline derivatives were synthesized by performing copper-catalyzed 1,3-dipolar cycloaddition ("click" reaction) between an 8-*O*-alkylated-quinoline containing a terminal alkyne and various aromatic azides. The compounds were characterized by ^{1}H-NMR and IR spectrometry. Minimum inhibitory concentrations (MIC) of the compounds were investigated by the micro-dilution broth method. The cytotoxic activity of the compounds was evaluated by brine shrimp lethality bioassay. Molecular docking study was performed for the preferred orientation of stable DNA compound associates to get an insight into the binding site and binding affinity between these molecules, and binding energy data were evaluated to check the strength of the association. Molecular docking is the key task for estimating the feasible binding geometries and interactions between drugs and the active site of proteins. The DNA binding ability of compounds was checked as the change in absorption band in UV-Vis spectra of CT-DNA and change in relative viscosity of DNA in presence of compounds. The results support the intercalation mode of binding with the good affinity of compounds toward DNA as evaluated by estimation of binding constant values.

The Strategic Integration of Magnesium Chloride Hexahydrate and Choline Chloride Type-II Deep Eutectic Solvent as a Draw Solute in Forward Osmosis

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Magnesium chloride hexahydrate: Choline chloride (1:1) (MAGCC) type-II deep eutectic solvent (DES) was utilized as a draw solute (DS) in different concentrations for forward osmosis (FO) with Thin film composite (TFC) FO and nanofiltration membranes. The water flux value for 1%, 5% and 10% concentrations (v/v) were analyzed. The membrane was characterized by microscopic analysis for the surface morphology and Contact angle for hydrophilicity which gave good results. MAGCC DES was characterized using IR for structural identification, and TGA for thermal stability. The low energy-consuming chilling method was used for the draw solute recovery which gives clear separation at 3°C. The data strongly agrees with the potential of MAGCC DES for FO application.

Keywords: Forward osmosis, deep eutectic solvents, choline chloride, Flux measurement, Draw solute

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Indole-Based Derivatives: Efficiently Synthesized Cu-Catalyzed Compounds with Potent Antimicrobial and Antifungal Activity Surpassing Standard Drugs

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In this study, a series of indole-based derivatives were efficiently synthesized using a highly efficient Cu catalyst and mild reaction conditions. The synthesized compounds were evaluated for their in vitro antimicrobial activity against Gram-positive and Gram-negative bacteria. Notably, compounds 5a, 5d, 5g, 5l, and 5m exhibited potent antibacterial activity with MIC values ranging from 10 to 25 µg/mL, surpassing the standard drugs norfloxacin and ciprofloxacin. Furthermore, the synthesized compounds demonstrated remarkable antifungal activity, with compounds 5e, 5g, 5k, and 5n showing excellent MIC values of 25 µg/mL against Candida albicans and Aspergillus niger, outperforming the standard drugs Nystatin, Griseofulvin, and Fluconazole. The cytotoxic activity of the synthesized compounds is currently being investigated. Overall, these findings highlight the potential of the synthesized compounds as promising antimicrobial and antifungal agents with improved activity compared to standard drugs. Further studies on their cytotoxic activity will provide insights into their potential for therapeutic applications.

Keywords: antimicrobial activity, anti-fungal activity, MIC values, cytotoxic activity

One-pot Synthesis of Novel Tetrahydrobenzofuran-4(2H)-ones: *In vitro* Antimicrobial, Antimalarial Activity

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A diverse set of tetrahydrobenzofuran-4(2*H*)-one derivative **4(a-o)** were synthesized using a one-pot treatment of dimedone, 3-(1*H*-imidazol-1-yl)benzaldehyde, and different phenacyl bromide by utilizing cesium carbonate as a cost-effective catalyst in acetonitrile under mild reaction condition. During the synthesis of compounds, two carbon-carbon (C-C) bonds and one carbon-oxygen (C-O) bond are formed. All the compounds were obtained with moderate to good yield. The synthesized compounds underwent screening to assess their antimicrobial and antimalarial properties. Compounds **4l** and **4d** exhibited the highest potency against *A. baumannii* and *Car. Resistant P. aeruginosa* in comparison to the standard drug chloramphenicol, respectively. Compound **4l** displayed the highest efficacy against *C. albicans* than that of the standard drug, fluconazole while **4f** showed greater efficacy against *A. niger* than griseofulvin. In addition, all the titled compounds displayed good antimalarial activity. Among them, **4f** has the highest efficacy against *P. falciparum* than quinine

Keywords: Multicomponent reactions, Tetrahydrobenzofuran-4(2*H*)-one, Cs_2CO_3, Antimicrobial, Antimalarial

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Solid Acid Catalysis: Hydration Effect on Catalytic Activity

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The solid acid catalyst, silica functionalized with propylsulfonic acid (SFS) was synthesied by grafting of 3-mercaptopropyltrimethoxysilane followed by oxidation using hydrogen peroxide and sulfuric acid. The as-synthesized SFS contained strongly bound water molecules with sulfonic acid ($–SO_3H$) groups, which greatly lowered the strength of Brønsted acidic sites (of $–SO_3H$ groups) and exhibited reduced catalytic activity. These bound water molecules could be removed by heating the SFS at a high temperature (225ºC), which strengthened the acidity of $–SO_3H$ groups and enhanced the activity. The catalytic activity of SFS has been investigated for the isomerization of longifolene to iso-longifolene as a model reaction. The SFS being a metal free solid acid catalyst can provide a cost-effective and environmentally benign process for the synthesis of iso-longifolene.
Keywords: Solid acid catalysts; silica functionalized with propylsulfonic acid; isomerisation; acidic strength; catalytic activity.

Catalyst-free Synthesis of Biologically Relevant Novel Pyrazolo-Pyridine Fused Tetrazolo-Pyrimidines Derivatives as a Potent Anticancer Agent

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Nitrogen-containing heterocycles are widely found in pharmaceutical chemistry, natural products, and material science.[1] In the last few decades, tetrazole derivatives have gained interest due to their remarkable biological profile, demonstrating significant activities, including antifungal, antimalarial, anticancer, and antidiabetic activities.[2] Additionally, this moiety is utilized as bioisostere for carboxylic acid.[3] Simultaneously, pyrazolo-pyridine derivatives belong to a privileged class of biologically active *N*-heterocycles.[4] So, based on molecular threading, we combined two moieties to construct novel *N*-heterocycles expected to enhance their biological profile.[5] Herein, we successfully synthesized a series of diversely functionalized pyrazolo-pyridine fused tetrazolo-pyrimidines derivatives under catalyst-free conditions with moderate to very good yields. All the synthesized derivatives were characterized by ^{1}H NMR, ^{13}C NMR, mass spectrometry, and elemental analysis. Motivated by the excellent pharmaceutical profile of tetrazole and pyrazolo-pyridine derivatives, we evaluated our compounds for cytotoxicity assessment against MCF-7 and HEK-293 cells using MTT assays. Remarkably, several of the synthesized compounds exhibited excellent anticancer activity against both cells compared to the standard drug.

Keywords: Pyrazolo-Pyridine Fused Tetrazolo-Pyrimidine, Catalyst-free, Anticancer, MTT Assay.

References:

1. Y. Zhang, R. Chen, Z. Wang, L. Wang, Y. Ma, *J. Org. Chem.,***2021**, *86(9),* 6239-6246.
2. N. Dhiman, K. Kaur, V. Jaitak, *Bioorg. Med. Chem*., **2020**, *28(15),* 155599.
3. K. Ishihara, T. Shiori, M. Matsugi, *Org. Lett.,* **2020,** *22(16)*, 6244-6247.
4. D. D. Priya, M. Nandhakumar, S. M. Roopan, *Synth. Commun.,* **2020**, *50(23),* 3535-3562.
5. G. Brahmachari, M. Mandal, I. Karmakar, K. Nurjamal, B. Manda, *ACS Sustainable Chem. Eng.*, **2019**, *7(6)*, 6369-6380.

Meglumine Supported Heterogeneous Catalyst for the Synthesis of 1,2,3-Triazole Tethered Spiro[indoline-pyrazolo[5,1-*b*]quinazoline]carboxylates

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Heterogeneous catalysts actively seek green and sustainable utensils in numerous fields of science, especially in organic alterations, and their literature reports growing exponentially.[1] Additionally, it provides ease of handling, separation, and a convenient recycling process. But, universally the preparation of heterogeneous catalysts suffers from various difficulties since it requires numerous steps, more chemical consumptions, and more energy feeding, etc.[2-4] This ultimately reduces the overall environmental impacts of chemical strategies. Hence, it is mandatory to use solid support without any modification for the immobilization. So, the design of the catalyst using small organic molecules to enhance its properties seems to be a meaningful goal. Moreover, 1,2,3-triazoles are abundant structural motifs in bioactive molecules due to their good biocompatibility and marked stability.[5,6] Considering their immense synthetic and biological importance, much attention has been paid to their synthesis in the last two decades. Therefore, herein, we utilized a task-specific meglumine immobilized copper catalyst Meg-Cu for the building of 1,2,3-triazole-tethered-spiro[indoline-pyrazolo[5,1-*b*]quinazoline]carboxylates under the mild reaction conditions to minimize the use of air pollutants and enhances the sustainability of the reaction. All the synthesized derivatives were characterized using various analytical tools such as ^{1}H NMR, ^{13}C NMR, and Mass.

Keywords: Meglumine-based copper catalyst Meg-Cu, Biologically potent 1,2,3-triazoles, Greener approach, Click reaction.

References:

1) Erythropel, H. C.; Zimmerman, J. B.; de Winter, T. M.; Petitjean, L.; Melnikov, F.; Lam, C. H.; Lounsbury, A. W.; Mellor, K. E.; Janković, N. Z.; Tu, Q., *Green chemistry* **2018,** *20* (9), 1929-1961.
2) Keypour, H.; Kouhdareh, J.; Rabiei, K.; Saremi, S. G.; Noroozi, M.; Sadighi, S.; Rezaei, M. T.; Khorshidifard, M., *Journal of Organometallic Chemistry* **2023,** *1001*, 122873.
3) Karimi-Nami, R.; Keypour, H.; Rabiei, K.; Kouhdareh, J.; Alavinia, S.; Karakaya, I., *Polycyclic Aromatic Compounds* **2023**, 1-16.
4) Jia, X.; Liang, Z.; Chen, J.; Lv, J.; Zhang, K.; Gao, M.; Zong, L.; Xie, C., *Organic letters* **2019,** *21* (7), 2147-2150.
5) Deng, L.; Cao, X.; Liu, Y.; Wan, J.-P., *The Journal of Organic Chemistry* **2019,** *84* (21), 14179-14186.
6) Cui, X.; Zhang, X.; Wang, W.; Zhong, X.; Tan, Y.; Wang, Y.; Zhang, J.; Li, Y.; Wang, X., *The Journal of Organic Chemistry* **2021,** *86* (5), 4071-4080.

Removal of Methylene Blue from Water Using Silica Supported Biosynthesized Silver Nanoparticles as Efficient Adsorbent and Photocatalyst

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Acquiring clean and affordable water is a great challenge across the globe nowadays. In line with that, herein we demonstrate a facile synthesis of a promising photocatalyst for the removal of cationic dye (methylene blue; MB) from water under visible light irradiation. The silica-supported silver nanoparticle (Ag@SG) based photocatalysts were prepared by using different concentrations of biogenic silver nanoparticles (AgNPs; 0.25-5 mM) solutions prepared from *Cicer arientinum* pod extract. Detailed characterization of AgNPs was carried out by UV-Visible spectroscopy, HR-TEM, EDX, powder XRD, and FT-IR spectroscopy. The synthesized AgNPs were wet impregnated on silica gel (SG) and the resultant composites were characterized by using ICP-OES, BET, XPS, and HR-TEM analyses. Among them, the Ag@SG composite prepared using 1.25 mM AgNPs solution (Ag1.25@SG) contained Ag^0 species as nanoparticles, whereas the samples prepared by higher concentrations contained both Ag^0 and Ag^+ (silver oxide) species. All the Ag@SG composites exhibited good adsorption capacity but Ag1.25@SG exhibited higher photocatalytic activity for degradation of MB. The study reveals that the plasmonic Ag^0 species supported on silica are catalytically more active than Ag^+ species. Also, AgNPs (Ag^0) in supported form exhibit much higher (~5-fold) photocatalytic activity than unsupported AgNPs. The Ag1.25@SG composite containing a very small amount of silver (0.037×10^{-2} mol%) had shown the highest efficiency for photocatalytic activity giving 88 % removal of MB. The synergistic effect of the adsorption property of silica surface and plasmonic photocatalytic activity of AgNPs in the synthesized composites is found to be effective for the removal of MB. The fine dispersion of AgNPs on internal surface of silica is found to be a key aspect for better photocatalytic activity.

Keywords: Silver nanoparticles, Silica, Methylene blue, Adsorption, Photocatalysis

Quasi Solid Polymer Gel Electrolytes for rechargeable Zinc- ion Battery

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Polymer Gel Electrolytes (PGEs) has proven to be promising electrolytes for energy storage devices in view of problems associated with using aqueous electrolytes such as metal whiskering, metal corrosion, capacity dying over long cycling and HER (Hydrogen Evaluation Reaction). PGEs show excellent properties for application as electrolyte such as high electrochemical activity, mechanical stability, excellent safety, and reliable conductivity. In this study, we have synthesized Pluronic [(PEG)-(PPG)-(PEG)] coordinated with Zn and Fe metal separately using reflux method. The resulting metal-coordinated polymer gel electrolyte (MCPGE) exhibited high conductivity, excellent zinc ion transport number, and outstanding thermal and electrochemical stability. The thermal stability of MCPGE was characterized by Thermogravimetry analysis (TGA) and Differential scanning calorimetry (DSC). The electrochemical properties such as ionic conductivity and transport number were analysed using Electrochemical impedance spectroscopy (EIS) and Cyclic voltammetry (CV). The CV analysis of MCPGE showed perfect cyclic behaviour, indicating the smooth transfer of Zn ions between two symmetrical electrodes. Rechargeable Zn ion battery have been prepared using the synthesized MCPGE with Quinhydrone catholyte on the ion storing side. The prepared battery was assessed for its electrochemical performance and capacity. This study provides a new solvent-free approach to the utilization of polymer as an electrolyte material in energy storage devices, which can enhance their overall performance.

Keywords: Polymer gel electrolyte, Pluronic, Aqueous rechargeable zinc-ion battery.

References:

1. Kotadia DA, Soni SS. 2014. *Applied Catalysis A: General* 488:231-8
2. Maurya PK, Mondal S, Kumar V, Singh SP. 2021. *Environmental Science and Pollution Research* 28:49327-42
3. Sonigara K, Zhao J, Machhi H, Cui G, Soni S. 2020. *Advanced Energy Materials* 2001997

Hierarchically porous Functionalized Silica Nanoparticles as Catholyte Hosts in Aqueous Rechargeable Zn-ion batteries

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Efforts are underway to advance the development of promising battery systems to meet the demands of electric vehicles with extended driving ranges. The next-generation batteries are expected to demonstrate higher energy densities compared to current models and reasonable rechargeability. Aqueous zinc-iodine batteries with rechargeable capabilities (AZIBs) stand out due to their impressive zinc-iodine redox chemistry, positioning them as highly promising candidates. Their appeal lies in notable features such as high safety levels, cost-effectiveness, easy fabrication, and a high energy density. In this study, a versatile porous matrix, composed of silica-functionalized mesoporous nanoparticles utilizing soft polymer-infused templates, is employed through a sol-gel procedure. This matrix serves as a host for a significant quantity of an iodine-based catholyte. The exceptional performance of aqueous zinc-iodine batteries is presented, operating based on the triiodide/iodide redox reaction. This innovative approach involves the transformation of iodine to triiodide in an aqueous iodide, establishing a stable potential window for the aqueous cathode and facilitating the triiodide/iodide redox reaction in zinc-iodine batteries. The presence of functional groups after synthesis was confirmed using FT-IR spectroscopy. The prepared functionalized mesoporous silica was characterized by SEM, UV-visible, TGA, and DSC, analysing their properties. The n-type character and commendable electrical conductivity of the synthesized porous silica materials were affirmed through both Mott-Schottky analysis and Electrochemical Impedance Spectroscopy (EIS). Consequently, we successfully fabricated high-performance and long-term stable AZIBs with a capacity of 110 mA h g^{-1} at a 4 C rate. These batteries exhibit exceptional capacity retention, maintaining 95% of their original capacity even up to 18C rates.

Keywords: Mesoporous silica, Aqueous zinc-iodine battery (AZIB) ,Triiodide/iodide (I^{3-}/I^{-}) redox couple

Studies on Mechanism of Ammonia Capture by One-Pot Ni(II) Based Metallogel: A Chemoprobe and Reversible Adsorbent

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Nowadays, the emission of various industrial gases like Carbon Monoxide, Ammonia, etc. not only threatens the human health, but also affects the environment. Among these gases, ammonia acts as noxious gas due to its high solubility in water as well as being a key component of PM 2.5 (Fine particulate matter present in environment). The hazardous impact of this gas on human body has raised to quest for advanced adsorbent. The present study offers design and fabrication of tetrazole based Ni(II) metallogel (Ni(II)MG) *via* one-pot method which acts as a promising material for sensing and reversible ammonia adsorbent. The Ni(II)MG is composed of Ni(II) centre, coordinated with four *in-situ* formed 5-(1H-tetrazol-5-yl)pentanenitrile ligands and two water molecules forming predominant octahedral geometry. Rheology study reveals the Viscoelastic, Thixotropic and self-healing nature of Ni(II)MG. The structural identification and crystallinity of Ni(II)MG has been confirmed by various spectroscopic techniques like FT-IR spectroscopy, Mass Spectrometry, Differential Reflectance Spectroscopy, Thermogravimetric Analysis, X-Ray Photo Electron Spectroscopy, Vibrating Sample Magnetometer, and Powder XRD. FEG-SEM analysis confirms the nano spherical morphology and porous nature of metallogel. The mesoporous nature with an average pore size of 11.4nm and pore volume of 0.1010cm^3 has been measured by BET analysis. The presence of extensive hydrogen bonding inside the pores makes Ni(II)MG a promising material for reversible ammonia adsorption. The lewis acidic Ni(II) center initiates the cloud network of hydrogen bonded water molecules and triggers coordinate water molecule to active hydrogen bonded water molecule for binding with ammonia. Temperature Programmed Desorption studies confirms that the material has a capacity to adsorb 8 mmol/gm of ammonia making it a predominant reversible material for ammonia adsorption.

Keywords: One-pot method, Thixotropic property, Metallogel, Ammonia Adsorption, Reversible Adsorption

Effective Removal of Naproxen Sodium NSAID by Biopolymer Based Hydrogel Nanocomposite Gum Acacia-*g*-poly(N,N'-Dimethylacrylamide)/$CoFe_2O_4$

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The disposal and treatment of wastewater contaminated with non-steroidal anti-inflammatory drugs (NSAIDs) pose a significant environmental challenge. Among these NSAIDs, Naproxen sodium has been identified as a major contributor to water pollution and causes adverse effects on aquatic ecosystems and, consequently, on human health. In response to this environmental concern, we have developed a novel solution in the form of biopolymer-based hydrogel nanocomposites. One such composite is created using Gum acacia (GA) as biopolymer, ammonium persulphate (APS) as initiator, N,N'-methylene bisacrylamide (MBA) as cross linking agent, N,N'-Dimethylacrylamide (DMA) and Cobalt ferrite (CF) as monomer and nanoparticles respectively for the formation of Gum acacia-*g*-poly(N,N'-Dimethylacrylamide)/$CoFe_2O_4$. The characterization of this nanocomposite involve techniques such as Fourier-transform infrared spectroscopy (FTIR), thermogravimetric analysis (TGA), and scanning electron microscopy (SEM). The hydrogel's swelling study is carried out by soaking dry mass into triple distilled water. Optimization of various parameters for effective removal of Naproxen sodium are conducted, and adsorption isotherm studies carried out to assess its potential as an efficient and environmentally friendly method for treating wastewater contaminated with this NSAID.

Keywords: Gum acacia, Hydrogel, Nanocomposite, Swelling, $CoFe_2O_4$, FTIR, TGA, Drug removal

Microwave-Induced One-Pot Synthesis of 3-imidazolyl indole Clubbed 1,2,3-triazole Hybrids as Antiproliferative Agents and DFT Study

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Herein, we outline a highly efficient PEG-4000 mediated one-pot three-component reaction for the synthesis of 3-imidazolyl indole clubbed 1,2,3-triazole derivatives **5(a-r)** up to 96% yield as antiproliferative agents. This thr ee-component protocol offers the advantages of an environmentally benign reaction, excellent yield, quick response time and operational simplicity triggered by copper-catalyst under microwave. All the synthetics were tested for antiproliferative activity against six human solid tumor cell lines such as A549 and SW1573 (non-small cell lung), HBL100 and T-47D (breast), HeLa (cervix), and WiDr (colon). Among them, six compounds **5g-5j**, **5m**, and **5p** demonstrated effective antiproliferative action with GI_{50} values under 10 μM. Furthermore, density functional theory (DFT) calculations were performed for all the synthesized molecules through geometry optimizations, frontier molecular orbital approach, and molecular electrostatic potential (MESP). The theoretical DFT calculation was performed using DFT/B3LYP/6-31+G (d,p) basis set. Moreover, the biological reactivity of all the representative synthesized molecules was compared with the theoretically calculated quantum chemical descriptors (QCDS) and MESP 3D plots. We also investigated the drug-likeness characteristic and ADMET prediction. In general, our approach enables environmentally friendly access to 3-imidazolyl indole clubbed 1,2,3-triazole derivatives as prospective antiproliferative agents.

Keywords: Three-components reaction, Antiproliferative activity, Drug-likeness property, ADMET study, DFT study.

References

1. G. Grover, R. Nath, R. Bhatia and M. J. Akhtar, *Bioorganic & Medicinal Chemistry*, 2020, **28**, 115585.
2. A. Mermer, T. Keles and Y. Sirin, *Bioorganic Chemistry*, 2021, **114**, 105076.
3. F. Salehian, H. Nadri, L. Jalili-Baleh, L. Youseftabar-Miri, S. N. Abbas Bukhari, A. Foroumadi, T. Tüylü Küçükkilinç, M. Sharifzadeh and M. Khoobi, *European Journal of Medicinal Chemistry*, 2021, **212**, 113034.
4. K. Taruneshwar Jha, A. Shome, Chahat and P. A. Chawla, *Bioorganic Chemistry*, 2023, **138**, 106680.
5. A. Dutta and D. Sarma, *Tuberculosis*, 2020, **124**, 101986.
6. B. S. Allaka, S. Basavoju, E. Madhu Rekha, D. Sriram and G. Rama Krishna, *Molecular Diversity*, 2023, **27**, 1427-1436.
7. M. Fares, W. M. Eldehna, S. M. Abou-Seri, H. A. Abdel-Aziz, M. H. Aly and M. F. Tolba, *Archiv der Pharmazie*, 2015, **348**, 144-154.

O-1,2,3-Triazole-Xanthenediones and O-1,2,3-Triazole-Acridinediones: Design, Synthesis, and Biological Evaluation

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This study reports the design and synthesis of novel Xanthene/Acridine-1,8-dione linked 1-phenyl-4-[(p-tolyloxy)methyl]-1,2,3-triazole derivatives as potent antidiabetic as well as antioxidant agents utilizing an efficient, and ecofriendly deep eutectic solvent (DES) under ultrasound irradiation. The low cost and reusability of DES make it task-specific solvent. The current approach offers the advantages of a mild reaction condition, and produce water as a byproduct with a favorable yield (up to 92% yield) in a short reaction time. All the newly synthesized compounds were screened against the pancreatic α-amylase and DPPH inhibitors. The outcomes result from the antidiabetic activity revealed that analogous **3f, 3h, 3i,** and **4h** were found to be more active than the others with IC_{50} values ranges for α-amylase inhibition (IC_{50} = 68.32 -79.26 µg/ml) in comparison with the standard acarbose (IC_{50} = 81.52 µg/ml). Compounds **3a, 3b, 4a, 4b, 4i,** and **4j** showed excellent DPPH inhibition (IC_{50} = 38.79 -56.41 µg/ml) as compared with standard drug L-ascorbic acid (IC_{50} = 81.67 µg/ml). Molecular docking study also streamlined the plausible interactions of compound **3h** and **4a** with the active site of α-amylase and Cytochrome *C* Peroxidase respectively. Based on the noteworthy findings from molecular docking study, these derivatives depict an efficient multifunctional action and offer prospective access for future discoveries of antidiabetic and antioxidant studies.

Keywords: Acridine, Xanthene, DES, α-amylase inhibitor, DPPH inhibitor, Molecular docking study

References:

1. Smith, E.L., Abbott, A.P. and Ryder, K.S., 2014. Deep eutectic solvents (DESs) and their applications. *Chemical reviews*, *114*(21), pp.11060-11082
2. Bansal, G., Singh, S., Monga, V., Thanikachalam, P.V. and Chawla, P., 2019. Synthesis and biological evaluation of thiazolidine-2, 4-dione-pyrazole conjugates as antidiabetic, anti-inflammatory and antioxidant agents. *Bioorganic chemistry*, *92*, p.103271.
3. Naouri, A., Djemoui, A., Ouahrani, M.R., Lahrech, M.B., Lemouari, N., Rocha, D.H., Albuquerque, H., Mendes, R.F., Paz, F.A.A., Helguero, L.A. and Bachari, K., 2020. Multicomponent and 1, 3-dipolar cycloaddition synthesis of triazole-and isoxazole-acridinedione/xanthenedione heterocyclic hybrids: Cytotoxic effects on human cancer cells. *Journal of Molecular Structure*, *1217*, p.128325.
4. Aziz, M.A., Shehab, W.S., Al-Karmalawy, A.A., El-Farargy, A.F. and Abdellattif, M.H., 2021. Design, Synthesis, Biological Evaluation, 2D-QSAR Modeling, and Molecular Docking Studies of Novel 1 H-3-Indolyl Derivatives as Significant Antioxidants. *International journal of molecular sciences*, *22*(19), p.10396.

Primary Amine Integrated Ru(II)-Half Sandwich Complexes for Solvent-Free N-Alkylation of Primary Amines Via Borrowing Hydrogenation

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The formation of C-N bond via N-alkylation has significant importance in the field of science. However, conventional conversion utilizes expensive and toxic reactants with unavoidable selectivity and poor atom efficiency resulting into difficult separation and purification of product. To surmount this problem, Borrowing Hydrogenation (BH) is emerging as a powerful methodology for the selective N-alkylation of primary amines with alcohols using homogeneous molecular catalysts. Herein, a series of four new primary amine integrated Ru(II)-arene complexes were prepared with chemical formulas [Ru(η^6-*p-cymene*)Cl_2L(1-3)] **[Ru-(1-3)]** and [η^6-*p*-cymene)Ru(L4)Cl] **[Ru-4]** (where, L1 = 3,5-bis(trifluoromethyl)aniline, L2 = 3,4,5-trimethoxy aniline, L3 = 4-trifluromethoxyaniline, and L4 = Quinaldic acid). The structural features were elucidated through spectroscopic methods such as FT-IR, ^{1}H and ^{13}C NMR along with ESI-MS, and elemental analysis. The molecular features of all four complexes were confirmed by Single Crystal XRD analysis. Additionally, reported unsubstituted aniline-based complex **[Ru-5]** was also synthesized and confirmed with ^{1}H NMR. The Catalytic efficacy of **[Ru-(1-5)]** was examined for N-alkylation of primary amines using alcohols as alkylating agents in a benign and solvent-free condition. The catalytic performance was monitored by GC-MS and HPLC. Catalytic results revealed that co-operative effect of -NH_2 in **[Ru-(1-3)]** and **[Ru-5]**, enhances the catalytic activity as compared to strong chelated **[Ru-4]** catalyst presumably due to presence of -N-H bond in the catalysts predominately prefers outer sphere mechanism for BH. The observed catalytic activity trend **[Ru-1] > [Ru-3] > [Ru-5] > [Ru-2]** clearly indicated that electron deficient Ru(II) centre is advantageous for binding affinity towards substrate leading to superior catalytic performance of **[Ru-1]** compared to other catalysts.

Keywords: Homogeneous catalysis, Borrowing hydrogenation, Ru(II)-arene, N-alkylation

Synthesis and Characterization of New *n*-Substituted-Indole Appended Dibenzo[*b,e*][1,4]diazepin-1-ones

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Diazepine derivatives, especially those having appended to aryl/hetero-aryl fragments are known to have promising bioactive profiles such as antioxidant, antimicrobial and antiproliferative activities. Important therapeutic actions of these compounds include hepatitis C virus (HCV) NS5B polymerase inhibitors[2], HIV protease inhibitors properties. Aromatic aldehydes are widely used for the synthesis and bioactivity studies of aryl appended dibenzo[b,e][1,4]diazepin-1-ones. Surprisingly, heteroaryl carbaldehydes are studied less for the design of diazepine ring skeleton. Pyrazolyl- and quinolyl-dibenzo[b,e][1,4]diazepin-1-ones have been synthesiezed successfully as active bioactive diazepinones. In preset work, several new N-substituted (allyl-/prenyl-propargyl-/ethyl-/methyl-)indole-3-carbaldehydes were prepared and reacted with *O*-phenylene diamine (OPD)/4-Fluoro-OPD and dimedone in presence of acetic acid in ethanol at room temperature. The method is highly efficient and yields of all desired indolyl-dibenzo[b,e][1,4]diazepin-1-ones obtained in the 80-90% range and requiring no further chromatography for purification. All newly synthesized diacepine-heterocycles are characterized by mass, ^{1}H, ^{13}C and ^{19}F NMR data. Further the *N*-allylation of indolyl-dibenzo[b,e][1,4]diazepin-1-ones was also studied. It was observed that the allylation is highly regioselective occurring selectively at NH of the diazepine ring (between OPD and indole units) as confirmed by NMR studies.

Keywords: Diazepine, Indole, heterocycles

References:

(1) Brahmbhatt, G. C.; Sutariya, T. R.; Atara, H. D.; Parmar, N. J.; Gupta, V. K.; Lagunes, I.; Padrón, J. M.; Murumkar, P. R.; Yadav, M. R. New Pyrazolyl-Dibenzo[b,e][1,4]Diazepinones: Room Temperature One-Pot Synthesis and Biological Evaluation. *Mol. Divers.* **2020**, *24* (2), 355–377. https://doi.org/10.1007/s11030-019-09958-z.

(2) McGowan, D.; Nyanguile, O.; Cummings, M. D.; Vendeville, S.; Vandyck, K.; Van den Broeck, W.; Boutton, C. W.; De Bondt, H.; Quirynen, L.; Amssoms, K.; Bonfanti, J. F.; Last, S.; Rombauts, K.; Tahri, A.; Hu, L.; Delouvroy, F.; Vermeiren, K.; Vandercruyssen, G.; Van der Helm, L.; Cleiren, E.; Mostmans, W.; Lory, P.; Pille, G.; Van Emelen, K.; Fanning, G.; Pauwels, F.; Lin, T. I.; Simmen, K.; Raboisson, P. 1,5-Benzodiazepine Inhibitors of HCV NS5B Polymerase. *Bioorganic Med. Chem. Lett.* **2009**, *19* (9), 2492–2496. https://doi.org/10.1016/j.bmcl.2009.03.035.

An Efficient, Glycerol-Mediated Domino Synthesis of Novel Pyrazole-appended Xanthene Diones

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Xanthenes are tricyclic skeletons that contain a pyran unit in the center. They are found extensively in nature and have a wide range of pharmaceutical properties, such as antimicrobial[1], antioxidant[2], anti-cancer[3], antimalarial[4], and anti-inflammatory activities[5]. They are also effective against infectious diseases caused by SARS-CoV-2. Xanthene derivatives are useful dyes and fluorescent materials found effective as fluorogenic probes and optoacoustic probes for cell imaging. Because of these, the construction of new xanthene-based skeletons is worth exploring in chemical synthesis. The present work demonstrates a new and efficient domino synthetic approach 'Knoevenagel-Michael-dehydrative cyclization' that afford 9-[5-(allyl/prenyl/methyl)oxy-3-methyl-1-phenyl-1*H*-pyrazole-4-yl]-3,4,5,6,7,9-hexahydro-1*H*-xanthene-1,8(2*H*)-diones, after combining 5-(allyl/prenyl/methyl)oxy-1-phenyl-3-methyl-pyrazole and an active methylene unit, such as dimedone/cyclohexane-1,3-dione/5-phenylcyclohexane-1,3-dione, in the medium of glycerol at 110 °C. The methodology is highly efficient and takes a shorter reaction time to produce the desired compounds. The application of renewable feedstock material glycerol as an environmentally benign reaction medium makes this methodology a greener synthesis. The metal-free reaction mass used in the present work that made it easy to handle the wastes as part of the workup procedure accounts for further advantages of this method. Mass, ^{1}H NMR, and ^{13}C NMR spectral data confirmed all new proposed structures of DKMDC products.

Keywords: Domino, xanthene, catalyst-free, glycerol

References:

1. Kaya, M.; Basar, E.; Colak, F. *Med. Chem. Res*. **2011**, 20 (8), 1214.
2. Khurana, J. M.; Chaudhary, A.; Lumb, A.; Nand, B. *Can. J. Chem*. **2012**, 90 (9), 739.
3. Mulakayala, N.; Murthy, P. V. N. S.; Rambabu, D.; Aeluri, M.; Adepu, R.; Krishna, G. R.; Reddy, C. M.; Prasad, K. R. S.; Chaitanya, M.; Kumar, C. S.; Basaveswara Rao, M. V.; Pal, M. *Bioorganic Med. Chem. Lett*. **2012**, 22 (6), 2186.
4. Bero, J.; Frédérich, M.; Quetin-Leclercq, J. *J. Pharm. Pharmacol*. **2009**, 61 (11), 1401.
5. Napoleon, A. A.; Khan, F. R. N. *Med. Chem. Res*. **2014**, 23 (11), 4749.

Review: Various Synthetic Features for Functionalised 1,2,3-Triazole Scaffolds

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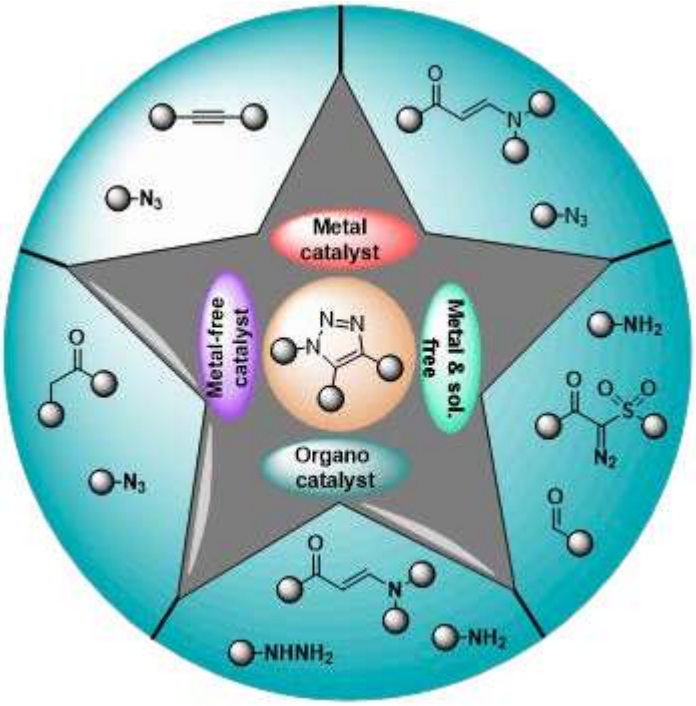
Although 1,2,3-triazole frameworks don't exist in nature, they are still being studied by chemical scientists across domains due to their good characteristics and green synthesis pathways. This review will provide a library of all the synthetic methods utilised over the past 21 years to synthesise 1,2,3-triazoles and their analogues via different metal catalysts (such as Cu, Ru, Ni, Rh, Sm, Zn, Ag, Au, Pd, and Ir), organocatalysts, metal-free as well as a solvent- and catalyst-free neat syntheses, along with their mechanistic cycles, recyclable qualities investigation, solvent systems, and reaction condition impact on regioselectivity. Constant progress demonstrates that 1,2,3-triazoles will aid in future organic synthesis and will be valuable in constructing molecular libraries of diverse functionalised compounds.
1,2,3-triazole

Keywords: Azides, Catalysts, Click, Triazole



An Efficient, Catalyst-Free and Aqueous Ethanol-Mediated Synthesis of (5-((2- aminothiazol-5-yl)(phenyl)methyl)-6-hydroxypyrimidine-2,4(1*H*, 3*H*)-dione Derivatives and Their Antioxidant Activity

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In this study, we effectively developed a catalyst-free multicomponent synthesis of (5-((2-aminothiazol-5-yl)(phenyl)methyl)-6-hydroxypyrimidine-2,4(1*H*, 3*H*)-dione derivatives employing 2-aminothiazole, *N*', *N*'-Dimethyl barbituric acid/Barbituric acid and different aldehydes at 80 °C in an aqueous ethanol medium (1:1) using group-assisted purification (GAP) chemistry. The essential characteristics of this methodology include superior green credential parameters, metal-free multicomponent synthesis, faster reaction times, greater product yields, simple product purification without column chromatography and higher product yields. All the synthesized compounds were analyzed against the HepG2 cell line. Two compounds 4j and 4k shows good anti-proliferative effects on HepG2 cells. Furthermore, the ABTS and DPPH scavenging assays were used to determine the antioxidant activity of all compounds **4(a-r)**. In both ABTS and DPPH radical scavenging assays, compounds **4e**, **4i**, **4j**, **4o** and **4r** exhibit excellent potency compared to the standard ascorbic acid.

Keywords: Catalyst-free, Multicomponent reaction, GAP Chemistry, 2-Aminothiazole, Barbituric acid.

Synthesis and Development of Polymer Electrolyte Membranes Containingpolybenzimidazopyrrones (PBIP) for the Fuel Cell Application

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A series of new polybenzimidazopyrrones (PBIP) were synthesized by poly condensation of pyridine bridged aromatic tetraamine, including 4,4'-(4-(5-fluoro-2-methylphenyl)pyridine-2,6-diyl)bis(benzene-1,2-diamine and 4,4'-(4-(3-fluoro-4-methylphenyl)pyridine-2,6-diyl)bis(benzene-1,2-diamine with various aromatic dicarboxylic acid. The obtained monomers have been characterized by Infra- Red Spectroscopy, ^{1}H-NMR Spectroscopy and Thermogravimetric analysis. Experimental results indicated that the prepared polybenzimidazopyrrones (PBIP) possess good solubility in strong organic solvents such as a N- methyl- 2- pyrrolidinone (NMP),N,N dimethyl formamide(DMF) and N, N dimethyl acetamide (DMAC).

Keywords: Fuel cell, Proton exchange membranes, Tetraamine**,** Polybenzimidazopyrrones.

References:

(1) Vogel, H.; Marvel, C. S. Polybenzimidazoles, New Thermally Stable Polymers. J. Polym. Sci. Part A Polym. Chem. 1996, 34 (7), 1125–1153. https://doi.org/10.1002/pola.1996.826.
(2) Maity, S.; Jana, T. Soluble Polybenzimidazoles for PEM: Synthesized from Efficient, Inexpensive, Readily Accessible Alternative Tetraamine Monomer. Macromolecules 2013, 46 (17), 6814–6823. https://doi.org/10.1021/ma401404c.
(3) Hjuler, H. A.; Aili, D.; Jensen, J. O. High Temperature Polymer Electrolyte Membrane Fuel Cells: Approaches, Status, and Perspectives. High Temp. Polym. Electrolyte Membr. Fuel Cells Approaches, Status, Perspect. 2016, 1–545. https://doi.org/10.1007/978-3-319-17082-4.

Extraction And Isolation of Phytochemicals from Extract from *Abrus precatorius* (L.)

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In recent times, an uptick in the consumption of synthetically derived drugs and medicines for the treatment of even subnormal diseases is reflected. However, it is vital to point out that these synthetic medicines can have a wide spectrum of side effects that discourage their use and still hold sway over a large portion of the human population toward the utilization of medicinal plants for the treatment of numerous illnesses [1]. *Abrus precatorius Linn* is a woody twinning plant that belongs to the Fabaceae family of the plant kingdom and it can solely identify through its characteristic black and red seeds [2]. The seeds and leaves of *Abrus precatorius Linn* are a diverse source of phytochemicals belonging to the terpenoids, saponins, flavonoids, and alkaloids classes[3] and hence *Abrus precatorius Linn* was scrutinized employing an array of extraction processes and a string of pure as well as a blend of solvents which yielded a hefty number of extracts that were screened for their activities against several biological faculties namely cytotoxicity[4], antioxidant[5], antidiabetic[6], and much more. This present study focuses on the stem of Abrus precatorius *Linn* which was subjected to extraction and isolation of phytochemicals as it was seldom scrutinized and it can reveal a presence of novel phytochemicals.

Keywords: Abrus Precatorius Linn, Phytochemicals, Extraction

References:

1. Ajibo, N.; Ogbuehi, I.; Brambaifa, N., Effect of the Chromatographic Fractions of Abrus precatorius Leaf on the Histology of Uterus and Ovary of Female Wistar Rats. *JAMPS* **2020,** *22* (9), 10-20.
2. Patel, M.; Doshi, K.; Winston, C., Gunja (*Abrus Precatorious linn*.)–a noxious plant-a review. *Pharma Science Monitor* 2015**,** *6* (3), 41-55.
3. Bhakta, S.; Das, S. K., The medicinal values of Abrus precatorius: a review study. *Journal Of Advanced Biotechnology and Experimental Therapeutics* 2020**,** *3* (2), 84-91.
4. Gul, M. Z.; Ahmad, F.; Kondapi, A. K.; Qureshi, I. A.; Ghazi, I. A., Antioxidant and antiproliferative activities of Abrus precatorius leaf extracts - an in vitro study. *BMC Complementary and Alternative Medicine* 2013**,** *13* (53), 1-12.
5. Attanayake, A. P.; Jayatilaka, K. A. P. W., Acetylcholinesterase inhibitory activity and antioxidant activity of selected medicinal plant extracts used against cognitive dysfunction and memory loss in sri lankan traditional medicine. *Asian Journal of Pharmaceutical Research and Development* 2018**,** *5* (6), 16-25.
6. Yonemoto, R.; Shimada, M.; Gunawan-Puteri, M. D. P. T.; Kato, E.; Kawabata, J., α-Amylase Inhibitory Triterpene from Abrus precatorius Leaves. *Journal of Agricultural and Food Chemistry* 2014**,** *62* (33), 8411-8414.

Development of Dansyl-Allied Calix[4]arene-Based Fluorescence Probe for Ni(II) and Co(II)

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By taking intrinsic advantages of calix[4]arene as a suitable supramolecular host anchored with dansyl moieties, we have synthesized a new chemical receptor C4S, that can be used in the pH range of 3 – 5. C4S was characterized by a combination of spectroscopic and spectrophotometric techniques. This proposed fluorescence sensor demonstrates a distinct "turn-on" emission enhancement and "turn-off" emission quenching response towards Ni^{2+} and Co^{2+}, respectively. By the help of this proposed probe, Ni^{2+} and Co^{2+} can be measured with the range of 5-155 µM and 5-150 µM with the limit of detection 4.26 µM and 2.26 µM, respectively. The selectivity of C4S retains the same towards Ni^{2+} and Co^{2+} in the presence of other transition metals, possessing binding constant to be 7.377×10^6 M^{-1} for Ni^{2+} and 8.859×10^6 M^{-1} for Co^{2+}. In computational chemistry exertion, the quantum mechanical study of the ligand C4S and ligand C4S with the metal cations (Co^{2+} and Ni^{2+}) has been performed using Gaussian 09W software. The semi-empirical method PM6 is used to optimize geometry of the ligand C4S and its composite metal cations. The molecular docking study was carried out using different protein receptors related to cancer disease (1N8Z, 3HB5, 4WW9, 5GG9, 5QXK, 6CG7, 6ONY and 7JWT) with ligand C4S using HEX software.

Keywords: calix[4]arene, fluorescence probe, cation sensing, computational study, cyclic voltammetry

References:

1. Soni, H.; Gandhi, S. A.; Pandya, A.; Sutariya, P.G. Dansyl driven fluorescence paper-based quencher probe for Pr^{3+} and I^- based on calix [4] arene. *J. Photochem. Photobio. A.*, **2022**, *431*, 114012.
2. Sutariya, P.G.; Soni, H.; Gandhi, S.A.; Soni, S. S.; Prasad, J. A dual-response naphthalene-armed calix [4] arene based fluorescence receptor for Zr (IV) and Fe (II) via Ligand to metal charge transfer. *Sens. Actuat. B.*, **2021**, *331*, 129417.
3. Soni, H.; Prasad, J.; Pandya, A.; Soni, S. S.; Sutariya, P.G. Disposable paper-based PET fluorescence probe linked with calix[4]arene for lithium and phosphate ion detection. *New J. Chem.*, **2022**, *46*, 21115-21123.
4. Sayin, S. A highly selective fluorescence probe for Co^{2+} or Cu^{2+} detection based on a new tetraquinoline-substituted calix [4] arene derivative. *Tetrahedron*, **2022**, *122*, 132960.
5. Cen, R.; Liu, M.; Lu, J.; Zhang,W.; Dai, J.; Zeng, X.; Tao, Z.; Xiao, X. Synthesis and characterization of a sensitive and selective Fe^{3+} fluorescent sensor based on novel sulfonated calix [4] arene-based host-guest complex. *Chinese Chem. Lett.*, **2022**, *5(33)*, 2469-2472.

Multicomponent Synthesis of Novel spiro-indoline[4,5-*b*]acridines and spiro-indoline[4,5-*b*]quinolines: In Silico Study and their Antioxidant Activity

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In this study, a highly atom-efficient one-pot synthesis of spiro-indoline[4,5-*b*]acridine **4(a-p)** and spiro-indoline[4,5-*b*]quinoline 4q-x were achieved via multicomponent reaction of 3,4-methylenedioxyaniline, isatin and 1,3-cyclic diones by using glacial acetic acid. This metal-free multicomponent approach offers mild reaction conditions, shorter reaction time and easy product purification without column chromatography. Frontier molecular orbital (FMO), various quantum chemical descriptors (QCDs) and molecular electrostatic potential (MESP) analysis were computed by density functional theory using B3LYP/6-311G+(d, P) basis set. All newly synthesized compounds were screened for their antioxidant properties. The compounds 4a and 4v are the most potent ABTS and DPPH radical scavengers to the standard ascorbic acid. Most potent antioxidants 4a and 4v were evaluated for in silico drug-likeness and ADMET prediction.

Keywords: Multicomponent synthesis, indoline[4,5-*b*]acridines, indoline[4,5-*b*]quinolines, DFT, ADMET, Antioxidant activity.

Metal Free Anode Based Aqueous Zinc Ion Rechargeable Battery

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The aqueous zinc-based rechargeable batteries became popular due to their low cost,environment friendliness, high safety, nonflammability and is a sustainable green energytechnology. But these Zinc-based batteries developed so far used thick zinc metal anodeswhich is almost ten times the amount of zinc actually being cycled, which results indecrement of the overall energy density of the battery. Though more efforts have been madein the field of “anode free” Li & Na batteries due to their highly reactive nature towards air,moisture, temperature etc. Notable problems such as dendrite growth, corrosion, sidereactions like hydrogen evolution leads to poor cycling stability and low coulombicefficiency in zinc ion batteries. Hence, in the continuous efforts by the scientists to improvethe energy density, life cycle of the battery raises a question; Is thick metal anode truly needed? Also some important aspects to be considered like stripping/plating efficiency,dendrite formation, salt concentration in electrolyte to control various side reactions, in thesebatteries. Herein, we discuss a comprehensive overview of “Metal Free Anode”, various types of cathodes, fabrication, characterization of the device, application & highlighting the challenges in this field. The paper will conclude by emphasizing the need for further researchand development in this field to fully realize the potential of metal free anode batteries.

Keywords: Anode free, Metal free, Battery, Zinc ion.

References:

1. Zhu, Y.; Cui, Y.; Alshareef, H. N., An Anode-Free Zn–MnO2 Battery. *Nano Letters* **2021,** *21* (3), 1446-1453.
2. Ming, F.; Zhu, Y.; Huang, G.; Emwas, A.-H.; Liang, H.; Cui, Y.; Alshareef, H. N., Co-Solvent Electrolyte Engineering for Stable Anode-Free Zinc Metal Batteries. *Journal of the American Chemical Society* **2022,** *144* (16), 7160-7170.
3. Huang, W.-Z.; Zhao, C.-Z.; Wu, P.; Yuan, H.; Feng, W.-E.; Liu, Z.-Y.; Lu, Y.; Sun, S.; Fu, Z.-H.; Hu, J.-K.; Yang, S.-J.; Huang, J.-Q.; Zhang, Q., Anode-Free Solid-State Lithium Batteries: A Review. *Advanced Energy Materials* **2022,** *12* (26), 2201044.

Facile Synthesis of Biowaste-Derived N-doped Graphene Quantum Dots for the Detection of Carcinogenic Cr (VI) and Fluorescent Ink

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In recent years, biowaste-derived green and sustainable zero-dimensional carbon quantum dots (CQDs) have emerged as a rising star in the field of nanomaterials due to their widespread applications such as, of metal sensing, bioimaging, drug delivery, etc. Facile low-cost synthesis, non-toxic nature, and highly tunable photoluminescence properties of CQDs make them promising sensing materials for the future. In this study, we have reported domestic biowaste-derived green and simple pyrolysis route for the bright blue-luminescent graphene quantum dots (p-GQDs) from the pods of *Cajanus Cajan*. Further, two Nitrogen-doped graphene quantum dots (p-NGQDs) were synthesized by using *Cajanus Cajan* pods and Urea with a 1:1 (p-NGQDs-1) and 1:2 (p-NGQDs-2) w/w ratio. All GQDs were characterized using Fluorescence spectroscopy, UV-visible spectroscopy, FT-IR spectroscopy, and Elemental analysis. The synthesized GQDs exhibited blue excitation-independent fluorescence in the UV-visible range of 300 to 450 nm. Further, elemental analysis confirmed the presence of nitrogen in the p-NGQDs. Nitrogen doping caused a large-bathochromic shift in the emission peak of p-GQDs (430 □ 355 nm) as well as increased the quantum yield from 9.15 to 12.58%. The Functional group profiles of GQDs were explored using FT-IR and Raman spectroscopy. Further, HR-TEM images of p-NGQDs-2 showed a hexagonal arrangement of atoms with the size range of 2-8 nm revealing that quantum dots have graphene sheet-like structure. SAED pattern confirmed the crystalline nature of p-NGQD-2. All the synthesized GQDs showed significant stability over a long time. p-NGQD-2 was utilized for sensitive and selective quenching of carcinogenic Cr (VI) metal, and p-GQDs were also used as fluorescent ink without any chemical alteration.

Keywords: Graphene quantum dots, Luminescent ink, Cr (VI) quenching, Metal sensing

A Review on Thiazole Derivatives: Recent Developments in the Green Synthetic Strategies and their Biological Activities

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The important five membered heterocyclic thiazole ring system consists of nitrogen and sulfur as hetero atoms in their structures. thiazole scaffold represent a privileged architecture in the process of drug design and development. that is present in numerous pharmacologically important drug molecules such as sulfathiazole, nitazoxanide, meloxicam, thiamine (vitamin B1), epothilone D etc. It has been broadly recognized by the scientific community and reported to possess a wide spectrum of biological activities. Hence, the exhaustive investigation of the conventional synthetic approaches for the synthesis of thiazole derivatives like Hantzsch synthesis, Cook-Heilbron synthesis, and Gabriel synthesis has diverted the attention of researchers towards the novel eco-friendly strategies. a variety of green chemistry based synthetic strategies like multi-component single pot reaction, recyclable green-based catalyst, green solvent, reusable solvent, ultrasound-mediated synthesis, solvent-free, photo catalyst and microwave-assisted technique, etc. this review aims to outline recent developments in the green synthetic strategies of thiazole derivatives with the objectives to represent comprehensive data on thiazole based marketed formulations, to discuss various techniques utilized in the synthesis of thiazole derivatives and summarization of the recent advances in the medicinal chemistry of thiazole derivatives with their broad spectrum of biological activities, e.g., antibacterial, antifungal, antimalarial, antitubercular, antiviral, anti-inflammatory, antidiabetic, anthelmintic, anticonvulsant, antioxidant, anticancer and cardiovascular. we have summarized this review, covering articles published between 2013 to 2023. this review article is highly beneficial to the medicinal chemists and researchers working in the field of medicinal chemistry and can help in the design and development of novel thiazole based compounds with improved potency and desired biological significances.

Keywords: thiazole heterocycle, green synthesis techniques, drug design and development, biological activities.

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Smile Prediction of Human faces from video sequence Using Deep Learning

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Emotion Detection of facial expression from human face from video sequences plays a vital role to study the state of emotion that an individual exibits during couse of action. Smile detection is significant and challenging statement that attracts attention in affective computing domain. Video Surveillance is the best platform to detection the real emotion which is spread across video sequences. Smile portrays basic emotion such as happiness which is the state of being satisfied. According to psychology, facial expression of Human face confirs 55% contribution for emotion detection in affective computing. To address positive impact of happiness in the society, this research model has been developed. We have constructed a model using Deep Learning for smile detection that helps for creating positive environment in the different flavours of life. APre-trained deep convolutional neural networks is applied to accomplish the experiment that uses a compound coefficient to uniformly scale an image's depth, width, and resolution. When compared to other computation-intensive decision making models, the system offers a less complicated but nearly accurate model for recognizing the intensity of a smile. Smile Intesnity is calculated to measure the effective smile out of the region of interest from the video sequence using Kalman filter. This research paper extend real time smile detection from video sequences on CK+ Data set. Experimental findings demonstrate that the suggested approach outperforms cutting-edge deep neural networks in terms of performance on CK+ data set. The proposed model reduces computational requirements, including computational time, memory, and space, in order to concentrate on accurately identifying smiles from video sequences. This proposed model achieves the accuracy of 95% with respect to the other existed models present in the domain.

Keywords: Smile Detection, Human Face,VideoSurvillence, Intensity,Deep Learning.

References:

1. Ali, I. a. (2019). 2019 3rd International conference on Electronics, Communication and Aerospace Technology (ICECA). Proceedings of the Third International Conference on Electronics Communication and Aerospace Technology [ICECA 2019] (pp. 151--156). IEEE.
2. Ali, I. a. (2019). Smile Detection: Current Trends, Challenges and. Proceedings of the Third International Conference on Electronics Communication and Aerospace Technology (pp. 151--156). IEEE.
3. Ali, I. a. (2020). Smile detection using data amalgamation. Procedia Computer Science, 979--986.
4. Girard, J. M. (2015). Estimating smile intensity: A better way}. Elsevier, 13--21.
5. Goswami, A. a. (2021). Goswami, Anurag and Ramakrishna, Ganjigunta and Sethi, Rajni. International Conference.
6. Guo, X. a. (2017). Smile detection in the wild based on transfer learning. 2018 13th IEEE International Conference on Automatic Face & Gesture Recognition (pp. 679--686). IEEE.
7. Liu, L. a. (2019). Real-time pose invariant spontaneous smile detection using conditional random regression forests. International Journal for Light and Electron Optics 182 (2019) 647–657, 647--657.
8. Luo, Z. a. (2021). Algorithm Modeling of Smile Intensity Estimation Using a Spatial Attention Convolutional Neural Network. Journal of Physics: Conference Series, 012044.

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Smart Agricultural Management System Using Mobile Application

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In India, the agriculture sector is one of the biggest sectors. Agriculture is a very vast field and requires a lot of manpower. Technology can help to reduce manpower and also help to improve the methods of farming. In many countries, new technology has been adopted in the agriculture field. With increasing demand for healthy food, new emerging technology known as hydroponics is being used for indoor plants. In this technology, plants are closely monitored continuously and kept in a desired environment for faster and healthier growth. Plants growth depends on many parameters like temperature, nutrients, light intensity etc. This research paper focuses on the design and development of a Smart Agricultural Management System Using a Mobile Application. The necessary instrumentation is developed which consists of an ESP32 Controller, Real-time clock, Optocoupler Circuit, LCD Display and Power Supply. Using an ESP32 all parameters are controlled as per requirement and it also provides an additional Wi-Fi facility. The clock is used to provide real-time to the system. To control the LED light intensity an Optocoupler circuit is used. In this developed instrumentation the user can set parameters like ON/OFF Time and Intensity of light. The light luminous can be adjusted up to 4000 lumens as per the requirement. The important feature is with the help of a mobile application users can set all the parameters through the Wi-Fi. All sensor data will be continuously monitored and controlled via the cloud and data will be sent to Mobile application. The implications are discussed.

Keywords: Agriculture, Hydroponic, Mobile Application, Cloud, ESP32

References:

1. V. A. Aher, Kadam Rutuja, “Smart Agriculture Monitoring System using IOT” , International Journal of Advanced Research in Science, Communication and Technology (IJARSCT), Volume 2, Issue 4, May 2022.
2. Ramya Venkatesan and AnandhiTamilvanan, “A Sustainab Agriculture System Using IOT”, International Conference on Communication and signal processing, April 6-8,2017.
3. Sridevi Navulur1, A. S. C. S. Sastry2, M. N. Giri Prasad3, “Agricultural Management through Wireless Sensors and Internet of Things”, International Journal of Electrical and Computer Engineering (IJECE) Vol. 7, No. 6, December 2017, pp. 3492~3499.
4. Senoo EEK, Akansah E, Mendonça I, Aritsugi M. Monitoring and Control Framework for IoT, Implemented for Smart Agriculture. Sensors. 2023; 23(5):2714. https://doi.org/10.3390/s23052714

Characterizing and Mitigating Noise in Industrial Instrumentation: A Comprehensive Analysis Approach

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This paper delves into the realm of noise occurrences within industrial instrumentation. The key aim is to devise effective strategies for recognizing and alleviating noise-induced disruptions in instrumentation results. In the time domain exploration, we closely examine temporal patterns to understand the evolution of noise over time. Shifting to the frequency domain, we analyze the spectral makeup of noise to reveal concealed patterns and frequencies that could affect instrumentation efficiency.Through meticulous examination of noise characteristics, this research aspires to enhance the stability and accuracy of industrial instrumentation. The findings will contribute valuable insights to the field, guiding the development of noise mitigation strategies and fostering advancements in industrial measurement and control systems. This study holds significance for industries reliant on precise instrumentation outputs, offering a pathway to optimize performance in the face of complex noise challenges.

Keyword: Industrial instrumentation, Noise, Time domain, Frequency domain, Fast Furious Transfer.

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Department of Home Science

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In vitro Properties of Potential Probiotic Lactic Acid Bacteria from Human Fecal

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Probiotics are live non -pathogenic microbes which are interact with human gastrointestinal microbiota and have significant beneficial health effects such as to enhance the host immune response, antimicrobial, antiallergic, anti-inflammatory properties and are capable to restore the essential properties of microbial gut flora. The probiotics can be isolate from different environments but it is considered that the probiotics for human use should be come from human sources. The aim of this study is to evaluate the *In vitro* potential probiotic properties of the two isolated lactobacillus strains (SA1 and SA2). The various physiological properties of the SA1 and SA2 were subjected to investigate such as acid, bile salts tolerance, antimicrobial activity and antibiotic susceptibility. Both SA1 and SA2 shows good tolerance to pH value (2, 2.5 and 3) for after 1.5hr. Both of these strains also showed good tolerance against bile salts concentration ranged from 0.5 to 2% after 5hr.SA1 and SA2 have susceptible to against Penicillin, Chloramphenicol, ciprofloxacin, Streptomycin, Tetracycline, Vancomycin, Erythromycin and Gentamicin antibiotics. SA1 has shown good resistance against Clotrimazole. Both strains showed inhibitory properties toward selected harmful microorganisms (*Escherichia coli, Typhimurium, Staphylococcus aureus and Bacillus cereus*). In conclusion SA1 and SA2 showed positive result for potential probiotic properties except antibiotic resistance and hence can be used source of probiotic for Human consumption after evaluation of their Bio safety.

Keywords: Probiotics, Fecal, *In vitro*

Washing Efficacy of Natural Antimicrobial Finish on Eri Silk and its Union Fabric Against *S. aureus*

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Consumers now a days need and expect a wide range of textile products with antimicrobial characteristics as they become more conscious of a hygienic lifestyle. In this study, plant extracts were used to develop an antimicrobial finish for textile applications. Using the pad-dry method, a methanolic extract of *Corchorus capsularis* combined with a cross-linking agent was applied on Eri/Eri, Eri/ Mulberry, Eri/ Cotton fabric. AATCC 90:2011 was used to evaluate the antimicrobial effectiveness of the finished fabric against the Gram-positive bacteria Staphylococcus aureus (MTCC 7443). All of the fabrics were found to have a considerable zone of inhibition, and even after ten (10) washing cycles, they all still had outstanding antimicrobial activity.

Keywords: Antimicrobial activity, *Corchorus capsularis,* washing efficacy.

Microbiological Assessment of Street Vended Vada Pav Samples Sold at Different Locations of Anand City, Gujarat

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Street foods are readily available meals for consumer, but the safety of these foods is always in doubt. These foods are perceived as potential risks for foodborne illnesses if not prepared or served hygienically. Thus, the purpose of the present study was the microbial evaluation of street vended Vada pav samples using both conventional culture techniques and molecular characterization (PCR assay). Samples of vada pav were collected in duplicate from seven different popular locations across five zones in Anand city: East, West, North, South, and Central. For microbial screening, the collected samples were transferred to the laboratory in an icebox and the analysis was conducted within 2 hours. The samples were serially diluted in buffered peptone water and 100 µL aliquots were inoculated on selective and differential media using the spread plate technique. Subsequently, bacteria were identified and isolated on their respective media. Colony morphology, Gram's reaction, and biochemical characterization were performed. The results indicated the existence of a significant number of microorganisms that could result in various foodborne infections. The total viable count ranged from 3.47 to 6.31 log cfu/gm. Highest total viable count were found in the sample procured from west zone while highest yeast and mold count seen in east zone. The pure bacterial culture obtained from the vada pav samples were identified as *Staphylococcus aureus, Bacillus cereus* and *Escherichia coli. Salmonella spp.* were not found in any of the samples. Using conventional methods, out of a total of 14 samples *Staphylococcus aureus* (in 3 sample), *Bacillus cereus* (in 2 sample), and *Escherichia coli* (in 3 sample) were identified. Highest count of *Staphylococcus aureus* was found in the sample obtained from central zone. Samples acquired from the south and east zones contaminated with *Bacillus cereus. Escherichia coli* was isolated from the samples collected from the West and East zones. Molecular characterization (PCR assay) results confirm the presence of *Bacillus cereus* and *Escherichia coli*. The research findings indicate a potential microbial health hazard for humans due to contamination. Consequently, it is crucial to supervise and improve hygiene practices among street food vendors.

Keywords: Street foods; Microorganism, Hygienic practises

The Functional Characteristics of Edible Film Developed from varying concentration of Raw Banana and Taro Root Starch

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Edible films based on natural resources have received considerable attention due to the growing consumer awareness of environmental protection and food safety. Edible films allow preserving fresh and processed food, maintaining quality, preventing microbial contamination, oxidation reactions and increasing the shelf life of food products. The structural matrix of edible films and coatings is mainly constituted by polysaccharides, proteins and/or lipids. Polysaccharides are one of the commonly used material for the development of edible films. The present study aims at investigation of the effect of different concentration of starches namely corn starch (CS), raw banana starch (40% CBS & 50% CBS) and taro root starch (40% CTS & 50% CTS) on the physical properties of starch-based edible films. The starch was extracted from raw banana (Zeng et al., 2014) and the edible films were developed from starch by casting method using sorbitol as plasticizer and they were analysed for thickness, colour analysis, solubility, transparency, and tensile strength. The result showed that thickness of edible film was ranged from 0.190 mm to 0.230 mm. The colour analysis revealed that the different concentrations of starch has also affected L, a, b values of edible films. The lowest solubility was noted for taro root starch based edible film while highest transparency was found for 50% CBS based edible film. The highest tensile strength was observed in CBS 50% based edible film followed by 40% CBS and 40% & 50% CTS based edible film. Overall, 50% CBS based edible film showed better film forming properties as compared to taro root starch based edible film.

Keywords: Edible film, corn starch, raw banana starch, taro root starch, film properties

References:

1. Zeng, F. K., Liu, H., & Liu, G. (2014). Physicochemical properties of starch extracted from Colocasia esculenta (L.) Schott (Bun-long taro) grown in Hunan, China. *Starch-Stärke*, *66*(1-2), 142-148.

Phytochemical Profiling and Nutritional Analysis of Hemp Seeds (*Cannabis Sativa L.*)

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Hemp seeds, derived from the Cannabis sativa plant, are extensively cultivated in various regions of Kumaon, Uttarakhand. Scientific studies highlight the numerous advantages of hemp seeds, encompassing their capacity to relieve constipation, promote cardiovascular well-being, address dermatological concerns, and mitigate gastrointestinal ailments owing to their nutritional richness and therapeutic properties. Hemp seeds contain antioxidants such as phenols and flavonoids, contributing to their overall health benefits. This study presents the proximate analysis of hemp seeds, specifically focusing on moisture (AOAC 1995), fat (AOAC method no. 963.15), and protein (AOAC 1995) content. Moreover, in this study, *Cannabis Sativa L.* seed extracts were subjected to various solvent extractions, including methanol, acetone, ethanol, and chloroform. The goal was to analyse the presence of different chemical constituents and bioactive compounds in the extracts using specific tests. The investigation of hemp seeds indicated a moisture content of 0.98 gm%, with a fat concentration of 26.95 gm% and a protein content of 35.15 gm%. *Cannabis Sativa L.* seed extracted in different solvents exhibited the presence of carbohydrates, proteins, glycosides, flavonoids, phenolic compounds, and steroids, with variations in results depending on the solvent used for extraction. Saponins were detected only in the chloroform extract, while terpenoids were not detected in any of the extracts. The study provides valuable insights into the chemical composition of *Cannabis Sativa L.* seeds and highlights the effect of extracting solvents on the presence of specific bioactive compounds.

Keywords: *Cannabis Sativa L.* seeds, phytochemical, solvents

References:

1. Leonard, W., Zhang, P., Ying, D., & Fang, Z. (2020). Hempseed in food industry: Nutritional value, health benefits, and industrial applications. *Comprehensive reviews in food science and food safety*, *19*(1), 282-308.
2. Devi, R., Kalita, D., Parasar, D. P., & Pratim, M. (2020). Phytochemical Analysis of Selected Cannabis from Northeast India. Cannabis, 95

Assessment of Nutrient Composition and Functional Properties of Potato Peel

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This study aimed to analyse the nutritional profile and functional properties of potato peel, focusing on its potential as a valuable food ingredient. Potato peel, often considered a byproduct in processing industries, was subjected to proximate analysis and assessment of functional properties. The proximate analysis revealed that potato peel is rich in dietary fiber (27.62%), followed by moderate levels of protein (7.54%), carbohydrates (47.84%), and a lower amount of ash (3.32%). The potato peel exhibited notable water absorption capacity (9.83 g/g), oil absorption capacity (0.99 g/g), and bulk density (0.38 g/mL). Thus, it can be incorporated as a food additive to improve the texture of food products. Overall, this study provides valuable insights into the nutritional profile and functional versatility of potato peel, emphasising its potential as a sustainable and economically viable ingredient in the food industry, as well as it can serve as a source of functional compounds for the development of novel nutritional supplements and nutraceuticals.

Keywords: Potato peel flour, byproduct, functional food, nutraceuticals

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Department of Materials Science

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Fabrication of Particulate Carbon-Based Composites Using Processed Pitch with Improved Performance

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Carbon fiber reinforced carbon matrix composites or more often carbon/carbon composites (c/c) are excellent engineered materials capable of withstanding harsh environments with robust strength and modulus at higher temperatures. Exceptional properties of c/c composites include Low thermal expansion, inertness, exceptional weight to strength ratio, better tribological properties and high strength in a protective atmosphere [1,2]. Their unique characteristics have propelled them to the forefront of modern engineering i.e. from medical to aerospace engineering, presenting a promising future for technological advancements. Prime disadvantages of c/c composites are high production cost due to multiple cycle process and poor oxidation resistance above 400°C. To cut down the processing time, a possible solution is to use materials with high carbon content. Present study deals with tailoring the pitch properties by chemical modification (HNO_3) for the efficient development of c/c composites in an economical way. Chemically modified has improved properties, i.e., high softening point, low viscosity, more aromatic compounds and high coke yield. FTIR analysis has shown an increase in the aromatic content of processed pitch. Optical images of coke made from processed and crude pitch shows the different microstructure i.e, graphitic to isotropic. Raman spectra of processed pitch suggested structural disorder in processed due to effective modification. Fabrication of particulate c/c composites using acid modified pitch, graphite powder and silicon carbide (SiC) particles in low cost fabrication process. Acid modified pitch heated to 350°C in zero air to convert pitch into partial coke to serve the purpose of binding, for particulate composites preparation. Results showed that composite with 20% (SiC) has a good coefficient of friction (0.150 and 0.165 under 10N and 20N load with minimal wear rate i.e. 3.66 x 10^{-4} mm/Nm and 2.90 3.66*10^{-4} mm/Nm respectively. Composite with 30% SiC has shown improved oxidation resistance at 900°C in zero air.

Keywords: Aromaticity, Partial coke, Coke yield, Microstructure, oxidation resistance.

References:

1. L.M. Manocha, High performance carbon-carbon composites, SadhanaA. 28 (2003) 349–358.
2. N. Vekariya, R. Patel, J. Valand, Improvement in the properties of quasi carbon composites by Tailor-made approach, Mater. Today Proc. 57 (2022) 245–250. https://doi.org/10.1016/j.matpr.2022.02.478.

Acid Functionalization of Carbon Nanotubes Grown on Hydrothermally Synthesized Catalyst

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In this study carbon nanotubes were synthesized using lab made chemical vapour deposition (CVD) on the hydrothermally prepared catalyst and acid functionalized of carbon nanotubes (CNTs) was done to modify the surface of carbon nanotube with acid functional groups. Carbon nanotubes (CNTs) demonstrate extraordinary properties and shown great promise in enhancing out-of-plane properties in many applications like energy storage, sensors, catalyst support and many more. In this work, different combination like 10%, 20% of Ni and Co doped Titania supported catalysts were prepared by hydrothermal method. Produced catalyst was used to synthesized CNTs in the lab made chemical vapour deposition (CVD) setup. Chemical vapour deposition is the most reasonable and suitable method to produced CNTs at lab scale as well as large scale also. In CVD process, cracking of xylene precursor was done at 800°C for 1 hour under N_2 and H_2 gas atmosphere. Functionalization and purification of CNTs was done by HNO_3 acid. Morphological study of CNT was carried out using SEM. Inner and outer diameter of CNT was determined by TEM. Crystallinity of carbon nanotubes were studied using Raman spectroscopy. Functional groups study was carried out using FTIR spectroscopy. FTIR spectrum shows that acid functionalization introduced oxygen containing groups, such as carboxylic acid (COOH) and carbonyl (C=O) groups. Due to the high catalytic property of nickel, growth of CNTs on 20% Ni doped titania catalyst has shown the highest yield with better crystallinity (ID/IG ratio of 0.40 which is the lowest among other). Prepared CNTs are functionalized by chemical method and confirmed by instrumental techniques. This type of functionalized CNTs are good candidate as reinforcement materials in polymer matrix composites.

Keywords: Hydrothermal synthesis, CVD, Carbon nanotubes (CNTs), Acid functionalization.

Influence of Silanization on Mechanical and Thermal Properties of Luffa Fiber Reinforced Polymer Matrix Composites

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Environmental awareness motivates the researchers, worldwide on the studies of natural fiber reinforced polymer composite and cost effective option to synthetic fiber reinforced composites. This study focuses on the fabrication and characterization of luffa fiber-reinforced phenolic resin matrix composites. Aim of the present study is to enhance the mechanical and thermal properties of the natural fiber composites by treating luffa fibers with a NaOH solution followed by silanizing with 3-aminopropyl triethoxy silane. Two types of composites were produced. Luffa mat composite, where luffa was in fabric form and luffa inner core chopped fiber composite. The alkalization and silanization processes were applied to the fiber mat and inner core of dried luffa cylindrica chopped and composites were fabricated. Phenol formaldehyde resin was synthesized in the laboratory and used as matrix. Compression moulding was employed for the composite fabrication. The presence of silane functional groups on the fibers is revealed from FTIR spectroscopy. Mechanical properties were evaluated through tensile and izod tests for laminate composites and compression tests for chopped fiber-reinforced composites. The percentage of porosity was determined using kerosene adsorption under vacuum conditions and the results show a decrease in porosity percentage. Thermal stability was assessed using Thermogravimetry analysis (TGA), slight increase in thermal stability of silanized compound within the temperature range of 300°C to 400°C. Silane treatment positively influenced mechanical properties in both chopped and laminate composites. This comprehensive investigation contributes valuable insights into the potential applications of luffa fiber-reinforced phenolic resin matrix composites in various fields.

Keywords: Natural fiber, Polymer Matrix Composites, Silanization, Compression moulding

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Department of Mathematics

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Modelling Co-infection and Super-infection of HBV-HDV with Lyapunov Stability and Holling Type-II Treatment Rate

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Undoubtedly co-infection and super-infection by hepatitis B virus and hepatitis D virus (HBV-HDV) are severer liver diseases, which cause rapid progression toward liver cancer. Many researchers have studied them and introduced mathematical models focusing on different factors. In this paper we combined both co-infection and super-infection in one frame as a mathematical model in consideration with real dynamics of the disease and some assumptions, as well as we incorporated Holling type-II functional response as treatment function. Furthermore positivity and boundedness of the model have been deliberated, basic reproduction number at disease free equilibrium point has been computed, local stability has been explored using Jacobian matrix of the model and global stability has been investigated with the help of Lyapunov function. For supporting qualitative results we performed numerical analysis and concluded that both co-infection and super-infection are very infectious, they can cause new infections faster and almost all the susceptible individuals can be infected. However, the infection can be controlled via vaccination and treatment, among these two prevention measures, vaccination has great impact and is very effective compared to treatment against the disease.

Keywords: Mathematical Model, Co-infection, Super-infection, Stability Analysis, Simulation.

Approximation Properties of Riemann-Liouville Type Fractional Lupas-Kantorovich Operators of Order α

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In this note, we are dealing with Riemann-Liouville type Fractional Lupas-Kantorovich operators of order α, which introduces a new sequence of positive linear operators with fractional integration. Rate of convergence using modulus of continuity and approximate the Lipchitz class function using these new sequences of positive linear operators are obtained. Its weighted approximation properties and Voronovskaja's type approximation theorems are also discussed. Bivariate Riemann-Liouville fractional integral type Lupas-Kantorovich operators are introduced at the end.

Keywords: Riemann-Liouville fractional integral, Kantorovich operators, Rate of convergence, bivariate Lupas-Kantorovich operators

References

1. A. Lupas, The approximation by some positive linear operators, in: Proceedings of the International Dortmund Meeting on Approximation Theory, Akademie Verlag, Berlin, 1995, pp. 201-229.
2. O. Agratini, On a sequence of linear and positive operators, Facta Universitatis (Nis), Ser. Math. Inform 14 (1999) 41-48.
3. U. Abel, M. Ivan, On a generalization of an approximation operator defined by A. Lupas, Gen. Math., 15 (1) (2007) 21-34.
4. F. Dirik, Statistical convergence and rate ofconvergence of a sequence of positive linear operators, Mathematical communications 12 (2) (2007) 147-153.
5. A. Erencin, G.Bascanbaz-Tunca, F. Tasdelen, Some properties of the operators defined by Lupas, Rev. Anal. Numér. Théor. Approx. 43 (2) (2014) 168-174.

A Class of Uniformly Differentiable Functions using Caputo-types fractional derivatives

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In this paper, the authors studied several properties of uniformly fractional differentiable functions. The relation between uniformly fractional differentiable function and absolutely fractional differentiable function also been established. Uniformly fractional differentiable function and absolutely fractional differentiable function are defined using Caputo-type fractional derivatives instead of the commonly used first-order derivatives.

Keywords: Caputo fractional derivatives, uniformly continuous, uniformly fractional continuous, absolutely continuous, absolutely fractional differentiable

References:

[1] Jyotindra C. Prajapati and Krunal B. Kachhia, Introduction to Class of Uniformly Fractional Differentiable Functions, *Mathematical Modelling, Applied Analysis and Computation,* Springer Proceedings in Mathematics and Statistics (as Special Issue ICMMAAC 2018, Jaipur, India, July 6—8), (2019), 103--111

[2] Jyotindra C. Prajapati and Krunal B. Kachhia, Functions of bounded fractional differential variation--A new concept, *Georgian Mathematical Journal,* 23, (3), (2016), 417--427

[3] Subhash Bhatt and P. Dabhi and Krunal Kachhia, Absolutely differentiable functions and functions of bounded differential variation, *The Mathematics Student,* 79, (1), (2010)

[4] Kai Diethelm, The mean value theorems and a Nagumo-type uniqueness theorem for Caputo's fractional calculus (Corrected Version), *arXiv preprint arXiv:1709.01113*, (2017)

[5] Igor Podlubny, *Fractional Differential Equations: An Introduction to Fractional Derivatives, Fractional Differential Equations, to Methods of Their Solution and Some of Their Applications*, Elsevier Science, (1998)

LHPM for Time-Fractional N-dimensional BS Equation for European Put Option

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A famous Black-Scholes differential equation is used for pricing options in financial world which represents financial derivatives more significantly. Option is one of the crucial financial derivatives. This study contributes to the generalization of two dimensional Black-Scholes (BS) model for European put option derived by Prathumwan D. and Trachoo K. in the fractional derivative sense using Laplace homotopy perturbation method (LHPM). The aim of this paper is to derive solution of Liouville-Caputo time-fractional Black-Scholes equation with n assets using LHPM. Numerical results shows that our approach gives very accurate results and our formulas are quite close to the plain vanilla options.

Keywords: Black-Scholes Model, HPM, LTHPM, European call option, Fractional derivative

References

1. He J. H., *Homotopy Perturbation technique*, Computer methods in applied mechanics and Engineering, 178 (1999), 257-262.
2. Panumart Sawangtong, Kamonchat Trachoo, Wannika Sawangtong and Benchawan Wiwattanapataphee, *The Analytical Solution for the Black Scholes equation with two assets in the LiouvilleCaputo fractional derivative sense*, Mathematics, 6 (2018), 1-14.
3. Din Prathumwan and Kamonchat Trachoo, *On the solution of two dimentional fractional Black Scholes equation for European put option*, Advances in Difference Equations, 146 (2020), 1-9.

Two-Strain SEIR Model with a Non-Monotone Incident Rate and Its Global Stability Using Lyapunov Function

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In this article we study a two-strain SEIR epidemic model having one strain with bilinear and another one with non-monotone incidence rates. We obtain feasible region, two basic reproduction numbers, one for each strain, the Disease Free Equilibrium (DFE) and Endemic Equilibriums. Global stability of the DFE
and is discussed using the Lyapunov function method and a condition on basic reproduction numbers has been derived which gives the global stability of DFE.

Keywords: SEIR, Epidemics, Non-monotone incident rate, Disease Free Equilibrium, Global Stability, Lyapunov function method

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Compact Elements in the Weighted Discrete Abelian Semigroup Algebra l^1 (S, W)

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Let A be a Banach algebra and a in A. Define the bounded linear operator L_a on A as $L_a(x) = ax$ (x in A). If the operator L_a is compact, then a is called a compact element in A. The compact elements of the convolution Banach algebra $L^1(R_+, W)$ have been extensively studied by Bade and Dales, and for the weighted discrete semigroup algebra $l^1(S, w)$ by Gronbaek and Dedania. The objective of this presentation is twofold. First is to prove the weighted discrete analogues of some results proved on the compact elements in $L^1(R_+, W)$. Second is to set the record right by correcting some results proved in the Ph.D. Thesis of Gronbaek.

Keywords: Commutative Banach algebra, Compact element, Semigroup, Semigroup ideal, Weight.

Some Matrices of 2-Strong Product Graph

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Many matrices are associated to a graph. Among them, adjacency matrix, degree diagonal matrix and Laplacian matrix are widely investigated and their spectrum are also studied. Matrices of well known product graphs like Cartesian product, tensor product, strong product, etc., are also studied. Matrices of these product graphs and their spectrum are obtained in terms of matrices of the corresponding factor graphs. For 2-Cartesian product and 2-tensor product graphs, adjacency matrix, degree diagonal matrix and Laplacian matrix are obtained. In this paper, we obtained these matrices for 2-strong product graph and studied their spectrum.

Keywords: adjacency matrix, degree diagonal matrix, Laplacian matrix, spectrum, 2-strong product graph.

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Hypergeometric Functions and Generalized Hypergeometric Functions

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In this paper, first we have discussed the hypergeometric function which is a generalization of the geometric series. The properties like convergence, uniform convergence, θ-form differential equation, contiguous function relation and transformations are discussed. After this by adding finitely many numerator and denominator parameter to this Gauss series, the generalized hypergeometric function is define and it's convergence is also discussed. As a particular case ${}_2F_1[z]$, exponential function, binomial theorem are discussed. The properties obtained for ${}_2F_1[z]$ are generalized for this series. As a particular case of this generalized hypergeometric function, Legendre polynomials are discussed for which generating function relation, differential recurrence relation, pure recurrence relation, differential equation are obtained. At last it's application has been shown in the potential theory.

Keywords: Hypergeometric Functions, Generalized Hypergeometric Functions, θ - form differential equation, Legendre polynomials, Generating Function.

References:

1. Earl David Rainville, Special Functions, Macmillan, 1960.
2. L.C. Andrews, Special functions of mathematics for engineers, SPIE,USA, 1998.
3. L.J. Slater, Generalized hypergeometric functions, Cambridge, UK,1966.
4. George B. Arfken; Hans J. Weber, Mathematical Methods for Physicists, Elsevier Academic Press, 2005.

T. H. Koornwinder; R. Wong; R. Koekoek; R. F. Swarttouw, Handbook of Mathematical Functions, Cambridge University Press, 2010.

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Innovative Nanocarrier for Lung Cancer: Targeted Nanotechnology-based Inhalation Delivery of Drug

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The second most common and deadly cancer worldwide is lung cancer. The preferred course of treatment for lung cancer is chemotherapy, which increases patient survival by successfully slowing the growth of the tumour. However, systemic chemotherapy has a limited clinical efficacy and considerable systemic adverse effects due to the nonspecific distribution of anticancer agents. Conversely, inhalation methods provide the direct administration of medications to the lungs at elevated local concentrations, augmenting their antitumor efficaciousness while minimising adverse reactions. According to preliminary research investigations, cough and bronchospasm are acceptable side effects of inhaled chemotherapy that can be controlled. Therefore, increasing the anticancer medications' deposition in tumour cells and preventing their spread to other healthy cells will boost their clinical efficacy while lowering their systemic and local toxicities. Nanoparticle formulations are a feasible approach for the inhalation administration of chemotherapeutics to lung malignancies due to the controlled release and localization of tumours. The main obstacles to the efficient deposition and maintenance of inhaled nanoparticle formulations in the lungs are the physiology of the respiratory tract and the mechanisms of lung clearance. Recent studies have focused on designing and developing smart nanoformulations to maximise lung deposition, reduce pulmonary clearance, and enhance the targeting of malignant tissue. This review focuses on recent examples of work in this area, along with the opportunities and challenges for the pulmonary delivery of smart nanoformulations to treat lung cancers.

Keywords: Lung cancer, inhalational route, targeted chemotherapy, surface modified nanocarrier

References:

1. Amararathna M, Goralski K, Hoskin DW, Rupasinghe HPV. Pulmonary Nano-Drug Delivery Systems for Lung Cancer: Current Knowledge and Prospects. J Lung Health Dis (2019) 3(2): 11-28

Yu, X. Y., Jin, X., & Shou, Z. X. (2021). Surface-engineered smart nanocarrier-based inhalation formulations for targeted lung cancer chemotherapy: a review of current practices. Drug Delivery, 28(1), 1995–2010.

An Overview on Psoriasis: Pathogenesis, Diagnosis and Current Therapy

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Psoriasis is a chronic autoimmune skin disorder that affects millions of people worldwide. The condition is characterized by the rapid growth of skin cells, leading to the development of thick, scaly patches on the skin. The exact cause of psoriasis is not fully understood, but it is believed to be a complex interplay of genetic, environmental and immune system factors. The pathogenesis of psoriasis is involving both innate and adaptive immune responses. Proinflammatory cytokines such as TNF-alpha (Tumor necrosis factor), IL-17 (Interleukin) and IL-23 play central role in the disease, with an upregulation of Th1 (T-helper cell) and Th17 subsets and dysfunction of regulatory T cells. There are many treatments available to manage the symptoms and help patients achieve long term remission. These treatments include topical medications, phototherapy, oral medications and biologic therapies. Additionally, lifestyle changes such as maintaining healthy weight, quitting smoking, reducing stress may also help manage psoriasis symptoms. Nanotechnology holds great promise for the management of psoriasis. This review provides an overview of the pathogenesis, clinical features, diagnosis and management of psoriasis by using nanotechnology, highlighting the importance of a multidisciplinary approach to care that addresses both the physical and emotional aspects of the condition.

Keywords: Psoriasis, Autoimmune skin disorder, Comorbidities, Pathogenesis, Clinical features, Diagnosis.

Recent Advances in Buccal Drug Delivery System

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Over the past few years, there has been a notable advancement in the field of medication delivery, with a strong emphasis on innovative approaches to improve therapeutic outcomes and patient compliance. Buccal drug delivery involves the administration of pharmaceutical substances through the mucosal tissues lining the oral cavity, providing an alternative route to traditional oral or parenteral methods. This route offers advantages such as rapid onset of action, avoidance of hepatic first-pass metabolism, sustained drug release, and improved patient compliance due to its non-invasive nature. The buccal drug delivery system is one area which is developed, and gaining popularity because it has the potential to overcome some of the drawbacks of more conventional ways of administration. The development of mucoadhesive formulations is a key strategy, enhancing the residence time of drugs on the buccal mucosa, thereby improving absorption and bioavailability. The recent advancements in buccal medication delivery are summarized in this study, which also highlights the revolutionary new methods, formulations, and technology. The presentation covers conventional buccal drug delivery system, their advantages, limitations then new advances and newer technologies. This includes lyophilized wafer technology, Buccal spray, peptide delivery, mucoadhesive nanofiber and many more. The presentation aims to provide a comprehensive overview of the evolving landscape of buccal drug delivery.

Keywords: Buccal drug delivery, dosage forms, mucoadhesion

A Review: Liposomal Formulations in the Management of Idiopathic Pulmonary Fibrosis.

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Idiopathic Pulmonary Fibrosis (IPF), a progressive lung ailment characterized by excessive lung tissue scarring, poses a significant therapeutic challenge. The existing treatments offer only limited relief, leaving room for innovative approaches. A promising strategy involves leveraging liposomal drug delivery systems for improved IPF treatment. Liposomes, tiny liid based vesicles, present advantages such as extended drug release, better stability and reduced systemic adverse effects. This overview encapsulates recent developments in liposomal formulations tailored to address IPF. The assessment delves into diverse aspects of liposomal drug delivery encompassing formulation techniques, drug loading approaches, and their mechanisms of impact within the IPF frame work showcasing their potential in augmenting drug effectiveness, minimizing toxicity, and enhancing targeting precision towards fibrotic lung regions. The review also acknowledges hurdles and charts the future path for liposomal formulations in IPF treatment development. Collectively this review emphasis the significance of liposomal drug delivery system as a promising way in the management of IPF by doing so, it offers a ray of hope for more.

Keywords: Idiopathic pulmonary fibrosis, Pulmonary route, liposomal formulation, anti-fibrotic agents, pulmonary drug delivery technologies

References:

1. Safin S, Uttam B. (7th February 2022). Formulation, ex-vivo and in-vitro characterization of liposomal drug delivery system of Fexofenadine. Thai journal of pharmaceutical sciences.
2. Naseeb B, Laxmi P, Basava V. (2022). Formulation and evaluation of Favipiravir proliposomal powder for pulmonary delivery by Nebulization. International Journal Pharmaceutical Research & Allied Sciences.
3. Thakur A, Chellappan D, Dua K, Maheta M, Satija S, Singh I. (March, 2020). Patented therapeutic drug delivery strategies for targeting pulmonary diseases, Expert Opinion on Therapeutic Patents. Taylor & Francis.
4. Liu H, Du K, Li D. (31st July, 2021). A high bioavailability and sustained – released nano – delivery system for nintedanib based on electrospray technology. Dovepress. International Journal of Nanomedicine.

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Photoresponse of Surface-Modified Graphene Oxide by Green Synthesized Gold Nanoparticles

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Recently, metal nanoparticles incorporated in carbon nanostructures have tremendous applications in the field of nano sensors and technologies. Utilizing black tea extracts as reducing agents, this work proposes a distinctive and biogenic approach to prepare Gold (Au) nanoparticles. The microwave irradiation technique was employed to construct Au-GO nanostructures. The morphology, structure, and optical properties of synthesized Au-GO samples were rigorously characterized using energy-dispersive X-ray spectroscopy (EDX), X-ray diffraction (XRD), Raman spectroscopy, and UV-Vis's spectroscopy. The outcomes demonstrate that Au NPs were accumulated over the GO surface in the NCs. The structural investigation revealed the efficient synthesis of face-centered cubic-structured crystalline AuNPs. AuNPs were synthesized across the surface of GO, as evidenced by high-resolution transmission electron microscopy (HRTEM). Further, we examined current-voltage (I-V) and transient photocurrent (I-t) at different bias voltages (5-30 V) and wavelengths to assess the photoresponse properties of the devices. A bias voltage of 30 V and a monochromatic light of wavelength (480 nm) having an intensity of 5 $mWcm^{-2}$ at room temperature provided detectivity of 0.75×10^{8} Jones and responsivity of 0.11 mAW^{-1}. According to the analyzed photoresponse properties, Au-GO nanocomposites do show the potential for use in future optoelectronic device applications.

Keywords: Au, GO, black tea, green synthesis, photoresponse.

References:

1. H. M. Mistry, M. P. Deshpande, A. B. Hirpara, N. M. Suchak, S. H. Chaki, S. Pandya, J. Valand, and S. V Bhatt, Applied Surface Science 632, 157583 (2023).
2. D. Latha, S. Sampurnam, C. Arulvasu, P. Prabu, K. Govindaraju, and V. Narayanan, Materials Today: Proceedings **5**, 8968 (2018).

Synthesis and Characterization of Cobalt Diselenide (CoSe2): A Comprehensive Investigation

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Transition Metal Dichalcogenides (TMDCs) have gained much attention since a few years due to their remarkable electronic & optical properties. Among this TMDC family, Co based dichalcogenide give good performance in electrical and magnetic properties. In this study, we focus on the synthesis and characterization of Cobalt Diselenide ($CoSe_2$). The Direct Vapour Transport Technique (DVT) was used to synthesize the material. Powder X-Ray diffraction (XRD) using Rikagu Ultima Diffractometer with Cu-K_α radiation confirmed the structural phase of layered grown compound**.** Scanning Electron Microscope (FEG-SEM 450) was used to observe the surface topography of grown compound. The X-Ray Photoelectron Spectroscopy (XPS) is used for quantitative analysis of elemental composition of a material and determines the binding states of the elements. XPS of grown material was carried out using ESCA-Omicron Nanotechnology for the elemental confirmation. The optical properties of synthesized material was examined by UV-Visible-NIR Spectroscopy. It gives valuable information of materials such as band-gap, absorption characteristics, providing comprehensive understanding of its optical response. For the study of vibrational properties of sample, Raman spectroscopy has been done.

Keywords: *2D materials, TMDCs, DVT, Structural properties, optical properties, morphological properties.*

Optimized Synthesis, Thorough Investigation and photo-catalytic study of Pristine Rhenium Diselenide ($ReSe_2$).

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The recent focal point of research has been Transition Metal Dichalcogenides (TMDCs) due to their extensive utility across diverse fields. These two-dimensional materials exhibit a range of captivating properties, positioning them as promising candidates for applications in optoelectronics, electronics, nano-electronics, photonics, sensing, energy storage, photo catalysis, electrochemical catalysis, and more. TMDCs, characterized by a layered structure held together by weak van der Waals forces, display highly tunable band gaps, exceptional carrier mobility, substantial visible light absorption, and the ability to generate multiple excitons upon the absorption of a single photon. These distinctive features make TMDCs highly promising for numerous applications.Among the various TMDCs, Rhenium Diselenide ($ReSe_2$) remains relatively unexplored, offering properties that contrast with other TMDCs. $ReSe_2$, a layered direct band gap semiconductor, is optically biaxial and exhibits highly in-plane anisotropic characteristics. This study focuses on the growth of $ReSe_2$ crystals using the DVT technique, with comprehensive basic characterizations conducted to validate the properties of the synthesized compound. These fundamental characterizations encompass Powder X-ray Diffraction, Scanning Electron Microscopy, Energy Dispersive X-ray Spectroscopy (EDAX), Raman Spectroscopy, and UV-VIS Spectroscopy. The outcomes of these characterizations provide insights into the structure, elemental composition, crystallinity, mechanical properties, and optical characteristics of the grown $ReSe_2$ crystals. Its photo-catalytic capability is subsequently examined by employing it as a catalyst in the decomposition of organic dyes, such as Methylene Blue (MB) dye.

Keywords: *Two-dimensional materials (2D materials), Direct Vapor Transport (DVT), Structural characteristics, Optical properties, Morphological features.*

References:

1. Nair, Salil et al. 2021. "Photocatalytic Degradation of Organic Dyes by Ni (25%) Doped WSe2 Nanosheets." Materials Science in Semiconductor Processing 125(April 2020): 105625. https://doi.org/10.1016/j.mssp.2020.105625.
2. Patel, H., Chauhan, P., Patel, A.B. et al. "Anisotropic study of $ReSe_2$-based photodetector grown via vapour transport technique". Eur. Phys. J. B **95**, 181 (2022). https://doi.org/10.1140/epjb/s10051-022-00439-1

Enhancement in dye removal by photocatalytic degradation using metal oxide nanoparticles embedded on activated carbon powder

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The synergetic effect of photocatalytic and adsorption properties of ZnO@ACP and CuO@ACP samples are investigated in this study. The synthesized samples are initially studied for their elemental composition, crystalline phase and structure, surface morphology, optical band gap, functional groups, and vibrational modes by EDAX, SEM, XRD, Raman, FTIR, UV-Vis spectroscopy, and BET respectively. Methylene blue (MB) used as a dye in industries has been used in this work for its removal from wastewater using the above-prepared samples. We could remove 63% of MB by adsorption under dark conditions with these samples. After illumination with UV radiation, it is seen that MB is degraded 93% by ZnO@ACP, 85% with CuO@ACP whereas adsorbed 78% with activated charcoal. This reflects that ZnO and CuO nanoparticles embedded with activated charcoal show increased photocatalytic activity. Further, the Langmuir-Hinshelwood model is used to calculate the kinetic rates of ZnO and CuO nanoparticles on embedded in ACP samples.

Keywords: Activated carbon; Nanoparticles; Photocatalysis; Adsorption; Langmuir-Hinshelwood model.

DFT Study on the Structural, Electronic, Elastic, Mechanical and Thermophysical Properties of $LaFeO_3$

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Because of its unique features and simple structure, perovskite structure materials have attracted the curiosity of scientists and researchers. The density functional theory's generalised gradient approximation function was used to determine structural, electrical, and thermophysical parameters in the ground state cubic phase (SG 221) of LaFeO3 via Ultrasoft Pseudopotential. It shows that the calculated structural properties of cubic $LaFeO_3$ are in a good agreement with previous literature. Electronic characteristics band structure, total and projected electronic density of states, electronic charge density, and fermi surface topology of $LaFeO_3$ are all investigated in this study. In the temperature range of 0K to 1073 K, thermophysical characteristics such as specific heat capacity, thermal expansion (α), Gruneisen parameter (γ), isothermal bulk modulus (B_0), and Debye temperature (θ_D) were computed.

Keywords: Perovskite $LaFeO_3$; Electronic band structure; Electronic charge density, Density of states, Fermi surface; Thermophysical Properties; Density Functional Theory (DFT)

Synthesis and Characterization of Tungsten Oxide (WO_3) Nanoparticles for Enhanced Photodegradation of Organic Pollutants

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In this study, we synthesized tungsten oxide (WO_3) nanoparticles, known for their ability to break down organic pollutants into harmless substances through photodegradation. We employed the hydrothermal method, using sodium tungstate dihydrate (Na_2 $WO_4 \cdot 2H_2$ O) as a precursor material and hydrochloric acid (HCl) as a precipitating agent. The focus is on comparing samples at different calcination temperatures. To understand the structural properties of the WO_3 nanoparticles, we utilized various characterisation techniques such as Powder X-ray Diffraction and Raman Spectroscopy. Additionally, we investigated the optical properties specifically the band gap of the synthesized nanoparticles using UV-visible spectroscopy. The study also explores the photocatalytic activity of the WO_3 nanoparticles, examining their ability to break down an organic dye (Methylene Blue - MB) under a UV-light source and compares the photocatalytic activity for different calcination temperatures.

Keywords: (WO_3) nanoparticles, Hydrothermal method, Methylene Blue, Photocatalytic activity

References:

1)Azmat1, S. (2018). Solar Light Triggered Photocatalytic Performance of WO3. *Materials Research Express*.

2) InsaafAssadullah1*, J. H. (2022). Growth of crystalline WO3-ZnSe . *Scientifc Reports* |.

Enhancing Glass-Forming Ability in Zr-Cu-Al Ternary Alloys: A Molecular Dynamics Approach for Optimal Composition

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Predicting good glass-forming composition in metallic glass remains a significant challenge, particularly in multi-component alloys. In the present study, classical molecular dynamics is employed to effectively forecast GFA in the $Zr_{50}Cu_{50-x}Al_x$ (ZCA) and $Cu_{50}Zr_{50-x}Al_x$ (CZA) ternary alloy systems, where x = 5, 10, 15, 20, 25, 30, 40 (at. %). Structural analysis is performed through an in-depth investigation of radial distribution functions, coordination numbers, and Warren-Cowley chemical short-range order (WC-CSRO). Thermodynamic results reveal a pronounced impact of aluminum alloying on the glass transition temperature (T_g) in $Cu_{50}Zr_{50-x}Al_x$, with insignificant changes observed in the ZCA system. This observation is substantiated by specific heat analyses, indicating that CZA-15 exhibits the highest specific heat. Notably, the formation of <0,0,12,0> full icosahedra is maximum in the CZA (x = 15 %) system compared to ZCA, leading to reduced dynamics and increased stability. The prevalence of the $Zr_5Cu_6Al_2$ icosahedra in CZA-15, characterized by a higher packing fraction, underscores its dominance over other icosahedra. Our findings reveal the crucial role of chemical composition and affinity in shaping the microstructural features of metallic glasses across various length scales, influencing their mechanical properties.

Keywords: Amorphous alloys, molecular dynamics, GFA, voronoi analysis, thermodynamics

References:

1. P. Thurnheer, R. Maass, S. Pogatscher, and J. F. Loffler, Appl. Phys. Lett. 104, 101910 (2014).
2. S. A. Kube, S. Sohn, R. Ojeda-Mota, T. Evers, W. Polsky, N. J. Liu, K. Ryan, S. Rinehart, Y. Sun, and J. Schroers, Nat. Commun. 13(1), 3708 (2022).

Curvature and Strain Analysis of Human Red Blood Cell Membrane Using Parametric Models

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We present mathematical simulations of shapes of red blood cells (RBCs) and their cytoskeleton when they are subjected to linear strain. The cell surface is represented by a quartic equation in three-dimensional (3D) cartesian space(Fung & Tong, 1968; Kuchel et al., 2021; Skalak et al., 1973)[1][2][3]. Using recently available functions in Mathematica to triangularize the surfaces we computed four types of curvature of the membrane. We also mapped changes in mesh-triangle area and curvatures as the RBCs were distorted. The profoundly deformable erythrocyte (RBC) answers precisely forced shape changes with upgraded glycolytic transition and cation transport. A key observation is the extent to which the maximum and minimum Principal Curvatures are localized symmetrically in patches at the poles or equators and distributed in rings around the main axis of the strained RBC. The parametric model was revised by introducing a spring network object immersed in fluid for efficient blood cell simulations, validated through calibration using a computational method. With the help of curvature analysis and spontaneous curvature, we can calculate the Helfrich energy of the equilibrium model.

Keywords: erythrocyte, curvature, Helfrich energy, spring network

References:

1. Fung, Y. C. B., & Tong, P. (1968). Theory of the Sphering of Red Blood Cells. *Biophysical Journal*, *8*(2), 175–198. https://doi.org/10.1016/S0006-3495(68)86484-7
2. Kuchel, P. W., Cox, C. D., Daners, D., Shishmarev, D., & Galvosas, P. (2021). Surface model of the human red blood cell simulating changes in membrane curvature under strain. *Scientific Reports*, 1–18. https://doi.org/10.1038/s41598-021-92699-7
3. Skalak, R., Tozeren, A., Zarda, R. P., & Chien, S. (1973). Strain Energy Function of Red Blood Cell Membranes. *Biophysical Journal*, *13*(3), 245–264. https://doi.org/10.1016/S0006-3495(73)85983-1

Investigation of Junction Temperature of Germanium Diode

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Performance of the diode heavily depends upon fabrication quality of its junction[1]. Hence, it is necessary to characterize junction of a diode to determine and improve diode parameters. Over-heating is one of the main reasons for failures of electronics systems. Due to this, determination of junction temperature over a wide range of current becomes essential. In this work, junction temperature of germanium point contact diode is determined experimentally[2]. The dependence of the junction temperature on the current passing through the diode (dT/dI) was found to be 1.01 K/mA. The temperature co-efficient of forward junction voltage (dV_f/dT) turned out to be in the range of -3 to -8 mV/K for the currents in the range of 10 to 100 mA. Present study demonstrates in-depth analysis of variation in junction temperature over wide range of DC current.

Keywords: P-N junction, Junction temperature, Germanium point contact diode.

References:

1. S. M. Sze, *Physics od Semiconductor Devices*, 2nd ed. New York: John Wiley, 1981.
2. Y. Xi and E. F. Schubert, "Junction–temperature measurement in GaN ultraviolet light-emitting diodes using diode forward voltage method," *Appl Phys Lett*, vol. 85, no. 12, pp. 2163–2165, Sep. 2004, doi: 10.1063/1.1795351.

Refractometric and volumetric study of molecular interaction in binary mixture of carbon tetrachloride with methanol at constant temperature

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The refractive index (n), density (ρ) and viscosity (η) are significant physical parameters highly influenced by the solution chemistry of liquids and their binary mixtures. Although refractive index, density, and viscosity data for pure liquids are abundantly available in the literature, information on mixture data is often limited. This study involved the experimental determination of refractive index (n), density (ρ), and viscosity (η) for binary liquid mixtures of carbon tetrachloride and methanol across a range of concentrations (0.0 → 1.0) at a constant temperature of 318.15 K. The obtained experimental values of refractive index, density, and viscosity were utilized to calculate various refractometric parameters, including molar refraction (Rm), molecular radii (r), reduced molar free volume (Vm/Rm) and internal pressure (Pint). Excess values for all computed parameters were determined as the difference between experimentally determined values and those evaluated using additive mixing rules. These excess parameters were fitted into the Redlich-Kistler polynomial. The variations of these parameters with composition at a constant temperature of the mixtures were analyzed in the context of physical, chemical, and structural effects between the dissimilar molecules. Predictions for the refractive index (n) and viscosity (η) of binary mixtures were made using various mixing models. A comparison of these mixing models with experimental refractive indices was expressed in terms of Average Percentage Deviation (APD).

Keywords: Binary Mixture, Molecular interaction, Refractive index, Viscosity, Mixing models.

References

1. A. N. Prajapati, V. A. Rana, A. D. Vyas, D. H. Gadani, J. Int. Acad. Phys. Sci.,16 (2012) 387-398.
2. H. Iioukhani, Z. Rostami, J. Chem. Eng. Data, 52 (2007) 921-928.
3. G. Franchini, A. Marchetti, R. Seeber, L. Tassi, P. Zannini, Phys. Chem. Liq., 39 (2001) 277-300.

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Comparative Study of Joint Ranked Set Sampling and Joint Simple Random Sampling for The Weibull Populations

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Joint ranked set sampling (JRSS) and joint simple random sampling (JSRS) methods are compared for parameters of two Weibull populations using the Maximum Likelihood(ML) Estimation Method. The expressions for ML estimates for parameters of the Weibull populations in JRSS and JSRS are obtained. Further, expressions are derived to test hypothesis about parameters using the likelihood ratio test for JRSS and JSRS. The performance of estimators are studied using simulation. From the simulated tables it is observed that ML estimators performed better in JRSS compared to JSRS from MSE point of view. The simulation is carried out in the R studio.

Keywords: Joint ranked set sampling, joint simple random sampling, maximum likelihood estimates, likelihood ratio test

References

1. Al-Saleh, M. F. and Al-Shrafat, K. (2001): Estimation of average milk yield using ranked set sampling Environmetrics: The official journal of the International Environmetrics Society, 12(4):395–399.
2. Ashour, S. and Abo-Kasem, O. (2014): Parameter estimation for two weibull populations under joint type ii censored scheme International Journal of Engineering, 5(04):8269.
3. Ding, L. and Gui, W. (2023): Statistical inference of two gamma distributions under the joint type-ii censoring scheme Mathematics, 11(9):2003.
4. Dong, X., Zhang, L., and Li, F. (2013): Estimation of reliability for exponential distributions using ranked set sampling with unequal samples Quality Technology & Quantitative Management,10(3):319–328.
5. McIntyre, G. (1952): A method for unbiased selective sampling, using ranked sets Australian journal of agricultural research, 3(4):385–390.
6. Rasouli, A. and Balakrishnan, N. (2010): Exact likelihood inference for two exponential populations under joint progressive type-ii censoring Communications in Statistics—Theory and Methods, 39(12):2172–2191.
7. Raykundaliya, D. and Patel, M. (2022a): Estimation for two exponential populations based on estimation joint percentile rank set sampling Revista Investigaci´on Operacional, 9(2).
8. Raykundaliya, D. and Patel, M. (2022b): Estimation for two exponential populations based on joint rank set sampling Revista Investigaci´on Operacional, 43(5):544–559.

Study of awareness and enrolment process of Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) in Gujarat, India: A literature review

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Ayushman Bharat Pradhan Mantra Jan Arogya Yojana (AB-PMJAY) is the "world's largest government funded healthcare program" targeting more than 50 crore beneficiaries. AB-PMJAY covers Rs. 5 lakhs per family per annum for secondary and tertiary care hospitalization expenses, reduce catastrophic out-of-pocket health expenditure by improving access to quality health care for its underprivileged citizens, online & offline enrolment process for urban and rural areas, cashless and paperless treatment at any public or private empanelled hospitals, have been Quality Certified under the scheme. The aim of Ayushman Bharat Digital Mission (ABDM) to optimise the use of digital infrastructure and digital connectivity to deliver health services efficiently throughout of ABHA card. The use of database system will help Creating a more modern and inclusive Digital India. AB-PMJAY cardholders increase their access to top-quality medical treatment in Gujarat. Material and Methods : We will conduct a comprehensive search for potential records using electronic databases and official websites of health-related govt. bodies such as the Ministry of Health and Family Welfare, RSBY, Ayushman Bharat, and state health care websites to identify reports on healthcare schemes from 2018 to 2023.The awareness campaigns utilize various media channels such as billboards, radio and TV commercials, and also include health education initiatives and community mobilisation efforts through Accredited Social Health Activists (ASHA), who are community outreach workers in the public health system at the panchayat level. Content analysis to evaluate outcome: The first major initiative taken was Additional Data Collection Drive (ADCD) drive was undertaken by participating in "Gram Swaraj Abhiyaan" of Ministry of Rural Development on 30th April, 2018 named as "Ayushman Bharat Diwas". Discussion: An electronic record-based beneficiary identification system has been introduced, allowing individuals to easily check and confirm their eligibility status. Very few studies are reported on the level of awareness, enrolment, and utilization of the AB-PMJAY scheme as well as the sources of information and support to the beneficiaries from Gujarat. So, this study aims to assess the current status of awareness, enrolment, and utilization of AB-PMJAY in Gujarat. The "Ayushman Mitra " program is a voluntary initiative designed to offer all citizens the chance to contribute to the realization of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojna's vision. Challenges and ways forward: There is a dearth of literature in the community-level assessment of the awareness of Ayushman Bharat-PMJAY in India. Very limited studies have assessed PMJAY at the community level. Conclusion: Very few studies are reported on the level of awareness, enrolment, and utilization of the AB-PMJAY scheme as well as the sources of information and support to the beneficiaries from Gujarat. So, this study aims to assess the current status of awareness, enrolment, and utilization of AB-PMJAY in Gujarat. The scheme aims to improve awareness and utilization among beneficiaries, but there is still a lack of knowledge about its specific features and benefits.

Keywords: Awareness, Universal health coverage, Utilization, Enrolment process, Ayushman Bharat

Enhancing Change Point Detection in State-Related Brain Activity using Modified EWMA in fMRI Experiments

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Functional Magnetic Resonance Imaging (fMRI) is a powerful tool for studying brain activity, with the General Linear Model (GLM) being a widely used analytical approach. However, the GLM's reliance on precise stimulation onset times poses challenges in scenarios where this information is unknown. In response, this paper applies the Modified Exponentially Weighted Moving Average (MOEWMA) as an improved alternative to the traditional Exponentially Weighted Moving Average (EWMA). The MOEWMA method incorporates a weighted difference term, enhancing sensitivity (with smaller ARL) to changes in fMRI signals. The variance formula for MOEWMA is derived, and its performance is compared with EWMA under an ARMA(1,1) process. Simulated fMRI data, generated using R, is utilized to validate MOEWMA's efficacy in early change point detection. Results demonstrate that MOEWMA consistently outperforms EWMA, exhibiting smaller variance and lower Average Run Length (ARL). Ten fMRI time series analyses illustrate MOEWMA's ability to detect change points earlier than EWMA, showcasing its enhanced sensitivity in capturing significant changepoints in brain activity. This research contributes a valuable statistical tool for fMRI analysis, particularly in scenarios where the exact timing of events is uncertain. MOEWMA stands as a promising approach improved accuracy and sensitivity in the detection of changepoints in fMRI time series data.

Keywords: fMRI, Changepoint, EWMA, Modified EWMA, HEWMA

References

1. Martin A. Lindquist,a,∗ Christian Waugh,b and Tor D. Wagerc (2007) Modeling state-related fMRI activity using change-point theory.
2. Brockwell, P.J., Davis, R.A., 2002. Introduction to Time Series and Forecasting, second ed. Springer-Verlag, New York.
3. Friston, K. J., Fletcher, P., Josephs, O., Holmes, A., Rugg, M. D., & Turner, R. (1998). Event-related fMRI: Characterizing differential responses. NeuroImage, 7(1), 30-40.

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Department of Business Studies

Sardar Patel University

Vallabh Vidyanagar, Anand, Gujarat

A Study on Customers Awareness and Satisfaction Towards Green Banking Practices of Selected Public Sector Banks in Anand District of Gujarat

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Banks play a vital role in the Indian economy. Green banking through banks tries to reduce the carbon footprint of the environment. The researcher tries to check the customer's awareness & satisfaction towards the green banking initiatives. The researcher collected primary data through a questionnaire. The data was collected from the customers of the Anand district. The 55 customers are ready to fill out the questionnaire. The analysis was done based on a pie chart, bar chart & and percentage analysis. The customers are more aware of saving paperwork, and Saving time & mainly focused on economic development & and creating awareness. The Researcher concluded that green banking activities through customers are more aware of green banking practices & and green initiatives and we also tried to reduce carbon footprints by increasing the maximum use of green practices & and green initiatives.

Keywords: Green Banking, Green Initiatives, Public sector banks, Customers.

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A Comparison of Fintech Awareness and Perception Between Gen Y and Gen Z in Surat City

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Fintech, short for Financial Technology, encompasses software and cutting-edge technologies employed by sectors offering enhanced and automated financial services. It introduces innovations that revolutionize traditional methods of financial management, enabling a swift and innovative approach. In the realm of Gen Y and Gen Z, Fintech is not merely a tool but a lifestyle, with mobile apps and digital platforms becoming integral for seamless financial interactions and decision-making. This research paper investigates and compares the levels of Fintech awareness and perception among Generation Y (Gen Y) and Generation Z (Gen Z) in Surat City, India. Utilizing T-test data analysis tool, the study aims to identify any significant differences in their understanding and perspective towards Fintech services. The key findings and implications of the research are highlighted, offering valuable insights for Fintech companies and policymakers alike. This information can be used to tailor marketing strategies, develop innovative products, and formulate effective policies that cater to the specific needs and preferences of each generation.

Keywords: Fintech, Generation Y, Generation Z, Fintech Awareness, Fintech Perception, Surat City

Role of Rural Postal Life Insurance Scheme in Rural Areas: An Empirical Study in Kheda District

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The main aim of this study is to check awareness about the RPLI scheme in rural areas of the Kheda district. The Indian postal department, controlled by the central government, has the world's largest postal network and provides services to every corner of the country, including rural areas. The Postal Department offers two types of insurance services one Postal Life Insurance and another Rural Postal Life Insurance. Rural Postal life insurance is specially made for Rural people. Awareness plays a significant role in financial inclusion. A low financial awareness is the main reason for low financial inclusion. To check the role of the postal Department in channelizing people towards financial inclusion this study has been undertaken. Some researchers have done work on satisfaction with these two insurance schemes. Limited research work has been done on Rural postal life insurance and its awareness. Primary data has been collected for this particular study. Percentage Analysis and a Chi-Square test are used for this study. The result of this study gives an idea about the role of the RPLI scheme and the role of the Postal Department in channelizing insurance services to Rural people and also indicates the role of the RPLI scheme in making people financially inclusive.

Keywords: Insurance, Insurance Awareness, PLI Scheme, RPLI Scheme, Financial Inclusion, Insurance, Penetration

A Systematic Literature Review on Trends, Growth and Problems of Ceramic Tiles Industry in Gujarat

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The ceramic tiles industry plays a crucial role in Gujarat's economic development contributing to employment generation and overall prosperity. This study examines the trends, growth, and challenges faced by the ceramic tiles industry in Gujarat state particularly in Morbi region. Methodology used in study is descriptive in nature by analysing relevant academic articles, industry reports and market research studies. It also discusses the specific challenges faced by the ceramic industry in Gujarat. Understanding and addressing the identified challenges will be crucial for the sustained growth and competitiveness of the ceramic tiles industry in Gujarat.

Keywords: Ceramic Industries, Economic development, Trends, Growth, Challenges.

References:

1. Agarwal, R. (2014). Indian ceramic industry's recent trends. Journal of Scientific and Engineering Research, 5(5), 37-44.
2. Andreola, F., Barbieri, L., Bondioli, F., Lancellotti, I., & Manfredini, T. (2019). Sustainable ceramics industry based on agricultural and post-consumer waste: A case study on ceramic tiles. Journal of Cleaner Production, 233, 674-686.
3. Biswas, S. (2020). Comparison between the Chinese and Indian ceramics sectors. Advances in Ceramic Science and Engineering, 9(3), 22-33.

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A Study on Customer Perception Towards Service Quality Dimensions of Selected Private Sector Banks with Special Reference to Surat District

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Service quality is a powerful weapon that marketers use to differentiate their service from the competition. This study examines the difference between banks on the dimension of service quality. The SERVQUAL model was chosen to measure service quality in the Private sector banks with special reference to Surat District. Five major private sector banks were selected for the study. Three hundred questionnaires were sent for data collection based on convenience sampling method. SPSS was used to analyze the data. Differences were found in customer perceptions of services according to specific and reliability measures between banks.

Keywords: Service quality, SERVQUAL, SPSS and Customer Perceptions

Job Satisfaction of Employees: A Case Study of Bank of Baroda and Union Bank of India with Reference to Vadodara City

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The efficiency of any organisation majorly depends on its satisfying human assets, which are the lifeblood of every successful organisation, and especially when we talk about the service sector, only satisfied employees can give this synergy to their organisation. This study aims to analyse the level of job satisfaction of the employees of Bank of Baroda and Union Bank of India in Vadodara city. Descriptive and analytical research designs have been used for the research study, and 50 bank employees were selected with the help of a convenient non-probability sampling technique. The five-point scale questionnaire has been used for collecting the primary data. For data analysis, statistical techniques such as the chi-square test, and one-way ANOVA have been applied. The analysis has been carried out with the help of SPSS software. The result indicates an association between monthly income, which is a part of the demographic factor, and the long-term strategy of the bank, which is a part of organisational transparency, while other dimensions, i.e., work environment, technology, security, and organisational transparency, are not associated with demographic factors. The study points out an association between pay scale and adequate time with the length of service and designation, respectively. While the variables of demographic profile, i.e., gender, monthly income, and education qualification, are not associated with attitude.

Keywords: Job Satisfaction, Work Environment, Technology, Security and Organizational Transparency

A Study on Consumer Purchase Behavior Towards Mobile Phone with Special Reference to Selected Cities of Gujarat

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The growing significance of people's mobile phones is encouraging fresh marketing research. . India is the second largest growing economy in the world and has the fastest-growing mobile phone industry in the world. As a result, where we had only a limited number of mobile phone options a few years ago, today we have a lot of mobile phone options. In particular, customer behavior in the mobile phone market, from adoption motivation to post-usage behavior, has become a major focus of research in the field of consumer purchase behavior in the selected cities of Gujarat. The mobile phone has become an essential part of the lives of people, without which it is a blank dream to imagine development in today's digital era. The objective of this research is to analyze the external and internal factors that influence the decision to buy mobile phones among the people of selected cities in Gujarat. This research also affects the consumer's approach to the mobile phone and the name of the brand. Research is dependent on quantitative analysis, in which we have known the opinions of 535 respondents through questionnaires in selected cities in Gujarat. The convenience sampling method was used for this study. SPSS 27 is used for data analysis. Study found that the trend of customers purchasing phones from e-commerce companies is very high, as those companies provide better options at the right cost, and the first choice of customers for mobile phones is Samsung. Quality, price, and appearance were affected by choosing mobile brands.

Keywords: Encouraging, Development, Industry, Consumer behavior, Digital era and Brand.

A Comparative Study on Liquidity Analysis of Selected Pharmaceutical Companies in India

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In order to determine the health of any enterprise, Liquidity is considered to be important tool. Liquidity determines the companies' overall ability to pay its obligation by current assets. The present paper focuses on the liquidity analysis of selected Pharmaceutical companies in India. The researcher employ liquidity ratios to analyze the liquidity position of selected pharmaceutical companies like current ratio, quick ratio and interest coverage ratio. The present study covers the period of twelve years from 2011-12 to 2022-23. Secondary data was used for the study which was collected from the financial statements of the selected five pharmaceutical companies Aarti Drugs, Divis Labs, Nectare Life Science, Everest Organics and Gujarat Themis. For the analysis of data, statistical tool ANOVA was used. From the study, it was found that in terms of current ratio and quick ratio, performance of Divis Labs was best while in terms of interest coverage ratio, performance of Gujarat Themis was best. It was also found that there exists significant difference between liquidity ratios of selected pharmaceutical companies during period of study.

Keywords: Liquidity, Current Ratio, Quick Ratio, Interest Coverage Ratio

References:

1. Byjus. (n.d.). *Byjus*. Retrieved from www.byjus.com: https://byjus.com/commerce/liquidity-ratio/
2. Dhanalakshmi, D. C., & Rajeswari, D. V. (2017). An empirical study of liquidity analysis of selected pharmaceutical companies in India. *International Journal of Commerce and Management Research,* (8), 17-20.
3. Foundation, I. B. (n.d.). *IBEF*. Retrieved from www.ibef.org: https://www.ibef.org/industry/pharmaceutical-india.aspx
4. Saini, N., & Bansal, S. (2020). Pharmaceutical Companies and Liquidity Analysis: A Review. *International Journal of Economics and Financial Issues, 10*(5), 236-242.
5. Yadav, P. (2014). Liquidity Analysis of Selected Pharmaceutical Companies: A Comparative Study. *International Journal of Advance Research in Computer Science and Management Studies, 2*(8), 271-274.

A Study of NPA Management of Selected Public Sector Banks in India

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This study delves into the Non-Performing Asset (NPA) management strategies adopted by a selected public sector banks in India. With the rising challenges in the banking sector, NPAs pose a significant threat to financial stability. This study investigates the dynamics of Non-Performing Assets (NPAs) within selected public sector banks in India, addressing the challenges and strategies in managing these distressed assets. The research aims to analyze the proactive measures undertaken by the chosen bank to mitigate NPA risks, enhance asset quality, and sustain overall financial well-being. The research focuses on understanding the root causes of NPAs, evaluating the impact on financial health, and exploring proactive measures taken by the chosen banks to curb the NPA menace.

Keywords: Non-Performing Assets (NPAs), Public Sector Banks, Financial Stability, Risk Management

Study on Performance of Pradhan Matri Jan Dhan Yojna (PMJDY) in India

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The research study aims to analyze the performance of the Pradhan Mantri Jan Dhan Yojana by using key data of the scheme including the number of accounts opened, Total deposits collected, Rupay debit card issued, DBT transactions, and digital transactions. The secondary data has been used for the study. One-way ANOVA and paired t-test have been use to test the hypothesis. The result of the study shows that Through the Jan Dhan Accounts initiative, more than 50 crore individuals have gained access to the formal banking system. About 55.5% of these accounts are held by women, and 67% of them were opened in rural or semi-urban regions. The total deposits into these accounts exceed 2 lakh crore and around 34.07 crore RuPay cards which come with a 2 lakh accident insurance cover have been freely distributed to these accounts. The result of ANOVA and the t-test shows that there is a significant difference in the number of accounts based on gender, Geographical location, and different banks. Public sector banks have been leaders in the successful journey by opening the highest PMJDY accounts. A Scheme plays an important role in reducing regional gaps and gender inequality in access to financial services. The performance of the scheme is particularly effective in that it increases financial inclusion, closes gaps, opens doors to financial empowerment for every person, and has a favorable impact on India's economic environment.

Keywords: PMJDY, Financial Inclusion, Financial Services, Performance.

References:

1. Chaudhary, A. (2017, May). PMJDY- A study of its role in financial inclusion and Inclusive growth in India. *International Journal for Research in Management and Pharmacy, 6*(5), 14-17.
2. Kapoor, D. T. (2017). Pradhan Mantri Jan Dhan Yojana: Growth and Performance. *Inspira-Journal of Commerce, Economics & Computer Science (JCECS), 3*, 12-18.
3. Malligar, M. S., & Bankapur, M. B. (2016, January). Performance of Pradhan Mantri Jan-Dhan Yojana. *Indian Journal of Applied Research, 6*(1), 15-18.

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Child Nutritional Status and Woman Health Condition of all the Districts of Gujarat- An Analytical Perspective

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Nutritional status of child is affected by the socio-economic condition of household and nutritional status of mother. Undernourished girl become undernourished mother who give birth to the next generation of undernourished children. Therefore, the objectives of the study are to inquire the nutritional status of child, progress related to the woman's health indicators, and socio-economic condition of household of all the districts of Gujarat for NFHS-5 data. More apart, the study also analysed the correlation of Child District Nutritional Index Value (CDNIV) with Household Condition Index Value (HCIV) and Woman's Condition Index Value (WCIV). Data are utilized from NFHS-5 (2019-21) report. In terms of child nutritional status, results shows that Junagadh and Porbandar districts have achieved the first rank which indicates that they are having least percentage of malnourished children because as urbanization, and related growth of life style related living standard. Panchmahal district has obtained the last rank meaning that the district has the highest percentage of malnourished children because this is a tribal district of Gujarat and comparatively less developed than other district of Gujarat. In terms of socio-economic condition of household, Rajkot and Ahmadabad have achieved the first rank while Dahod district has obtained the last rank. Banaskantha and Panchmahal obtained 2nd and 3rd last rank in this category respectively. If we consider women health condition, we found that Navsari district has achieved the first rank, while Banaskantha district has obtained the last rank which means the status of women in terms of health is worse. Spearman's rank correlation has been computed to assess the relationship between the CDNIV with HCIV and WCIV. There is a positive correlation between CDNIV and HCIV r = .61 with p = 0.0001 and the correlation between CDNIV and WCIV is r = .53 with P = 0.001 significant level. Rational behind this positive relation is very logical because when the socio – economic condition and women conditions are improved nutritional status are also improved.

Keywords: NFHS, Gujarat, Malnutrition, CDNIV, HCI, WCI

References:

1. Meyerhoff, S. (2014). *The Intergenerational Cycle of Malnutrition: How Gender and Social Status Doom Many Mothers and Newborns*. New Security Beat. https://www.newsecuritybeat.org/2014/08/intergenerational-cycle-malnutrition-gender-social-status-doom-mothers-newborns/
2. Ministry of Health and Family Welfare. (2020). National Family Health Survey-5 (NFHS-5). In *International Institute for Population Sciences.*
3. Suri, S. (2020). *Malnutrition: India needs to urgently break inter-generational cycle*. Observer Research Foundation. https://www.orfonline.org/research/malnutrition-india-needs-to-urgently-break-inter-generational-cycle/
4. UNICEF, WHO, & IBRD. (2023). Levels and trends in child malnutrition: UNICEF,WHO, World Bank Group Joint Child Malnutrition Estimates: Key findings of the 2023 edition. In *UNICEF and WHO*. https://doi.org/10.18356/6ef1e09a-en

Economic Evaluation Methods for Residential Rooftop Solar System

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Rooftop Solar Systems (RTS) have been popularized among residential sector as it is economically viable , easy to operate , bearing least maintenance cost ,additionally government provides a subsidy up to installation of 10 kw system for residential sector though the consumer has to incur a certain amount of initial cost as the life span of the RTS is 25 years ,the fruits of the investment after a prolong time therefore the adoption of the RTS depends on the economic evaluation of the RTS, for that various methods are utilised such as Net Present Value(NPV), Internal Rate of Return (IRR), Payback Period, Discounted Payback Period, but each method required different type of data. The required data for the study collected from variours reference books. The systemtic review of literature method is employed for study it is found that NPV METHOD is more suitable for economics evaluation of residential rooftop solar system. This paper attempts to understand the various method for economic evaluation and the merits and demerits of each method.

Keywords: NPV, IRR, Payback Period, Rooftop Solar System

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સૌરઊર્જાની લાભદાયી અસરો" આણંદ જિલ્લાના સંદર્ભમાં એક અભ્યાસ

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પ્રસ્તુત સંશોધન અભ્યાસ વર્ષ 2022-23 દરમ્યાન આણંદ જિલ્લાના પેટલાદ અને સોજીત્રા તાલુકાના સૂર્ય શક્તિ કિસાન યોજના (SKY) અને PM-KUSUM યોજનાના કુલ 70 ખેડૂત લાભાર્થીઓને પસંદ કરી કરવામાં આવ્યો છે. આ અભ્યાસમાં કુલ 65 સૂર્ય શક્તિ કિસાન યોજના (SKY) અને 05 PM-KUSUM ખેડૂત લાભાર્થીઓને પસંદ કરવામાં આવ્યા છે. આ અભ્યાસનો હેતુ સૌરઊર્જાની લાભદાયક અસરો અને સોલરપંપ અંગે લાભાર્થી ખેડૂતો કેટલા અંશે માહિતગાર છે તે જાણવાનો છે. અભ્યાસના તારણરૂપે જાણવા મળ્યું કે SKY યોજનાનો મુડીખર્ચ ઉંચો છે પરંતુ લાંબાગાળે લાભદાયક રહેશે તેમજ ગેરલાભના તુલનામાં સોલરપંપ વધુ લાભ ધરાવે છે. મોટાભાગના લાભાર્થી ખેડૂતો સોલર પંપ અને માહિતગાર નથી. પસંદ કરેલ નમુનામાંથી મોટાભાગનો વર્ગ સોલરપંપથી સંતુષ્ઠ છે.

ચાવીરૂપશબ્દો: સૌરપંપ, સૌરપંપના લાભ અને લાભ.

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Mind Mapping and NEP 2020

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Education is considered as an important index to measure societal development. Student's performance in the subject Science has been investigated through this research. Hope it will be useful for the school teachers and students to reach their goal easily. The implication of the result of all past researches is that is better to teach student using mind map strategy teacher are therefor employed not to stick to one particular method of teaching but should endeavour to use variety taking cognizance of the topic and the need of the student to gradually acquire the skill and competencies they need to become an independent reader and writer. Mind map is good teaching method for teaching science subject. The review of related literature reveals that some studies were reported related to mind map strategy and achievement in Maths, Science and various other subject. No study were reported as per the knowledge of the investigate related to mind map strategy and achievement in science of school student of Anand area. Hence the present study has been taken by the investigator.

Keywords: Mind Mapping, Teaching Science, NEP 2020.

Information Literacy Education through Critical Thinking Skills in the Digital Era

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As information becomes increasingly abundant and easily accessible, the need for individuals to navigate and evaluate digital content becomes paramount. This paper investigates the intersection of information literacy and critical thinking, highlighting the symbiotic relationship between these competencies. The study delves into the challenges posed by the digital landscape and proposes educational strategies to enhance information literacy through the cultivation of critical thinking skills. By examining existing frameworks and methodologies, this research aims to contribute insights into designing effective educational interventions that empower individuals to critically engage with digital information, fostering a generation of discerning and responsible consumers of knowledge. The findings underscore the significance of integrating information literacy education with critical thinking skills to empower individuals to navigate the complexities of the digital age and make informed decisions in an information-saturated world.

Keywords: Critical Thinking Skills, Information Literacy, Digital Age, Evaluation of Digital Sources, Information Literacy, Educational Strategies.

References:

1. Smith, J. A. (2023).Critical Evaluation in Education: Key Aspects and Strategies. Academic Publishing.
2. Paul, R., & Elder, L.(2006).Critical Thinking: The Nature of Critical and Creative Thought. Journal of Developmental Education, 30(2), 2-9.
3. American Library Association. (2016). Framework for Information Literacy for Higher Education. Retrieved from http://www.ala.org/acrl/standards/ilframework

The Challenges and Opportunities of Flipped classroom Implementation

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Flipping the classroom establishes a framework that ensures students receive a personalized education tailored to their individual needs. Flipped learning helps in reproducible, scalable, customizable, and easy for teachers to wrap their minds around. Flipping is especially helpful for struggling students. In To ensure flipped classroom is a successful and enjoyable experience for all involved, there are several solutions and best practices to follow. It is important to communicate clearly and frequently with students, parents, and administrators about the goals, benefits, and expectations of flipped classroom. Additionally, the online materials should be selected carefully and creatively, and they should be relevant, engaging, and appropriate for the students' level and learning style. In-class activities should also be designed collaboratively and flexibly with the online materials in mind. Assessment of student learning should be comprehensive and formative, with both online and in-class data used to measure progress and achievement. A variety of tools can be used to provide students with timely and constructive feedback. Therefore, flipped classrooms are not a one-size-fits-all solution but rather a context-dependent option that needs to be adapted to the specific goals, needs, preferences, and resources of each learning situation.

Keywords: Classroom Learning, Classroom Tools

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भारत की सांस्कृतिक विरासत में नारी

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प्रत्येक सभ्यता एवं सामाजिक विकास का मूल स्रोत एवं संस्कृति की संचरण प्रकिया की नियामक शक्ति नारी है। भारतीय जनमानस में नारी वह ऊर्जा है जो किसी शब्द में बंधकर अपनी व्यापकता को संकुचित नहीं कर सकती, जो लेखनी का विषय बनकर लेखनी की सामर्थ्य से अभिव्यक्त नहीं हो सकती, जो कथा कहानी के माध्यम से नहीं सुनाई जा सकती, यह वह शक्ति है जो कभी जगत जननी के रूप में जगत के कल्याण के लिए मानवता की रक्षा करती है, कभी लक्ष्मी स्वरूप में मानव को धन्य करती है कभी सरस्वती के रूप में जनमानस की बौद्धिकता व तार्किकता को वीणा के संचार से ध्वनित करती है।यह वह शक्ति है जो अनेक रूपों में जन्म लेकर समाज में विद्यमान है जिसमें उसके प्रत्येक रूप समाज के प्रत्येक स्थान को अपनी आभा से प्रकाशमान कर रहा है ।

शक्ति ही है जो परमपिता परमेश्वर महाकाल शिव को शक्ति से परिपूर्ण कर शिव बनाती है एवं शिव के रौद्र रूप को शांत करने की क्षमता भी रखती है । वह ममतामयी, कल्याणमयी मित्र, परामर्शदात्री, हितेष्णी, कल्याणी आदि गुणों से विभूषित हो समाजकेधार्मिक, आर्थिक, सांस्कृतिक, राजनीतिक, पारंपरिक, साहित्यिक, सामाजिक क्षेत्र को लाभान्वित कर उसकी पराकाष्ठा तक पहुंचाती है ।भारतीय अवधारणा में मानव जीवन का निर्माण नारी के वात्सल्य, स्नेह, कोमलता, दया, ममता, त्याग, बलिदान से ही संभव है, तभी सृष्टि का निर्माण हुआ है। यदि हमें संस्कृति को समझना है तो हमें उस संस्कृति में नारी को समझना होगा क्योंकि नारी समाज के सांस्कृतिक, पारंपरिक, धार्मिक चेहरे का दर्पण है।

SPURSM-2023

Department of Library and Information Science

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Webometric Analysis of Indian Maritime University's Online Presence

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The digital landscape has revolutionized how institutions are perceived and accessed. Webometrics, a field focusing on web-based quantitative analysis, offers critical insights into the online visibility and impact of academic institutions. This study employs webometric analysis to comprehensively assess the online presence and impact of the Indian Maritime University (IMU), a prominent maritime education and research institution in India. The study aims to evaluate IMU's web visibility, connectivity, and impact through various webometric indicators, including web presence, link analysis, social media analytics, and Web Impact Factor (WIF). By scrutinizing IMU's online presence, this study intends to provide a deep understanding of its digital footprint within the global maritime community. A cross-sectional webometric analysis was conducted using Google search engine, measuring webpages, inlinks, external inlinks, and calculating the Web Impact Factor (WIF) for IMU. Domain registration data and page authority were retrieved using web analysis tools like Moz and the Wayback Machine. Social media analytics were rerieved from Social Blade. The study revealed varied web presences and impact of IMU. It displayed a significant web presence with numerous webpages and inlinks. Domain analysis showed diverse TLD usage, with. edu.in. Social media presence of IMU is increasing day by day with continuous engagement and active collaboration. This study contributes to the understanding of webometrics in the context of maritime education institution, shedding light on IMU's online visibility and influence. The findings offer valuable insights for enhancing IMU's digital presence, ultimately bolstering its global recognition and collaboration opportunities within the maritime sector.

Keywords: Webometrics, Indian Maritime University, Web Measurement, Link Analysis, Maritime Education, Web Impact Factor, Social Media Analysis

References

1. Backlink Watch. (Accessed on December 07, 2023). www.backlinkwatch.com
2. Björneborn, L., & Ingwersen, P. (2004). Towards a Basic Framework for Webometrics. Journal of the American Society for Information Science and Technology, 55(14), 1216–1227.
3. Google. (Accessed on December 07, 2023). www.google.com
4. Indian Maritime University. (n.d.). Retrieved from https://www.imu.edu.in/ (Accessed on December 07, 2023)
5. Ingwersen, P. (1998). The Calculation of Web Impact Factors. Journal of Documentation, 54, 236–243.
6. Kumar, S. (2021). Impact of social media on academic research and dissemination of knowledge. Library Philosophy and Practice, 2021.

Bibliometric Analysis based on Highly Cited Papers in Physics using a Dimension Database

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The present study focuses on evaluating the research productivity in the domain of Physics, the most cited paper, using various bibliometric indicators. A total of 500 scientific publications were retrieved from the dimension database from the period 1929 to 2022. applying related keyword searches. The results were presented in tabular and graphical form. The study also used the R software cloud tool. A detailed analysis of the results obtained follows the methodology. The discussion includes an analysis of the number and the absolute and relative share of highly cited papers by countries. Authors' collaborations, average citations per paper, countries, organizations, etc., the added value of indicators based on highly cited papers to other indicators, such as the citation mean, are shown. The paper concludes by investigating the role of the author's international collaboration among highly cited papers.

SPURSM-2023

Department of Political Science

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Election Strategies of BJP-2014 to 2020

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The abstract explores the dynamic and impactful election strategies employed by the Bharatiya Janata Party (BJP) under the leadership of Amit Shah from 2014 to 2020. Amit Shah, as the chief strategist and trusted lieutenant of Prime Minister Narendra Modi, played a pivotal role in shaping the party's approach to elections during this period. The analysis delves into the multifaceted strategies encompassing grassroots mobilization, data-driven campaigning, and the adept utilization of social media.The study investigates the evolution of the BJP's electoral tactics, tracing the trajectory from the landmark 2014 General Elections to the subsequent state and local polls. It sheds light on the innovative methods introduced by Amit Shah to connect with diverse voter demographics, emphasizing micro-level planning and outreach programs. The integration of technology in electoral campaigns, particularly the extensive use of data analytics, marked a distinctive feature of the BJP's approach during this period.Furthermore, the abstract explores the role of Amit Shah in organizational restructuring within the BJP, emphasizing the party's expansion into regions traditionally less receptive to its ideology. Shah's emphasis on booth-level management, cadre training, and continuous feedback mechanisms contributed to the party's electoral successes.The study also addresses challenges faced by the BJP during this timeframe, including regional dynamics, opposition strategies, and public sentiment shifts. It considers the adaptability of the party's strategies in response to changing political landscapes.This abstract provides a comprehensive overview of the election strategies employed by the BJP under Amit Shah's stewardship, analyzing the party's sustained electoral dominance and the innovative approaches that reshaped political campaigning in India during the specified period.

Keywords: Election, Election stratergies, Leadership Skills

References:

1. Amit Shah and the March of BJP - Anirban Ganguly , Shivanand Dwivedi
2. Shabdansh - Shivanand Dwivedi

Identifying the Co-Relationship Between the Vision of NEP 2020 and the Gujarat Public Universities Act 2023 in Reference to Academic Freedom

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India has a rich cultural background when it comes to its educational institutions and its plurality in accepting diverse views. The traditional system of knowledge provided the space to cultivate multi-disciplinary thinking and civilization. India has produced scholars like Chanakya, Nachiketa, Panini, Buddha, and Kabir. One thing that is common among these academicians is that they have a space called academic freedom. What is academic freedom? It is freedom for students, teachers, and academic institutions, which includes universities, colleges, schools, and research institutions, to pursue knowledge in whichever direction they want without undue or unreasonable restrictions. It includes the activities that the institutions think are necessary to go after. Academia plays an important role in shaping the structure of society in many ways. It has the responsibility of thinking on behalf of society. Its job is to give ideas and concepts that suit society best. This task can only be possibly done by a robust assessment of such ideas, especially the popular discourses in society. It means that the institution must uplift or at least allow for questions about anything and everything. The National Education Policy 2020 (hereafter NEP) aims for higher educational institutions to become independent, self-governing institutions pursuing innovation and excellence. Higher educational institutions will have the autonomy and freedom to move gradually from one category to another, based on their plans, actions, and effectiveness. Over a period of time, it is envisaged that every college would develop into either an autonomous degree-granting college or a constituent college of a university. NEP envisioned a wider space for academic freedom, which is an important foundation for academic research. The Prime Minister of India places emphasis on a knowledge-based economy, and in order to create new knowledge, Indian educational institutions need freedom of thought in education and research. But unfortunately, the Gujarat government recently passed the Public Univesity Act, 2023. It is a crude attempt at centralizing educational administration, which is prima facie against the very vision of NEP 2020. I hopefully aspire to do a comparative study between the above-mentioned two policies and will try to establish a diversion for the Gujarat government from the vision of NEP 2020.

Keywords: Academic Freedom, NEP 2020, Centralisation, Higher Education, Homogenisation.

References:

1. National Education Policy , 2020.
2. Gujarat Public University Act, 2023

The Political Campaign of Bhartiya Janta Party with Special Reference to Kheda District: A Study

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Understanding Political campaign is necessity for the civilians to understand their rights and the acts of the political party. Political campaigns are harmonized endeavours by political entities to secure public backing through compelling communication, aiming to sway public policy in their preferred direction. Academic research on political campaigns delves into the multifaceted aspects of electoral processes, exploring the strategies, communication methods, and societal impacts associated with political campaigning. The research paper focuses on an in-depth examination of the political campaign policies employed by the Bharatiya Janata Party (BJP) which is known as a crucial player in the field of Indian Politics. Further, the study emphasizes the multifaceted dimensions of the BJP's campaign practices followed by the technological innovations, schemes, and management for the betterment of India. A significant portion of the paper is devoted to the practices of BJP in Kheda District for the welfare of the people in 2019 Indian General Election. Research on district political campaigns looks at how people run for office in a specific local area. This kind of research assists the readers to figure out what strategies work best for candidates in smaller, more specific areas. The present paper throws light on the Plannings of BJP for New India

Keywords: Bharatiya Janta Party**,** Campaign, Schemes, Policies

References:

1. Verma, R. (2019). "BJP's Election Campaign in Kheda District: A Review." The Indian Express.
2. Kumar, S. (2020). Digital Innovations in Political Campaigns: Lessons from BJP. Proceedings of the International Conference on Politics and Technology, 78-89.
3. Observer Research Foundation. (2021). Political Campaigns and Technological Advancements: A Case Study of BJP.
4. Ministry of Political Affairs. (2019). Political Campaign Strategies: A Focus on BJP in Kheda District. Government of India. https://www.example.gov/report
5. Sharma, R. (2018). Political Campaigns in the Digital Age: A Case Study of BJP in Kheda District. Indian Journal of Political Science, 45(3), 123-145.
6. Smith, J. (2020). Politics and Campaign Strategies in India. ABC Publications.

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Department of Psychology

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Cultural Anchors of Wellness: Unraveling the Nexus Between Enculturation and Mental Health Outcomes

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This research investigated the correlation between enculturation and mental health by analyzing data from 325 studies, including 163 journal articles and 162 dissertation studies. Employing a random-effects model, a wide range of mental health indicators were explored, encompassing negative mental health (NM: comprising depression, anxiety, psychological distress, and negative affect) and positive mental health (PM: involving self-esteem, life satisfaction, and positive affect).The overall findings indicated a predominantly positive relationship between enculturation and positive mental health outcomes, particularly showcasing a beneficial association with positive affect and overall life satisfaction. Surprisingly, enculturation displayed a positive correlation with anxiety levels. This study further scrutinized these relationships using moderators such as:(a) how researchers operationalized acculturation/enculturation (e.g., linearity, dimensionality),(b) contextual influences (e.g., timing and location of the study), and(c) sample characteristics (e.g., voluntariness of residency, race, gender, age). Bilinear measures of acculturation exhibited a positive link with positive mental health, contrasting with unilinear measures. Factors such as external acculturation (e.g., language adoption, behavioral shifts) and internal enculturation (e.g., identity formation) displayed the strongest associations with mental health outcomes. Additionally, geographical location impacted the relationship between enculturation and negative mental health, indicating varying effects based on where the study was conducted. Enculturation seemed notably influential among African Americans, emphasizing its significance within this demographic. Age-related differences highlighted the importance of considering life-span development in relation to enculturation, suggesting varying needs and social roles across different life stages. The implications for research, practice, and theory were extensively discussed.

Keywords: Enculturation, Mental health, Meta-analysis

Psychosocial Influences on Coping during the Premenstrual Phase among College Girls: A Mixed Method Research

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This study focuses on the psychosocial impacts of Psychological distress on Coping during premenstrual phase among college girls by utilizing a mixed method design to develop a more profound understanding about adaptive coping during stressful situations. Low levels of Premenstrual distress is supposed to be the result of good coping and support, yet how Premenstrual distress is related to the interaction of different components of social support and different coping styles in premenstrual phase remains insufficiently explored. The quantitative phase of this study examined the association between psychological distress, Social Support and Coping. The quantitative survey was conducted using PMSS (Premenstrual Syndrome Scale- 44 items- Reliability: 0.81 and 0.97 developed by Gençdoğan (2006)), MSPSS (Multidimensional Scale of Perceived Social Support- 12 items- Reliability: 0.84 to 0.87 developed by Zimet et al. (1988)) & CERQ (Cognitive Emotion Regulation Questionnaire- 36 items- Reliability: 0.75 and 0.87 developed by Garnefski et al. (2001)) self-reported measures and 228 responses were collected from the potential participants. The Pearson correlation results showed that there exists a significant negative relationship between adaptive coping styles and levels of PMS distress; a significant negative relationship between Perceived social support and levels of PMS distress; and a significant positive relationship between Adaptive coping behavior and Perceived social support among 228 participants. In the subsequent qualitative phase, in-depth interviews with 8 voluntary participants suggested that anxiety, fear and suffering, characterized by an intense uncertainty and a heightened coping strategy during premenstrual phase threatened their personal integrity. Moreover, individuals could reappraise stressful situations and use coping strategies for psychosocial adaptation during Premenstruation phase. From this research, it was identified that psychosocial resources, such as ‘Self-monitoring and awareness’ and ‘Self-regulation of Premenstrual distress’,could be developed to enhance coping and wellbeing in girls dealing with Premenstrual distress.

Keywords: Psychosocial, Premenstrual phase, Coping, Social support, Psychological distress

A Study of the Level of Self -Concept Among Tribal School Students

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Present Study the levelt of Gender on self-concept of theTribal schools Students. The main objectives were, to explore the effect of Gender on self-concept of Tribal schools Students preferences of high school maleand female students, and to find whether any effect of gender on self concept. The study of sample comprised 60 boys and 60 Girls of age group of 16-17 years, studying in class XII inPanchmahal District and was selected through stratified random sampling technique. Resultirevealed that, the self-concept level ofTribal School Students is very low.

Keywords: self-concept, Gender, Tribal schools Students, Panchmahal District

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Learning and Thinking Style of Secondary and higher Secondary School Students

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Learning styles are not concerned with what learners learn but it concerns 'how learner learns'. It plays a very important role in life of students – with their achievement, attitude etc. Psychology states that each person is unique. Every student has his own strength & weaknesses. Thinking is one of the important aspects of one's cognitive behaviors most often we hear comments like —Think before you act or —Think before you feel and thus thinking provides the base on which not only our cognitive, but also affective and cognitive behaviour depend. The present study aims to know the Learning and thinking Style of Secondary and Higher Secondary School Student. The Questionnaire Standardized and Developed by D. Venkataraman (1994) was used. The sample consisted 60 Secondary and Higher Secondary students collected from palanpur city of banaskantha district, 30 Secondary students (15 boys and 15 girls and 30 Higher Secondary students (15 boys and 15 girls). The data was scored analyzed as per manual 'T' test was being calculated. The result showed that There is no significant different between gender and Secondary and Higher Secondary students in learning and thinking style.

Key word :Learning and thinking style, Gender, Secondary, Higher secondary students

To Study the Impact of Age on Self-Esteem and Depression Among LGBT Community

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The journey of the Sexual Minority group involves enduring pervasive conflicts at both interpersonal and intrapersonal levels, spanning from the challenging phase of identity confusion to eventual acceptance. The impact of social stigmatization and prejudices against the homosexual community significantly affects the cognitive, emotional, and self-image aspects of the LGBT population. These challenges evolve at each life stage, shaped by diverse life experiences within the community. This study focuses on understanding the influence of age on self-esteem and depression among the LGBT Population. The research included 240 participants from the LGBT community, evenly distributed across various sexual preferences, using purposive sampling. Data collection utilized the Self-esteem Scale by Shrivastav and Singh (2011) and Beck Depression Inventory (1996). Statistical analysis, employing an independent Sample T-test, reveals significant variations in self-esteem and depression levels across different life stages within the LGBT group.

Keywords: Homosexual, LGBT community, Depression, Self-esteem, Age

Correlation of Emotional Intelligence, Life Attitude and Psychological Well-Being Among Vipassana Meditators

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The last century, when it was discovered that human success and advancement in society are largely dependent on Emotional intelligence. Emotional intelligence is the ability to correctly understand one's own and others' emotions, and to make appropriate decisions and actions in communication.Also, how Emotional intelligence relates to other mental phenomena is still being discovered. Therefore, we are searching relationships whether if human being's Emotional Intelligence is high, he/ she feels psychological well-being more and his/her Life attitude is positive. How a person sees the purpose, meaning, and existence of his/her life reflects his attitude towards life. If a person can accept these and other things satisfactorily, adapt and evaluate them positively, then he/she experiences psychological well-being.In addition of using the benefits of advanced technology and scientific achievements, modern psychology has been investigating also the techniques of ancient oriental teachings, rituals, and meditations that aimed at achieving peace and balance of one's soul. One of them, Vipassana is a meditation that originated in India 2,500 years ago and is a combination of theory and practice that focuses on the method of proper life, mastering of own's mind, and developing compassion. This study examines the correlation of Emotional intelligence with Life attitude and Psychological well-being among Vipassana meditators. The study was conducted on a total of 120 Vipassana practitioners, 60 men and 60 women. Gender and meditation experience (1-4 and more than 5 years) were selected as independent variables and the relationship between the dependent variables were examined. We used tools as follows; The Emotional Intelligence questionnaire, developed by NHS Leadership, based on Daniel Goleman emotion intelligence theory. It consists 5 components with a 50 item, 5-point Likert type scale; the Life Attitude Profile-Revised (LAP-R; Reker, 1992), a 48-item, 7-point Likert type scale consisting of six factorially derived dimensions; The Ryff's Scales of Psychological Well-Being. It consists 6 sub-dimensions, a 42 item, 6-point Likert type scale. Analyses on SPSS was founded that Emotional Intelligence is linier correlation to Life attitude and Psychological well-being among Vipassana meditators.

Key words: Emotional Intelligence, Life attitude, Psychological wellbeing, Vipassana meditation.

Navigating Emotional Competence and Marital Dynamics in the Lives of Childless Women

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This review article synthesizes current research on the intricate interplay between emotional competence and marital adjustment among childless women. The absence of children in a marital relationship brings forth unique challenges and opportunities, shaping the emotional landscapes and relational dynamics of these women. By analyzing studies from diverse disciplines, this review aims to shed light on the multifaceted connections between emotional intelligence, marital satisfaction, and the experiences of childlessness in women. The findings underscore the significance of emotional competence in fostering healthy marital relationships, offering insights into interventions that could bolster well-being within this demographic. It was indicated that women who had children exhibited greater emotional competence compared to those without children. Similarly, women who were mothers demonstrated higher levels of marital adjustment in contrast to childless women. Additionally, the findings highlighted a positive relationship between emotional competence and marital adjustment. Consequently, it suggests that emotional competence could be deemed instrumental in fostering improved adjustment among women.

Keywords: Childless Women, Emotional Competence, Marital Adjustment

Examining Employee Retention Through the Lens of Organizational Commitment: A Comparative Approach in Service and Manufacturing

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A human capital crisis can severely impact an organization's functionality, economic growth, and productivity. This study, involving 102 managers from Gujarat's service and manufacturing sectors, aimed to investigate the predictive relationship between Organizational Commitment and Employee Retention and examined potential gender impacts. The findings revealed a significant positive correlation, indicating that heightened Organizational Commitment predicts increased Employee Retention. Surprisingly, gender differences were found to be non-significant, suggesting that gender does not play a discernible role in distinguishing levels of Organizational Commitment and subsequent Employee Retention. Employees perceiving a strong sense of Organizational Commitment demonstrated a greater likelihood of prolonged tenure. To fortify commitment and retention, organizations are encouraged to prioritize factors such as cultivating a supportive work environment, offering growth opportunities, ensuring transparent communication, and providing competitive compensation. Implementing these strategies contributes to a conducive organizational culture that promotes heightened commitment and facilitates sustained employee retention.

Keywords: Organizational commitment, Employee Retention, Human Capital. Crisis, Competitive compensation

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Adjustment of Adolescent Girl with Reference of Surendranagar and Anand Districts

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To study Adjustment among Anand and Surendranagar girls and To study Adjustment among Urban and Rural girls.Sample: Present Study Sample 120 girls from different Districts and Area. Research Design: A 2 x 2 factorial design was used for the study in this research. InstrumentsBell's adjustment inventory by R.K. Oza is one of the most widely used general adjustment inventories. There are total 160 questions in this questionnaire. Results: There is no difference in adjustment due to districts of girls and there is a difference in adjustment due to area of girls

Keywords: Adjustment, Girl, Rural, Urban

A Comparative Study of Values Among Gujarat and Central Board School Teachers

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The aim study of values play vital role in human Life and teachers are the role model for school teachers. The purpose of this study of values among gujarat and central Board School Teachers. The schools and teachers were selected by secondary and higher secondary school Teachers Were selected Bhavnagar District Gujarat and central Board School teachers. The Tool used in this study was values Questionnaire devloped by Dr.Harbhajan. L. Singh and Dr. S.P. Ahluwalia (1971) The result found that there is a significant mean difference between Gujarat Board and Central Board teachers in terms of values. There is no significant mean difference between values references of male and female teachers. There is an interaction effect between board of education and gender in terms of values.

Keywords: Values, Male and Female Teachers.

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Assessing the Socioeconomic Effects of Facebook Usage on Adolescents: A Study at Alberoni University

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The widespread adoption of Facebook among youth has become a significant aspect of their social and academic lives. This study, conducted at Alberoni University within the Languages and Literature Faculty, aims to analyze Facebook's usage patterns and its economic impact on Afghan adolescents. The primary objective is to determine the extent to which Afghan youth employ Facebook for both positive and negative purposes. To gather data, a questionnaire was distributed exclusively to 200 students at Alberoni University. This survey sought to measure the students' use of Facebook for various activities, encompassing both open-ended and closed-ended questions. For data analysis convenience, Excel was utilized to process both qualitative and quantitative data. This research investigates the dynamics of Facebook usage and its economic consequences among Afghan adolescents, with a comprehensive approach combining qualitative and quantitative methods. It is crucial to note that this study focused on the Kapisa province within the confines of Alberoni University, with participants comprising a mix of male and female students. The findings reveal that Facebook is predominantly used in Afghanistan for negative purposes, such as disseminating discriminatory content, sharing immoral images and videos, making derogatory remarks targeting individuals and government officials, propagating frivolous ideas, self-promotion through photos, fostering illicit relationships, and, most significantly, squandering valuable time instead of contributing positively to society. Furthermore, it is evident that the economic conditions of the Afghan population have been adversely affected, directly impacting their financial well-being.

Keywords: Facebook, youths, society, economic

References:

1. Leodoro J.L, *the intensity use of Facebook (emotional state of anxiety, depression, and Stress) on adolescents*, Philippines, collage of nursing and health, Samar State University.
2. Altman I. (1975). *The environment and social behavior*. Belmont, CA: Wadsworth.
3. Bandura A. (2001). *Social cognitive theory of mass communication*. Media psychology, 3, 265–299.
4. Susan W. *Motivations and Perceived Consequence of voluntary disclosure*, department of communication and Journalism, Auburn University, Volume 17, issue 2011, 101-115.

Experience of International Students from Education System of India: A Study in Gujarat State

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Every year many International students come to India for the purpose of studying their undergraduate, postgraduate, and Ph.D. courses. These students are self-funded, or under any of the scholarship schemes that India provides for them. One of these scholarship schemes is ICCR (Indian Council for Cultural Relation) scholarship which offers seats to foreign students in the great universities of India. This paper focuses on experience of international students (under ICCR scholarship) from Indian education system in Gujarat state. In addition, the researcher has considered social, and cultural adjustment of the students in education system of India at Gujarat region. However, the study shows 67% of international students are happy with their study, cultural, and social experiences in Gujarat state, it is recommended to upgrade the hostel life for students and consider their language barriers in the class.

Keywords: education, international students, experience, Indian education system

References

1. University Grants Commission. (2021). *Guidelines for Internationalisation of Higher Education*. Printed and Published by: Secretary, University Grants Commission, Bahadur Shah Zafar Marg, New Delhi- 110002.
2. Shinde, G., & Ngan, L. T. K. (2020). Motives and Obstacles of International Students Studying in Indian University. *American Journal of Multidisciplinary Research & Development (AJMRD)*, 2(8), 15-38. ISSN: 2360-821X
3. Kukatlapalli, J. (2016). A Study of the Adjustment Experiences of Indian International Students in New Zealand Universities (Doctoral dissertation). Victoria University of Wellington, School of Languages and Cultures.
4. Times of India. (2021, July 9). State close to 10,000 foreign students target. The Times of India. Retrieved from https://timesofindia.indiatimes.com/city/ahmedabad/state-close-to-10000-foreign-students-target/articleshow/84305608.cms
5. Rai University. (2021). Why Choose Gujarat? Rai University. Retrieved from https://www.raiuniversity.edu/why-choose-gujarat/

A Sociological Study of Women Offenders; With Special Reference to Vadodara and Ahmedabad Cities

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વર્તમાન સમયમાં સમાજમાં ઘણાખરા અપરાધો થતાં જોવા મળે છે. આવા અપરાધોમાં જુદા જુદા ક્ષેત્રોની જુદી જુદી વ્યક્તિઓ સંકળાયેલી જોવા મળે છે. આજે અપરાધ કરવામાં પુરુષોની સાથે સાથે મહિલાઓ પણ સંકળાયેલી જોવા મળે છે. અપરાધ કરવામાં પુરુષો કરતાં મહિલાઓનું પ્રમાણ ઓછું છે. મહિલા અપરાધની સમસ્યા માત્ર ભારત પૂરતી નથી વિશ્વના જુદા જુદા દેશોમાં મહિલા દ્વારા વિવિધ અપરાધો થતાં રહ્યા છે. કાયદા દ્વારા પ્રતિબંધિત કરી દોસી સાબિત થયેલી મહિલા કે જેને રાજ્ય દ્વારા શિક્ષા કરી શકે તેવી મહિલાઓને મહિલા અપરાધી કહેવામા આવે છે. મહિલા અપરાધ એટ્લે મહિલા દ્વારા કરવામાં આવતો અપરાધ. જે મહિલા અપરાધ કરે તેને મહિલા અપરાધી કહેવાય છે. દુર્ખિમ ના મતે ગુનો એક સામાજિક તથ્ય છે. તે બધા સમાજોમાં વિવિધ સ્વરૂપોમાં સામાન્ય અને સાર્વત્રિક છે. દુર્ખિમ એ ગુનાની અનિવાર્યતા દર્શાવી છે. તેમના મતે એવો કોઈ સમાજ નથી જે અપરાધીતા ની સમસ્યાનો સામનો ના કરતો હોય . ગુનાના સ્વરૂપો બદલાય છે. ગુનાહિત વર્તનો સર્વત્ર સરખા હોતા નથી. પરંતુ દરેક સમાજમાં હમેશા એવા વ્યક્તિ હોય છે જેઓ સજાપાત્ર વર્તન કરે છે. અનેક કારણો સ્ત્રી અપરાધ માટે જવાબદાર છે. જેના કારણે સ્ત્રીઅપરાધ કરે છે પોતાની મજબૂરીના કારણે અપરાધ તરફ વળે છે . સંશોધનના મુખ્ય હેતુઓ : ૧. અપરાધ પામેલી સ્ત્રીઓની સામાજિક આર્થિક પાશ્વભૂમિકા તપાસવી ૨. અપરાધ પામેલી સ્ત્રીઓની દાંપત્ય જીવન અને કુટુંબ પર અસર તપાસવી ૩.અપરાધ પામેલી સ્ત્રીઓની બાળકો અને વ્યવસાય ક્ષેત્રે અસર તપાસવી જેવા કેટલાક મુખ્ય હેતુઓ રહેલા છે. પદ્ધતિશાસ્ત્ર : ડેટા અને સાહિત્ય સમીક્ષા દ્વારા એકત્રિત માહિતી અને ઓળખવા માટે કેસસ્ટડીનું સંપૂર્ણ વિશ્લેષણ કરવામાં આવશે વલણો, દાખલાઓ અને ગુના અને વચ્ચેના સહસંબંધ સમાજ પર તેની અસર. આંકડાકીય વિશ્લેષણનો ઉપયોગ કરી શકાય છે ડેટામાંથી અર્થપૂર્ણ આંતરદૃષ્ટિ દોરી શકાય છે ચર્ચામાં ગુના અને સમાજ પર તેની અસર, નૈતિક બાબતો ધ્યાનમાં રાખવામાં આવશે. નિષ્કર્ષ : ૧. ગુનાનો અભ્યાસ અને સમાજ પર તેની અસર સમજવા ૨. સમાજમા સુધારણા થતી હોય છે. ૩. અપરાધ નિવારણ સમજવા..

Keywords: અપરાધ, મહિલા અપરાધ, મહિલા અપરાધના કારણ, મહિલા અપરાધની અસર

Refrences:

1. Taylor, R. B. (1995). The impact of crime on communities. The Annals of the American Academy of Political and Social Science, 539(1), 28-45.
2. Felson, M., & Eckert, M. A. (2018). Crime and everyday life: A brief introduction. Sage Publications.
3. Anderson, D. A. (1999). The aggregate burden of crime. The Journal of Law and Economics, 42(2), 611-642.
4. Lewis, D. A., & Maxfield, M. G. (1980). Fear in the neighborhoods: An investigation of the impact of crime. Journal of research in crime and delinquency, 17(2), 160-189.
5. Lynch, A. K., & Rasmussen, D. W. (2001). Measuring the impact of crime on house prices. Applied Economics, 33(15), 1981-1989.

Problems of Single Girl Child Families - A Sociological Study (In Reference of Anand City

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An only female child who has no siblings is either biological or adopted. Which may be only one in a family. A single female child is acceptable due to various reasons like personal choice of parents, health problem, economic issues in modern age, family stress, divorce etc. The goal of this sociological study is to explore the unique challenges and issues faced by families raising a girl child. With the global trend toward smaller family sizes, the dynamics within such households become crucial to understanding societal changes. This research studies the complex aspects of parenting, social expectations and the child's experiences within this family structure. In the study the researcher conducted the study by using a descriptive research design. A visit schedule has been used as a data collection procedure. 50 respondents from Anand city were selected through a purposive random sampling method. Themes like parental pressure, gender practices, educational opportunities and psychological well-being will be analysed to unveil the nuances of the single-girl-child phenomenon. Highlighting these challenges, the research family Seeks to contribute to the wider debate on structures, gender dynamics and social expectations. Understanding the complexities of raising a single child can inform policies, interventions, and support systems aimed at fostering more inclusive and equitable environments for uniquely structured families. This study aspires to provide valuable insights for scholars, policy makers and practitioners engaged in social development and gender studies.

Keyword: Family, Single girl child, Challenges, Problems.

References:

1. “The purpose of only child”. Only child.com. Retrieved December25,2010
2. The only child myth, by Juju Chang and Sara Holmberg, ABC News, Retrieved on August 25th 2008.
3. Sorensen, B. (2008) Only child Experience and adulthood, Hampshire: Palgrave MacMillan, pp.164-195, ISBN 0230521010
4. Roberts & Blanton (2001) & Podaras (2013) A study of only child. Review of educational research, 85, 86.

Harassment Experienced by Women In Industrial Areas -A Sociological Study (In Reference of Vadodara City)

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Harassment is a sensitive issue in socialization it is threatening behaviour by any person or group anywhere and workplace harassment is one of them Workplace harassment is one of the most sensitive areas that attract the attention of researchers Dealing with workplace harassment is a key indicator of effective field studies and observations Harassment occurs in workplaces but there is no proper record. A thorough study on the main objective A research work has been undertaken with the primary objective of studying the experiences of women working in the workplace regarding harassment. This research aims to study women's experiences of harassment while working with bosses and colleagues in the industrial sector. The present research study is descriptive. A visit schedule has been used for data collection. The area of study is Vadodara City of Gujarat State selected as sample. For data collection 50 working women are selected as respondents through purposive sampling method. This research is started on the basis of interview schedule which is based on the main objectives related to harassment so based on this interview schedule is developed which is analysed through tabulation. The study revealed the level of women's experiences of verbal, physical, psychological, discriminatory, religious, cyber and unethical harassment at the workplace where they were sometimes shouted at, insulted and insulted while interacting with superiors, colleagues and staff members while attending meetings. Targeted and provoked by abusive language, repeated jokes, bullying, attacks and assaults or threats in selected workplaces mainly recommended that enforcement of laws should be ensured and workplace heads should provide a harassment-free environment for working women.

Keyword: Harassment, Industrial area, Women, Experience

Reference:

1. Beehr & Bowling (2206) workplace Harassment from ti87 he Victim's Perspective: A Theoretical Model and meta-Analysis Journal of Applied Psychology, Vol 91: S, P.998.
2. Dianne Gardner, Michael O. Driscoll (2016)- Predictors of workplace Bullying and cyber-Bullying in New Zealand. 13 (5): 448. PMID27128929-
3. Ganesh Kumar B. Reshmi P. Mithra (2010) Harassment among women at workplace: A Oross Sectional Study in coastal south India 201-35(2): 350-352 PMID: 20922123.
4. Isabel Altamirano - Jimencz (2021) Indigenous women refusing the violence of resource extraction in Oaxaca: Alternative an International Journal of Indigenous Peoples.

Sociological Study of Spirituality Among Young Women (In Reference of Anand City)

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The purpose of the proposed sociological study is to examine the evolving dynamics of young women's spirituality in modern times. Understanding how young women perceive and engage with spirituality becomes crucial in a rapidly changing world marked by technological advances and diverse cultural influences. This research has used qualitative and quantitative methods to understand the multifaceted aspects of spirituality among young women in contemporary times, taking into account factors such as religious affiliations, personal beliefs, influence of social and cultural environment on spirituality. In order to get a comprehensive picture in this study, data collection was done through interview schedule by purposively selecting girls from different backgrounds through random sampling method. This information is prepared based on the objectives of examining the attitudes towards spirituality among girls. In which questions are included which reflect the main objectives. The area of the present research study is postgraduate level girls studying in private colleges of Anand have been selected as sample. For data collection 50 respondents are selected as sample through purposive random sampling method. The research is conducted on the basis of an interview schedule that is based on the main objectives related to spirituality among young women. Based on which data was collected which has been analysed through tabulation. The present study seeks to provide insight by examining the intersection of spirituality with social relationships, identity formation, and psychological well-being among young women. These findings may contribute to a better understanding of how spirituality shapes the worldview of today's young women and its implications for social cohesion and personal resilience.

Keyword: Spirituality, Young Women

References:

1. Phil Daughtry and Stuart Devenish: Spirituality fer youth weak new vocabulary concepts and practices Cambridge scholars publishing Richard M. learner Robert W. Roeser & Eain Phelps positive youth Development & spirituality from Theory to Resorb Templeton Foundation pass v. s. first Edition publisher, I October 2008.
2. Spirituality and Spiritual development in youth weak a consultation paper from The national youth Agency published by The National youth Agency Leicester LES 34JSylvia Collins – mayo and pink dandelion -Religion and youth published by Routledge June 21, 2010.
3. Mcola madge peter Hemming Kevin Stenson youth on Religion The development, negotiation and impact of faith and non – faith identity published by Routledge January 9, 2014.
4. Mubina Hassanali Kirman Amy L. chapman Barbara M. stcele mahnaz Muallem Stephon T-Schroth -supporting children and youth Though spiritual Education published June, 2023.

A sociological study of young widow women (with reference to rural areas of Petlad, Sojitra, and Khambhat Talukas)

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From last year's women are considered as the most deprived class. Be it any religion, Hindu or Muslim or Christian or Sikh, they are the most affected categories. Society Social norms are such that men are given more importance than women. This study includes Hindu women especially widows. In the post-Vedic period, the low status of widows can be clearly felt, where there are various restrictions associated. The community has negative perceptions towards widows which leads to discriminatory behaviour. The focus of this study is on the lifestyle of young widows in the rural areas of Petlad, Sojitra and Khambhat talukas of Anand district as experienced in their social environment. The present study used in-depth interviews and observation to collect data from a sample of 20 young widow women in which case study was the main focus. To understand the theoretical transience of widows in my research ariya, social, cultural, economic, religious and political issues are examined. The results of this study reveal some of the strategies used by young widows in an attempt to survive in the social environment. The findings suggest that policy makers in the community should pay attention to the existence of widows and the discriminatory treatment they receive. The paper also outlines some of the strategies that young widows use in their efforts to survive and adapt to the social environment.

Keywords: Society, Widows, Survival, Strategies, Emotional challenges.

References:

1. Chen (2008). Listening to widows in rural India, Women: A Cultural Review. Retrieved from http://dx.doi.org/10.1080/09574049708578320
2. Chen and Dreze (1995). Recent Research on Widows in India: Workshop and Conference Report. Retrieved from https://www.jstor.org/stable/4403278
3. Jamadar (2015). Quality of Life among Widows. Retrieved on 14.05.2021 from Quality of life-widows.pdf
4. Kapur(2018). Widowhood in Indian Society. Retrieved on 17.05.2021 from https://www.researchgate.net/publication/323825493_Widowhood_in_the_Indian_Society
5. Stein (1988). Burning Widows, Burning Brides: The Perils of Daughterhood in India. Retrieved fromhttp://www.jstor.com/stable/2760461

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Metamorphosis: The Journey from Dysfunctionalism to Functionalism in the selected works of Tsitsi Dangarembga

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For humankind it is always said that who protects the law is protected by it. And we take that law as a way of leading our lives i.e. functionalism. We believe that our society is functional society as it always follows laws and orders to sustain and to flourish. But dysfunctionalism always follows functionalism as they are inseparable. In the present paper, we intend to envisage dysfunctionalism by the optimistic point of view. The main focus of the paper is to show how functionalism of the society is necessary to be dysfunctional in order to evolve. Functionalists define the term functionalism as a set of rules laid by society, culture or nation in order to maintain peace and to cultivate. While penning the Dysfunctionalism, our thoughts are navigated towards the negative aspects of life but when the functionalism which nurtures the individual, society and nation becomes chain to hold them back it should be dysfunctional. Demolition of the present functionalism could open up the gates of new world analogous to metamorphosis of caterpillar. The present paper will use analytical method to study dysfunctionalism shown in the selected works of Tsitsi Dangarembga. Author has described journey of protagonists which shows how dysfunctionalism is necessary for the growth of an individual as well as the society. In works we find devastating yet appealing conditions of the female protagonists. In the play *She No Longer Weeps* Martha prefers to go to jail after murdering her husband in order to show her revolutionary ideas about the pseudo-functional society and sets a benchmark that sometimes you have to bear a bit to have greater achievements in life. Similarly in the trilogy Tambu does not feel even sorry on the death of her brother because the death gives her the opportunity to get education and identity in the society. We see little Tambu, evolving from wretchedness of life and crafting a new world on her own by disembarking the pseudo-functionalism of society. The works are true replica of metamorphosis indicating dysfunctionalism as the only way to make them functional. According to functionalist society, the male member of the society always gets prior chance to get education in the family and the girl child is always marginalised and has to compromise. But the protagonist tries to evolve from the demolishing situations of her life. Demolition of discrimination on the gender basis is clearly visible through the lives of characters and they prove that dysfunctionalism leads to the functionalism- a new way of living beautiful life.

Keywords: Functionalism, dysfunctionalism, pseudo-functionalism, metamorphosis.

The Changing Face of War: The Evolution of War from Metallic Arms to Nuclear Warfare

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The progress of human civilization throughout history has remained fascinating. This research paper explores the transformative journey of warfare, tracing the evolution from traditional metallic arms to the advent of nuclear warfare. Spanning centuries, the analysis begins with an examination of the historical context and technological advancements that characterized early forms of conflict, marked by swords, armor, and cannons. As societies progressed, the introduction of firearms and mechanized warfare ushered in a new era of industrialized conflict. The narrative then shifts towards the 20th century, when the landscape of war underwent a seismic shift with the development and deployment of nuclear weapons. This paper investigates the profound implications of this transition, exploring the strategic, geopolitical, and ethical dimensions of nuclear warfare from ancient to postmodern times.

Keywords: War, Evolution, Metallic, Postmodern

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Constructivism: A Paradigm of Learning Actively

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To understand that learning about communication is a skill and merely a subject. The problem faced today with fundamental issues of how to talk, what to talk, which words to use professionally has been a concern, specifically with business talk, marketing and selling. Therefore, the researcher has focused on teaching communication, specifically, business communication, which contains an intervention programe with constructivist approach that motivates students to be self dependent, critical thinker, problem solver and more importantly a good business communicator .The traditional chalk and talk method of teaching has gained widespread popularity in India for many years and still continued to be. But this programme solely deals with modern approach of teaching in where students participates actively in the learning by performing tasks on business communication individually or in pair. The intervention program has taken in consideration some basic and important aspects of business communication, worked on task-based learning and the research method taken in consideration is experimental post test only method to seek positive outcome out of it. This research paper contains the problem, teacher's classroom point of view and tasks for business communication

Keywords: Constructivism, business communication, task based teaching learning

Cultural Mosaic: Neil Bissoondath's Harmonious Reflection of 'Vasudhaiva Kutumbakam'

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This study provides a focused analysis of Neil Bissoondath's selected works to unravel the nuanced representation of multiculturalism. The paper employs the metaphor of a "Cultural Mosaic" to elucidate Bissoondath's adept navigation of diverse cultural elements within his narratives. Through a scholarly lens, the research explores the author's portrayal of characters negotiating the intersections of identity, tradition, and modernity, echoing the universal quest for unity within diversity. The examination delves into the thematic richness of cultural diversity in Bissoondath's writings, celebrating his skilful depiction of a world where differences are embraced. Drawing on the concept of Vasudhaiva Kutumbakam, the study aims to contribute to the scholarly discourse on multiculturalism, shedding light on the global significance of embracing diversity and recognizing shared human experiences. "Cultural Mosaic" seeks to offer a concise yet insightful exploration of Neil Bissoondath's literary contributions within the context of the universal theme of interconnectedness.

Keywords: Neil Bissoondath, Multiculturalism, cultural mosaic, Vasudhev Kutumbakam

References:

1. AG Krishna Warrier (1953), Maha Upanishad, Theosophical Society, Madras, Online, Verse VI.71–73
2. Multicultural Fictions. Ed. Linda Hutcheon and Marion Richmond. Toronto: OUP,1990. 3. Toorn, Penny van. "Positioning Neil Bissoondath: Post-Colonial, Multicultural and National Formations." New Literatures Review 27 (1994): 78-90. Web. 28 August 2021.
3. Bissoondath, Neil. Digging Up the Mountains. New York: Vikings, 1986.
4. Bissoondath, Neil. On the Eve of Uncertain Tomorrows. London: Bloomsbury, 1990.
5. Bissoondath, Neil. The Unyielding Clamour of the Night. Canada: Cormorant Book, 2005.
6. Bissoondath, Neil. The Soul of All Great Designs. Canada: Cormorant Book, 2008.

Towards a Neutral Language Society: A Study of *Mistress* by Anita Nair

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In the patriarchal society, power has always been inflicted through language. The researcher here aims at decoding gender differences encoded in Anita Nair's Mistress (2005) by applying the 'Feminist Stylistics' theory of Sara Mills. The researcher from this text tries to make a clear demarcation between context analysis and stylistic analysis and develops a separate ground for women to represent themselves through language. Art has traditionally been recognized as one of the finest means of expression in the society. 'Navarasas' are regarded as the foundation of all creative genres. The art form portrayed in Nair's Mistress is Kathakali. Nair uses this piece to raise the question of who determines success as an artist: the artist or society (Nair 2006). The text is divided into nine chapters, each named after one of the nine rasas. The researcher attacks the gendered language of society in this magnificent work, which is well described by the writer. The phallogocentric society represented by the writer has gendered art in its original form. All nine rasas have also been gendered. Chapters that are split based on rasas are addressed differently by categorizing them according to socially imposed gender norms. The language employed by the characters for females is strongly gendered. The researcher here questions this language structure of the society depicted by Anita Nair and takes a step to develop a model of a society consisting of neutral language. Using the aforementioned theory, the entire text was screened at three distinct levels: word, phrase/sentence, and discourse (Mills 1995). The researcher has also tried to give a glimpse of how a neutral language society would seem.

Keywords: Navarasas, gendered language, phallogocentric, neutral language, feminist stylistics

References:

1. Nair, Anita. *Mistress*. St. Martin's Griffin, 2006
2. Mills, Sara. *Fminist Stylistics*. Routledge, 1995.

Revisiting Early History of English Language Education in the Indian Subcontinent

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This study meticulously dismantles the entrenched 'Macaulayan Myth' surrounding the genesis of English Language Education **(**ELE) in the Indian subcontinent. Contrary to the prevailing belief attributing the introduction of ELE solely to Lord Macaulay's Minutes on Indian Education in 1835, this paper presents compelling evidence of its pre-existing roots of ELE in the Indian subcontinent. An exhaustive examination of historical sources spanning the pre-Macaulayan period illuminates a multifaceted educational landscape that challenges the notion of Macaulay's policy being the exclusive catalyst behind the introduction of ELE in the Indian subcontinent. By revisiting this historical context, this study significantly enhances understanding of the educational evolution and the imperative to dispel misconceptions, fostering a truthful discourse on the colonial legacy of ELE. However, this paper stands as a compelling testament to the critical role of rigorous scholarship and factual precision in dismantling enduring myths surrounding the educational history of ELE in the Indian subcontinent.

Keywords: Macaulayan Myth, ELE, Pre-Macaulayan Period, Indian Subcontinent

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શોધપત્રનો વિષય ; ભારતીય નદીસંસ્કૃતિ : ઇતિહાસ અને સાહિત્યના સંદર્ભ

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વિશ્વ માનવસંસ્કૃતિ નદી સંસ્કૃતિને આભારી છે. જેવી સિંધુ નદીને કિનારે 'સિંધુખીણની સંસ્કૃતિ', નાઈલ નદીના કિનારે ઈજિપ્ત સંસ્કૃતિ અને પીળી નદીને કિનારે ચીની સંસ્કૃતિ જોવા મળે છે. ભારતમાં નદી સંસ્કૃતિની મહત્ત્વ અનેરું છે. લોકકલ્યાણી એવી નદીઓ ભારતના લોકોનું ઘડતર, પોષણ અને સંરક્ષણ કરે છે. નદીને કિનારે ઋષિમુનિઓની તપસ્યા અને વેદ- પુરાણો જેવા મહાનગ્રંથોનું ઉદ્ભવનું માધ્યમ બની છે. તદ્ઉપરાંત ભારતમાં સિંધુ, ગંગા, યમુના, બ્રહ્મપુત્ર, નર્મદા જેવી અગ્રણી નદીઓના કિનારે સંસ્કૃતિ પાંગરેલી છે. જેમાં 'સિંધુખીણની સભ્યતા' સવિશેષ રહી છે. આ સભ્યતાના અવશેષ રૂપે હડપ્પા અને મોહેં-જો-દડો જેવા નગરો મળી આવ્યા છે.

આમ સાહિત્યક્ષેત્રમાં પણ નદીઓનો મહિમા કરવામાં આવ્યો છે. સાહિત્યના વિવિધ સ્વરૂપમાં આપણે નદીઓનો મહિમા જોવા મળે છે. જેમાં 'THE CHRONICLE OF SAPTA SINDHU (APORVA KALA)' એક ઉત્તમ સાહિત્ય કૃતિ છે. જેમાં સિંધુ નદી કેન્દ્ર સ્થાને છે. ત્યાર બાદ 'તત્ત્વમસિ' નવલકથામા નર્મદા નદીના મહિમાનુગાન કરવામાં આવ્યું છે. 'તિસ્તા કાંઠા વૃત્તાંત'મા તિસ્તા નદીનું મહત્ત્વ આલેખાયું છે. નદીષ્ટ, કાલિંદી જેવી કૃતિઓ જોઈ શકાય છે. વાત કરીએ નદી સંસ્કૃતિ સામેના પડકારોની જેમાં ભારતીય માનવીઓ નદીને 'માતા' કહી સંબોધે છે. પરંતુ સાંપ્રત સમયમાં ઔદ્યોગિક પ્રવાહે પ્રકૃતિના અનેક તત્ત્વો જેમાં નદીને સવિશેષ કલુષિત કરી મૂકી છે. જેના કારણે ભારતીય નદીઓની સ્થિતિ સવિશેષ દયનીય બની છે. નદીના સંરક્ષણ માટે 'નદી અભિયાન' દ્વારા તેના જતનની કામગીરી હાથ ધરવામાં આવી છે. આ સ્રોતમા સાહિત્ય પણ પ્રકૃતિ અને જળ રક્ષણ માટે સારું એવું પ્રોત્સાહન પૂરું પાડે છે.

Keywords: ભારતીય, નદી, સંસ્કૃતિ, ઇતિહાસ, સાહિત્ય

બાળસાહિત્ય અને પર્યાવરણ

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આ શોધપત્રમાં હું બાળસાહિત્યની સાથે પર્યાવરણ કઈ રીતે જોડાયેલું છે એની વાત કરીશ. આપણા પૂર્વજોને ઝાડની પૂજા કેમ કરી હશે એ વાત આજે પણ આપણને આજના સમયમાં બરાબર સમજાય છે. માનવ જયારે પ્રાથમિક કક્ષાનું જીવન જીવતો હતો અને આદિમાનવ કહેવાતો હતો ત્યારે કુદરતના સંપૂર્ણપ્રભાવ હેઠળ જીવતો, પરિણામે તે સમયે એને માટે કુદરતી પર્યાવરણ પોષક, રક્ષક અને આશ્રયદાતા હતું. આ શોધપત્રમાં પર્યાવરણની વિવિધ વ્યાખ્યાઓ આપવામાં આવી છે. બાળકની આસપાસનું સમૃદ્ધ વાતાવરણ એ એનું પર્યાવરણ છે. બાળકની તદન સમીપે એનું કુટુંબ,ઘર,પાડોશીઓ, મિત્રો અને શિક્ષકો છે. આ શોધપત્રમાં બાળસાહિત્યના અનેક ઉદાહરણોથી બાળક અને પર્યાવરણમાં સંબંધને આલેખવાનો પ્રયત્ન કર્યો છે. બાળકોના ઉછેરમાં સૌથી મહત્વનો ભાગ પર્યાવરણનો જ હોય છે.

Keywords: બાળક, બાળસાહિત્ય, પર્યાવરણ.

સંદર્ભ ગ્રંથો :

૧)૨૦૧૭), કોકીલા દેસાઇ (૨૩૫ અનોખી બાળવાર્તા .મુંબઈ, ઠક્કરની કંપની, એમ ,એન

૨ (૨૦૨૧), જિતેન્દ્ર પ્રજાપતિ પતંગિયું ભણવા બેઠું ,અમદાવાદ ડિવાઈન પ્રકાશન ,

૩ ,મી સદીનું બાળસાહિત્ય૨૧(.૨૦૦૦.આ.પ્ર) કુમારપાળ દેસાઇ ((ગુજરાતી સાહિત્ય અકાદમી ગાંધીનગર,૪

દઅમદાવા રન્નાદે પ્રકાશન સર્જન અને ભાવન બાળ કવિતા (૧૯૯૪) રજનીકાંત જોશી.પટેલ , ,-

.મોહનભાઇ સ.

૫ નૂતન જાની, પર્યાવરણકેન્દ્રી વિવેચનવિચારણા, પાશ્વ પ્રકાશન, અમદાવાદ.

કચ્છ પ્રદેશના લોકગીતમાં રાષ્ટ્રીયતા, શૌર્ય અને સામાજિકતા

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કચ્છના પ્રદેશ જે સમયે રાજય હતું એ સમયે અનેક રાજાઓના શાસનકાળ દરમ્યાન આક્રમણ, દુષ્કાળ અને ભૂકંપ જેવી પરિસ્થિતિનો ભોગ બન્યું છે એ સમયે ભીનાશ અને સૂકાભઠ વાયરા વચ્ચે વસ્તી કચ્છની પ્રજાએ માથું ઉંચુ રાખી ટકી રહેવાનું બળ માતૃભૂમિને પૂરું પાડ્યું છે એના અનેક ઉદાહરણ ગુજરાતી લોકગીતમાં જોવા મળે છે'છપ્પનિયો દુકાળ', 'ઝારાનું યુદ્ધ' વગેરે લોકગીતમાં જે રીતે એકઠો થયેલો સમાજ છેજયારે છપ્પનીયો દુકાળ પડ્યો ત્યારે રા'ખેંગાર એ પ્રજાને તાત્કાલિક રાહત પૂરી પાડી હતી એ રાજાની પ્રશસ્તિ કરતા લોકગીતમાં

"કચ્છ ભુજના રાજા, ખજીના ખોલ્યા રે છપન સાલમાં, દેશ રે પરદેશ વહાણો મોકલ્યા ઘણી ખમ્મા તુને ગરીબોના આધાર રે.'

જોવા મળે છે.આ ગીતમાં પ્રજાની રાજા પ્રત્યેની લાગણી અને સમાજ પ્રત્યે રાજાનું કર્તવ્ય જોવા મળે છે તો ઝારાના યુદ્ધમાં જે રીતે રાષ્ટ્રીયતા અને શૌર્ય જોવા મળે છે એનું લોકગીત

" ન છડિયા તલવાર, જુવાને કે મરણુ હકડી વાર, ઝારે મથ્થે જંગ લગો ને, ઝૂંઝેંતા ઝૂંઝાર.'

વીરરસસભર આ લોકગીતમાં કચ્છની અસ્મિતા પ્રતિબિંબિત થાય છે તેમાંય ભાષા સાહિત્ય અને વિશિષ્ટ પ્રકારે વગાડાતા વાદ્યની આગવી ભાત પુરી પાડે છે એ કેવી રીતે એ દર્શાવવાનો મારો હેતુ છે.

Keyword: લોકગીત, રાષ્ટ્રીયતા, શૌર્ય, સામાજિકતા

વાલ્મીકિ રામાયણમાં નિરૂપિત સમાજવ્યવસ્થા

દરજી વિશાલકુમાર હસમુખભાઈ[1*]

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સમાજ એ સંસ્કૃતિનું અભિન્ન અંગ છે. માનવ એ સામાજિક પ્રાણી છે. રામાયણમાં વર્ણિત સમાજવ્યવસ્થા એ તત્કાલીન સંસ્કૃતિનું જ પ્રતિબિંબ છે. વાલ્મીકિ રામાયણ મુજબ રામાયણકાલીન સમાજવ્યવસ્થાના મુખ્ય અંગો આ મુજબ છે.

1. વર્ણાશ્રમ વ્યવસ્થા
2. કુટુંબ વ્યવસ્થા
3. સમાજમાં નારીનું સ્થાન
4. શિક્ષણ વ્યવસ્થા
5. આર્થિક વ્યવસ્થા
6. સામાજિક મૂલ્યો

રામાયણ એ આદર્શ કૌટુંબિક મૂલ્યોનું મહાકાવ્ય છે. કુટુંબ એ સમાજનો જ એકમ હોવાને નાતે રામાયણમાં વર્ણિત કૌટુંબિક મૂલ્યો એ તત્કાલીન સમાજવ્યવસ્થાનું ચિત્રણ આપે છે. રામાયણકાલીન સમાજવ્યવસ્થામાં સત્ય, પ્રેમ, ભાતૃપ્રેમ, ત્યાગ, સેવા, ભક્તિ, ન્યાયપ્રિયતા, આદર્શ મિત્રતા, વડીલો પ્રત્યે આદર, ધર્મપરાયણતા, નૈતિક આચરણ અને અનિષ્ટ પર ઈષ્ટનો વિજય જેવા મૂલ્યો સમાજવ્યવસ્થાના પાયામાં હતા.

સૂચક શબ્દોઃ વર્ણ, આશ્રમ, કુટુંબ, સમાજ, મૂલ્ય

સંદર્ભ ગ્રંથઃ શ્રીમદ્ વાલ્મીકીય રામાયણ, ગીતાપ્રેસ ગોરખપુર, સંવત૨૦૭૬

‘દિવ્યચક્ષુ બાળઘડતર અને ગુજરાતી શ્રાવ્ય-બાળસાહિત્ય’

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બાળસાહિત્યનો ઉદ્દેશ મુખ્યત્વે બાળકોને આનંદઆપવાનો રહ્યો છે, પરંતુ આનંદની સાથે સાથે ભાષા ઘડતર, નૈતિક ઘડતર, બાળકનો સમાજ સાથેનો પરિચય જેવાં અનેક વિષયોને આનંદમય રીતે જ એના વ્યક્તિત્વમાં પ્રવેશ કરાવી દે છે. દિવ્યચક્ષુ બાળકો કે, જેમણે જન્મથી જ આ જગતને જોયું નથી પણ બાળસાહિત્ય બાળકનો હાથ પકડીને બાળકને કેવી રીતે આ જગતમાં પ્રવેશ કરાવે છે? તેમજ બાળસાહિત્ય બાળકનાં ઘડતરમાંશું ભાગ ભજવે છે? આ બાબતનો અભ્યાસ આ વિષય અંતર્ગત થશે. સાથે સાથે ગુજરાતી ભાષા પાસે બાળસાહિત્યની કેટલી અને કેવી શ્રાવ્ય સામગ્રી ઉપલબ્ધ છે?. તેની પણ થોડી ચર્ચા કરાશે અને આ સામગ્રીનો ઉપયોગ વ્યક્તિગત અને સંસ્થાકીય એમ બંને રીતે કરવામાં આવે છે. દિવ્યચક્ષુ બાળકોના વિકાસ માટે શ્રાવ્ય- બાળસાહિત્ય કેવી રીતે વરદાનરૂપ બને છે એની,. પણ ચર્ચા આ શોધપત્રમાં વિગતે કરવામાં આવશે. દિવ્યચક્ષુ બાળકોના નૈતિક ઘડતર માટે પંચતંત્રઅને હિતોપદેશની વાર્તાઓમાં પશુ-પક્ષીઓને નિમિત્ત બનાવીને બાળકોને મૂલ્યબોધ અપાયું છે અને આં વાર્તાઓ આપણને‘ગુજરાતી જલસા એપ’ ઉપરથી શ્રાવ્યરૂપે પ્રાપ્ત થાય છે.ભાવનગરના પ્રોફેસર દીકપાલસસિંહે ૧૦૦૦ જેટલી ગુજરાતી બાળવાર્તાઓ શ્રાવ્યમારૂપાંતરિત કરી છે.આંવાર્તાઓ સંભાળીને દિવ્યચક્ષુ બાળકોની ભાષાઅને બોલવાનાલહેકામાં ઘણાસુધારા થયા છે.

Keywords: બાળસાહિત્ય,બાળઘડતર, દિવ્યચક્ષુ શ્રાવ્ય બાળસાહિત્ય

જયવંતસૂરિ કૃત શૃંગારમંજરી : શીલવતી કથા – પરંપરા

ખુશ્બુબેન મુનીરએહમદ કુરેશી[1*]

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મધ્યકાલીન ગુજરાતી સાહિત્ય વિશાળ પટ પર અંકિત થયું છે જેમા અનેકાનેક જૈન- જૈનેતર કૃતિઓ મળી આવી છે. જેમા જૈન કવિ અને સાહિત્યકારોને ગુજરાતમાં વિશેષ કથા પરંપરાને સ્થાન આપતાં મહત્વના યોગદાન અપાયેલા છે. કવિ જયવંતસૂરિ કૃત આશરે પંદરમી સદીમાં પ્રાચીન ગુજરાતી ભાષામાં રચયેલી કૃતિ " શૃંગાર મંજરી-શીલાવતી ચરિત્ર" જે કનુભાઇ વ્રજલાલ શેઠ દ્વારા આપણને પ્રાપ્ત થયેલ છે. જેના અંતર્ગત ગુજરાતી ભાષા, સાહિત્ય, સમાજ અને સંસ્કૃતિ સંબંધિત મૂલ્યવાન સામગ્રી મળી આવે છે. આ શીલાવતી કથા જૈન કથા સાહિત્યમાં વ્યાપક પ્રસિદ્ધિ પામે છે.

શીલવતી કથા ક્યા સમયે, કઈ કઈ ભાષામાં કોના કોના હસ્તક તેની કથા વિકાસ – રૂપરેખા અને સંદર્ભ ગ્રંથ સૂચિ સાથે આગળ જોઈશું. માટે આ "શીલાવતી કથા"ને મારાં શોધ પત્રમાં વિસ્તૃત માહિતી મેળવી પ્રસ્તુત કરવાનો મારો ઉપક્રમ છે.

ગુજરાતી લોકસાહિત્યના પર્યાય ઝવેરચંદ મેઘાણી અંગે કનુભાઈ જાનીનું સંશોધન કાર્ય.

સોલંકી મિત્તલબેન મોહનભાઈ[1*]

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કોઈ પણ પ્રદેશ અને એની ભાષાબોલીમાંની કથાઓ અને ગીતો જેવી પરંપરાથી કહેવાતી-ગવાતી રચનાઓ જે લોકમાનસમાંથી ઉદ્ભવેલી , લોકમાનસ દ્વારા ઘડાયેલી અને લોકલક્ષી હોય તે લોકસાહિત્ય. લોકસાહિત્યની રચનાઓ લોકપરંપરામાં જ જન્મતી, વિકસતી અને તરતી રહે છે'રાષ્ટ્રીય શાયર'નું બિરુદ પામેલા ગુજરાતના લોકસાહિત્યના સમર્થ સંશોધક ને ઉદ્ધારક ઝવેરચંદ મેઘાણી વિશેનું સંશોધન આરૂઢ અભ્યાસી પ્રો. કનુભાઈ જાની પાસેથી ઉપલબ્ધ થાય છે. મેઘાણીની અધિકૃત જન્મતારીખ નક્કી કરવાથી લઈ ને તેમના લોકસાહિત્ય સંશોધનના કનુભાઈ તલગામી અભ્યાસી હતા.મેઘાણી જ્યા જ્યા જતા ત્યા ત્યા કનુભાઈ જતા. તેમણે મેઘાણી સંદર્ભ , મેઘાણી છબી , મેઘાણી ચરિત , શબદનો સોદાગર વગેરેનું સર્જન કર્યું છે. આમ , મેઘાણી વિશે તલસ્પર્શી બાબતો ઉજાગર કરનાર કનુભાઈ જાનીના કાર્યને , તેમના સંશોધનને પ્રસ્તુત શોધપત્રમા દર્શાવવાનો ઉપક્રમ છે.

સંદર્ભ :

મેઘાણી ચરિત : ગુજરાત વિશ્વકોશ ટ્રસ્ટ, અમદાવાદ

શબ્દનો સોદાગરઃ સંપા.કનુભાઈ જાની

એક નાની શોધ પ્રવાસિકા : કનુભાઈ જાની (ડાયરી)

‘શામળભટ્ટકૃત રાવણ મંદોદરીસંવાદ’ સાહિત્ય અને સમાજના પરિપ્રેક્ષ્યમાં

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સાહિત્ય અને સમાજ વચ્ચેનો સંબંધ અવિનાભાવી છે. સાહિત્યને સમાજ વગર અને સમાજને સાહિત્ય વગર ચાલ્યું નથી અને ચાલશે પણ નહિ. કોઈપણ યુગના સાહિત્યકારના સાહિત્યમાં તેનો સમાજ યેન કેન પ્રકારેણ નિરૂપિત થઈ જ જતો હોય છે. સાહિત્ય અને સમાજના સંબંધને તપાસવા અહીં શામળકૃત “રાવણ મંદોદરીસંવાદ”(કાવ્ય) પસંદ કર્યું છે.શામળનો જન્મ ઈ.સ.ની૧૮મી સદીમાં અમદાવાદના વેગનપુર(હાલનું ગોમતીપુર)માં થયો હતો. તેના પિતાનું નામ વીરેશ્વર અને માતાનું નામ આણંદબાઈ (આનંદીબાઈ) હતું. શામળ મધ્યકાલીન ગુજરાતી સાહિત્યના જાણીતા પદ્યવાર્તાકાર હતા. તેમને પદ્યવાર્તા પિતા ગણવામાં આવેછે. શામળેતેના આ સંવાદકાવ્યની રચના વાલ્મીકિકૃત રામાયણના પ્રખ્યાત મહાકાવ્ય ઉપરથી કરી છે, જે ૨૦૪ કડીમાં અને દોહરા તથા ચોખરા જેવા છંદોમાં રચાયેલ છે. લક્ષ્મણ દ્વારા શૂર્પણખાનું નાક કાપવામાં આવે છે, અને તેના બદલારૂપે રાવણ સીતાનું અપહરણ કરે છે. આ અપહરણ અયોગ્ય છે, એ વિષય ઊપર રાવણ અને મંદોદરી વચ્ચે જે સંઘર્ષમય સંવાદ થાય છે, તે આ સંવાદકાવ્યનું મુખ્ય વિષયવસ્તુ છે. સીતાનું અપહરણ યોગ્ય છે કે નહિ? તેની ચર્ચા રાવણ વિવિધ જ્ઞાતિના લોકો (અઢારે વર્ણના) સાથે કરે છે, ત્યારે તે સમયનો જે સમાજ આપણને પ્રત્યક્ષ થાય છે, તેની તપાસ કરવાનો ઉપક્રમ આ શોધપત્રમાં રાખવામાં આવેલ છે.

સૂચકશબ્દો (keywords): સાહિત્ય અને સમાજ, મધ્યકાલીન ગુજરાતી સાહિત્ય, સંવાદ, કાવ્ય સ્વરૂપ.

સંદર્ભ (Reference):

•ગુજરાતી સાહિત્યનો ઈતિહાસ ગ્રંથ ૨ ખંડ ૨. પ્રકાશકઃ ગુજરાતી સાહિત્ય પરિષદ, અમદાવાદ
•બૃહત કાવ્યદોહન ભાગ ૧. સંપાદકઃ દેસાઈ ઈચ્છારામ સૂર્યરામ. પ્રકાશક. ગુજરાત વિદ્યાપીઠ અમદાવાદ.
•સાહિત્ય અને સમાજ, જોષી વિધુત, પ્રકાશકઃ પાર્શ્વ પબ્લિકેશન અમદાવાદ. બીજી આવૃત્તિ ૨૦૧૨

ભારતીય રાજનીતિ અને ભારતીય તત્ત્વનું તરંગાવહનઃ ધાસિરામ કોટવાલ

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ભારતીય રાજનીતિ વિચારણા અતિ પ્રાચીન છે. રાજનીતિ સમાજનું અવિભાજ્ય અંગ છે. સમાજના સંચાલન તેમજ યોગ્ય રાજ્યવ્યવસ્થા માટે તેનો પ્રયોગ કરવામાં આવે છે. પુરાણો, મહાકાવ્યો તેમજ વિવિધ ગ્રંથોમાં ભારતીય રાજનીતિ વિશે સારા પ્રમાણમાં ચર્ચાઓ થયેલી છે. બે અંકોમાં વિસ્તરેલા 'ધાસીરામ કોટવાલ' નાટકમાં આધુનિક રાજનીતિ કેન્દ્રસ્થાને છે.સમગ્ર નાટકમાં રાજનીતિજ્ઞ નાના ફડણવીસ કેન્દ્ર સ્થાને છે. તે ધાસીરામનો ઉપભોગ કરી તેની પુત્રી લલિતા ગૌરીને પણ મેળવે છે અને ધાસીરામને કોતવાલ બનાવી રાજ્યવ્યવસ્થા દૃઢ કરી દરેકની દૃષ્ટિમાં ધાસીરામને ખલનાયક બનાવી પ્રજા દ્વારા તેને મરાવી નાખે છે. નાના ફડણવીસ રાજનીતિને માધ્યમે પોતાનું કાર્ય સિદ્ધ કરી ધાસીરામનું કાસળ કાઢે છે. નાટકનો ઢાંચો ભારતીય લોકતત્ત્વથી સભર છે. નાટકના સંવાદો, નાટ્યરીતિ, મંચન, નૃત્ય આદિ ભારતીયતાને પ્રસ્તુત કરે છે. નાટકમાં મહારાષ્ટ્રના 'તમાશા', કોંકણના 'ખેલે' તેમજ પ્રાચીન એવા 'દશાવતારી' જેવા નાટ્યપ્રવાહોનો સુરેખ વિનિયોગ નાટકને ભારતીયતા અર્પે છે. નાટકમાં વિજય તેંડુલકર દ્વારા થયેલો આ ત્રિવિધ નાટ્યત્રયીની સુંદર અભિવ્યક્તિ અને પ્રયોગ નાટકને ભારતીય તત્ત્વથી સભર બનાવે છે. નાટ્યકાર વિજય તેંડુલકર આધુનિક ભારતીય નાટ્યપ્રવાહના મૂર્ધન્ય નાટ્યકાર છે. સાંપ્રત નાટ્યધારામાં ભારતીય પરંપરાનું સંમિશ્રણ તેમના નાટકોનું ધ્યાનાકર્ષક બિંદુ રહ્યું છે.

Keywords: રાજનીતિ, નાટક, ભારતીયતા,ભારતીય તત્ત્વ, આધુનિકતા, રાજ્યવ્યવસ્થા

નરેશવેદનાં સાહિત્યમાં અધ્યાત્મનું નિરૂપણ

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નરેશ વેદનાં નામકામથી શિક્ષણ, સાહિત્યજનો ભાગ્યે જ અજાણ હશે. તેમનો જન્મ ત્રીજી માર્ચ ૧૯૪૮માં તેમના મોસાળ ગોંડલમાં થયેલો. વિશ્વ તેમ જ ભારતીય સાહિત્યના બહોળા વાચન-લેખનથી અને નોખી અભિવ્યક્તિથી તેમણે સાહિત્યજગતને ઘણુંઆપ્યું છે. નરેશ વેદનાં અભ્યાસનો રસલક્ષી વિષય વિવેચન, સંપાદન અને સાહિત્યિક લેખોમાં રહ્યો છે. એમના વિવેચનસંગ્રહોમાં મુખ્યત્વે કથાસાહિત્ય વિશેના લેખો છે. નવલકથા તેનુ કથાકથન તેમના અભ્યાસનો મુખ્ય વિષય રહ્યો છે. તેઓ નવલકથા અને લઘુનવને જુદા જ દ્રષ્ટિકોણથી તપાસી છે. જનપદી નવલકથા વિશે તેઓ પ્રશ્નો પણ ઉઠાવે છે તો સ્વાતંત્ર્યોત્તર ગુજરાતી નવલકથાના ગદ્યને તપાસે છે. વિવિધ દ્રષ્ટીકોણથી ગુજરાતી નવલકથાનો થયેલો અભ્યાસ તેમની વ્યાપક દ્રષ્ટિનો પરિચય કરાવે છે.આ ઉપરાંત તેમણે કથનકલાશાસ્ત્ર, નવલકથા સ્વરૂપની સૈદ્ધાંતિક ચર્ચા, પ્રવાહદર્શન તેમજ કૃતિસમીક્ષાઓ આપી છે. આમ, નરેશ વેદનું ગુજરાતી નવલકથા, ભારતીય નવલકથા, લઘુનવલ, ટૂંકીવાર્તા વગેરેનું વિવેચન અને સંપાદન નોંધપાત્ર રહ્યું છે. 'સાહિત્ય અને અધ્યાત્મ' એકમેક સાથે કઈ રીતે સંકળાયેલા છે અને નરેશ વેદનાંપુસ્તક "ઉપનિષદવિમર્શ" માંઅધ્યાત્મનું નિરૂપણ ક્યાં અને કઈ રીતે થયેલું છે એ દર્શાવવાનો ઉપક્રમ અહીં રાખવામાંઆવેલછે.ગુજરાતી સાહિત્યમાં અધ્યાત્મ વિશે લખનારા સર્જકો અને એને લગતા પુસ્તકોનો ઉલ્લેખ કરવામાંઆવશે. આધ્યાત્મિક સાહિત્યનો લલિત કલામય આવિર્ભાવ અને વિકાસ ગુજરાતીમાં પણ થયો છે. નરસિંહ મહેતાઅનેમીરાંબાઈનાં પદોમાં આધ્યાત્મિક કાવ્યોના નમૂના સાંપડે છે. દયારામે પણ આધ્યાત્મવિષયક રચનાઓ રચી છે. નરેશ વેદનાં પુસ્તક 'ઉપનિષદ વિમર્શ'માં અધ્યાત્મ વિશેનું નિરૂપણ ઉપરાંત અધ્યાત્મ લોકજીવન સાથે કઈ રીતે સંકળાયેલું છે અને એ લોકોપયોગી કઈ રીતે બને છે તેની પણ નોંધ આ શોધપત્રમાં રજૂ કરવામાં આવશે. ગીતાના આઠમાં અધ્યાયમાં અધ્યાત્મ શબ્દ પ્રયોજાયો છે.ચૈતન્ય તત્ત્વનેપરાપ્રકૃતિ કહી છે તથા જેને પંદરમાં અધ્યાયમાં અક્ષર કહીને ઓળખાવ્યું છે, તે સમસ્ત તત્વને અધ્યાત્મતત્ત્વકહેવામાં આવે છે.અધ્યાત્મ એટલે જેના દ્વારા સમગ્ર બ્રહ્માંડને પોતાનામાં ઓળખી શકાય તે.

સુચક શબ્દો (Keywords): અધ્યાત્મ, સાહિત્ય, ઉપનિષદ.

સંદર્ભ (Reference):

- અને સાહિત્ય, ત્રિવેદી યશવંત, પ્રઃ આર આર શેઠ, પ્રથમ આવૃત્તિ : ઑગસ્ટ ૧૯૭૫, અમદાવાદ
- ઉપનિષદવિમર્શ, વેદ નરેશ, પ્રઃ પાર્શ્વપબ્લિકેશન, પ્રથમ આવૃત્તિ : ૨૦૨૧, અમદાવાદ
- પારિભાષિકકોશતત્ત્વજ્ઞાન, પ્રા. સી. વી. રાવળ, પ્રઃ યુનિવર્સિટીગ્રંથનિર્માણબોર્ડ, પ્રથમઆવૃત્તિ : ૧૯૯૭, અમદાવાદ

પન્નાલાલની નવલકથાઓમાં માનવ સ્વભાવનું નિરૂપણ

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કોઈ પણ મનુષ્યની સાચી ઓળખ એના સ્વભાવ થકી નક્કી થાય છે. માનવ સ્વભાવ એ અતિ સંકુલ વસ્તુ છે. આ માનવ સ્વભાવ માનવના મન, વ્યક્તિત્વ પર ગાઢ અસર કરે છે. આપણા ગુજરાતી સાહિત્યમાંમાનવ સ્વભાવનું નિરૂપણ કરતી અનેક નવલકથાઓ મળી આવે છે. જેની વાત આ લેખમાં રજૂ કરવામાં આવી છે.આપણા ગુજરાતી સાહિત્યમાં ઘણી બધી સ્વરૂપગત કૃતિઓમાં આપણને માનવ સ્વભાવનું નિરુપણ જોવા મળે છે. આ લેખમાં ખાસ પન્નાલાલ પટેલ કે જેઓ જ્ઞાનપીઠ પુરસ્કારથી સમ્માનિત થયેલા છે. એમની કેટલીક નવલકથાઓમાં માનવીની ભવાઇ, સાચાં શમણાં અને મળેલાંજીવના સંદર્ભમાં માનવ મનનીવિલક્ષણતાઓરજૂ કરવામાં આવી છે. જે આ નવલકથાઓનાંપાત્રોનામાનવ સ્વભાવમાં જોવા મળે છે. અહીં માનવ સ્વભાવમાં જે વિવિધતા દર્શાવવામાં આવેલ છે,તેમજઅમુક પ્રકારનું વર્તન બતાવવામાં આવ્યું છે. એની પાછળ ભૌગોલિક પરિસ્થિતિ, સાંસ્કૃતિક ચેતના, સામાજિક દરજ્જો, પરિવેશ, વગેરે કારણો જવાબદાર હોઈ શકે. આ સ્વભાવને કેટલાંક પ્રયત્નો થકીબદલી પણ શકાય.જે આ નવલકથાઓમાં નિરૂપાયેલું જોવા મળે છે.

Keywords: - નવલકથા, માનવસ્વભાવ, વિલક્ષણતાઓ ,પન્નાલાલ પટેલની નવલકથાઓ

સંદર્ભ :-

1. માનવ સ્વભાવની આંટીઘૂંટી, પંડિતહર્ષિદા રામુ, પ્રઃ નવભારત સાહિત્ય મંદિર , અમદાવાદ,પ્રથમ આવૃત્તિઃ૧૯૮૭.
2. પન્નાલાલનું પ્રદાન ,સં. ચૌધરી રઘુવીર, દવે રમેશ, પ્રઃ ગુજરાતી સાહિત્ય પરિષદ, અમદાવાદ,પ્રથમ આવૃત્તિઃ ફેબ્રુઆરી ૧૯૯૫.
3. માનવીનીભવાઇ,પટેલપન્નાલાલ,પ્રઃભારતીય સાહિત્ય સંઘ,અમદાવાદ,પ્રથમઆવૃત્તિઃ૧૯૪૭.
4. સાચાં શમણાં, પટેલ પન્નાલાલ, સાધના પ્રકાશન, અમદાવાદ, પાંચમી આવૃત્તિઃ૧૯૮૭.
5. મળેલા જીવ. પટેલ પન્નાલાલ, સંજીવની પ્રકાશન, અમદાવાદ, ૧૯૪૧.

વિલિયમ શેક્સપિયરના ટ્રેજેડી નાટકો આધારિત હિન્દી ફિલ્મો

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મહાકાવ્ય, લોકકથા, નવલકથા, નવલિકા કે નાટક જેવા સાહિત્ય સ્વરૂપ પરથી Hollywood કે Bollywood માં વિવિધ ફિલ્મો નિર્માણ પામી છે. વિષયવસ્તુ અને કલાત્મક દૃષ્ટિકોણથી કેટલીક ફિલ્મો સફળ રહી છે તો કેટલીક નબળી.

વિલિયમ શેક્સપિયરના નાટકો પરથી Bollywood માં વિશાલ ભારદ્વાજે મકબુલ(2004), ઓમકારા(2006) અને હૈદર(2014) જેવી ફિલ્મો બનાવી છે. 'મકબુલ' અને 'ઓમકારા' ફિલ્મોમાં નાટકોને અનુરૂપ યોગ્ય નિર્દેશન કરવામાં આવ્યું છે. 'હૈદર' ફિલ્મમાં કાશ્મીરમાં જોવા મળતી આતંકવાદની સમસ્યા, ત્યાંની પરિસ્થિતિ, લોકજીવન, સંસ્કૃતિ ભારતીય સંદર્ભમાં જોવા મળે છે.

'રોમિયો એન્ડ જૂલિયટ' નાટક પરથી 'રામલીલા' ફિલ્મ સંજય લીલા ભણસાલીએ બનાવી છે. પરંતુ આ ફિલ્મમાં નાટકનો આધાર માત્ર છે. ફિલ્મનુ વિષયવસ્તુ, પાત્રો, સંસ્કૃતિ, લોકજીવન, પહેરવેશ કચ્છ પ્રદેશના છે. જેમાં મુખ્ય કથાનક 'સનેડા' અને 'રજાડી' કોમ વચ્ચે ચાલી આવતી પારિવારિક દુશ્મનાવટ, ખટપટ અને તેને કારણે એકબીજા પ્રત્યે અનુરાગ હોવા છતાં એક ન થઈ શકતા રામ અને લીલાના પાત્રો દ્વારા વર્ણવ્યું છે.

Keywords: ફિલ્મ, નાટક, મહાકાવ્ય, નવલિકા, નવલકથા, Bollywood, Hollywood, ભારતીય,, સંસ્કૃતિ

મનોવૈજ્ઞાનિક અભિગમથી 'કાદંબરીની મા' નવલકથાની સમીક્ષા

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સાહિત્યસર્જનને દેખેતી રીતે જ માનજીવનના અનુભવો, સંઘર્ષો ,સ્વપ્નો વગેરે મનોવૈજ્ઞાનિક તત્વો સાથે રહ્યો છે. કોઈપણ પરંપરાની જૂની નવી સાહિત્યકૃતિયો જુઓ તેમાં માનવચિતના આવેગો, ઝંખનાઓ કે અનુભવનો સાથેનો માર્મિક સબંધ તેમા પ્રત્યેક્ષ થશે.સાહિત્ય માટે મનોવૈજ્ઞાનિકના ચાર પ્રસ્થાનકારો મહત્વના છે; સિગમંડ ફ્રોઇડ,આલ્ફ્રેડ એડલર, કાંલે યુંગ અને ઝાંક લકાં, ફ્રોઇડ જો વ્યકિત મનોવિજ્ઞાન(individual Psychology) ને તો,એડલરે આંતરવ્યક્તિ- મનોવિજ્ઞાન(interpersonal Psychology)ને પુરસ્કાર્યું છે. યુંગે સામૂહિક મનોવિજ્ઞાન(Collective Psychology)ને, તો લકાંએ સંરચનાત્મક મનોવિજ્ઞાન(Structural Psychology)ને પુરસ્કાર્યું છે.

'કાદંબરીની મા'મનોવૈજ્ઞાનિક અભિગમ દાખવતી આ લધુનવલનું સર્જન ધીરુબહેન પટેલે કર્યું છે.અનિલના મુખ્ય પાત્ર દ્વારા એના ચરિત્ર-ચિત્રણ દ્વારા એક મનોઋગણ વક્રી ગયેલ વિવિધ માનસિક ગ્રંથિઓથી ગ્રસિત એવા માણસનું ઊંડું દર્શન કરાવ્યું છે, શરાબ અને સુંદરીના મતમા લીન બનેલો અનિલ વીસ વર્ષની વય પછી એટલો બધો બગડી ગયો ચૂક્યો છે કે પોતાની પત્નીના સુંદર દેહની ભૂખ લાગે ત્યારે પોતાની પત્નીને ત્રાસ આપવામાં,મારવા-ફટકારવામાં એને આનંદ આવે છે.વિજયા દ્વારા તેઓ કાદંબરીમા આધુનિક નારી જીવનના અભિનવ આદર્શને મૂર્ત કરતાં એના નારીત્વનું ગૌરવ જગાડે છે. અહિયાં એમને મનોવૈજ્ઞાનિક અભિગમનો તેમનો ઉદેશ્ય સિદ્ધ કર્યો છે. શકુંતલા દેવીની હાજરીમાં ગર્ભવતી કાંદબરીને બોલાવીને વિજયા જયારે એને એક આઘાતજનક બાબતની સાક્ષી બનાવે છે તે સમયના એના પ્રતિભાવોનું આઘાત-પ્રત્યાઘાતનું આસ્વાદ્ય આલેખન કર્યું છે. આ લેખિકાના મનોવૈજ્ઞાનિક અભિગમનું એક ઉતમ ઉદાહરણ બની રહે છે. આ ઉપરાંત સેન્ટની શીશીઓ કપડાં પર છાંટીને આત્મહત્યા કરવા તત્પર થયેલી કાદંબરીનું ઊંડું મંથન એની મુંઝવણ, માનસિક ત્રાસ વગેરેનું ચિત્રણ કરવાની ઝાંઝી તક એમને ઝડપી નથી એટલે સ્થૂળ ઘટનાં પર જેટલું ધ્યાન આપ્યુ છે એટલું પાત્રની માનસિક સૂક્ષ્મ ઘટનાં પર આપ્યું નથી,પરંતુ પરંપરાગત મનોવૈજ્ઞાનિક દ્રષ્ટિએ આ નિરૂપણ આસ્વાદ્ય અને ઉચિત ગણાય છે.

Keywords: મનોવિશ્લેષણવાદ સંજ્ઞા,પાયાની વિભાવનાઓ, સાહિત્ય અને મનોવિજ્ઞાન,મનોવૈજ્ઞાનિક અભિગમથી નવલકથા'કાદંબરીની મા'ની સમીક્ષા

મોહન પરમારની ટૂંકીવાર્તાઓમાં માનવસંબંધો (સાહિત્ય અને સમાજશાસ્ત્રના પરિપ્રેક્ષ્યમાં)

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સાહિત્ય અને સમાજ એ બંને અભિન્નપણે એકબીજાથી જોડાયેલા છે. કોઈપણ સર્જક તેના જમાનાનું જ સંતાન છે, તે સમાજમાંથી જ આવે છે તેથી તેના સર્જનમાં સંબંધનું નિરૂપણ આવતું હોય છે. મોહન પરમાર ની ટૂંકી વાર્તાઓમાં પણ માનવ - માનવ વચ્ચેના સંબંધોનું નિરૂપણ થયું છે. તેમાં કેવા પ્રકારના સંબંધો નિરૂપાયા છે તે મારા શોધપત્રનો વિષય છે. સંબંધોમાં માનવ મનના મનોભાવો,સામાજિક પરિસ્થિતિ, જીવનશૈલી, ભૌતિકતા, સુખ -દુઃખ, આર્થિક સ્થિતિ જેવી બાબતો રજૂ કરી વાર્તાકારે પાત્રોની માનસિકતા - સમાજની માનસિકતા રજૂ કરી બતાવી છે. આ બાબતોથી દાંપત્ય સંબંધ, માતા-પિતા અને સંતાનોના સંબંધ, ભાઈ-ભાઈના સંબંધ, સાસુ-સસરા અને વહુના સંબંધ, મિત્રોના સંબંધ, પાડોશી સંબંધમાં કેવી હકારાત્મક અને નકારાત્મક અસર ઊભી થાય છે તે સર્જકે કેવી રીતે નિરુપી બતાવી છે તે બતાવવાનો મારો ઉપક્રમ છે.

મોહન પરમારની વાર્તાઓમાં રહીમખાં, અનિકેત જેવા પાત્રો પરિસ્થિતિજન્ય બાહ્ય સંઘર્ષ અનુભવે છે. તો મેહુલ, દીપક જેવા પાત્રો માનસિકતાણ - આંતરિક સંઘર્ષ અનુભવે છે. 'સમાધાન','સાંજ' અને 'કાયાપલટ' જેવી વાર્તાઓમાં પાત્રો દ્વારા સહકારના સંબંધો રજૂ થયા છે. 'ખાંચો','સમજણ' અને 'નિર્ણય' જેવી વાર્તાઓમાં બે પેઢી વચ્ચેના ભેદ દ્વારા બાહ્ય અને આંતરિક સંઘર્ષ રજૂ થયા છે.

Key words:

(૧) ટૂંકીવાર્તા (૨) માનવસંબંધ (૩) માનવીના મનોભાવો (૪) સામાજિક પરિસ્થિતિ (૫) જીવનશૈલી

સાહિત્યમાં મૃત્યુદંડનાઅવશેષો અને સાહિત્યિક સક્રિયતા

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કોઇ પણ સભ્ય સમાજમાં મૃત્યુદંડ *(*Capital Punishment*)* આદર્શરૂપમાં ન હોય તો વધારે સારું. આમાં કોઇ ચર્ચાનો વિષય ન હોય શકે. આ સંદર્ભેગાંધીજીનું મંતવ્ય છે કે, "વ્યક્તિ દ્વારા વ્યક્તિની હત્યા અને રાજ્ય દ્વારા વ્યક્તિની હત્યા મારે મન બંને સમાન છે."જ્યારે મૃત્યુદંડનું અમલીકરણ કરવામાં આવે છે ત્યારે વ્યક્તિમાં સુધારાની કોઇ શક્યતા રહેતી નથી. બીજી વાત એ કે, કોઇ વ્યક્તિ ગુનો કેમ કરે છે? અથવા તો ગુનેગાર કેમ બને છે? તેની પાછળના પ્રભાવક પરિબળો કયા હોય શકે? ગુનેગારના મગજમાં શું ચાલી રહ્યું છે? તેથી પણ આગળ સમાજ કઈ રીતે આવા લોકોને જન્મ આપે છે? જેવા પ્રશ્નોની શોધ તાતી જણાય છે. માત્ર ગુનેગાર છે એટલા માત્રથી સજા ન કરી શકાય. જેમ ઈમેન્યુઅલકાન્ટ કહે છે, "કોઇ વ્યક્તિને સાધન માત્ર માનીને સજા કરવી તે વિકસિત સમાજની લાક્ષણિકતા ન હોય શકે." આપણી સામે સદીઓથી સાહિત્ય મૃત્યુદંડની નાબૂદી માટેના પ્રયત્નો કરતું આવ્યું છે. આ પ્રકારના સાહિત્યમાં નૈતિક મૂંઝવણ અને સદાચાર તથા *કર્તવ્યપરાયણતા (*The Stranger, In cold blood*)*, માનવીયકરણની કથા અને તેની અસર *(*La Miserables), ન્યાયવ્યવસ્થાની સમીક્ષા તથા ટીકા (The Trial, The Crucible),સામાજિક અસર (Milkman, Chronicle of a Death Foretold), માનવ સ્વભાવ પર અસર જેવા વિષયોકૃતિના કેન્દ્ર સ્થાને હોય છે. જે સમાજના ઘણા ખરા અંશને પ્રભાવિત કરે છે. આ શોધપત્રનામાધ્યમથીએ બાબત ઉજાગર કરવાનો પ્રયત્ન છે કે, સાહિત્ય ઘણાં લાંબા સમયથી મૃત્યુદંડ સહિત અનેક સામાજિક સમસ્યાઓનાપ્રશ્નોની સમીક્ષા અને ટીકા કરવા માટેનું શક્તિશાળી માધ્યમ રહ્યું છે. જેમાં વિક્ટરહ્યુગો, આલ્બર્ટકામુ, ફ્રાન્ઝકાફકા, ગેબ્રિયલમાર્કવેઝ, આર્થરમિલર, ટ્રુમેનકેપોટ, વગેરે સાહિત્યકારો તથા ઝાંકદેરીદા, હેલનસિક્સસ, ઇવમોરિસી, પેગીકામુફ, વગેરે ચિંતકોએ અગત્યની ભૂમિકા ભજવી છે. કાયદોવ્યવસ્થા અને સમાજનાપરિપ્રેક્ષ્યમાં આ પ્રકારનું સાહિત્ય એક મોટું યોગદાન આપી શકે છે. મૃત્યુદંડની સજાની નાબૂદી માટે અથવા તેના ઉપયોગનેઘટાડવા માટે જે સમજણ અને તર્ક વિકસિત કરવું પડે તે આ પ્રકારનું સાહિત્ય પૂરું પાડે છે. મૃત્યદંડનાબદલાતા સ્વરૂપ, તેની વ્યક્તિગત રીતે અને સમાજ પર કેવી અસર ઉપજે છે તથાઓગણીસમીસદીથી એકવીસમી સદીમાં સુધીમાં તેની નાબૂદીમાં સાહિત્યે જે ભૂમિકા ભજવી છે તેને આલેખવાનો પ્રયત્ન કરવામાં આવ્યો છે.

Keywords: મૃત્યુદંડની નાબૂદી, સાહિત્યિક સક્રિયતા, નૈતિકતા, માનવીયકરણ, ન્યાયવ્યવસ્થા, વિમર્શ

ભારતના સ્વાતંત્ર્ય સંગ્રામમાં સુભાષચંદ્ર બોઝનું યોગદાન એક સમીક્ષા

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'તુમ મુઝે ખૂન દો મૈ તુમ્હે આઝાદી દૂંગા' ભારતના સ્વાતંત્ર્ય સંગ્રામમાં આ શબ્દો અવિસ્મરણીય બની ગયા છે. સુભાષચંદ્ર બોઝની આ એક આગવી ઓળખ છે. તેઓ નેતાજીના રૂપમાં લોકવિખ્યાત છે. ભારતને આઝાદી મહાત્મા ગાંધીજીના અહિંસા અને સત્યાગ્રહના ફળ સ્વરૂપે પ્રાપ્ત થઈ કે નેતાજીના ઉદ્દામ રાષ્ટ્રવાદના લીધે પ્રાપ્ત થઈ એ સતત ચર્ચાતો વિષય રહ્યો છે. પ્રસ્તુત શોધપત્રમાં હું નેતાજીનાં જીવનને ઈતિહાસ, સાહિત્ય અને ફિલ્મના સંદર્ભે આંતરવિદ્યાકીય અભિગમથી તપાસવાનો પ્રયત્ન કરી રહ્યો છું. આપણને સુવિદિત છે એ મુજબ નેતાજીનો જન્મ કટક ખાતે ૨૩ જાન્યુઆરી ૧૮૯૭ના રોજ થયો હતો અને ૨૦મી સદીનો પૂર્વાર્ધ નેતાજીના સ્વાતંત્ર્ય પ્રાપ્તિના મહાન પુરુષાર્થથી ઝળહળી રહ્યો છે. નેતાજીનો જીવનકાળ કેટલો એ પણ એક વિવાદ અને સંશોધનનો પ્રશ્ન છે. આ દિશામાં ઈતિહાસ, સાહિત્ય અને ફિલ્મ પોતપોતાની રીતે નેતાજીનાં જીવનને સમજવા – મૂલવવાનો પ્રયત્ન કરે છે. આ ત્રણ વિદ્યાશાખાઓના સમન્વયથી નેતાજીનું એક જ્વલંત ચારિત્ર આપણને પ્રાપ્ત થાય છે.

ભારતના સ્વાતંત્ર્ય સંગ્રામની શરૂઆતનો એક મહત્વનો પડાવ ૧૮૫૭નો ક્રાંતિકારી સંગ્રામ છે. મંગલ પાંડે જેના પ્રથમ શહીદ બને છે. ત્યારબાદ ૧૮૮૫માં ભારતીય રાષ્ટ્રીય કોંગ્રેસની સ્થાપના થાય છે. એનાથી આ સંગ્રામને એક નવું પરિમાણ મળે છે. ૧૯૦૫માં બ્રિટીશ સરકાર બંગાળનું વિભાજન કરી અને દેશની રાજધાની કલકત્તાને બદલે દિલ્હીને જાહેર કરે છે. ૧૯૧૫માં મહાત્મા ગાંધી દક્ષિણ આફ્રિકામાં સત્યાગ્રહ કરીને પાછા ફરે છે ને દેશને સમજવાનો પ્રયત્ન કરે છે. ૧૩ એપ્રિલ ૧૯૧૯ના રોજ અમૃતસર ખાતે જલિયાવાલા બાગની વિભિષિકા સર્જાય છે. ૧૯૨૯માં ભગતસિંહ અને બટુકેશ્વર દત્ત દિલ્હીની સેન્ટ્રલ એસેમ્બલીમાં બૉમ્બ ફેંકે છે. ૧૯૩૦માં ગાંધીજી દાંડીકૂચ કરે છે. ત્યારબાદ સ્વાતંત્ર્ય સંગ્રામના ઈતિહાસની સૌથી મહત્વની ઘટના છે ; ૧૯૪૩માં આઝાદ હિન્દ ફોજની સ્થાપના અને ૨૧ ઓક્ટોબર ૧૯૪૩ના રોજ સુભાષચંદ્ર બોઝ ભારતની અસ્થાઈ સરકાર બનાવે છે. એને જર્મની, જાપાન, ફિલિપાઈન્સ, કોરિયા, ચીન, ઇટલી, આયર્લેન્ડ જેવા દેશો માન્યતા પણ આપે છે. ભારતના સ્વાતંત્ર્ય સંગ્રામના ઈતિહાસની આ સૌથી મહત્વની ઘટનાઓ છે. એના પરિણામે ૧૯૪૭ની ૧૫મી ઓગસ્ટે દેશના ભાગલા પડે છે અને બ્રિટિશરોએ ભારતને રાજકીય સ્વતંત્રતા આપી મોટી અરાજકતામાં હડસેલીને પોતાના દેશ પાછા જતા રહે છે. ઈતિહાસના પાના પર આ ઘટનાઓમાં સુભાષચંદ્ર બોઝને જે ખરેખર મહત્ત્વ મળવું જોઈએ તે મળ્યું નથી કારણ કે આપણો ઈતિહાસ એક ચોક્કસ વિચારધારા ધરાવતા વર્ગ દ્વારા લખાયો છે.

નેતાજી વિશે સાહિત્યમાં જીવન-ચરિત્ર, નવલકથા, નાટક, કાવ્ય, નિબંધ વગેરે સ્વરૂપે પુસ્તકો પ્રાપ્ત થાય છે. જેમાં 'અંતિમ અધ્યાય' એ ઈતિહાસ કેન્દ્રી એક એવી નવલકથા છે જે ૧૮ ઓગસ્ટ ૧૯૪૫ પછીના નેતાજીનાં જીવન અંગે પ્રકાશ પાડે છે. એ સિવાયનાં પુસ્તકોમાં ૧૯૪૫ સુધીનું જીવન દર્શાવવામાં આવ્યું છે.

સુભાષચંદ્ર બોઝનાં જીવન અંગે બે ફિલ્મ અને એકથી બે વેબ સિરીઝ મળે છે. ૧૯૦૪માં 'ધ ફરગોટન હીરો સુભાષચંદ્ર બોઝ' એ પ્રથમ ફિલ્મ શામ બેનેગલ પાસેથી મળે છે. જેમાં નેતાજી કોંગ્રેસ છોડી દેશમાંથી વેશ બદલી વિદેશ જઈ ભારતની સ્વતંત્રતા માટે લડાયક યાત્રા આરંભે છે; જેમાં ૧૮ ઓગસ્ટ ૧૯૪૫ની વિમાની ઘટના સુધી દર્શાવે છે. જયારે ૨૦૧૯માં મુખરજી કમિશનના રીપોર્ટ પર આધારિત 'ગુમનામી' ફિલ્મ બને છે. જેમાં ચંદ્રચુડ ઘોષ તથા અનુજ ધર વગેરેના પ્રયાસોથી ૧૮ ઓગસ્ટ ૧૯૪૫ પછીના નેતાજીનાં ગુમનામી જીવનને દર્શાવ્યું છે.

આમ, નેતાજીનું જીવન અત્યંત રહસ્યમય અને રોમાંચક બની રહ્યું છે. એ અંગે સંશોધનને વિપુલ અવકાશ છે.

સૂચક શબ્દોઃ આઝાદ હિન્દ ફોજ, અસ્થાઈ સરકાર, નેતાજીનું મૃત્યુ

સંદર્ભઃ

- 'તુમ મુજે ખૂન દો મૈ તુમ્હે આઝાદી દૂંગા' - રાજુલ દવે
- 'કદમ કદમ બઢાયે જા' - જયમલ્લ પરમાર
- 'સુભાષચંદ્ર બોઝ' - ગુણવંતરાય આચાર્ય
- 'અંતિમ અધ્યાય' - વિષ્ણુ પંડ્યા- ડૉ. આરતી પંડ્યા
- 'નેતાજી' - કલ્યાણ કુમાર ડે

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निरजा माधव कृत कोरोना उपन्यास की मूल संवेदना

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समय की बढ़ती गति के साथ इंसान अनेक समस्याओं, बीमारियों, महामारियों के झेलते हुए आया है | इसी क्रम में अब 2021 का साल समाप्त हो रहा है | महामारियों के इसी क्रम में इंसान के मन सदा भय, डर, निराशा, अवसाद आदि से कांप उठता है। महामारी वर्तमान की हो या 1700, 1800, 1900 ई. की, सामाजिक स्थितियां नियंत्रण में नहीं रहती है । मनुष्य के काबू में कुछ भी नहीं रहता वह असहाय और बेबस हो जाता है । मानव द्वारा किए गए सारे प्रयास महामारी के समय निरर्थक सिद्ध होती है। वर्तमान परिस्थिति से सभी परिचित है, पर भूतकाल के महामारी से परिचित होने का माध्यम साहित्य है। साहित्यकारों ने अपने-अपने समय में हुए महामारी का चित्रण साहित्य में इस प्रकार किया है कि वह आज की परिस्थिति से हू-ब-हू मेल खाती है। ऐसा माना जाता है कि हर सौ साल में महामारी आती है, उदाहरण के लिए 1700 ई. में प्लेग, 1820 ई. में हैजा, 1920 ई. में स्पेनिश फ्लू तथा वर्तमान (2020) में कोविड-19 । वर्तमान में (कोरोना वायरस) कोविड-19 महामारी से सभी जूझ रहे है इसके नकारात्मक प्रभावों को भी हम सभी महसूस किया है। आज से पहले जो भी महामारियां विश्व में आई हैं इनकी जानकारी इतिहास के पन्नों के साथ साहित्य के पन्नों में भी देखी जा सकती है। हर युग का लेखक अपने युग को साहित्य में उकेरता है और यही सार्थक रचना कहलाती है। महामारी से संबंधित साहित्य सभी भाषाओं में रची गई हैं. हिंदी कथा साहित्य भी इससे अछूता नहीं है चाहे वो चेचक, एन्फ़्लुएन्जा, तपेदिक, मलेरिया, हैजा, प्लेग आदि क्यों न हो।ऐसे में जब हम पूरे साल के साहित्यिक परिदृश्य पर नजर डालते हैं, उसका मूल्यांकन करते हैं तो पाते हैं कि हमने इस साल काफ़ी कुछ खोया है, साथ ही बहुत कुछ पाया है। इस बीच साहित्य हमें बराबर कोरोना से लड़ने की ताकत देता रहा। तकनीकि ने भी हमारा भरपूर साथ दिया। इस साल प्रिंट मीडिया की अनुपस्थिति में इलैक्ट्रोनिक मीडिया खूब सक्रिय रहा। सोशल मीडिया की बदौलत हम घरों में बंद रहने के बावजूद एक-दूसरे से जुड़े रहे, एक-दूसरे को हिम्मत बँधाते रहे, एक-दूसरे को ढ़ाढ़स देते रहे थे यहां मैं सुप्रसिद्ध लेखिका निरजा माधव कृत उपन्यास "कोरोना" की मूल संवेदना को प्रस्तुत है कोरोना कालीन हिंदी का पहला उपन्यास है | इस उपन्यास में लेखिका ने महामारी के कठिन समय को डायरी शैली में लिखा | जिसमें अपने आसपास के वातावरण का सचित्र शब्दबद्य किया है |

जेल में लिखी गयी हिन्दी कविताओं का सौन्दर्य निरूपण

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जेल साहित्य क्रन्तिकारी इतिहास का वह भाग है जिसमें रचनाकारों की रचनाधर्मिता का आंतरिक सौन्दर्य अत्यंत सजीव रूप में चित्रित हुआ है। जेल साहित्य की हमारे यहाँ लम्बी परम्परा रही है जिसमें रचनाकारों ने अपनी बात को अधिकतर कविताओं के माध्यम से व्यक्त किया है। स्वतंत्रता संग्राम की लड़ाई से लेकर आपातकाल के दौर तक के अनेक रचनाकारों ने प्रत्यक्ष रूप से आन्दोलन में भाग लेते हुए क्रान्ति संघर्ष के उत्तरदायित्व को संभाला, जिसके कारण इन्हें जेल भी जाना पड़ा और जेल की यातनाओं से गुजरना पड़ा। इन रचनाकारों ने जेल में भोगे गए अपने यातनाजन्य अनुभव और संघर्ष को कविताओं में व्यक्त किया। जेल में लिखी गई कविताएँ भले ही संघर्ष और जेल की यातनाओं से उपजी हों किन्तु इनमें एक अलग सा काव्य सौन्दर्य है। यह काव्य सौन्दर्य रचनाकार के संघर्ष और आंदोलनधर्मिता का सौन्दर्य है। हिन्दी में साहित्यकार माखनलाल चतुर्वेदी से लेकर, पाण्डेय बेचन शर्मा 'उग्र', शिवमंगल सिंह 'सुमन', भवानी प्रसाद मिश्र, नागार्जुन, अज्ञेय, अटल बिहारी बाजपेयी व एकांत श्रीवास्तव के अलावा भी अनेक राजनेता और फ़िल्म अभिनेता हैं जिन्होनें जेल के बन्द अंधेरे कमरे और अकेलेपन को कलमबद्ध किया। इसी को चलताऊ भाषा में हम बन्दी साहित्य या जेल साहित्य कहतें हैं। जेल में लिखी गयी कविताओं के सौन्दर्य निरूपण की बात करें तो 'माखनलाल चतुर्वेदी' की कविता ..'कोकिल बोलो तो? / क्या गाती हो? / सन्देशा किसका लाती हो?/ कोकिल बोलो तो? ..और 'चाह नही सुरबाला के गहनों में गूथा जाऊं' में देश प्रेम से उपजा सौन्दर्य है जो जेल की कोठरियों में भी उनमें आत्मबल भर रहा है। इसी प्रकार शिवमंगल सिंह 'सुमन' भी जेल की सलाखों में कैद रहकर लिखतें –

‘प्यार जो तुमने सिखाया

यहाँ तक खींच लाया

प्रीत के बन्दी करते नही फरियाद

जेल में आती तुम्हारी याद।।’

21वीं सदी के आदिवासी केंद्रित हिन्दी उपन्यासों में पर्यावरणीय चेतना: एक अध्ययन

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21वीं सदी के इस दौर में अखिल विश्व की सबसे बड़ी समस्या पर्यावरण की समस्या है। दुनिया में बढ़ते तापमान, जल प्रदूषण, वायु प्रदूषण,और ध्वनि प्रदूषण इत्यादि समस्याएं; प्रकृति में होने वाले असंतुलन तथा मानव द्वारा हो रहे अति प्राकृतिक दोहन के कारण हमारे सामने आ रही हैं।ये सभी समस्याएं पर्यावरणीय समस्याएं हैं। चेतना से तात्पर्य है – "चैतन्य अवस्था " अर्थात किसी समस्या के समाधान हेतु समस्या का वर्णन करना तथा उपाय के बारे में चिंतन करना। क्योंकि साहित्य समाज का दर्पण होता है तथा हिंदी साहित्य में आदिवासी साहित्य का मूल जल, जंगल और जमीन मुख्य रूप से पर्यावरण के संतुलन तथा प्रकृति के साथ तारतम्यता पर ही आधारित है। अतः आदिवासी केंद्रित साहित्य में पर्यावरणीय चेतना का होना स्वाभाविक ही है। साहित्य में उपन्यास एक ऐसी विधा है जिसमें जीवन के लगभग सभी पहलुओं का वर्णन होता है अतः आदिवासी केंद्रित हिंदी उपन्यासों में पर्यावरण चेतना मुख्य रूप से दिखाई देती है। इस दृष्टि से देखते हैं तो 21वीं सदी के दो दशकों में कुछ उपन्यास जैसे- संजीव का "जंगल जहां से शुरू होता है", "रह गई दिशाएं इसी पार", महुआ माजी का "मरंग गौड़ा नीलकंठ हुआ", रणेंद्र का "ग्लोबल गांव का देवता", "गायब होता देश", सत्यनारायण पटेल का "गांव भीतर गांव", दिवाकर दिनेश गौड़ का "विकास और विनाश" इत्यादि प्रकाशित हुए हैं जिनमें पर्यावरण मुख्य रूप से दिखाई पड़ती है।

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શોધપત્રનો વિષયઃ 'પ્રવર્તમાન પરિપ્રેક્ષ્યમાં ભારતીય દાર્શનિકજ્ઞાન મુજબ મનુષ્યજીવન અને Artificial Intelligence

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મનુષ્ય પાસે જે જ્ઞાન છે તે સીમિત છે, તેનાથી તે ઇચ્છિત ધ્યેય મેળવવા માટે પ્રયત્નશીલ છે, તેનું કારણ માયા કે અજ્ઞાનથી તે આવૃત્ત છે એવું ભારતીયદર્શન કહે છે. પ્રાચીનકાળથી તે અજ્ઞાન નિવૃત્તિ જ્ઞાનપ્રાપ્તિ અર્થે પ્રયત્ન કરે છે, તે કેટલુંક મેળવે છે, ક્યારેક વિશેષ પરિણામ લાવી શકતો નથી, તત્ત્વજ્ઞાનની તેને આવશ્યકતા છે. મનુષ્યને સત્ય તરફ દોરી જનાર જ્ઞાન ભારતીયદર્શનોમાં મળે. તેમાં કહેલા સિદ્ધાંતો જીવનમાં આત્મસાત કરી, જીવનની સમસ્યાનો અંત આવે. ભારતીયદર્શનો બે પ્રકારના છે, નાસ્તિક અને આસ્તિક. આ બધા જ દર્શનો મનુષ્યને સુખાકારીથી લઈને પરમ સુખની પ્રાપ્તિ કરાવી આપે. કેમકે તે જીવ, જગત અને ઈશ્વર જેવાં તત્વોને ઝીણવટથી જણાવી ઉત્કર્ષ સાધે. તેનાથી મનુષ્યની નવી બૌદ્ધિક પેઢી જન્મશે, જેનાથી તેનું જીવન શાંતિભર્યું બને. બીજી તરફ આધુનિક સમયમાં માનવનિર્મિત વ્યવસ્થાઓ, જે એના દ્વારા જ નિર્માણ થાય છે, તેનો ઉપયોગ વ્યવહારની ન જાણેલ વસ્તુથી પર સુધી પહોંચવાનો હોય છે. એનાથી તેને જે પરિણામ પ્રાપ્ત કરવું હોય તે મુજબના જ ડેટા તે ફીટ કરે છે, અને તેનું નિયમન યાંત્રિકપ્રક્રિયા દ્વારા કરે છે, તેથી તેમાં જેટલું ફીટ કર્યું હોય તે મુજબ જ, સીમિત અને મર્યાદામાં કાર્યની સિદ્ધી થાય છે. આ પ્રકારની ટેકનોલોજીથી જે આઉટપુટ મળે છે તેનાથી તેને સંતોષ પ્રાપ્ત ન થતાં તે નવો આવિષ્કાર કરી, યાંત્રિક પેઢીનું નિર્માણ કરે છે. જેમકે ChatGPT સોફ્ટવેયર વગેરે. તે એમાં જે ડેટા ફીટ કરેલ હોય એ મુજબ અનૈસર્ગિક રીતે વિચારી જવાબ આપે છે, તેનાથી સીમિત અર્થની પ્રાપ્તિ થાય છે. કેમકે તેમાં જે અર્થ સાંપડે છે તેમાં માનવનિર્મિત પ્રોગ્રામિંગથી જોડાણ કરેલું હોય છે. આની સામે દાર્શનિકજ્ઞાનનો પોતાનામાં આવિષ્કાર જીવનને મહામાનવ બનાવે છે. ભારતીયદર્શન-જ્ઞાનપરંપરાનાં સૈદ્ધાંતિકતત્વોની ચર્ચાના મહત્વને રજૂ કરી માનવનિર્મિત ટેકનોલોજીના આવિષ્કાર સમક્ષ આ જ્ઞાનપરંપરાની વિશેષતા ઉજાગર કરવાનો હેતુ છે.

Keywords: ભારતીય દાર્શનિક-જ્ઞાનપરંપરા, મનુષ્યના માનસ પટલમાં રહેલ જ્ઞાન, Artificial Intelligence, સોફ્ટવેયર.

Reference:

- ભારતીય દર્શન – ૧–૨, ડૉ. રાધાકૃષ્ણન, રાજપાલ એન્ડ સન્સ દિલ્લી, સંસ્કરણ : ૨૦૨૨.
- ભારતીય દર્શન, ઉપાધ્યાય બલદેવ આચાર્ય, ચૌખમ્ભા સંસ્કૃત ભવન વારાણસી, સંસ્કરણ: પ્રથમ, વિ.સં.૨૦૭૮
- આદ્યશંકરાચાર્ય વિરચિત વિવેકચૂડામણિ, પુરોહિત ભાઈશંકર, સંસ્કૃત સેવા સમિતિ અમદાવાદ, પ્રથમ આવૃત્તિ ૧૯૮૫.

“ધર્મશાસ્ત્રમાં વર્ણિત અપરાધ-દંડવિધાન અને પ્રાયશ્ચિત્તનું વિવેચનાત્મક અધ્યયન”

(મનુસ્મૃતિ-મન્વર્થ મુક્તાવલી ટીકા તથા યાજ્ઞવલ્ક્યસ્મૃતિ-મિતાક્ષરા ટીકાનાવિશેષ સંદર્ભમાં)

અક્ષય કુમાર મહેન્દ્ર કુમાર પંડ્યા
અનુસ્નાતક સંસ્કૃતવિભાગ, સરદાર પટેલ યુનિવર્સિટી.
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ધર્મ શબ્દ ધૃઞ (धृ धारयति) ધાતુથી મન્ પ્રત્યય જોડવાથી બન્યો છે.જેનો અર્થ થાય છે ધારણ કરવું,આધાર આપવો,પાલન કરવું.મહાભારત પ્રમાણે ધર્મથી જ બધીપ્રજા બંધાયેલી છે.ધર્મ બધાને ધારણ કરે છે. માટે જ તેને ધર્મ કહે છે.તે અધોગતિ માંથી બચાવે છે. અને જીવનનું રક્ષણ કરે છે.આમ જેનાથી ધારણ અને પોષણ અને રક્ષણ સિધ્ધ થાય તેને ધર્મ કહે છે.

धारणाद धर्ममित्याहुर्धर्मो धारयते प्रजा: |
धारणाद धर्ममित्याहुर्धर्मेण विधृता: प्रजा: ||

(મહા.કર્ણપર્વ ૬૯:૫૮)

સૃષ્ટિના આરંભથી જ મનુષ્ય ધર્મના માર્ગે ચાલવાની પ્રવૃત્તિ અને પ્રયત્ન કરતો આવ્યો છે,પણ જે રીતે ચાલતાં-ચાલતાં માર્ગમાં વિઘ્નો આવે છે એ રીતે સમાજ-જીવનમાં પોતાની ઇચ્છાઓની પરિપૂર્તિ કરવામાં તે અધર્મ અથવા તો શાસ્ત્રવિરોધી પ્રવૃત્તિ કરી બેસે છે.આ શાસ્ત્ર અથવા તો રાજ્ય વિરોધી પ્રવૃત્તિથી તેને રોકવા અને સમાજ માં કાયદાનું ઉત્તમ ઉદાહરણ પૂરું પાડવા માટે શાસ્ત્રોમાં દંડવ્યવસ્થા કરવામાં આવેલી છે.વેદમાં વિવાહ, વિવાહના પ્રકાર, પુત્રપ્રકાર, દત્તકવિધાન, શ્રાધ્ધ વગેરે બાબતોની ચર્ચા કરવામાં આવેલી છે. ત્યારબાદ વેદ ઉપરથી વેદાંગો રચાયાં. આ વેદાંગોમાં કલ્પગ્રંથો હતા.કલ્પમાં ધર્મ,ગૃહ્ય અને શ્રૌત એવા પ્રકારના સૂત્રગ્રંથો હતાં. તેમાંથી સ્મૃતિઓનો જન્મ થયો અને તેને આધારે નિબંધકારોએ નિબંધ ગ્રંથોની રચના કરી ગૌતમ,આપસ્તંબ,બૃહસ્પતિ,બોધાયન વગેરે ધર્મસૂત્રકારો થયાં. મનુ,યાજ્ઞવલ્ક્ય દેવલ,પરાશર,અત્રિ,હારિત,શાતાતપ જેવા સ્મૃતિકારો થયાં. ત્યારબાદ થયેલા ટીકાકારોએ ધર્મશાસ્ત્રનું સમ્યક નિરૂપણ કરવાનો પ્રયત્ન કર્યો.

ભારતીય ધાર્મિક સાહિત્યમાં સ્મૃતિઓનું મહત્વપૂર્ણ સ્થાન છે. કહેવામાં છે કે,श्रुतिस्तु वेदो विज्ञेयो धर्मशास्त्रं तुवै स्मृति: । સ્મૃતિઓને જ ધર્મશાસ્ત્ર ગણવામાં આવે છે. વસ્તુતઃધર્મનો મૂળ સ્ત્રોત જ્યાંથી પ્રવાહિત થયો તેમાં સ્મૃતિ પ્રધાન છે. સ્મૃતિગ્રંથો આચાર,વ્યવહાર,અને પ્રાયશ્ચિત્ત એવા ત્રણ વિભાગોમાં વિભક્ત છે.જે પૈકી વ્યવહારમાં દંડ નો સમાવેશ કરવામાં આવે છે.અને દંડ એ આત્મખોજ કરી ને પ્રાયશ્ચિત્ત તરફનું પ્રયાણ છે.મહર્ષિ વ્યાસે કહ્યું છે કે, परोपकाराय पुण्याय पापाय परपीडनम् | પ્રજાજનોનું વર્તન આ આચાર પ્રમાણે હોય તે જોવાની ફરજ રાજાની હતી.રાજાને આ આચાર,વ્યવહાર માં કોઈ પણ પ્રકારનું શાસ્ત્રજ્ઞાનું પાલન થતું ન જણાય તો રાજા દંડનો ઉપયોગ કરી અથવા તો પ્રાયશ્ચિત્ત ધ્વારા પ્રજાના આચાર,વ્યવહારને નિયંત્રણમાં રાખતો હતો. અને આમ કરવાથી રાજાને ધર્માવતાર માનવામાં આવતો.

अधर्मदण्डनं स्वर्गकीर्तिलोकविनाशनम् |
सभ्यक्तु दण्डनं राज्ञ: स्वर्गकीर्तिजयावहम || याज्ञ.स्मृ. (१.३५७)

वेदोऽखिलो धर्ममूलम् स्मृतिशीले च तद्विदाम

आचारश्चैव साधूनामात्मनस्तुष्टिरेव च || मनुस्मृति(२.६)

મનુસ્મૃતિ ના મતે અપરાધ એટલે શાસ્ત્ર માં નિહિત કર્મો સિવાયના સ્વાર્થ માટે કરવામાં આવતા કર્મો કે જેના પરિણામે વ્યક્તિ,કુટુંબ,સમાજ,દેશ વેગેરે નું અહિત થાય તેને અપરાધ કહેવામાં આવે છે.દંડ નો અર્થ સમજાવતા મનુ જણાવે છે કે,

तस्य सर्वाणि भूतानि स्थावराणि चराणि च |

भयाद्भोगाय कल्पन्ते स्वधर्मान्न चलन्ति च || मनुस्मृति(७.१५)

તેમજ દંડની ઉત્પતિની બાબતમાં જણાવે છે કે,

तस्यार्थे सर्वभूतानां गोप्तारं धर्ममात्मजम् |

ब्रह्मतेजोमयं दण्डमसृजत्पूर्वमीश्वरः || मनुस्मृति (७.१४)

સૌ પ્રથમ ઇશ્વરે દંડનું નિર્માણ કરી ભગવાન શિવને અર્પણ કર્યો, શિવ પછી વિષ્ણુ,ત્યારબાદ મનુ તથા મનુના પુત્રો પાસે થી અંતમાં રાજાના હાથમાં આવી પડ્યો.રાજા દંડ વિષયક નિર્ણય લેવામાં જાતિ-ધર્મ,દેશ-કુળ,માન્યતાઓને ધ્યાનમાં લેતો હતો.(મનુસ્મૃતિ૮/૪૫)આ મતનું સમર્થન કુલ્લુકભટ્ટ પણ કરે છે. મનુસ્મૃતિ આ બાબત માં જણાવે છે કે, જેણે જેટલો અપરાધ કર્યો છે, અને જેનાથી જેટલું દુખ પહોચ્યું છે તેને તેટલો જ દંડ આપવામાં આવતો હતો. यथा-यथा महदुःखं दण्डं कुर्यात् तथा तथा। मनुस्मृति(८/२८६) મનુ ક્યારેય અપરાધીને દંડવિના છોડવાની વાત કરતા નથી તેઓ જણાવે છે કે, આતતાયીનો તુરંત વધ કરવો જોઈએ ભલે તે પછી ગુરુ,વિદ્વાનબ્રાહ્મણ,બાળક,વૃધ્ધજ કેમ ન હોય.(મનુ.૮/૩૫૦) રાજા માટે કોઈપણ અદંડનીય નથી તે ભલે પછી માતા,પિતા,ભાઈ,પત્ની,આચાર્ય,પુત્ર કે પુરોહિત હોય.

દંડનીચર્ચાબાદપ્રાયશ્ચિત્ત શબ્દની વ્યુત્પત્તિ સમજાવતા યાજ્ઞવલ્ક્યસ્મૃતિ ની બાલંભટ્ટી ટીકામાં જણાવવામાં આવ્યું છે કે, प्रायः पापं विनिर्दिष्ट चितं तस्य विशोधनम्| અર્થાત્ ચિત્તનું વિશોધન કરવું તેને પ્રાયશ્ચિત કહેવામાં આવ્યું છે.પાણિની પોતાના અષ્ટાધ્યાયી ગ્રંથમાં જણાવે છે કે, तपादि साधनपूर्वक किल्बिषनिवारणार्थं चित्तम् – निश्चयम् प्रायश्चित्तम्।

આમ,

ધર્મશાસ્ત્રમાંઅપરાધ,દંડવિધાનતથાપ્રાયશ્ચિતનીખૂબવિગતેચર્ચાકરવામાંઆવેલીછેજેવર્તમાનસમયમાંસમાજ નેખૂબજઉપયોગીથઈપડેછે.

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શાસ્ત્રાર્થ કે વાદવિધિ એટલે સત્યની સ્થાપના કે અસત્યનું ખંડન. આજના સમયમાં ટેલિવિઝન વગેરેના કાર્યક્રમોમાં જે શાસ્ત્રાર્થનું સ્વરૂપ જોવા મળે છે તે પ્રાચીન ભારતીય શાસ્ત્રાર્થ પદ્ધતિથી ઘણું ભિન્ન પડી ગયું છે. ખરેખર પ્રાચીન ભારતીય પરંપરામાં શાસ્ત્રાર્થનું સ્વરૂપ અને તેનું પ્રયોજન સમાજના ઉદ્ધાર અને જ્ઞાનના વિકાસ માટે જોવા મળતું હતું. જે આજના સમયમાં યશપ્રાપ્તિ કે સ્વાર્થ માટે જોવા મળે છે. જેની નકારાત્મક અસર સમાજના જ્ઞાન અને વિકાસની ગતિ પર ક્યાંક ને ક્યાંક જોવા મળે જ છે. માટે શાસ્ત્રાર્થની પ્રાચીન ભારતીય પદ્ધતિને પ્રકાશમાં લાવી યથાર્થ જ્ઞાનની દિશામાં ભારતને ફરીથી વધુ ગતિમાન કરવા અખંડ ભારતના અનેક શાસ્ત્રાર્થોમાંથી આદિ શંકરાચાર્યે તેમની દિગ્વિજય યાત્રામાં સંપૂર્ણ ભારતમાં ફરીને મોટા મોટા અનેક વિદ્વાનો સાથે શાસ્ત્રાર્થ કરી સંપૂર્ણ ભારતમાં અદ્વૈતદર્શનના જ્ઞાનનો વિકાસ કર્યો, જેમા મંડનમિશ્ર અને તેમની ધર્મપત્ની ઉભયભારતી સાથેનો શાસ્ત્રાર્થ ખુબ જ પ્રસિદ્ધ છે. આદિ શંકરાચાર્યના આવા શાસ્ત્રાર્થો વિશે વિવેચનાત્મક પદ્ધતિથી અહીં પ્રકાશ પાડવામાં આવશે. જેથી આજના સમયમાં ‘‘શાસ્ત્રાર્થ’’ કે જે ટેલિવિઝન વગેરેના માત્ર કાર્યક્રમો બનીને રહી ગયા છે તેને નવી દિશા મળે, સમાજને જે-તે શાસ્ત્રાર્થ કે વાદવિવાદથી જ્ઞાનની પ્રાપ્તિ થાય, સમાજનો વિકાસ થાય તેવી આશા છે. આમ, ભારતીય શાસ્ત્રાર્થની પ્રાચીન પદ્ધતિને ફરીથી અનુસરીને ભારતને ફરીથી વિશ્વગુરુ બનાવવાનો પ્રયાસ છે.

Keywords: શંકરાચાર્ય, શાસ્ત્રાર્થ, અદ્વૈતદર્શન, જ્ઞાન

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વેદ અને અંત શબ્દ મળીને વેદાન્ત શબ્દ બન્યો છે. જેનો અર્થ માનવ જ્ઞાનની પરાકાષ્ઠા તેમજ વેદોનો સાર થાય છે. આત્મા અજ્ઞાનના આવરણ ને કારણે વાસ્તવિક સ્વરૂપને ભૂલીને સાંસારિક સુખ દુઃખનો અનુભવ કરે છે. આ દુઃખોને દુર કરી મોક્ષ પ્રાપ્ત કરાવનારું આ દર્શન છે. આધ્યાત્મિકતાને કારણે આપણો દેશ વિશ્વનો પથદર્શક બન્યો છે પાશ્ચાત્ય દેશો પતંજલિ યોગ તથા વેદાન્ત દર્શનને મહત્વ આપવા લાગ્યા છે. આ દર્શન દ્વારા વ્યક્તિ અનુભવે છે કે માનવ માત્ર ઉદર પોષણ માટે નહિ પરંતુ સાચા અર્થમાં માનવી બને છે. લૌકિક વ્યવહાર દ્વારા પરમ બ્રહ્મનો સાક્ષાત્કાર થઇ શકતો નથી તેના માટે વેદાન્તની ઉપયોગીતા રહે છે. બધા સાંસારિક દુઃખોનું મૂળ અધ્યાસ છે. જેનો નાશ બ્રહ્મવિદ્યાને જાણવાથી થાય છે. જેના માટે વેદાન્ત ખુબજ ઉપયોગી છે. વેદાન્ત એકતા ઉપર વધુ ધ્યાન આપે છે. આખું વિશ્વ માત્ર એકજ તત્વ માંથી ઉત્પન્ન થયું છે. વેદાન્ત એકતા, આત્મીયતા,અહિંસા વગેરે જેવા ગુણોનો વિકાસ કરાવે છે. હિંસા, હત્યા, ભ્રષ્ટાચાર, ગરીબી, શોષણ વગેરે ને રોકવામાટે વેદાંત ખુબજ ઉપયોગી છે. આ દુનિયામાં અદ્વૈત દર્શન જ એવું એકમાત્ર દર્શન છે જે સંપૂર્ણ સૃષ્ટિની અખંડિતતાનો સ્વીકાર કરે છે. મનુષ્ય મનુષ્ય વચ્ચે ભેદ કરતુ નથી. પરંતુ એકજ આત્માના વિભિન્ન સ્વરૂપોને સ્વીકારે છે. મનુષ્ય એકલાને નહિ પરંતુ જીવ-જંતુ, પશુ-પક્ષી, વનસ્પતિ, આદિને ઈશ્વરનું સ્વરૂપ માનીને તેની પૂજા કરે છે. આ દર્શન જડ તથા ચેતનમાં ભેદ કરતુ નથી. દુઃખોમાંથી મુક્તિ મેળવવા માટે માનવીનું કર્તવ્ય છે કે તે આધ્યાત્મિક સાધનાને અનુસરે તથા બ્રહ્મ તત્વને જાણે.

Keywords – વેદાન્તદર્શન, જીવન, મોક્ષ, આધ્યાત્મિકતા,ગુણ, દુઃખ

चारुदेवशास्त्री एवं भाषा

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व्याकरणशास्त्रं स्तरत्रये निबद्धम्। वर्णस्तरे, पदस्तरे, वाक्यस्तरे। वर्णस्तरे अङ्गकार्यं, सन्धिः च दृश्यते । पदस्तरे सुबन्तं, तिङ्गन्तं, लकाराः, एकशेषसमासः, एकशेषवृत्तिः एते विषयाः अन्तर्भवन्ति। वाक्यस्तरे कारकं, स्फोटः, शाब्दबोधविचारः इत्यादयः अन्तर्भवन्ति। भाषायाः शुद्धिः इति अत्यन्तप्रधानो विषयः। परन्तु भाषायाः मर्यादा, शब्दानामध्ययनं, शब्दानां स्वभावः, एतादृशविषयेषु व्यवहारस्तरे बहुजनैः तत्र परिशीलनं करणीयं भवति। अधीतव्याकरणशास्त्रैः समधितसंस्कृतवाङ्मयैः एव तत्र भाषायाः शब्दानां गाम्भीर्यं, मर्यादाव्याप्तिः अवगम्यते। अतः दोषाणामपाकरणम् एवं भाषायां शब्दसौन्दर्यस्य आनयनमिति बिन्दुद्वयमपि बहुधा मुख्यमेव। अतः तत्र विशेषतः भाषाशुद्धिविषये अध्ययनम् एवं स्थाने योग्यप्रयोगाणां करणं नाम साधुशब्दानां प्रयोगः एतदुभयमपि भाषायाः व्यवहारमुखे अत्यन्तमपेक्षितम्। अतः एतादृशविषये विशेषतः व्याकरणशास्त्रे त्रिविधग्रन्थाः सन्ति।प्रक्रिया-ग्रन्थाः, प्रमेय-ग्रन्थाः, प्रयोग-ग्रन्थाः। प्रक्रिया ग्रन्थेषु शब्दसिद्धिः , रूपनिष्पत्तिः इति विषये एव बहुधा प्राधान्येन चर्चा क्रियते तत्र रूपं निष्पाद्यते परन्तु पदानां प्रयोगः , पदानां समासवृतौ प्रयोगः , पदानां नानावृत्तिषु प्रयोगः कथं करणीयः तथा तस्य विषये चर्चा प्रक्रिया-ग्रन्थेषु न क्रियते, रूपनिष्पादनं तेषां ग्रन्थानां लक्ष्यम्। प्रमेय–ग्रन्थेषु व्याकरणशास्त्रस्य दार्शनिकविचाराः, शाब्दबोधविचाराः, शक्तिविचाराः च दृश्यन्ते । प्रयोग-ग्रन्थेषु शब्दप्रयोगादिविषये चर्चा भवति। चारुदेवशास्त्रिणा शब्दापशब्दविवेकः, वाग्व्यवहारादर्श, उपसर्गार्थचन्द्रिकादि ग्रन्थेषु प्रयोगपरिशीलनानि कृतानि सन्ति। प्राक्कृतानां प्रयोगाणां कथं निर्वहणं करणीयम् एवं शुद्धप्रयोगाः साधुप्रयोगाश्च कथं करणीयाः इत्यस्य तत्र विशेषतः विमर्शः कृतः परन्तु लोके संस्कृतभाषायाः अल्पव्यवहारः अस्ति अतः व्यवहारस्य अभावात् अत्र प्रयोगविषये बहुधा चर्चा न जाता अतः प्रयोगविषये बहुधा चर्चा करणीया अस्ति अतः तद्विषये चारुदेवाचार्यैः बहुकार्यं कृतं वर्तते। चारुदेवाचार्याः वदन्ति यत् रामचन्द्राचार्यैः प्रक्रियाकौमुदी नाम्ना प्रक्रिया ग्रन्थः एवं भट्टोजी-दीक्षिताचार्यैः सिद्धान्तकौमुदी नाम्ना तत्र तैः प्रक्रीयाप्रधानः ग्रन्थः कृतः एवं तत्र प्रयोगस्य प्राधान्यं न्यूनं जातम्। यः इच्छेत्प्रियोऽहं लोकस्य स्यामिति स शब्दाञ्शिलयेत् साधीयश्च तान् व्यवहरेत्, प्रियङ्करणो हि शब्दप्रयोगः इति चारुदेवाचार्याः वदन्ति।

Keywords - संस्कृतभाषा, व्याकरणपरम्परा, भाषाशुद्धिः, साधुप्रयोगः, शुद्धप्रयोगः।

“સંસ્કૃત વ્યાકરણશાસ્ત્રમાં વ્યાકરણપરંપરાના અભ્યાસીઓ.”

પંચાલ પાયલ [1],ડૉ.વિજયાનન્દજી. પટેલ[1*]

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સંસ્કૃતવ્યાકરણ પરંપરાના અભ્યાસીઓનો પરિચય દ્વારા વિદ્યાક્ષેત્રમાંઆગવું પરિણામ મેળવી શકાય છે.વિવિધ ક્ષેત્રોમાં સંસ્કૃત વૈયાકરણોની માહિતી મેળવી શકાશે.આમ,આ સંસ્કૃતવ્યાકરણ વિષયમાં અનેક વિદ્વાનો જેમાં પાશ્ચાત્ય વિદ્વાનો રસ લઈને અભ્યાસ કરેલ છે, આમ 18મી 19મી તથા 20મી સદીના વ્યાકરણ અંગેની પ્રવૃત્તિનો પરિચય આપેલ છે.જેથી વિશ્લેષનાત્મક માહિતી મેળવી શકાશે.તેમાંઅભ્યાસીઓનું કર્તૃત્વ વગેરે દર્શાવેલ છે.આમ,સંસ્કૃત ભાષાની વિશિષ્ટતા તેમજ વ્યાપકતા માટે સંસ્કૃત વ્યાકરણ શાસ્ત્રનું અધ્યયન આવશ્યક છે.માટે આ શોધપત્રદ્વારા અભ્યાસીઓનો પરિચય આપીને પૂર્વે થયેલાં અભ્યાસ તપાસવા જોઈએ,માટે આજના પ્રવર્તમાન સમયમાં સંસ્કૃત વ્યાકરણનું અધ્યયન જરૂરી છે.એવી માહિતી મેળવી શકાશે. તેમજ પણિનીય વ્યાકરણનાઅભ્યાસક્ષેત્રોનો પ્રાથમિક પરિચય આપવામાં આવશે જેથી સંસ્કૃત વ્યાકરણ અંગે જેઓ અભ્યાસ કરશે તેમનાં ક્ષેત્રમાં ઉપલબ્ધ ગ્રન્થો,લેખો તેમજ સંશોધનો કરવાની પ્રેરણા મેળવી શકાય છે.

Keywords; સંસ્કૃત વ્યાકરણ, અધ્યયન, વૈયાકરણો,પ્રવર્તમાન સમય

References:

1. संस्कृत व्याकरण शास्त्रका इतिहास प्रथम भाग, लेखक युधिष्ठिर मीमांसक, भारतीय प्राच्य विद्या प्रतिष्ठान- रामगंज अजमेर संवत -२०२०।
2. પાણિનીય સંસ્કૃત વ્યાકરણ શાસ્ત્ર પરંપરાનો ઇતિહાસ -બીજી આવૃત્તિ - સં-ડૉ.જયદેવમો. શુકલ, યુનિવર્સિટી ગ્રન્થ નિર્માણ બોર્ડ-અમદાવાદ-૨૦૨૦.

सामाजिक जीवन में दर्शन की महत्ता

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दर्शन हमारे सामाजिक जीवन के प्रत्येक पहलु से जुड़ा हुआ है। हम उसे अपने जीवन से पृथक नहीं कर सकते। मनुष्य आरम्भ से ही अपनी वैचारिक दुनिया में बेहतर जीवन और समाज निर्माण का सपना अपने चेतन-अवचेतन मन में संजोए बेहतर समाज की कल्पना से ओतप्रोत रहा है। मानवीय विचारों का इतिहास बताता है कि दर्शन ही उसके वैचारिक जीवन को रचने, गढ़ने और दिशा देने का बुनियादी आधार रहा है, जहाँ से व्यक्ति अपने अस्तित्व और जीवन के महत्तर सवालों से लेकर रोजमर्रा की समस्यायों को हल करने का चेतना सूत्र प्राप्त करता है। दर्शन मानव अस्तित्व की व्याख्या करने वाला अनुशासन है। दर्शन एक वैचारिक अनुशासन है और विचार का अपना एक भौतिक सामाजिक आधार होता है। यहाँ हम कह सकते है कि कोई भी समाज अपने वैचारिक और सामाजिक जीवन को अलग-अलग रखकर एक सामाजिक प्राणी की भाँति समाज में नहीं रह सकता। दर्शन एक विचार है और मनुष्य विचारशील प्राणी और जहाँ दर्शन का सम्बन्ध विचार से है वहीं मनुष्य का समाज से है और विचार मनुष्य के विवेक से उत्पन्न होते हैं। यहीं से दर्शन की सामाजिक जीवन में महत्ता का एक ढाँचा तैयार होने लगता है। मनुष्य का सामाजिक वैचारिक संघर्ष उसे दार्शनिक श्रेणी में ला देता है। इसप्रकार दर्शन आज मानव-जीवन की वास्तविकता का सत्य है जो हमारे जीवन और समाज से गहनता से जुड़ा हुआ है।

कूट शब्द : दर्शन, सामाजिकता, विचार, मानव-जीवन

सन्दर्भ :

१. भारतीय दर्शन, आचार्य बलदेव उपाध्याय, चौखम्बा संस्कृत भवन, वाराणसी, प्रथम संस्करण- वि.सं. २०७८।
२. भारतीय दर्शन, वाचस्पति गैरोला, लोकभारती प्रकाशन, छठवाँ संस्करण- २०१६।
३. दर्शन की सामाजिक भूमिका और भारतीय जीवनदृष्टि, सुधा चौधरी, गार्गी प्रकाशन, प्रथम संस्करण- २०१६।

અદ્વૈત વેદાંતમાં બ્રહ્મતત્વનું નિરૂપણ

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પ્રાચીન સમયથી જ ભારતદેશ પોતાની આધ્યાત્મિકતાના કારણે વિશ્વમાં અગ્ર સ્થાને છે પરંતુ વર્તમાન સમયમાં મનુષ્ય આધ્યાત્મિકતાનાં માર્ગથી દૂર થતો જાય છે, તેનું મૂળ કારણ છે ભૌતિકવાદી જીવન. માનવી ઉદર-પોષણને સર્વસ્વ માની બેઠો છે. આ ઉપરાંત સાંસારિક પદાર્થોમાં આસક્ત થઈને સુખ-દુઃખનાં ચક્રમાં ફસાતો જાય છે. જેના પરિણામે બ્રહ્મતત્વથી વિયુક્ત થયો છે. શંકરાચાર્યએ અદ્વૈતતાના માધ્યમથી મનુષ્યને બ્રહ્મની સાથે જોડી રાખવાનો પ્રયાસ કર્યો છે. અદ્વૈતવેદાંત બ્રહ્મને માયાથી પર માને છે જ્યારે આજના સમયમાં માનવી બ્રહ્મને માયા દ્વારા પ્રાપ્ત કરી રહ્યો છે, જે તેનું અજ્ઞાન અને અવિદ્યા છે. અજ્ઞાનનાં આવરણને કારણે મનુષ્ય-મનુષ્ય વચ્ચેનો દ્વેષભાવ વધી રહ્યો છે. જીવો પ્રત્યેની દયા-ભાવના નષ્ટ થઇ રહી છે. તે બધું જ અવિદ્યાના લીધે થઇ રહ્યું છે. જીવ અને બ્રહ્મમાં ભેદ માનતો હોવાથી એક જીવ બીજા જીવને પોતાના સ્વાર્થ માટે પ્રતાડિત કરી રહ્યો છે જ્યારે શંકરાચાર્યજી જીવ અને બ્રહ્મ અભિન્ન છે એવું કહે છે. તેવી જ રીતે આજનો મનુષ્ય જીવ અને બ્રહ્મમાં ઐક્યભાવ જોતો થઇ જાય તો સંસારનાં અડધા દુઃખોનો અંત લાવી શકાય અને પરિવાર, સમાજ, રાજ્ય, દેશ અને સંપૂર્ણ વિશ્વમાં શાંતિની ભાવના સ્થાપિત કરી શકાય. જેનાં માટે બ્રહ્મનાં વાસ્તવિક સ્વરૂપનું જ્ઞાન હોવું ખૂબ જ જરૂરી છે જે વ્યક્તિને અજ્ઞાનનાં અંધકારમાંથી મુક્ત કરીને જ્ઞાનનાં પ્રકાશ તરફ લઇ જાય છે.

Keywords: જીવ, બ્રહ્મ, વેદાંત,અજ્ઞાન, અદ્વૈતતા

સંદર્ભગ્રંથો

૧. अद्वैत वेदान्त का इतिहास तथा सिद्धान्त, डॉ. राममूर्ति शर्मा, इस्टर्न बुक लिंकर्स, दिल्ली|
૨. अद्वैत वेदान्त में ज्ञान एवं भक्ति, सत्यकाम मिश्र, मोतीलाल बनारसीदास, दिल्ली|
૩. श्रीसदानन्दप्रणितःवेदान्तसार, आचार्य बदरीनाथशुक्ल, मोतीलाल बनारसीदास, दिल्ली|
૪. पञ्चपादिका, डॉ. किशोरदास स्वामीस्वामी, स्वामी रामतीर्थ मिशन राजपुर, देहरादून|