



Estd: 1944

ST. XAVIER'S COLLEGE
RANCHI

Research Magazine

June, 2025 - May, 2026

St. Xavier's College (Autonomous), Ranchi

Compiled by RDC, SXC Ranchi under the aegis of IQAC, SXC

Compiled by-

- Fr. Dr. Ajay Minj, S.J.- Director, RDC and Vice-Principal, St. Xavier's College, Ranchi
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St. Xavier's College

(An Autonomous College, Affiliated to Ranchi University, Ranchi)
DR. CAMIL BULCKE PATH, PURULIA ROAD, RANCHI - 834001, JHARKHAND
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Message



It brings me immense joy to learn that St. Xavier's College (Autonomous), Ranchi, is publishing the Second Volume of its Research Magazine. It is deeply gratifying to note that this edition showcases the scholarly work of 51 faculty members across our diverse disciplines—commerce, humanities, earth and environmental sciences, mathematics, and science.

Academic research is the bedrock and true gauge of an institution's intellectual calibre. It empowers faculty members to articulate complex questions, cultivate creative thinking, and pioneer dynamic solutions. Meaningful progress depends on using diverse methods and setting higher standards; without them, transformative results are hard to achieve.

Our Research Magazine is a great place to launch such endeavours—whether you are taking foundational steps or deepening ongoing investigations to reach your goals. This second volume stands as a testament to that collective commitment. I hope it offers fresh impetus and confidence to our young researchers, inspiring them to embrace the rigour, discipline, and systematic inquiry that true discovery demands.

Fr. Dr. Sudhir Kumar Minj, S.J.

Rector, St. Xavier's College, Ranchi - 834001



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Message

It gives me immense pleasure to welcome the publication of the Second Edition of the St. Xavier's College Research Magazine. This edition is a testament to the vibrant spirit of inquiry, creativity, and intellectual engagement that continues to flourish in our institution.

Research is not merely the pursuit of knowledge, it is a means of understanding the world with curiosity, critical thinking and a commitment towards truth. At St. Xavier's College, we believe that education must extend beyond the boundaries of the classroom and inspire our students and faculty to question, explore, investigate and contribute meaningfully to society. A research magazine such as this provides an important platform for sharing academic endeavours, exchanging ideas and fostering a culture of research across disciplines. Research creates opportunities to evaluate existing knowledge, rethink established perspectives, analyse emerging challenges, enhance our capacities and contribute towards meaningful and sustainable betterment.

In this sense, research is not confined to any particular field or area of study. It has a natural and significant relevance to all aspects of life and to every sphere of human endeavour. It enables us to strengthen ourselves as individuals, enrich our communities and societies, protect and sustain our environment and improve the quality of life for present and future generations.

The second edition reflects the collective efforts of our researchers, students, faculty members and the editorial team. The articles and contributions featured here demonstrate the diversity of ideas and perspectives within our academic community. Each contribution represents not only scholarly effort but also a willingness to engage with contemporary issues and seek thoughtful solutions to the challenges before us.

I commend the editorial team for their dedication in bringing this edition to fruition. I also appreciate the authors and contributors who have generously shared their research, insights and reflections. Their efforts remind us that meaningful research begins with curiosity and grows through perseverance, collaboration and intellectual integrity.

As we move ahead, I encourage our students and faculty members to cultivate a spirit of lifelong learning and research. May this magazine inspire more members of the Xavierian community to undertake research, engage in interdisciplinary dialogue and use knowledge for the greater good. It is my sincere hope that this edition of the Research Magazine will encourage our academic community to embrace the spirit of inquiry and innovation and to recognise research as a powerful instrument for transformation and positive change.

I extend my sincere congratulations and best wishes to everyone associated with this Edition of the St. Xavier's College Research Magazine. May this edition inspire new questions, new discoveries and new avenues of knowledge and findings.

With best wishes,



Rev. Fr. Dr. Robert Pradeep Kujur, S.J.

Principal, St. Xavier's College, Ranchi

Message

I am delighted to note that St. Xavier's College, Ranchi, having initiated Research Day on 1st September 2025, continues to celebrate the research contributions of every individual at the institution this year as well. This significant event serves as a platform to acknowledge and commend both individual and collective efforts and dedication towards research and innovation.

The implementation of the National Education Policy (NEP) 2020 reminds everyone in higher education of our duty to uphold our commitment and contributions to research and innovation. As the Director of the Research Development Cell at the college, I am proud to report that the teaching faculty has responded very positively to NEP 2020's call with enthusiasm. I am confident that this path will be pursued with even greater dedication and commitment.

Additionally, I am pleased to mention that all faculty publications are being recorded in the Xavier Research Magazine on this occasion. I believe this magazine will serve as a well-documented source of inspiration and research-related information for all of us, guiding our progress and future direction in research and innovation.

Congratulations to all the dedicated researchers, and best wishes for elevating this mission to greater heights. I would like to extend special congratulations to the editorial team for their exceptional effort in compiling all the publications and shaping the Xavier Research Magazine.



Rev Fr. Dr. Ajay Minj S.J.
Vice-Principal, SXC Ranchi



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Message



I am delighted that St. Xavier's College (Autonomous), Ranchi is publishing its second Research Magazine with the laudable objective of recognizing, documenting, and promoting the research contributions of its faculty members. Research is an essential component of academic excellence. It not only enriches our intellectual and professional journey but also enables us to explore new knowledge, perspectives, and possibilities, thereby sustaining the spirit of inquiry and lifelong learning.

The University Grants Commission (UGC) has placed considerable emphasis on research and innovation, while the National Education Policy (NEP) 2020 has further underscored the importance of research as an integral part of higher education and the teaching-learning process. In this context, the initiative of the Research Committee to publish a dedicated Research Magazine is both timely and commendable.

I sincerely hope that this publication will provide a meaningful platform for showcasing the scholarly work of our faculty members and will inspire both faculty and students to engage more actively in research, undertake scholarly writing, publish research papers and books, and contribute constructively to the wider academic community. I extend my best wishes to the Research Committee and all the contributors for the successful publication of this Research Magazine. May it serve as a source of inspiration and encouragement for fostering a vibrant culture of research and academic excellence at St. Xavier's College, Ranchi.

Rev. Fr. Dr. Prabhat Kennedy Soreng, S.J.

Registrar, SXC Ranchi

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Message



It is a matter of great pride and privilege to release the Research Magazine of St. Xavier's College, Ranchi on 1st September 2026, the birth anniversary of Padma Bhushan Rev. Fr. Camil Bulcke S.J.

Fr. Bulcke was a towering scholar, linguist, and visionary who embodied the spirit of inquiry, service, and excellence. His life inspires us to pursue knowledge with humility and to use research for the betterment of society.

This magazine reflects the commitment of our faculties to academic rigor and original thought. I congratulate the Editorial Board and all contributors for their sincere efforts in upholding the research culture of our institution, as envisioned by IQAC.

May this publication serve as a tribute to Rev. Fr. Camil Bulcke S.J. and as a beacon for future scholars.

Dr. Shiv Kumar

IQAC Coordinator
St. Xavier's College, Ranchi – 834001

Research Ecosystem at St. Xavier's College, Ranchi

Research and Development Cell, St. Xavier's College (Autonomous), Ranchi

Research Advisory Committee (RAC)

Patron: Fr. Ajit Kumar Xess, S.J., Chairman, Governing Body, St. Xavier's College, Ranchi

Chairperson- Fr. Dr. Robert Pradeep Kujur, S.J., Principal, St. Xavier's College, Ranchi

Director- Fr. Dr. Ajay Minj, S.J., Vice-Principal, St. Xavier's College, Ranchi

Research and Development Cell (As per UGC guideline)-

Director- Fr. Dr. Ajay Minj, S.J., Vice-Principal, St. Xavier's College, Ranchi

Dean, Faculty of Commerce- Dr. Narendra Singh

Dean, Faculty of Science- Dr. Ajay Kumar Shrivastava

Dean, Faculty of Humanities and Social Science- Prof. B. K Sinha

Coordinator- Dr. Sandeep Chandra, Dept. of Geography, SXC

Committee 1 : Finance and Infrastructure

- a. Fr. Ravi Hemant Kujur, S.J., Bursar, Convenor
- b. Dr. Raman Kumar Das, Dept. of Mathematics
- c. Dr. Dhiraj M. Pathak, Dept. of Economics
- d. Dr. Sandeep Kumar, Dept. of Commerce
- e. Dr. Jyoti Ignace Tete, Dept. of Commerce

Committee 2 : Research Program, Policy Development

- a. Fr. Sanjay Kerketta, S.J., Dept. of English, Convenor
- b. Dr. Sunil Kumar Bhatia, Dept. of Hindi
- c. Dr. Sanjay Kumar Sinha, Dept. of History
- d. Dr. Ashutosh Kr. Pandey, Dept. of Political Science
- e. Dr. Ananya Bose, Dept. of English
- f. Mr. Vijay Kumar Mehta, Dept. of Mathematics

Committee 3 : Collaboration and Community Development

- a. Dr. Rajeev Ranjan Shrivastava, Dept. of Geography, **Convenor**
- b. Dr. Mitesh Chakraborty, Dept. of Physics
- c. Dr. Priya Srivastava, Dept. of Zoology
- d. Dr. Abhijit Dey, Dept. of Business Administration
- e. Dr. Somesh Sen Gupta, Dept. of Geology

Committee 4 : Product Development, Monitoring and Commercialization

- a. Fr. Dr. Prabhat K. Soreng, S.J., Dept. of Botany, **Convenor**
- b. Dr. Ritesh Kr. Shukla, Dept. of Zoology
- c. Dr. Sanyukta Kumar, Dept. of Biotechnology
- d. Dr. Shiv Shankar Prasad, Dept. of Biotechnology
- e. Dr. Kamaldeep, Dept. of Computer Science and IT
- f. Dr. Shreya Pandey, Dept. of Political Science

Committee 5 : IPR and Legal and Ethical Matters

- a. Fr. Dr. Florence Purty, S.J., Dept. of Education, **Convenor**
- b. Dr. Shiv Kumar, Coordinator, IQAC, SXC
- c. Dr. Nandita Pandey, Dept. of Education
- d. Dr. Sumit Kumar Roy, Dept. of Physics
- e. Dr. Sushil Kumar Pandey, Dept. of Chemistry

Research Policy of the College

St. Xavier's College, Ranchi strongly believes in the value of 'Magis'-a challenge to do more and strive for excellence. Striving continuously towards this motive, the institution has persistently endeavored to achieve academic excellence in teaching and research by encouraging "inquisitive" and "futuristic" mindset in both teachers and students. The college emphasize on creating a research-based ecosystem-where facts powered with novel thoughts can lead to a conscious and responsive society.

Objectives of the Research Policy

- i. To build up an exuberant research culture among the faculty members, students and research scholars working under the guidance of a faculty members of SXC, Ranchi.
- ii. To develop a support structure to facilitate research activities
- iii. To motivate and encourage both teachers and students for publications in quality journal indexed by Scopus/Web of Science, having impact factor
- iv. To promote collaborations nationally and globally to carry out interdisciplinary research work with other research institutes/industries/academia etc.
- v. To establish standards and norms for ensuring ethical conduct in research
- vi. To design a plan/flowchart to promote continuous research work for faculty, scholars and students in the college

Scope of the Research Policy

This policy will be applicable to:

- i. All staff, who are appointed on sanctioned post as well as those appointed by the college management on permanent basis and are engaged in active teaching, research or administration.
- ii. All students studying in the college
- iii. All researchers/ research scholars associated with college/college staff

The research agenda at SXC focuses on two fronts, namely individual and departmental

- i. Faculty members and students are encouraged to take up research individually as well as jointly.
- ii. All faculty members/researchers/students are encouraged to work on contemporary issues relevant to the society at large.

Research Facilities/ Centers

The College has established five dedicated Research Centres to carry out research and publication in Basic and Applied Sciences, Social Sciences, Humanities, Commerce, Management and Tribal languages etc. These Research Centres are-

- i. **Central Research Laboratory (CRL)**
- ii. **Xavier Research Centre**
- iii. **Camil Bulcke Research Centre**
- iv. **Tribal Research Centre**
- v. **Society for Earth Observation and Conservation (SEOC)**

Apart from above five research centres all PG departments are recognized as Research Centres. Departmental Research Centres are encouraged to engage students in quality research work.

Central Research Laboratory (CRL)-

The college established a Central Research Laboratory (CRL) in 2010 to enable the faculty and students to achieve excellence in multidisciplinary research with societal/industrial relevance. Fr. C. De Brouwer s.j., a legendary personality of the college management, played the pivotal role in the establishment

of the said lab. The modern analytical instruments present in this lab offer a wide range of analytical methods/techniques for material testing and characterization. This consequently helps researchers to publish their research findings in peer reviewed indexed journals.

This facility is extensively used by the faculty members and doctoral research scholars. Also, the students of science fraternity (undergraduate and post graduate) use the lab extensively to carry out research projects which is a mandatory part of the course curriculum. The facility is also extended to students of external organizations mainly academic institutions in the region. The CRL provides facilities and assistance in sample preparation to the users. It carries out analysis of samples received from students, faculty members and other researchers.

Xavier Research Centre-

Xavier resource Centre was set up in the year 2002 under the aegis of St. Xavier's College, Ranchi, under the leadership of the then Principal. Dr. Fr. Nicholas Tete, S.J. The idea was to develop the centre as a nodal wing of the college in respect of research and extension activities with regard to 4 major thrust areas and namely-

- Tribal Development
- Rural Management
- Human Rights
- Gender Problems

This research centre publishes a journal called Xavier Research Journal, which is specifically designated to disseminate information pertaining to the problems and issues faced by the tribal brethren living in Jharkhand and other contiguous areas of India. The journal was discontinued for some years, but the centre is working towards reviving the Xavier Research Journal for publishing its research activities.

The centre provides a sitting capacity for about 10 researchers. Besides being equipped with several books, it also gives access to desktop computers for scholars to conduct their research. The centre has a wide range of books on tribal issues and development. It provides a conducive research environment for those coming from the field of social sciences. Xavier Research Centre also takes care of all types of publications of the institution.

Camil Bulcke Research Centre-

The college has dedicated research for Hindi language in memory of one of India's most renowned Hindi scholars, Dr. Fr. Camil Bulcke, a Belgian Jesuit missionary in India. The centre came into existence since 1st July, 2017. Professors of Hindi, teaching in any College or retired are welcome to become members. The research centre has a total of about 14000 books, encyclopedias, dictionaries, books on Hinduism- the Vedas, the Ramayana, the Mahabharata, the Upanishads, the Brahmanas, the Bhagavad Gita and so on. Books on different religions - Christianity, Islam, Buddhism, Sikhism, Jainism and works of great poets like - Surdas, Tulsidas, Jayasi, Meerabai etc are also present in the centre. The centre has computers, fully air conditioned seating area, Ricoh xerox machine, Voltas filter water, CCTV surveillance, attached wash room, parking space in college campus. The library software KOHA is used to keep account of the books and magazines. Two librarians work at the centre.

Tribal Research Centre (TRC)-

To sustain and nurture the rich the heritage of local tribes of the state the college has also established the Tribal Research Centre. Scholars from the local region are promoted to enrich the literature regarding regional and tribal languages. Tribal Research Centre is a private enterprise established in 2017. It works on the promotion of 5 tribal languages: Mundari, Santhali, Kurukh, Kharia and Ho. These are also called Adivasi / Indigenous People's languages. Here, the word "tribe" is used to mean the Adivasi / Indigenous

Peoples languages mostly spoken in central India. Following are the overall aims and objectives of the TRC for the promotion of tribal languages and cultures as far as practicable and in collaboration with persons, institutions and organizations on the similar objectives:

1. To engage in research on tribal languages and cultures as well as viz. Mundari, Santhali, Kurukh, Kharia and Ho languages and publish the findings and outcome;
2. To publish 2 magazines annually in each of the five tribal / adivasi / indigenous people's languages including the wall calendar for the promotion of these languages;
3. To put the oral tribal literature in written form for record and learning;
4. To publish important old manuscripts on tribal matters that are on the verge of being lost;
5. To collect and publish the vanishing tribal folklores, proverbs, riddles and anecdotes including songs and customary practices;
6. To engage in research on tribal matters and issues relating to their knowledge systems, health and medicinal practices, governance and administration, livelihood patterns and ecology and sustainability of life to mention a few-

Society for Earth Observation and Conservation (SEOC)-

SEOC is a multidisciplinary research centre which was founded on 10th March, 2022, with the motto to promote a multidisciplinary approach to observe, address, understand, tackle, create awareness about and provide suitable remedial measures for the environmental issues and challenges leading to the conservation of earth resources.

For this the faculties/ researchers of different streams like Geography, Botany, Zoology, Biotechnology, Chemistry, Geology, Mathematics, Statistics have joined to foster a multidisciplinary research to save the three pillars of the sustainable development the environment, the economy and the society.

The college thus provides basic infrastructural facilities to research scholars and supervisors for successfully carrying out their research work.

Code of Research Ethics:

The policy frame work strictly states that all kinds of research undertaken within the campus must be conducted in accordance with the vision and mission of the institution, the guidelines issued by Ranchi University, and in compliance with the UGC guidelines. The institution insists on originality in research and advocates caution against plagiarism and any other form of malpractice. Through code of research ethics, the institution aims to protect and recognize the basic rights of the researcher and ensures academic freedom and high-quality research outcome.

Ethical Guidelines to Check Malpractice in Research

St. Xavier's College, Ranchi is committed to produce and promote quality research by adopting an effective mechanism for checking plagiarism and unethical practices. The guidelines issued to discourage **plagiarism** in research are in line with the UGC regulations given for promoting academic integrity and prevention of plagiarism in higher educational institutions, dated 23rd July, 2018 F.1-18/2010(CPP-II).

The college possess the licensed version of worldwide accepted Turnitin plagiarism check software (<https://sxcran.turnitin.com/home/sign-in>) to ensure the originality of the research work. The supervisors are responsible for high standard research conduct in the respective thesis/dissertation submitted by their students.

Support by the Organization

- i. Faculty members are encouraged to attend workshops and training programs. For those presenting quality research papers at conferences, the institute covers the conference registration fees and travel expenses.
- ii. Departments are encouraged to organize Faculty Development Programs (FDP), workshops,

and training sessions. The organization readily provides the necessary infrastructure and manpower. Additionally, the college management offers financial assistance to ensure the successful execution of these events.

- iii. The institution provides seed money to fund potential research projects. Faculty can apply for this funding using the designated format and submit their proposals to the college's Research Development Committee (RDC). After evaluating the proposals, the RDC will disburse the approved amount to the principal investigator.
- iv. The institution provides financial assistance for successful Patent registration.
- v. The college celebrates Research Day to develop research ecosystem and motivate researchers by providing cash incentives and certificate of appreciation by college management. Based on the recommendation of the Research and Development Cell and approval of the Principal, every year Best Researcher Award (SXC Best Researcher of the Year) will be awarded to teachers for exemplary research work and publication.
- vi. The institution provides partial financial assistance for
 - (a) Books authored which are published by:
 - International publishers
 - National Publishers
 - Editor of Book by International Publisher
 - Editor of Book by National Publisher
 - (b) Translation works in Indian and Foreign Languages by qualified faculties
 - Book

Seed Money Policy

St. Xavier's College, Ranchi

Seed money shall be granted by the College on the recommendation of the Research and Development Cell (RDC). The purpose of the seed money is to encourage faculty members to undertake research projects that may lead to publications, externally funded projects or other measurable academic outcomes.

Amount of Seed Money- up to ₹ 1,50,000 per faculty *(Subject to the availability of fund)*

Eligibility Criteria

- Only regular faculty members of the college are eligible to apply.
- Maximum age limit: 62 years.
- Applicants who received seed money in the previous financial year are not eligible to apply in the immediate following year.

Financial Assistance

- There is no provision for research fellows.
- Up to 30% for travel and field work.
- Up to 70% for consumables, contingencies, and other expenses.

Tenure of the Project

- Maximum of two years from sanction date.

Selection Process

- **Expert panel-** a copy of proposal may be sent to external member for evaluation of the proposal– depending on subject

Outcome

- Minimum one research paper publication (more than one publication is highly recommended) in SCI/Scopus/Peer Reviewed journal and one research paper presentation in seminar/conference is must. A final report must be submitted within one month of project completion.

Utilisation of Seed Money

- The seed money must be utilised **only under the approved expenditure heads** and **within the stipulated time period** mentioned in the sanction letter.
- Any **unspent amount** must be returned to the college account **within the same financial year**.
- All the equipment, books purchased out of seed money, will be asset of the department/college.

General

- Project is non-transferable in any case.
- If a Principal Investigator fails to complete the project, he/she has to refund the entire amount released.
- No extension in tenure is permissible in any circumstances.
- The decision of the Screening Committee, RDC will be final.

Research Proposal

A format for seed money proposal should be used. In which Aims and objective, uniqueness of the project, societal relevance, expected outcome and duration, budget should be described.

Research Project Completion / Midterm/Progress report format

Upon completion of a seed money-funded project, a **Research Project Completion Report** must be submitted **within two months** of the completion of the project. The report should be:

1. **Emailed** to: rdc@sxcran.org
2. A **hard copy** should be submitted to the Principal's Office.

The report must include:

- **Research Time Period**
- **Details of Fund Utilisation**, including expenditure heads and copies of bills
- **Outcomes / Results**- such as publications, presentations or other research outputs
- **Limitations and Challenges** encountered during the project

The **Completion/ Midterm/ Progress report** will be evaluated by an **Expert Panel** (consisting of internal and external members).

Timeline

Call for seed money proposal- 1st week of June

Deadline of proposal submission- 3rd week of June

Announcement of the selection- 1st week of July

Research Centers of the College

Sl No	Research Centers	Director/Coordinator
1	Central Research Laboratory (CRL)	Dr. Sumit Kumar Roy
2	Xavier Research Centre	Dr. Gauri Shankar Jha
3	Camil Bulcke Research Centre	Dr. Fr. Emmanuel Baxla, S.J.
4	Tribal Research Centre	Dr. Fr. Florence Purty S.J.
5	Society for Earth Observation and Conservation (SEOC)	Dr. Ritesh Kumar Shukla
Post Graduate Research centers of the college-		
6	Research Center, Dept. of History	HOD
7	Research Center, Dept. of Political Science	HOD
8	Research Center, Dept. of Economics	HOD
9	Research Center, Dept. of Hindi	HOD
10	Research Center, Dept. of English	HOD
11	Research Center, Dept. of Commerce	HOD
12	Research Center, Dept. of Commerce	HOD
13	Research Center, Dept. of Zoology	HOD
14	Research Center, Dept. of Botany	HOD
15	Research Center, Dept. of Chemistry	HOD
16	Research Center, Dept. of Geology	HOD
17	Research Center, Dept. of Geology	HOD
18	Research Center, Dept. of Geography	HOD

IQAC- RDC initiatives/ Activities Organized to Foster the culture of Research in college campus-

- St. Xavier's College (Autonomous), Ranchi Publishes Bi-annual Regional Journal "**Xavier Research Journal**" ISSN : 3139 - 8146 (Print).
- **Renewal of plagiarism test software- Turnitin Originality and Turnitin Authorship** - Comprehensive protection against copy/paste plagiarism, student collusion, and contract cheating, Authorship Verification; Evidence Collection; Workflow & API Turnitin with 1500 user licences.
- **IRINS-** College is registered on IRINS portal. IRINS (Indian Research Information Network System) is a web-based Research Information Management (RIM) service developed by INFLIBNET Centre. It helps academic and R&D organisations collect, curate, and showcase scholarly communication activities while enabling researchers to create professional research profiles. College faculty who has created Vidwan ID, is attached with college IRINS portal.
- Seed Money for the academic year **2024-25** was granted to **11 faculty members** of the college to initiate research projects in different fields.
- **Seed Money** for the academic year 2025-26 was granted to 16 faculty members of the college to initiate research projects in different fields. Total amount of the grant was Rs- 16,03,500/-.

List of Faculty Members received Seed Money for 2025-26

Sl No	Name of the Faculty/ Researcher (PI/ Co-Investigator)	Department	Project Topic
1	Dr. Alfred Besra (PI)	Biotechnology	Insilico analysis of differentially expressed gene in common beans (<i>Phaseolus Vulgaris</i> L) under stress
2	Dr. Shiv Shankar Prasad (PI)	Biotechnology	Production of important Industrial products from isolated Microorganism of natural Resources
3	Dr. Ajay Kumar Srivastava (PI) Aroma Aishwarya Barla (Co-Investigator) Dr. Alfred Besra (Co-Investigator) Dr. Father Prabhat Kennedy (Co-Investigator)	Botany	Study of members of Rubiaceae found in South Chhotanagpur, Jharkhand as tool for Phytoremediation for Aluminum.
4	Dr. Reman Kumar Singh (PI)	Chemistry	Molecular-Level Understanding of Neurodegenerative Disease – Inducing Molecules Using Molecular Dynamics Simulation
5	Dr. Sushil Kumar Pandey (PI)	Chemistry	Synthesis and Characterization of Some High Entropy Perovskite Oxides and Investigation of their Physical Properties for electronic applications.
6	Dr. Sumita Hazra (PI)	Chemistry	Synthesis, Characterization and Reactivity study of Biomimetic earth abundant transition metal Complexes of with N, O and S donor ligands
7	Dr. Sandeep Kumar (PI)	Commerce	Impact of Self-Help Groups (SHGs) on Rural Income Generation in Jharkhand with Special Reference to Gumla, Lohardaga, Simdega, Khunti and Ranchi
8	Dr. Somesh Sengupta (PI)	Geology	Influence of maceral composition and mineralogy on the combustion behaviour of Indian Gondwana Coals with special reference to Jharkhand: An integrated petrographic and microanalytical approach.
9	Dr. Melvin A Ekka (PI)	Geology	Integrated Trace Element, REE Geochemistry, and Isotope Systematics of magnetite deposits around Datam and Mahawat Muria, Daltonganj, Jharkhand
10	Ms. Mable Martha Toppo (PI)	Geology	Groundwater Quality Assessment and Identification of Potential Groundwater Artificial Recharge Zones for Rainwater Harvesting through Remote Sensing and GIS in Kanchi River Watershed of Subarnarekha Basin, Jharkhand.

11	Dr. Ananya Bose (PI)	English	Childhood in Children's Literature: Psychology, Nurturing and Cultural Inheritance in Classic and Contemporary Texts
12	Dr. Mitesh Chakraborty (PI)	Physics	Investigation on the temperature-dependent electron spin resonance (ESR) spectroscopy and Its correlation with the optical properties of some synthesized phosphors
13	Prof. Swagata Chakraborty (PI)	Physics	Investigation on the electro-optical properties of some oxide phosphors
14	Ivana Chakraborty (PI)	Sociology	Doing grief, Doing Gender: Gendered Experience of Grieving among Oroan Tribal women of Jharkhand
15	Dr. Pipas Kumar (PI)	Zoology	An empirical study on outcome assessment of Jal Jeevan Mission in Ranchi, Jharkhand
16	Dr. Priya Shrivastava (PI) Dr. Deependra Kumar Sinha (Co-Investigator)	Zoology and Self Finance and Management	Utilization of Waste plastic in geopolymers Development for sustainable Concrete Materials

List of Vidwan ID

SI No	Salutation Name	Last Name	Department	Vidwan ID
1	Dr. Prabhat Kennedy	Soreng	Botany	731933
2	Dr. Ajay	Srivastava	Botany	731898
3	Dr. Alfred	Besra	Biotechnology	465627
4	Dr. Sanyukta	Kumar	Biotechnology	723857
5	Dr. Shiv Shankar	Prasad	Biotechnology	731745
6	Dr. Abhijit	Dey	Business Administration	731746
7	Ms. Janet	Ekka	Business Administration	731073
8	Dr. Anirban	Biswas	Business Administration	730121
9	Mr. Mario	Martin	Business Administration	731760
10	Dr. Jui	Banerjee	Business Administration	731766
11	Mr. Anugrah Denis	Tete	Business Administration	731769
12	Dr. Ushir Ranjan	Sen	Chemistry	731432
13	Dr. Harendra Nath	Kumar	Chemistry	723287
14	Dr. Reman Kumar	Singh	Chemistry	432191
15	Dr. Narendra	Singh	Commerce	729972
16	Dr. Sandeep	Kumar	Commerce	731635
17	Dr. Jyoti Ignace	Tete	Commerce	729575
18	Dr. Robert Pradeep	Kujur	Commerce	730660
19	Dr. Srinath	Koley	Commerce	731812
20	Dr. Sumita	Roy	Commerce	729940
21	Dr. Anirban	Gupta	Commerce	729941
22	Dr. Sanjay	Prasad	Commerce	731889
23	Dr. Shakil	Siddique	Commerce Self Finance & Vocational Studies	722083
24	Mr. Hussain	Ahmed	Commerce Self Finance & Vocational Studies	729924
25	Dr. Abhishek	Kumar	Computer Science	730288
26	Dr. Kamaldeep		Computer Science	409318
27	Dr. Dhiraj Mani	Pathak	Economics	724219
28	Dr. Harishwar	Dayal	Economics	731435
29	Dr. Juhi J. R.	Horo	English	731893
30	Dr. Achal	Sinha	English	731808
31	Dr. Thomas	Dungdung	English	732060



32	Dr. Sumana	Ghosh	English	731813
33	Dr. Ananya	Bose	English	730092
34	Ms. Shashi Prava	Tigga	English	731915
35	Dr. Sweta	Jha	English	729922
36	Dr. Sachindra Nath	Mishra	English	730161
37	Dr. Rajeev Ranjan	Shrivastava	Geography	716551
38	Dr. Sandeep	Chandra	Geography	677520
39	Dr. Shiv	Kumar	Geography	642967
40	Dr. Mable	Toppo	Geology	722270
41	Dr. Melvin A	Ekka	Geology	722307
42	Dr. Somesh	Sengupta	Geology	722306
43	Dr. Sanjay	Sinha	History	710709
44	Mrs. Anju Oseema	Toppo	History	731674
45	Dr. Ajay	Minj	Mathematics And Statistics	730628
46	Dr. Pappu	Mahto	Mathematics And Statistics	710652
47	Dr. Vijay Kumar	Mehta	Mathematics And Statistics	710676
48	Dr. Manoj Kumar	Singh	Mathematics And Statistics	387850
49	Dr. Mitesh	Chakraborty	Physics	730060
50	Dr. Rajesh	Kumar	Physics	718323
51	Dr. Ravi Kumar	Bommali	Physics	718254
52	Dr. Swarat	Chaudhuri	Physics	238543
53	Mrs. Swagata	Chakraborty	Physics	731575
54	Dr. Sumit	Roy	Physics	729930
55	Dr. Ashutosh Kumar	Pandey	Political Science	223153
56	Dr. Shreya	Pandey	Political Science	724224
57	Dr. Bharti Singh	Raipat	Zoology	730110
58	Dr. Priya	Srivastava	Zoology	729919
59	Dr. Ritesh Kumar	Shukla	Zoology	729916
60	Dr. Pipas	Kumar	Zoology (Environmental Science)	625044

INTRODUCTION

One of the primary objectives of the New Education Policy 2020 is to transform Indian higher education institutions into centers of knowledge creation, extending beyond mere knowledge dissemination. St. Xavier's College, Ranchi, has implemented several initiatives to foster research activities and establish a sustainable research environment. By integrating research into the educational framework, the college seeks to connect academic learning with practical applications. This focus on research is deemed crucial for the institution's evolution from a consumer to a producer of knowledge.

The college has made significant strides in cultivating a research culture by initiating various research activities among faculty members, including publishing research papers, presenting at conferences, participating in workshops and seminars, and conducting research projects. Faculty-led research initiatives have demonstrated considerable potential, with numerous collaborative efforts to engage in diverse research activities. In the academic year 2025-26, 51 faculty members have been documented for research publication, 5 members for book publication and 13 for book chapters. The faculty of commerce has published 32 research papers, the faculty of natural science has published 56 papers, the faculty of humanities has recorded 3, the faculty of social science has recorded 29, the faculty of self-financed courses has recorded 22 paper publications and from tribal research centers 6. Officially recorded patents designed and registered are 3. Interdisciplinary collaboration for research is notably evident today. The faculty members merit commendation. However, *Magis* is the spirit of our institution and so it is now imperative for all of us to try to advance and publish our works in journals with high impact factors such as Scopus and Web of Science.

Participation in research and innovation significantly enhances the teaching and learning experience within an institution. It fosters critical thinking among both educators and students, enabling them to apply theoretical knowledge to practical challenges, thereby promoting a more comprehensive educational approach. Educators involved in research are better equipped to integrate the latest information into their teaching. Ultimately, adopting a research-focused approach in teaching improves the quality of higher education institution, raises academic standards, and inspires students to pursue research careers.

Research Day, initiated last year on 1st September, continues to celebrate the research contributions of every individual at the institution this year as well. This significant event serves as a platform to recognize and applaud both individual and collective efforts and dedication towards research and innovation. On this occasion, all faculty publications are being documented in the Xavier Research Magazine 2026. This magazine is anticipated to serve as a well-documented source of inspiration and research-related information, guiding our progress and future direction in research and innovation.

Congratulations to all the dedicated researchers, and best wishes for elevating this mission to greater heights. Special congratulations are extended to the editorial team for their exceptional effort in compiling all the publications and shaping the Xavier Research Magazine.

Dr. Fr. Ajay Minj, S.J.
Director, RDC

COMMERCE



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 No. of Ph.D Scholars Registered till now 13(4 completed)



Research Article-01

Title of the article: **Sector-wise Impact of FDI and FPI on Industrial Development in India: A Critical Evaluation**
 Authors: Shweta Kumari and Dr. Narendra Singh
 Name of the Journal: International Journal of Advanced Research in Commerce, Management & Social Science
 Publisher Name & city: **INSPIRA** (Inspira Research Association)
 ISSN No: 2581-7930 (Online)
 Month and Year of Publication: March 2026
 Page No: 171-178
 DOI: 10.62823/IJARCMSS/9.1(I).8559

Abstract

Recently, Indian economy has experienced strong foreign investment flows through Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). Its long-term trend highlighted economy has received \$748.78 billion through FDI since 2014-2025 whereas FPI has been boosted by equity market gains with total FPI asset under custody hitting \$858 billion. A healthy and vibrant industrial sector of capital markets is important for development of a nation. In the present scenario, sectors of foreign investment in Indian economy for instance Automotive, Pharmaceuticals, Information Technology (IT), Textiles, Construction, power, equity segment and assets under custody (AUC) have attracted attention of investors to invest in these industries particularly. This paper attempted to analyse some sectors and their impact on Industrial Development in India by foreign investors. The present study is based on quantitative data and used secondary data of annual time series. Data has been collected from the report of Reserve Bank of India, Department for Promotion of Industry and Internal Trade (DPIIT), World Bank report etc. Comparative sectorial analysis, Autoregressive Distributed Lag (ARDL) and GARCH model have been used. The results indicated strong and positive long-run relationship with capital-intensive, technology-based sectors, leading to stable output growth and value addition. On the contrary, FPI inflows showed a strong but volatile connection with construction and power industries.

Keywords- Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Industrial Development, Sectoral Analysis, Ardl Test, Garch Test.

Research Article-02

Title of the article: **FDI and FPI in Post-Pandemic India: A Recovery Perspective**
 Authors : Shweta Kumari and Dr. Narendra Singh
 Name of the Journal: International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Publisher Name & city: IJRASET Research and Development Corporation
ISSN No: 2321-9653
Month and Year of Publication: August 2025
Page No: 1065-1072
DOI: 10.22214/ijraset.2025.73695

Abstract

The COVID-19 pandemic has disrupted global economic activities at an unprecedented scale and significantly affected cross-border investment flows. India, like many other emerging economies, experienced substantial volatility in both Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). This paper explores the impact of the pandemic on FDI and FPI inflows in the Indian economy and evaluates the effectiveness of the government's recovery strategies in stabilizing and revitalizing foreign investments during the post-pandemic period. The study integrates quantitative time-series analysis of FDI and FPI data from 2017 to 2023. Quantitative data sourced from the Reserve Bank of India (RBI), Ministry of Finance, and SEBI reveals a sharp contraction in FDI and FPI inflows in 2020 due to investor uncertainty, lockdowns, and supply chain disruptions. However, a recovery trend has been observed post-2021, particularly in sectors such as digital services, healthcare, renewable energy, and fintech. Thematic analysis highlights that transparency in policy, macroeconomic stability, and targeted incentives encouraged a resurgence in long-term FDI. FPI inflows, being more volatile, responded quickly to global monetary policies and domestic reforms.

Keywords- Foreign Direct Investment, Foreign Portfolios Investment, Investment.

Research Article-03

Title of the article: **Impact of Corporate Training Program on Employee Productivity: Case Study of CCL**
Authors : Manisha Kerketta, Ankita Oraon, Amrit Xalxo, Md. Atif, Dr. Narendra Singh, Dr. Sandeep Kumar, Dr. Ajay Kumar
Name of the Journal: International Journal for Novel Research in Economics, Finance and Management
Publisher Name & city: True DataScience Pvt Ltd
ISSN No: 3048-7722
Month and Year of Publication: November-December 2025
Page No: 01-07
DOI: 10.22214/ijraset.2025.73695

Abstract

This study examines the impact of corporate training at Central Coalfields Limited (CCL), Ranchi, on employee growth and organizational success. Based on feedback from 50 employees, the research finds that effective, well-structured training significantly improves productivity, skills, confidence, and job satisfaction. Training explains about 29% of the variation in employee productivity. Initiatives like E-Pathshala, safety training centres, and vocational programs reflect CCL's commitment to learning and safety. However, challenges remain, including unequal access, outdated content, limited soft skills training, and a lack of follow-up. The study recommends more hands-on, tech-driven, and personalized approaches, emphasizing that strong training programs are key to both employee development and organizational performance.

Keywords- Training Program, Motivation, Adaptability, Effectiveness.

Research Article-04

Title of the article: **Investor Awareness and Mutual Fund Investment Trends in Jharkhand: A Survey-Based Study**

Authors : Nandani Kumari, Suruchi, Tannu Lal, Joshi Tudu, Nisha Parween, Dr. Fr. Robert Pradeep Kujur, S.J., Dr. Narendra Singh, Dr. Ajay Kumar

Name of the Journal: International Journal for Novel Research in Economics, Finance and Management

Publisher Name & city: True DataScience Pvt Ltd

ISSN No: 3048-7722

Month and Year of Publication: November–December 2025

Page No: 01–08

Abstract

This study focuses on the relationship between investor awareness and mutual fund investment behaviour in the Jharkhand region of India. It used a survey-based descriptive research design to investigate the factors influencing mutual fund investing decisions, drawing on primary data obtained from urban and rural populations. The study examines financial literacy, perceived risk, information source, and socioeconomic factors like income, education, and occupation. Statistical tools for Simple Linear Regression were used. The study analysed responses from a sample size of 202 individuals across urban and rural Jharkhand. The findings highlight the growing but uneven levels of awareness about mutual fund structures, risk-return trade-offs, and investment practices such as SIPs. The study identifies major knowledge gaps and behavioural hurdles that prevent greater financial inclusion in mutual fund markets. It emphasizes the importance of investor education efforts in increasing market participation and adds region-specific data to the larger discussion of mutual fund penetration and financial literacy.

Keywords- SIP, Investment Behavior, Retail Participation, Financial Inclusion, Risk Perception.

Research Article-05

Title of the article: **Effectiveness of SIP Investment Among Retail Investors in Jharkhand: A Survey-based Study**

Authors : Supriya Samanta, Shristi Priya, Nita Srivastava, Shubham Kumar Thakur, Simerpreet Kaur, Dr. Narendra Singh, Dr. Sumita Roy, Dr. Ajay Kumar

Name of the Journal: International Journal for Novel Research in Economics, Finance and Management

Publisher Name & city: True DataScience Pvt Ltd

ISSN No: 3048-7722

Month and Year of Publication: December 2025

Page No: 01–10

Abstract

This research project explores the effectiveness of Systematic Investment Plans (SIPs) as a preferred investment option among retail investors in the state of Jharkhand. The study aims to analyse investor awareness, behaviour, and satisfaction with returns from SIP investments, and to assess the role of SIPs in helping investors to achieve their financial goals. The research adopts a descriptive design and uses a quantitative approach. Primary data was collected through structured questionnaires administered to 205 retail investors across major cities and towns in Jharkhand, including Ranchi. Secondary data sources such as AMFI reports, SEBI Annual Reports and mutual fund statistics were also referred to

support the findings. ANOVA and Linear Regression were used for data analysis. The results indicate that a significant proportion of retail investors perceive SIPs as a disciplined and low-risk investment option, especially for long-term wealth creation. Factors such as regular income, ease of access, and market volatility hedging influence investor preference. However, gaps in financial literacy and understanding of market dynamics were observed, particularly among first-time investors.

Keywords- Systematic Investment Plan, Retail Investors, Financial Literacy, Investment Behaviour, Mutual Funds.

Research Article-06

Title of the article: **Performance of Regional Rural Banks (RRBs) in Jharkhand: A Case Study of Jharkhand Rajya Gramin Bank**

Authors : Neha Sweta Minz, Minoti Manjhi, Ankit Kujur, Aditya Ekka, Supriya Shalini Toppo, Aiman Fatima, Dr. Narendra Singh, Dr. Jyoti Ignace Tete, Dr. Anirban Gupta, Dr. Ajay Kumar

Name of the Journal: International Journal for Novel Research in Economics, Finance and Management

Publisher Name & city: True DataScience Pvt Ltd

ISSN No: 3048-7722

Month and Year of Publication: November–December 2025

Page No: 01–10

Abstract

This research examines the financial and operational performance of Regional Rural Banks (RRBs) in Jharkhand, with a particular focus on the Jharkhand Rajya Gramin Bank (JRGB). RRBs were established to promote financial inclusion and provide credit to the rural economy, especially for small and marginal farmers, artisans, and labourers. This study evaluates JRGB's performance by analysing various financial metrics, participation in government schemes, loan recovery rates, technological integration, and its contribution to inclusive growth. The research investigates key indicators, including the growth in deposits and advances, non-performing assets (NPAs), profitability ratios, credit-deposit ratios, and the implementation of government schemes like Pradhan Mantri Jan Dhan Yojana (PMJDY), PM-KISAN, and MUDRA. The study also explores how JRGB has maintained financial stability while addressing the needs of marginalized rural communities. Key findings indicate that JRGB has successfully expanded its rural presence, reporting a customer base of over 2.5 million and opening more than 500,000 PMJDY accounts.

Keywords- Jharkhand Rajya Gramin Bank, Growth Rate, Rural Economy, NABARD, RBI.

Research Article-07

Title of the article: **Financial Inclusion and Policy Impact in India: Evidence from the Financial Inclusion Index**

Authors : Reetika Singh and Narendra Singh

Name of the Journal: International Journal of Research in Finance and Management (IJRFM)

Publisher Name & city: AkiNik Publications

ISSN No: 2617-5762

Month and Year of Publication: 2025, Volume 8, Issue 2

Page No: 385–393

DOI: 10.33545/26175754.2025.v8.i2e.565

Abstract

Economic growth can be achieved if major focus is given towards inclusive growth, which means not only providing access to financial inclusion to richer and high earning groups of people but also making it available to the weaker section. Financial inclusion is a process that measures the usage, access and quality of financial services provided to all sections of people. As measuring financial inclusion is vital, it is also important to understand the different parameters and their significant indicators. Understanding indicators will also help in analysing whether any initiatives done by RBI or GOI are having any positive impact on financial inclusion or not. This paper focuses on financial inclusion index and its major indicators that help to measure the extent of access and availability of financial services like banking, credit facility, insurance facility, online payment etc. The purpose of this paper is to understand the origin of financial inclusion and status of financial inclusion year wise. Relevant data was collected from annual reports, research articles and online available sources. Data relating to the inclusion index was collected from RBI and CRISIL Inclusix Index. It was observed that since 2009 there has been a constant rise in the financial inclusion index, showing the positive impact of initiatives taken by RBI and GOI

Keywords- RBI, CRISIL, financial inclusion, financial access, financial inclusion index, indicators.

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Research Article-01

Title of the article: **Integrating indigenous knowledge with modern skill training: A new pathway for tribal women empowerment (a study with reference to Jharkhand)**
Authors : Nisha Toppo and Robert Pradeep Kujur
Name of the Journal: Asian Journal of Management and Commerce 2026
Publisher Name & city: AkiNik Publications
ISSN No: 2708-4523
Month and Year of Publication: Jan. 2026
Page No: 287-290
DOI: <https://www.doi.org/10.22271/27084515.2026.v7.i3c.1154>

Abstract

Tribal communities form an essential part of India's social, cultural, and ecological landscape, with indigenous knowledge systems that have evolved through sustained interaction with nature across generations. In Jharkhand, despite the growing emphasis on skill development as a pathway to inclusive growth, many tribal women continue to experience limited access to meaningful and sustainable livelihood opportunities. This paper reflects on and conceptually explores how indigenous knowledge systems, particularly those embedded in the socio-cultural context of Ranchi district, can be integrated with modern skill development initiatives to support sustainable empowerment among tribal women. Drawing on secondary literature, policy documents, and qualitative insights from existing studies, the paper argues that skill training becomes more effective when it builds upon traditional practices rather than replacing them. The discussion highlights how forest-based livelihoods, traditional crafts, and nature-oriented skills can gain renewed economic relevance when supported through contemporary inputs such as design development, market linkage, and technological support. By situating skill development within local realities and cultural knowledge, the paper suggests a framework that bridges the gap between policy intent and grassroots experience, while reinforcing cultural identity, localized entrepreneurship, and inclusive development.

Keywords- Indigenous knowledge, tribal women, skill development, empowerment, Jharkhand, sustainable livelihoods.

Research Article-02

Title of the article: **Impact of FinTech Applications on Financial Literacy among Undergraduate Students**
Authors : Fr. Dr. Robert Pradeep Kujur S.J.; Dr. Shakil Anwar Siddique; Hussain Ahmad
Name of the Journal: Journal of Xidian University
Publisher Name & city: Xidian University
Listed in Scopus: Yes
ISSN No: 1001-2400

Month and Year of Publication: April 2026

Page no: 243–251

DOI: <https://doi.org/10.5281/Zenodo.19626268>

Abstract

The rapid adoption of Financial Technology (FinTech) applications has transformed the way young individuals interact with financial services. This study examines the impact of FinTech applications on financial literacy among undergraduate students, with a focus on understanding how digital financial tools influence knowledge, awareness, and financial behavior. A quantitative research design was employed, and data were collected from 120 undergraduate students using a structured questionnaire. The instrument measured FinTech usage, financial literacy, and financial behavior on a five-point Likert scale.

Data were analyzed using SPSS, employing descriptive statistics, reliability testing, correlation analysis, and linear regression. Graphical tools including bar charts, pie charts, scatter plots, and histograms were used to illustrate trends and relationships. The findings reveal that students exhibit high FinTech usage, moderate financial literacy, and positive financial behavior. Correlation analysis shows a strong positive relationship ($r = 0.62$) between FinTech usage and financial literacy, and regression analysis confirms that FinTech usage has a significant positive impact on financial literacy ($p < 0.05$, $R^2 = 0.384$).

The study concludes that while FinTech applications enhance financial awareness and promote responsible financial behavior, they are not sufficient alone to ensure comprehensive financial literacy. Integration of formal financial education alongside the use of FinTech tools is recommended to develop well-informed, financially capable undergraduate students. The study contributes to the growing body of literature on digital financial literacy and technology adoption, providing insights for students, educational institutions, and policymakers to improve financial education in the digital era.

Keywords- FinTech Applications, Financial Literacy, Undergraduate Students, Financial Behavior, Digital Financial Education.

Research Article-03

Title of the article:

Financial Literacy and Investment Preferences of College Students and Young Professionals

Authors:

Dr. Deependra Kumar Sinha; Samia Islam; Fr. (Dr.) Robert Pradeep Kujur S.J.

Name of the Journal:

IOSR Journal of Economics and Finance (IOSRJEF)

Publisher Name & city:

International Organization of Scientific Research (IOSR)

ISSN No:

2321-5933

Month and Year of Publication:

December 2025

Page No:

58–73

DOI:

<https://doi.org/10.9790/5933-1606055873>

Abstract

This study investigates the interrelationship between financial literacy, risk tolerance, fintech adoption, income level, and investment preference among young professionals in India. Using data collected from 47 respondents, the research applies logistic regression, mediation, and moderation models to examine four hypotheses (H1–H4) concerning how behavioural and contextual factors shape investment decisions. The findings reveal that financial literacy, while generally high among respondents, does not independently predict investment in market-linked products. Risk tolerance shows a weak mediating effect, indicating that knowledge improves awareness but not necessarily risk-taking behaviour. Income level exerts limited moderating influence, whereas fintech use emerges as a significant factor—fintech users are over five times more likely to invest in market-linked instruments than non-users. The visual analyses further confirm that fintech accessibility enhances investment participation across literacy

levels. The study concludes that technological engagement and behavioural confidence, rather than knowledge or income alone, are the primary drivers of modern investment behaviour. The findings emphasize the need for integrated financial education and digital empowerment programs to bridge the gap between literacy and financial participation among young professionals.

Keywords- Financial Literacy; Risk Tolerance; Fintech Adoption; Income Level; Investment Preference; Behavioural Finance.

Research Article-04

Title of the article:	Ethical Concerns, Human Costs, and Inclusive Development Deficits in Mining-Induced Displacement: Comparative Insights from Jadugoda and Saranda Forests of Jharkhand
Authors:	Abhijeet Kumar; Fr. Dr. Robert Pradeep Kujur
Name of the Journal:	Xavier institute of social service
Publisher Name & city:	XISS
ISSN No:	0973-8444
Month and Year of Publication:	Feb.2026

Abstract

The study seeks to explore the ethics, human cost, and the post-displacement limits of inclusive development following mining-induced displacement, through a case study comparison of Jadugoda and the Saranda forests in the state of Jharkhand, India. It adopts a qualitative methodology, through semi-structured interviews, RTI and secondary research

complemented by thematic analysis to explore patterns of displacement, governance, and lived experience. These two sites, however, have many things in common: in Saranda, slow and policy-driven displacement is mainly due to the diversion of forest and the expansion of mining operations, while in Jadugoda, environmental pollution and long-term health impacts are the most relevant factors. The lack of community participation and inadequate rehabilitation are also present to a large extent in both sites, despite the differences in displacement speed. The research contends that this particular form of mining-led development does not pass the test of inclusive and responsible governance in that it exacts a disproportionate human and environmental cost on society's most vulnerable members. Higher standards of governance, an ethic of responsibility, and a commitment to human dignity, social justice, and sustainable development must be adopted.

Keywords- Mining-induced displacement, Inclusive development, Ethical governance, Jesuit values, Tribal Livelihood.

Research Article-05

Title of the article:	Role of Panchayats in Implementation of Rural Development Schemes in Ranchi
Authors:	Fr. Dr. Robert Pradeep Kujur S.J.; Ajit Kumar Melgandi
Name of the Journal:	International Journal of Research Publication and Reviews
Publisher Name & city:	Genesis Global Publication
ISSN No:	2582-7421
Month and Year of Publication:	March 2026
Page No:	4662-4665

Abstract

This study examines the role of Panchayati Raj Institutions (PRIs) in the implementation of rural development schemes in Ranchi district, Jharkhand. Panchayats constitute the grassroots tier of governance and play a crucial role in translating government policies into effective local action. The research analyses the involvement of Gram Panchayats in planning, execution, monitoring, and delivery

of major rural development schemes such as employment generation, housing, sanitation, and livelihood programs. Using primary data collected through interviews with elected representatives, officials, and beneficiaries, along with secondary sources including government reports and scheme guidelines, the study evaluates the effectiveness of Panchayats in scheme implementation. The findings reveal that while Panchayats have contributed significantly to improving local participation and service delivery, their performance is constrained by issues such as limited financial autonomy, inadequate administrative capacity, and lack of technical expertise. The study highlights the need for strengthening institutional capacity, ensuring timely fund flow, and enhancing accountability mechanisms to enable Panchayats in Ranchi to function as effective instruments of rural development.

Keywords- PRIs, rural development schemes, Gram Panchayat, technical expertise.

Research Article-06

Title of the article:	A Review on the Role of Emotional Branding in Luxury Goods Marketing
Authors:	Fr. Dr. Robert Pradeep Kujur S.J.; Dr. Shakil Anwar Siddique
Name of the Journal:	International Journal of Innovative Research in Technology (IJIRT)
Publisher Name & city:	Solaris Publication, Ahmedabad
ISSN No:	2349-6002
Month and Year of Publication:	December 2025
Page No:	6672–6678

Abstract

The Indian market's perception of luxury goods is evolving rapidly, driven by rising disposable incomes, globalization and shifting customer aspirations. As a result, luxury goods are shaping a new consumer mindset in India, where exclusivity, authenticity and experiential value define the modern luxury experience. Emotional branding plays a pivotal role in luxury goods market by creating deep and lasting connections and to evoke emotions between consumers and brand. Emotional attachment is cultivated through heritage, brand values and consistent engagement, making customers feel a part of elite community. Digital influence and celebrity endorsements have further amplified the desirability of luxury goods making them more accessible and aspirational.

Keywords- Brand, Emotional Branding, Luxury Goods.

Research Article-07

Title of the article:	A Study On The Impact Of Modern Marketing And Advertising In Today's Competitive Market
Authors:	Fr. Dr. Robert Pradeep Kujur S.J.; Dr. Shakil Anwar Siddique
Name of the Journal:	Journal of Novel Research and Innovative Development (JNRID)
Publisher Name & city:	JNRID (IJ Publication) Janvi Wave
ISSN No:	2984-8687
Month and Year of Publication:	September 2025
Page No:	a169-a175

Abstract

This paper explores advertising and marketing development as well as its impact through disparate times, from its rudimentary forms in very early commerce to the digitized phenomenon that is powered by AI. The effects of technological advancement, changing consumer habits, and socio-economic shifts are documented in marketing strategies. The research concerning noticeable paradigm shifts from print and broadcast advertising to online, social media, and mobile marketing is primarily about the outcome that each of them has on consumer-brand engagement. Also, some emerging trends, such as AI, AR, and VR, are on the verge of changing campaigns for years to come. The overall understanding that this review gives is how marketing continues to evolve and adapt to the changing dynamics of a global marketplace.

Keywords- Advertising, Marketing, Consumer

Research Article-08

Title of the article: **How club, Society and NGO Serve as catalyst for academic and personal development**

Authors: Dr. Deependra Kumar Sinha, Dr. Fr. Robert Pradeep Kujur S.J, Ms. Shreya Gupta, Mr. Shaurya Raj

Name of the Journal: International Journal For Multidisciplinary Research

Publisher Name & city: IJFMR Publications

ISSN No: 2582-2160

Month and Year of Publication: Oct. 2025

Page No: 01-16

DOI: <https://doi.org/10.36948/ijfmr.2025.v07i05.56074>

Abstract

Clubs, societies, and non-governmental organizations (NGOs) are becoming more and more important in influencing students' overall development in higher education. These platforms offer chances for community involvement, networking, skill development, and leadership in addition to traditional classroom instruction. This study looks at how student involvement in organizations, societies, and clubs affects their academic performance and personal development. The results, which were derived from survey data gathered from St. Xavier's College, Ranchi undergraduate students, show gains in active participants' academic engagement, communication, teamwork, and confidence. According to the study, participation in extracurricular activities improves academic performance by encouraging motivation, peer learning, and skill development. It also helps students get ready for their future careers and social obligations.

Keywords- Club, Society, NGO, Academic Development, Personal Development and Social Development

Research Article-09

Title of the article: **To Study the Contemporary Educational Approaches of Traditional Tribal People Through Knowledge Transfer in Jharkhand, Identifying Strengths and Areas of Improvement**

Authors: Fr. Dr. Robert Pradeep Kujur S.J., Dr. Sanjay Prasad

Name of the Journal: Iconic research and engineering journals

Publisher Name and city: Sky Research Publication and Journals

ISSN No: 2456-8880

Month and Year of Publication: SEP. 2025

Page No: 58-62

DOI: <https://doi.org/10.64388/IREV9I2-1710375-1752>

Abstract

In this modern era, when the essence of human life is slowly and aggressively disappearing with modern technology and collectivism, and even more so, the natural environment in the state of Jharkhand is constantly changing, we have shared very important information about the knowledge and their primitive education system. That is, how they acquire their knowledge, and in what form they apply it in their lives and society. The tribes of this state, who always strive to establish the overall goals of their native land, are slowly losing their value-based culture and sanskar due to becoming a symbol of modern education. In India, according to the passport in 2011 census, 59.23% of the tribals are genocide. But due to a lack of security in reading and writing, we have a perception in our mind that they are becoming

completely formless and ignorant of natural life. But education is a historical process and brings positive changes in human life and behavior. The ratio of the state is increasing rapidly, and the natural landscape is gradually decreasing. For this purpose, the natural environment is being destroyed indiscriminately. Through modern education and technology, people start their studies from the perspective of nature. Therefore, the process of acquiring indigenous knowledge and its principles has to be deeply adopted in modern education. Along with the environment, the behavior of openness has to be learned. The development of education in the remote areas of the state.

Keywords- Globalization And Modernization, Tribal Education System, And Population

Research Article-10

Title of the article:	Investor Awareness and Mutual Fund Investment Trends in Jharkhand: A Survey-Based Study
Authors :	Nandani Kumari, Suruchi, Tannu Lal, Joshi Tudu, Nisha Parween, Dr. Fr. Robert Pradeep Kujur, S.J., Dr. Narendra Singh, Dr. Ajay Kumar
Name of the Journal:	International Journal for Novel Research in Economics, Finance and Management
Publisher Name & city :	True DataScience Pvt Ltd
ISSN No:	3048-7722
Month and Year of Publication:	Dec, 2025
Page No:	01-08

Abstract

This study focuses on the relationship between investor awareness and mutual fund investment behaviour in the Jharkhand region of India. It used a survey-based descriptive research design to investigate the factors influencing mutual fund investing decisions, drawing on primary data obtained from urban and rural populations. The study examines financial literacy, perceived risk, information source, and socioeconomic factors like income, education, and occupation. Statistical tools for Simple Linear Regression were used. The study analysed responses from a sample size of 202 individuals across urban and rural Jharkhand. The findings highlight the growing but uneven levels of awareness about mutual fund structures, risk-return trade-offs, and investment practices such as SIPs. The study identifies major knowledge gaps and behavioural hurdles that prevent greater financial inclusion in mutual fund markets. It emphasizes the importance of investor education efforts in increasing market participation and adds region-specific data to the larger discussion of mutual fund penetration and financial literacy.

Keywords- SIP, Investment Behavior, Retail Participation, Financial Inclusion, Risk Perception.

Research Article-11

Title of the article:	Role of Self-Help Groups in Financial Empowerment of Tribal Women in Jharkhand
Authors:	Nisha Toppo, Fr. (Dr.) Robert Pradeep Kujur S.J.
Name of the Journal:	International Journal of Research Culture Society (IJRCS)
Publisher Name & city :	Research Culture Society and Publication
ISSN No:	2456-6683
Month and Year of Publication:	March - 2026
Page No:	36 - 42
DOI :	10.2017/IJRCS/202603008

Abstract

The financial empowerment of tribal women plays a vital role in achieving inclusive and sustainable

development in India. In states such as Jharkhand, where Scheduled Tribes constitute a substantial share of the population, women continue to face deep-rooted structural challenges, including limited access to formal financial systems, low levels of literacy, and restricted livelihood opportunities. This paper examines the role of SHGs in enhancing the financial empowerment of tribal women in Jharkhand. The study adopts a descriptive and exploratory research design based on secondary data drawn from government reports, academic literature, and institutional publications. The findings indicate that SHGs have made a significant contribution to improving income levels, and strengthening the overall socio-economic status of tribal women. The study concludes by emphasizing the need for sustained policy support, targeted capacity-building initiatives, and institutional strengthening to further enhance SHGs' effectiveness in promoting financial empowerment among tribal women.

Keywords- Self-Help Groups, Tribal Women, Financial Empowerment, Jharkhand, Rural Development

Research Article-12

Title of the article: **Impact of Artificial Intelligence, Chatbots, And Automation Tools on Digital Marketing Effectiveness, Customer Engagement, And Brand Loyalty**

Authors : Fr. Dr. Robert Pradeep Kujur S.J., Dr. Shakil Anwar Siddique

Name of the Journal: International Journal for Innovative Research in Multidisciplinary Field (IJIRMF)

Publisher Name & city: International Journal for Innovative Research in Multidisciplinary Field

ISSN No: 2455-0620

Month and Year of Publication: March - 2026

Page No: 104 – 112

DOI : 10.2015/IJIRMF/202603016

Abstract

Artificial Intelligence (AI), chatbots, and marketing automation tools are transforming digital marketing by enabling data-driven decision-making, personalized customer experiences, and efficient marketing operations. This study investigates the impact of AI technologies on digital marketing effectiveness, customer engagement, and brand loyalty.

A quantitative research methodology was used with 250 respondents consisting of digital consumers and marketing professionals. Statistical tools including descriptive statistics, reliability testing, correlation, regression analysis, and ANOVA were used through SPSS.

Results show a strong positive relationship between AI adoption and marketing performance. AI-powered chatbots significantly enhance customer engagement and brand loyalty. Organizations implementing AI marketing tools experience improved conversion rates and customer retention.

AI chatbots increase conversion rates by around 23% and resolve customer queries 18% faster, highlighting their role in improving marketing effectiveness and customer experience.

Keywords- Artificial Intelligence, Chatbots, Marketing Automation tools

Research Article-13

Title of the article: **A study on the need and benefit of vocational programmes at undergraduate level - bridging gap between students and workplace - a students perspective**

Authors : Fr. Dr. Robert Pradeep Kujur S.J., Dr. Shakil Anwar Siddique

Name of the Journal: Journal of Xidian University

Publisher Name & city: Xidian University

ISSN No: 1001-2400

Month and Year of Publication: August - 2025

Page No: 392 – 399

DOI : <https://doi.org/10.5281/Zenodo.15049876>

Abstract

In the present era the students want to earn just after the completion of their basic education, so there is a much need of professional courses that helps the students to attain this goal. Students who receive vocational education gain practical, useful skills that they can apply immediately upon graduation and throughout their program.

Through vocational education schools and programmes, there are numerous industry and career opportunities available. The National Center for Educational Statistics reports that the various sectors/ domain like finance, marketing, retail, banking, insurance, office administration, construction, and consumer services are the most sought-after professions.

Strong job markets and professional development, a wide range of possibilities for vocational programmes/courses, and investment value are the three primary categories of the advantages of a vocational education. With the equipped knowledge in the required field the student can get placed just after the completion of undergraduate programme. The course curriculum of vocational programme is designed in such a way that it acts as a bridge between the student and the industry.

This paper tries to led focus on the need and benefit of professional/vocational programmes that really helps the students in getting the job also a hand on experience that helps them in the workplace.

Keywords: Vocational, Opportunities, Job Oriented

Research Article-14

Title of the article:

Socio-Economic Transformation of Tribal Communities through Government Schemes in Ranchi District

Authors :

Fr. Dr. Robert Pradeep Kujur S. J, Ajit Kumar Melgandi

Name of the Journal:

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR)

ISSN No:

2349-5138

Month and Year of Publication:

August 2025

Vol and Issue :

12, Issue 3

Abstract

This research explores the socio-economic transformation of tribal communities in Ranchi district, Jharkhand, brought about by various government welfare schemes. The study aims to evaluate the impact of initiatives such as the Pradhan Mantri Awas Yojana (PMAY), MGNREGA, Tribal Sub-Plan (TSP), and education and health schemes tailored for Scheduled Tribes. Using a mixed-method approach, the study combines field surveys, interviews, and secondary data analysis to assess changes in income levels, education attainment, health outcomes, housing conditions, and employment opportunities among tribal households. The findings reveal that while significant progress has been made in improving living standards and access to basic amenities, challenges such as bureaucratic hurdles, lack of awareness, and irregular implementation still hinder the full potential of these programs. The study concludes with policy recommendations to enhance the inclusiveness, reach, and effectiveness of development interventions aimed at tribal upliftment.

Keywords: Tribal communities, Government Schemes, socio – economic, Scheduled Tribes, living standards.

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No. of Ph.D Scholars Registered till now 3 (Completed)



Research Article-01

Title of the article: **Impact of Corporate Training Program on Employee Productivity: Case study of CCL.**
Authors: Manisha Kerketta¹, Ankita Oraon¹, Amrit Xalxo¹, Md. Atif, Dr. Narendra Singh, Dr. Sandeep Kumar, Dr. Ajay Kumar
Name of the Journal: International Journal for Novel Research in Economics, Finance and Management
Publisher Name and city: True DataScience Pvt Ltd
ISSN No: 3048-7722
Month and Year of Publication: Dec 2025
Page No: 1-7

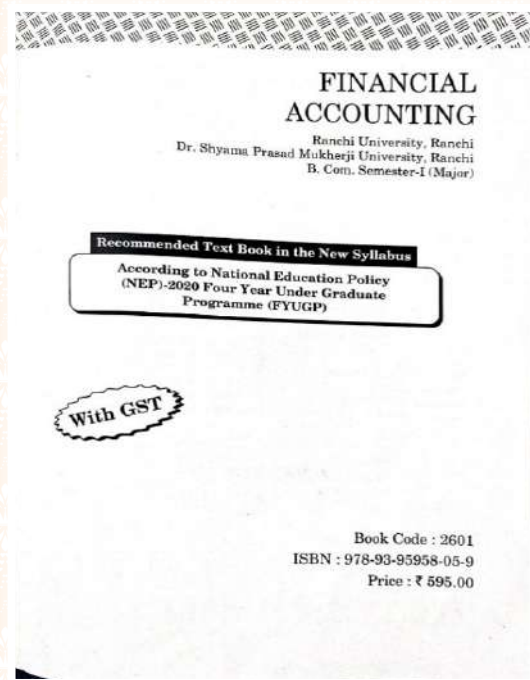
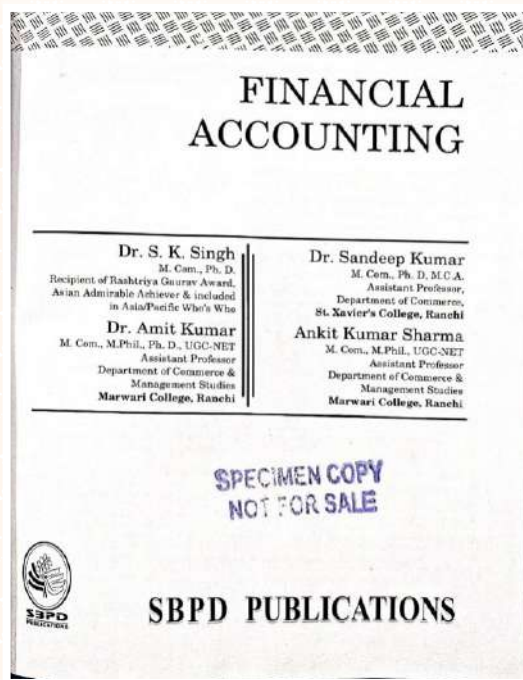
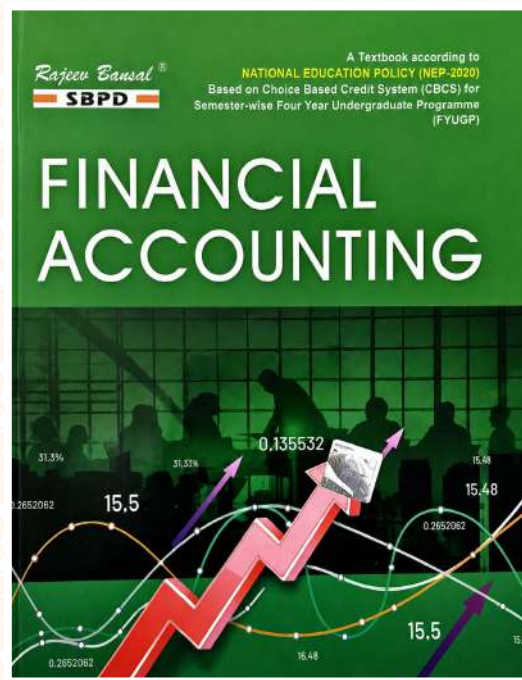
Abstract

This study examines the impact of corporate training at Central Coalfields Limited (CCL), Ranchi, on employee growth and organizational success. Based on feedback from 50 employees, the research finds that effective, well-structured training significantly improves productivity, skills, confidence, and job satisfaction. Training explains about 29% of the variation in employee productivity. Initiatives like E-Pathshala, safety training centres, and vocational programs reflect CCL's commitment to learning and safety. However, challenges remain, including unequal access, outdated content, limited soft skills training, and a lack of follow-up. The study recommends more hands-on, tech-driven, and personalized approaches, emphasizing that strong training programs are key to both employee development and organizational performance.

Keywords- Training Program, Motivation, Adaptability, Effectiveness.

Book -01

Book Title: Financial Accounting
Authors: S.K Singh, Sandeep Kumar, Amit Kumar, Ankit Kumar Sharma
Book Title: Advanced Topics in Mathematical Sciences and Computation
Publisher Name and city: SBPD Publication
ISBN No: 978-93-95958-05-9
Month and Year of Publication: June 2025
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Research Article-01

Title of the article: **A study of digital india: empowering the Citizens of jharkhand through Technology**
Authors : Dr. Sumita Roy
Name of the Journal: EPRA International Journal of Environmental Economics, Commerce and Educational Management
Publisher Name and city: EPRA Journals
ISSN No: 2348 – 814X
Month and Year of Publication: September 2025
Page No: 38
DOI : <https://doi.org/10.36713/epra0414>

Abstract

The main Purpose of bringing Digital India to Jharkhand is to encourage citizens to come forward with innovative ideas and practical solutions to properly realize the vision of Digital India. We envision transforming our country by using digital technologies in the interest of the state and creating opportunities for all citizens. Our vision is to empower every citizen with access to digital services, knowledge, and information. So that social media, mobility, analytics, and video are the bases that make demand on governance and services to the group of villages and make citizens digitally strong. The Digital India vision will be realized, and the social inclusion concept being initiated by the government will be supported. Digitalization has a proven impact on industry and society by reducing unemployment, improving the quality of life, and providing access to knowledge and other public services.

Keywords- Digital India, Innovative Ideas, Opportunities, Empower, and Knowledge.

Research Article-02

Title of the article: **Evaluating the Influence of Ethical Standards, Regulatory Compliance and Professional Integrity on Financial Reporting Practices**
Authors : Dr. Sumita Roy
Name of the Journal: International Journal of Research in Commerce and Management Studies (IJRCMS)
Publisher Name and city: Chronopub Publication, Ratlam, Madhya Pradesh, India
ISSN No: 2582-2292
Month and Year of Publication: November–December 2025
Page No: 289–298
DOI : [10.38193/IJRCMS.2025.7622](https://doi.org/10.38193/IJRCMS.2025.7622)

Abstract

This research investigates the influence of ethical standards, regulatory compliance, and professional integrity on financial reporting practices across Indian industries between 2020 and 2025. In light of recent corporate scandals and evolving regulations, the study aims to assess how ethics and compliance shape transparency, accuracy, and stakeholder confidence in financial disclosures. Using a mixed-method approach combining survey data from 200 finance professionals and secondary analysis of corporate reports, the findings reveal a strong positive correlation between ethical governance and the quality of financial reporting. Companies demonstrating higher compliance with SEBI and MCA regulations exhibited fewer misstatements and enhanced credibility. Furthermore, sectors integrating technology-driven compliance tools achieved superior accountability. The study concludes that ethical culture, supported by strong regulation and professional integrity, is essential for restoring investor trust and sustaining corporate transparency in India's dynamic financial landscape.

Keywords- Ethical Accounting, Financial Reporting, Regulatory Compliance, Professional Integrity, Corporate Governance

Research Article-03

Title of the article:	Effectiveness of SIP Investment Among Retail Investors in Jharkhand: A Survey-based Study
Authors:	Supriya Samanta, Shruti Priya, Nita Srivastava, Shubham Kumar Thakur, Simerpreet Kaur, Dr. Narendra Singh, Dr. Sumita Roy, Dr. Ajay Kumar
Name of the Journal:	International Journal for Novel Research in Economics, Finance and Management (IJNREFM)
Publisher Name and city:	True DataScience Pvt. Ltd., Bhopal, Madhya Pradesh, India
ISSN No:	3048-7722
Month and Year of Publication:	November–December 2025
Page No:	01–10

Abstract

This research explores the effectiveness of Systematic Investment Plans (SIPs) as a preferred investment option among retail investors in Jharkhand. The study aims to analyse investor awareness, behaviour, and satisfaction with returns from SIP investments and assess the role of SIPs in helping investors achieve their financial goals. It adopts a descriptive design and quantitative approach. Primary data were collected through structured questionnaires administered to 205 retail investors across major cities and towns in Jharkhand, including Ranchi. Secondary sources such as AMFI reports, SEBI annual reports, and mutual fund statistics were also used. ANOVA and linear regression were employed for data analysis. The findings indicate that many retail investors perceive SIPs as a disciplined and low-risk investment option, particularly for long-term wealth creation. Regular income, ease of access, and market-volatility hedging influence investor preference. However, gaps in financial literacy and understanding of market dynamics were observed, especially among first-time investors. The study concludes that SIPs can promote regular investment habits and financial inclusion, but their success depends largely on investor education and awareness.

Keywords- Systematic Investment Plan, Retail Investors, Financial Literacy, Investment Behaviour, Mutual Funds.

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Research Article-01

Title of the article: **Performance of Regional Rural Banks (RRBs) in Jharkhand: A Case Study of Jharkhand Rajya Gramin Bank,**

Authors: Neha Sweta Minz¹, Minoti Manjhi¹, Ankit Kujur¹, Aditya Ekka¹, Supriya Shalini Toppo¹, Aiman Fatima¹, Dr. Narendra Singh, Dr. Jyoti Ignace Tete, Dr. Anirban Gupta, Dr. Ajay Kumar

Name of the Journal: International Journal for Novel Research in Economics, Finance and Management

Publisher Name and city: True DataScience Pvt Ltd

ISSN No: 3048-7722

Month and Year of Publication: Dec-2025

Abstract

This research examines the financial and operational performance of Regional Rural Banks (RRBs) in Jharkhand, with a particular focus on the Jharkhand Rajya Gramin Bank (JRGB). RRBs were established to promote financial inclusion and provide credit to the rural economy, especially for small and marginal farmers, artisans, and labourers. This study evaluates JRGB's performance by analysing various financial metrics, participation in government schemes, loan recovery rates, technological integration, and its contribution to inclusive growth. The research investigates key indicators, including the growth in deposits and advances, non-performing assets (NPAs), profitability ratios, credit-deposit ratios, and the implementation of government schemes like Pradhan Mantri Jan Dhan Yojana (PMJDY), PM-KISAN, and MUDRA. Additionally, the study explores how JRGB has maintained financial stability while addressing the needs of marginalized rural communities. Key findings indicate that JRGB has successfully expanded its rural presence, reporting a customer base of over 2.5 million and opening more than 500,000 PMJDY accounts. In conclusion, the research highlights that JRGB has made significant contributions to rural economic development and financial inclusion in Jharkhand. Nonetheless, there is a pressing need for policy support, technological advancements, and improved credit risk management to sustain this growth. This study provides a micro-level perspective on how RRBs like JRGB can evolve into more robust pillars of rural banking and inclusive finance.

Keywords -Jharkhand Rajya Gramin Bank, Growth Rate, Rural Economy, NABARD, RBI.

Sl. No.	Name of Research Scholar	Date of Registration	Topic of Ph. D.	Status
1.	Riya Sinha	16-03-2026	Marketing Strategies of F.M.C.G. in Rural Areas of Jharkhand: A Case Study of Ranchi District	Ongoing
2.	Sharmeen Ejaz	01-04-2026	The Impact of Financial Literacy and Behaviour Biases on Bank-Based Financial Decisions in Jharkhand: A Case Study of Gumla District	Ongoing
3.	Sandip Oraon	15-04-2026	A Study on Impact of CSR of Central Coalfield Limited on Education and Health: A Case Study of Ramgarh District	Ongoing
4.	Abhay Kumar Barman	16-04-2026	Determinants of Capital Structure and its Impact on Profitability - A Comparative Study of Hindustan Unilever Limited and ITC Limited	Ongoing
5.	Raja Mishra	22-04-2026	Adoption of Digital Financial Services and Its Impact on Saving and Spending Pattern of Tribal Population - A Study of Khunti District, Jharkhand	Ongoing

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Research Article-01

Title of the article: **Employees' Perception of Liquidity Management and Financial Stability in Indian Automobile Companies: A Case Study of Maruti Suzuki India Limited, Ranchi**

Authors: Nafisa Ashraf; Dr. Anirban Gupta

Name of the Journal: Jamshedpur Research Review

Publisher Name and city: Gyanjyoti Educational and Research Foundation

ISSN No: 2320-2750

Month and Year of Publication: Feb-2026

Page No: 236-243

Abstract

This study examines the relationship between employees' perception of liquidity management and the financial stability of Maruti Suzuki India Limited in Ranchi. Using a quantitative research approach, primary data were collected from 80 employees across various departments through a structured questionnaire comprising demographic questions and Likert scale items. The study employed descriptive statistics and simple linear regression to analyze the impact of liquidity management on financial stability. The results indicate a positive and significant relationship, with liquidity management explaining 29% of the variation in financial stability, confirming that effective cash flow management, monitoring of short-term assets and liabilities, and liquidity risk planning enhance organizational financial resilience. The findings also suggest that employee awareness of liquidity practices contributes to maintaining consistent financial performance and operational stability. The study provides practical insights for management to strengthen liquidity policies and improve financial sustainability in large automobile companies.

Keywords: Liquidity Management, Financial Stability, Employee Perception, Maruti Suzuki

Research Article-02

Title of the article: **Impact of Emotional Marketing Strategies on Consumer Decision Making**

Authors : Dr. Anirban Gupta, Ashish Sharma

Name of the Journal: Journal of Emerging Technologies and Innovative Research

Publisher Name and city: IJ Publication

ISSN No: 2349-5162

Month and Year of Publication: May-2026

Page No: f16-f22

Abstract

Emotional marketing can be simply understood by breaking it into two words which is Emotions plus marketing which means to attach emotionally for the product. It plays a crucial role in consumer decision making process. It means to sell the product through advertisement which includes some values from which the consumer can easily connects. These strategies have a huge and long-lasting impact on the consumer. This study examines on how emotions impact the behaviour of the consumer. To analyze the impact on consumer, responses of 50 respondent was considered which is quite small but in some sort it is effective. Data has been collected on convenience basis and result shows that majority of people gets affected from the emotional marketing as compared to traditional or rational marketing. People find it more appealing when brand connects with them directly it somehow creates a bridge between their past and present experiences. Further studies in this paper can be done considering other factors such as price, quality and availability of the products and a cross-sectional study can also be conducted while taking two different goods at one point of time.

Keywords: Emotional Marketing, Consumer decision making, Brand Image, Advertisement.

Research Article-03

Title of the article:	Performance of Regional Rural Banks (RRBs) in Jharkhand: A Case Study of Jharkhand Rajya Gramin Bank.
Authors:	Neha Sweta Minz, Minoti Manjhi, Ankit Kujur, Aditya Ekka, Supriya Shalini Toppo, Aiman Fatima, Dr. Narendra Singh, Dr. Jyoti Ignace Tete, Dr. Anirban Gupta, Dr. Ajay Kumar
Name of the Journal:	International Journal for Novel Research in Economics, Finance and Management
Publisher Name and city:	True DataScience Pvt. Ltd.
ISSN No:	3048-7722
Month and Year of Publication:	December 2025
Page no:	01-10

Abstract

Emotional marketing can be simply understood by breaking it into two words which is Emotions plus marketing which means to attach emotionally for the product. It plays a crucial role in consumer decision making process. It means to sell the product through advertisement which includes some values from which the consumer can easily connects. These strategies have a huge and long-lasting impact on the consumer. This study examines on how emotions impact the behaviour of the consumer. To analyze the impact on consumer, responses of 50 respondent was considered which is quite small but in some sort it is effective. Data has been collected on convenience basis and result shows that majority of people gets affected from the emotional marketing as compared to traditional or rational marketing. People find it more appealing when brand connects with them directly it somehow creates a bridge between their past and present experiences. Further studies in this paper can be done considering other factors such as price, quality and availability of the products and a cross-sectional study can also be conducted while taking two different goods at one point of time.

Keywords: Emotional Marketing, Consumer decision making, Brand Image, Advertisement.

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Research Article-01

Title of the article:

Role of Innovative Practices in Increasing Growth with in Commerce and Management Sectors in India

Authors :

Dr. Srinath Koley & Dr. Sanjay Prasad

Name of the Journal:

Journal of Management and Health Sciences

Publisher Name and city:

Department of Research Novel Academy, New Road, Pokhara, Nepal

ISSN No:

2505-0680 (P)

Month and Year of Publication:

Vol-3, No.-3, December 2025

Abstract

This paper tries to examines the role of innovative practices leading to growth within commerce and management sectors in Jharkhand, India. Through analysis on both primary surveys and secondary data, this study focuses on identifying key factors including digital transformation, entrepreneurship campaign, skill development, public-private partnerships, and cluster-based innovation driving regional economic transformation. Findings specify that digital infrastructure expansion, targeted skill training, incubation centers and joint governance are very much correlated with enriched business performance and employment generation. For the research a mixed method approach i.e. a blend of quantitative data and qualitative stakeholder feedback has been used here. Policy recommendations focus on scaling tech-enabled solutions, strengthening institutional frameworks, and fostering inclusive entrepreneurial ecosystems. This paper also highlights limitations and outlines areas for future research.

Keywords- Digital Growth, Skill Development, entrepreneurship..

Book Chapter-01

Title of Book Chapter:

Challenges and Opportunity in Integrating the Indian Knowledge System with Modern Knowledge System: An Analysis of the Revival of Tribal Knowledge in Education (A Case Study of Jharkhand)

Authors :

Dr. Sanjay Prasad & Dr. Srinath Koley

Name of the Book:

Challenges and Opportunities in integrating Indian Knowledge System with Modern Knowledge System

Publisher Name and city:

Samriddh Publication, Shahdara, Delhi

ISBN No:

978-93-94837-69-0

Month and Year of Publication:

June 2025

Abstract

Through this research paper I try to examine the combination of the Indian Knowledge System (IKS), specifically tribal knowledge, into conventional education, with a specific emphasis on Jharkhand. We know that Jharkhand is known for its rich cultural and linguistic variety, holds a considerable tribal community whose traditional knowledge of herbal medicine, environmental sustainability, oral storytelling and also the effective use of natural teaching approaches has frequently been disregarded in formal education.

A qualitative methodology has been used for this research on the basis of analysis of government policies, interview of various stakeholders and case studies of Jharkhand. The research advises that integration of IKS with MKS will not only increase community participation in schooling and improve learning outcomes but will also Strengthened the cultural self-esteem among students. However, its lack of adequate resources, trained teachers and effective execution of policies.

The paper concludes that effective revival of tribal knowledge within modern academic frameworks in Jharkhand strongly needs a systematic, culturally responsive, and participatory educational reforms.

Keywords- Indian Knowledge System, Modern Knowledge System, tribal knowledge, multilingual education, curriculum integration, NEP 2020.

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Research Article-01

Title of the article

To Study the Contemporary Educational Approaches of Traditional Tribal People Through Knowledge Transfer in Jharkhand, Identifying Strengths and Areas of Improvement

Authors :

Fr. Robert Pradeep Kujur, S.J. & Dr. Sanjay Prasad

Name of the Journal:

Iconic research and engineering journals

Publisher Name and city:

IRE Journals

Listed in Scopus:

No

ISSN No:

2456-8880

Month and Year of Publication:

Sep. 2025

Page No:

58-62

DOI:

<https://doi.org/10.64388/IREV9I2-1710375-1752>

Abstract

In this modern era, when the essence of human life is slowly and aggressively disappearing with modern technology and collectivism, and even more so, the natural environment in the state of Jharkhand is constantly changing, we have shared very important information about the knowledge and their primitive education system. That is, how they acquire their knowledge, and in what form they apply it in their lives and society. The tribes of this state, who always strive to establish the overall goals of their native land, are slowly losing their value-based culture and sanskar due to becoming a symbol of modern education. In India, according to the passport in 2011 census, 59.23% of the tribals are genocide. But due to a lack of security in reading and writing, we have a perception in our mind that they are becoming completely formless and ignorant of natural life. But education is a historical process and brings positive changes in human life and behavior. The ratio of the state is increasing rapidly, and the natural landscape is gradually decreasing. For this purpose, the natural environment is being destroyed indiscriminately. Through modern education and technology, people start their studies from the perspective of nature. Therefore, the process of acquiring indigenous knowledge and its principles has to be deeply adopted in modern education. Along with the environment, the behavior of openness has to be learned. The development of education in the remote areas of the state.

Keywords- Globalization And Modernization, Tribal Education System, And Population

Research Article-02

Title of the article:

Role of Innovative Practices In Increasing Growth with in Commerce and Management Sectors in India

Authors:

Dr. Srinath Koley & Dr. Sanjay Prasad

Name of the Journal:

Journal of Management and Health Sciences

Publisher Name and city: Department of Research Novel Academy, New Road, Pokhara, Nepal
ISSN No: 2505-0680 (P)
Month and Year of Publication: Vol-3, No.-3, December 2025

Abstract

This paper tries to examines the role of innovative practices leading to growth within commerce and management sectors in Jharkhand, India. Through analysis on both primary surveys and secondary data, this study focuses on identifying key factors including digital transformation, entrepreneurship campaign, skill development, public-private partnerships, and cluster-based innovation driving regional economic transformation. Findings specify that digital infrastructure expansion, targeted skill training, incubation centers and joint governance are very much correlated with enriched business performance and employment generation. For the research a mixed method approach *i.e.* a blend of quantitative data and qualitative stakeholder feedback has been used here. Policy recommendations focus on scaling tech-enabled solutions, strengthening institutional frameworks, and fostering inclusive entrepreneurial ecosystems. This paper also highlights limitations and outlines areas for future research.

Keywords- Digital Growth, Skill Development, entrepreneurship..

Book Published-01

Title of Book: **Cyber Law Ethics**
Authors : Dr. Niraj Kumar; Dr. G. Vengatesan; Dr. Sanjay Prasad
Publisher Name and city: Bharat International Publication, Kolkata, Delhi, Guwahati, India
Listed in Scopus: No
ISBN No: 978-81-982833-0-6
Month and Year of Publication: April 2026
Page No: 1-210

Introduction : In the digital age, the intersection of technology and law has become increasingly crucial, and nowhere is this more evident than in the field of Cyber Law. The rapid evolution of the internet, digital platforms, and electronic transactions has created an intricate web of legal challenges that demand expert understanding and response. This book, Cyber Law Ethics, is designed to offer an in-Dept.h, comprehensive, and structured approach to understanding this complex domain.

This book covers the entire syllabus and curriculum related to Cyber Law, tailored to meet the needs of students from South Indian universities, as well as other universities across India. It has been carefully crafted to provide a balanced mix of theoretical and practical insights into the legal principles governing the digital landscape, ensuring that readers are well-equipped to face both academic assessments and real-world challenges.

Keywords- Ethics, cyber law, digital age, e-commerce

Book Chapter-02

Title of Book Chapter: **Challenges and Opportunity in Integrating the Indian Knowledge System with Modern Knowledge System: An Analysis of the Revival of Tribal Knowledge in Education (A Case Study of Jharkhand)**
Authors : Dr. Sanjay Prasad & Dr. Srinath Koley
Name of the Book: Challenges and Opportunities in integrating Indian Knowledge System with Modern Knowledge System
Publisher Name and city: Samriddh Publication, Shahdara, Delhi
ISBN No: 978-93-94837-69-0
Month and Year of Publication: June 2025

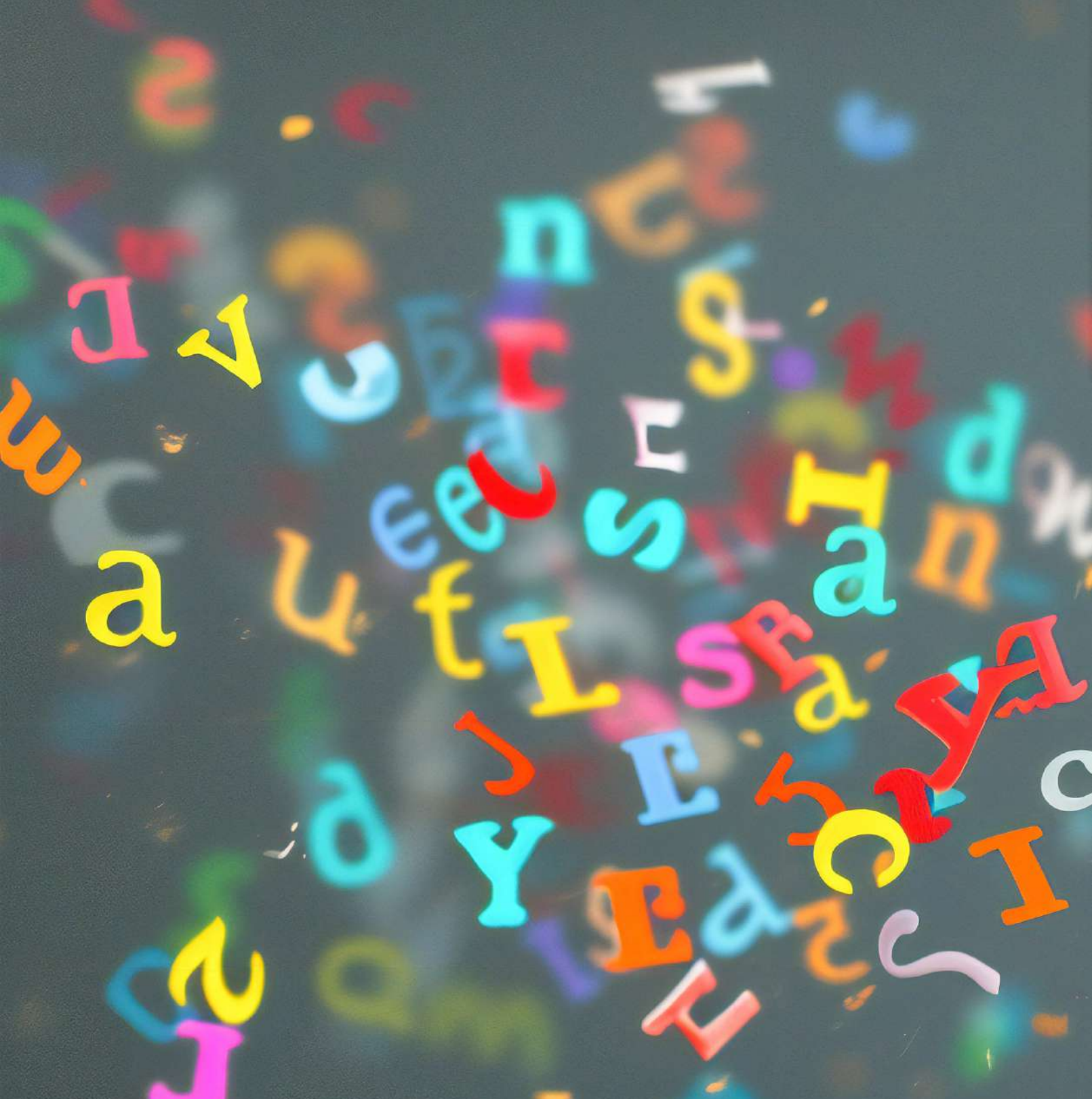
Abstract

Through this research paper I try to examine the combination of the Indian Knowledge System (IKS), specifically tribal knowledge, into conventional education, with a specific emphasis on Jharkhand. We know that Jharkhand is known for its rich cultural and linguistic variety, holds a considerable tribal community whose traditional knowledge of herbal medicine, environmental sustainability, oral storytelling and also the effective use of natural teaching approaches has frequently been disregarded in formal education.

A qualitative methodology has been used for this research on the basis of analysis of government policies, interview of various stakeholders and case studies of Jharkhand. The research advises that integration of IKS with MKS will not only increase community participation in schooling and improve learning outcomes but will also Strengthened the cultural self-esteem among students. However, its lack of adequate resources, trained teachers and effective execution of policies.

The paper concludes that effective revival of tribal knowledge within modern academic frameworks in Jharkhand strongly needs a systematic, culturally responsive, and participatory educational reforms.

Keywords- Indian Knowledge System, Modern Knowledge System, tribal knowledge, multilingual education, curriculum integration, NEP 2020.



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Book Chapter-01

Title of the Chapter:

Reverting the Gaze: Analyzing the Portrayal of Men in Shashi Deshpande's That Long Silence

Authors :

Dr. Shayantani Banerjee and Dr. Sachindra Nath Mishra

Book Title:

Literary Echoes Across Time and Culture

Publisher Name and city:

Neyan Publication, Katpadi, Vellore

ISBN No:

978-81-972143-9-4

Month and Year of Publication:

June, 2025

Page No:

210-214

Introduction:

Shashi Deshpande's *That Long Silence* offers a nuanced exploration of gender relations within the patriarchal structure of middle-class Indian society. While Deshpande's fiction is predominantly recognized for foregrounding women's consciousness, suffering, silence, and struggle for selfhood, this chapter shifts the critical gaze towards the representation of men and examines their role in shaping the experiences of the female protagonist, Jaya. The study analyses the male characters in the novel, particularly Mohan, Jaya's brothers, and other men in her familial and social relationships, to question the conventional representation of men as uniformly oppressive and women as passive victims. Although patriarchal expectations and unequal power relations contribute significantly to Jaya's marginalization, Deshpande complicates this binary by presenting men as products of their own social, psychological, and familial circumstances. Mohan's anxieties, ambitions, failures, and insecurities reveal the vulnerability underlying the apparently authoritative male persona, while Jaya's own reflections acknowledge that her suffering cannot be attributed entirely to men. The chapter therefore argues that Deshpande's feminist vision is not founded on an unqualified antagonism towards men but on a critique of oppressive social structures and gendered conditioning. By "reverting the gaze," the study seeks to demonstrate how the portrayal of men contributes to Jaya's process of self-realization and to Deshpande's larger exploration of the possibility of more balanced and humane man-woman relationships.

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Research Article -01

Title of the article: **Embodied Narratives and Medical Resistance: A Medical Humanities Study of *The Truth About Me: A Hijra Life Story* by A. Revathi and *I am Vidya: A Transgender's Journey* by Living Smile Vidya**

Authors: Dr. Sweta Kumari Jha

Name of the Journal: Interdisciplinary Research Journal for Humanities (IRJH)

Publisher Name and city:

ISSN No: 2249-250X

Month and Year of Publication: October, 2025

Vol- Issue: 5-10

Abstract

This paper explores embodied narratives and medical resistance through a Medical Humanities lens, focusing on *The Truth About Me: A Hijra Life Story* by A. Revathi and *I am Vidya: A Transgender's Journey* by Living Smile Vidya. These autobiographies foreground lived experiences of gender non-conformity, bodily autonomy and marginalization within Medical and social institutions. The study highlights how these texts challenge biomedical discourses and reclaim agency through storytelling. By situating transgender voices within the framework of Medical Humanities, the paper emphasizes the importance of inclusivity, empathy and narrative healing in healthcare and literary representations.

Keywords: Transgender Narratives, Medical Humanities, Bioethics, Queer Health and Narrative Healing

Research Article -02

Title of the article: **Waves of Divinity: A Blue Humanities Exploration of the Ramayana and the Mahabharata.**

Authors: Dr. Sweta Kumari Jha

Name of the Journal: International Journal of Advanced Multidisciplinary Scientific Research (IJAMSR)

ISSN No: 2581-4281

Month and Year of Publication: March, 2026

Vol- Issue: 581-586

Abstract

The Blue Humanities is an emerging academic discourse that expands ecocritical studies by focusing on water bodies, maritime cultures, and oceanic imagination. Developed by scholars such as Steve Mentz and Elizabeth DeLoughrey, it explores how literature, history and Culture engage with water as an agent of meaning and ecological interconnectedness. In the context of Indian epics, the application of Blue Humanities opens new interpretive possibilities. The *Ramayana* and the *Mahabharata* feature rivers, oceans, and aquatic metaphors that not only drive their plots but also reflect deeper philosophical, spiritual, and ecological insights. This article explores how the Indian epics reveal complex ecological consciousness, fluid cosmologies, and aquatic metaphors that shape their narratives, philosophies and ethical concerns.

Keywords: Indian epics, Ramayana, Mahabharata

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Research Article-01

Title of the article:

देदीप्यमान नक्षत्रः महाकवि जयशंकर प्रसाद

Authors :

Dr. Sanjay Kumar

Name of the Journal:

Indian Journal of Social Concerns

Publisher Name and city:

RESEARCH JOURNAL OF HUMANITIES AND SOCIAL SCIENCES,
Ghaziabad

ISSN No:

2231 - 5837

Month and Year of Publication:

Dec. -2025

Vol- Issue:

14 (68)

शोध सारांश

छायावाद के चार स्तंभों में एक मजबूत स्तंभ के रूप में जयशंकर प्रसाद की प्रसिद्धि है। आठवीं कक्षा तक नियमित शिक्षा पाने वाले प्रसाद की कविताएँ पीएच. डी. करने वालों के लिए पहेली बन गई हैं। भाव के स्तर पर प्रसाद की कविताएँ मानवीय पीड़ा को चित्रित करती हुई जहाँ संघर्ष के पथ पर आनन्द की ओर उन्मुख हो जाती हैं वहीं भाषा के स्तर पर उनकी कविताएँ लाक्षणिकता, ध्वन्यात्मकता, प्रतीकात्मकता तथा बिम्बात्मकता को सृजित करती हैं। रनियतिवादश एवं श्आनन्दवादीश दर्शन को समेटती उनकी कविताएँ जीवन का मार्ग प्रशस्त करती हैं।





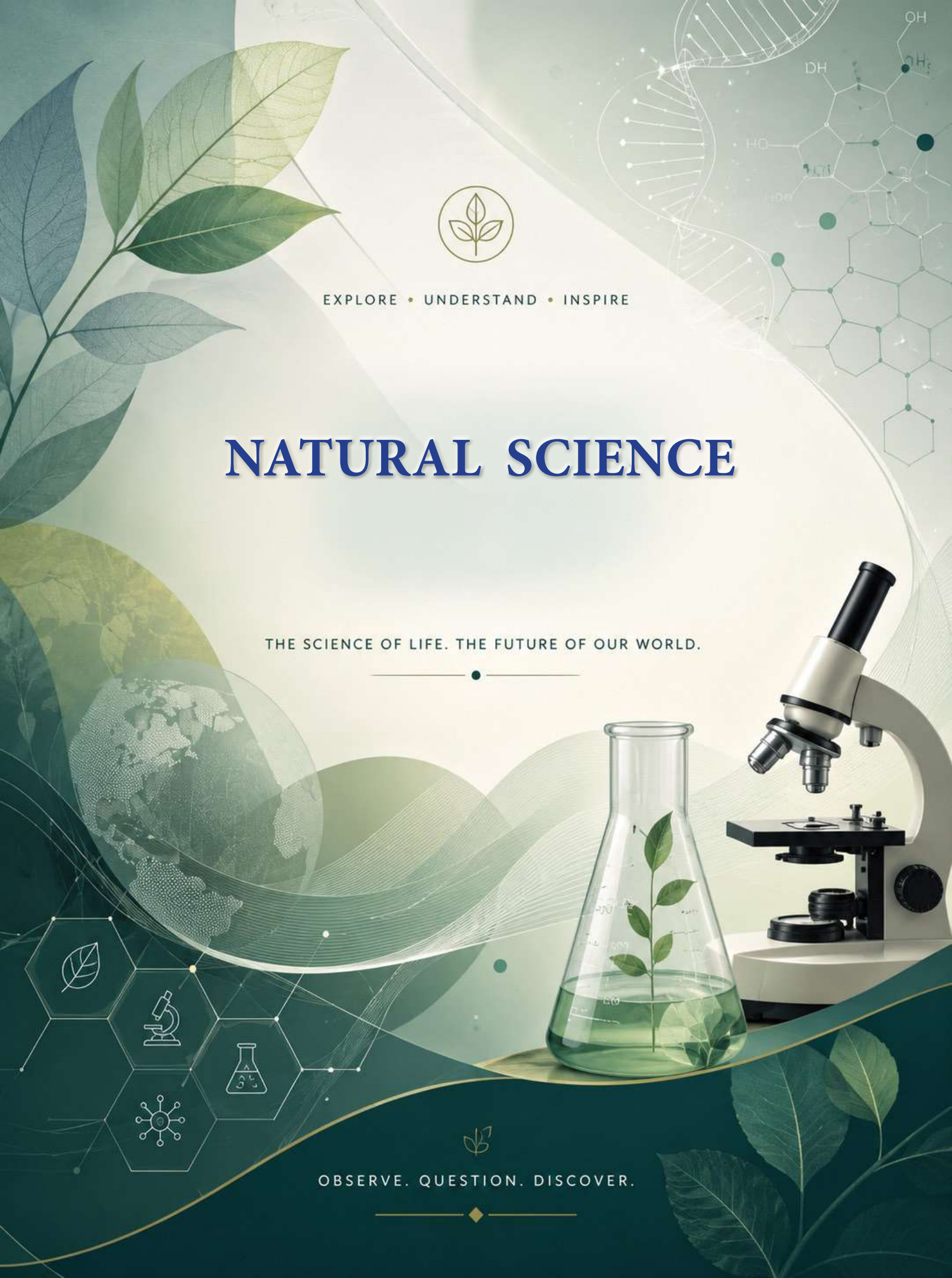
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Reviewer/Member of editorial board

1. Plant Cell Biotechnology and Molecular Biology IK Press
2. European Journal of Nutrition & Food Safety Science Domain
3. Journal of Agriculture and Forest Meteorology Research Sci Tech Central, USA
4. Institute of Forest Productivity, Ranchi
5. Asian Journal of Plant and Soil Sciences IK Press
6. Biophilia, Lucknow
7. International Journal of Environment and Climate Change
8. International Journal of Biochemistry Research & Review
9. European Journal of Medicinal Plants
10. Research Advances in Environment, Geography and Earth Science
11. Annual Research & Review in Biology
12. Asian Journal of Research in Botany
13. Asian Journal of Research in Biochemistry
14. Asian Journal of Research in Agriculture and Forestry
15. Asian Journal of Biology
16. Asian Journal of Environment & Ecology
17. Asian Journal of Biochemistry, Genetics and Molecular Biology
18. Asian Journal of Biotechnology and Genetic Engineering
19. Asian Journal of Biotechnology and Bioresource Technology
20. Asian Journal of Agricultural and Horticultural Research
21. Journal of Scientific Research and Reports

No. of Ph.D. Scholars Registered till now

11 (4 awarded)

Consultancy / R&D Projects

TREE TRANSPLANTATION, NHAI

Research Article – 01

Title of the article:

Comparative Evaluation of Antibacterial Activity and Phytochemical Constituents of *Rosa* sp., *Tagetes minuta* and *Murraya koenigii* Leaf Extracts

Author(s):

Rana, L., Jha, S., Verma, S., Barla, A. A., & Srivastava, A. K.

Name of the Journal: Online International Interdisciplinary Research Journal
Publisher Name and City: Dr. Somnath Kisan Mandal, Kolhapur, Maharashtra
ISSN No.: 2249 – 9598
Month and Year of Publication: May- 2026
Page No: 31 – 41

Abstract:

Since earlier days, plants have been used for medicinal purposes as they are recognized for their valuable bioactive compounds, which show therapeutic properties as well as antibiotic properties. These properties are made evident by the presence of phytochemical constituents between the three common household plants *Rosa* sp. (Family: Rosaceae), *Tagetes minuta* (Family: Asteraceae) and *Murraya koenigii* (Family: Rutaceae). The extraction was done using the three different organic solvents: Ethanol, Methanol and Aqueous. The qualitative preliminary phytochemical tests were performed to identify the secondary metabolites such as carbohydrates, proteins, saponins, alkaloids, flavonoids, tannins, phenols, glycosides and terpenoids. By using the Agar Well Diffusion method, the antibacterial efficiency of both the solvents (Methanol and Ethanol) of extracted plant extracts was tested against the *Escherichia coli* (Gram -Negative) bacteria. Different concentrations of the plant extract were tested by diffusing it into the wells created in the agar medium. Hence, the respective zone of inhibition was created by each sample. The difference in the appearance of the Zone of Inhibition formed around the wells created in the Nutrient Agar by the different plant concentrations of each extract. The result of this study suggests that among the three plants *Rosa* sp, *Tagetes minuta* and *Murraya koenigii*; *Rosa* sp. gave potential results showing better antibacterial efficacy. However, *Tagetes minuta* and *Murraya koenigii* gave mild effects against the bacteria. In the coming days, these plants can serve as a source of natural antibiotics instead of synthetic antibiotics. These can be further explored and studied for the pharmaceuticals, therapeutic uses and environment-friendly plant- based antiseptic which will be safer and of more economical value.

Keywords: Antibacterial, Phytochemical tests, antibiotics, Therapeutics, Zone of Inhibition

Research Article – 02

Title of the article: **Production of Biochar from Plant Organic Waste and evaluation of its different concentrations on Soil Carbon Sequestration and growth of *Vigna radiata* (L.) R. Wilczek**
Author(s): Mousami Singh, Ajay Kumar Srivastava, Aroma Aishwarya Barla, Sunidhi Verma, Swarnima Jha
Name of the Journal: Online International Interdisciplinary Research Journal
Publisher Name and City: Dr. Somnath Kisan Mandal, Kolhapur, Maharashtra
ISSN No.: 2249 – 9598
Month and Year of Publication: May 2026
Page No: 57 – 66

Abstract:

Biochar is a black charcoal like substance rich in carbon produced from plant organic waste. It is a sustainable soil amendment method used in enhancing soil fertility and plant growth. The soil degradation due to natural and anthropogenic factors have increased the need for sustainable soil management practices. This study evaluated the effects of different soil-biochar concentrations on soil pH, soil organic carbon (SOC), seed viability of replicates and growth of *Vigna radiata* (L.) R. Wilczek across four different soil types. Four concentrations with three replicates were used- 100g Soil + 0g Biochar, 75g soil + 25g Biochar, 50g Soil + 50g Biochar, 25g Soil + 75g Biochar. Additionally, a 0 g Soil +100g biochar with three replicates was also kept for observation. Data was analysed statistically using General Linear Model

(GLM) ANOVA. Results indicated that increasing the biochar concentration in soil increased SOC, seed viability and plant growth. Soil pH was influenced by concentration of biochar and soil type (interaction $p < 0.001$). The highest mean plant length was recorded as 15.4 ± 1.48 and the highest SOC were recorded in the 25g soil + 75 g biochar concentrations. The findings indicates that biochar obtained from plant organic waste has the potential to optimize soil properties and plant growth.

Keywords: Biochar, Soil Organic Carbon, Soil pH, Plant growth, Soil amendment, Sustainable agriculture

Research Article – 03

Title of the article:	Qualitative Assessment of Aluminium Accumulation in Vegetative Aerial Parts of Some Members of Rubiaceae Family Found in Ranchi District, Jharkhand
Author(s):	Barla, A. A., & Srivastava, A. K.
Name of the Journal:	Online International Interdisciplinary Research Journal
Publisher Name and City:	Dr. Somnath Kisan Mandal, Kolhapur, Maharashtra
ISSN No.:	2249 – 9598
Month and Year of Publication:	January – February, 2026
Page No:	1 – 5

Abstract:

Out of the many minerals available on the earth's crust, plants only use selected minerals for their growth and development, while other minerals are rendered useless and might even cause toxicity in the plants. One such mineral is – Aluminium. Despite its abundance in earth's crust, it is known to cause poor root development in plants growing in acidic soils. Jharkhand being one of aluminium rich state with mega bauxite reserves and lateritic soil having a pH ranging from 6 to 4.5, causes intense leaching in high temperature and high rainfall, washing away the nutrients like calcium and magnesium, leaving behind acidic iron and aluminium oxides. The plants exhibit various mechanisms to deal with the aluminium tolerance from exclusion mechanisms to accumulating the metal in tissues to combat Al-toxicity. Thus, the present study was conducted to explore the members of Rubiaceae in Ranchi, Jharkhand that accumulate aluminium in their tissues. In our present study, 12 different species were tested for presence of aluminium using histochemical tests. The study concludes that 4 members of the family were tested positive for aluminium.

Keywords: Aluminium accumulation, Histochemical tests, Jharkhand, Rubiaceae

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Research Article – 01

Title of the article:

Phytochemical Screening and Comparison of *Dendrophthoe falcata* (L.f.) Ettingsh growing on two different hosts: *Madhuca longifolia* (J. Konig) J.F. Macbr. and *Buchanania lanzan* Spreng

Author(s):

Ekka, R. N., Soreng, P. K., & Hansdah, J. R.

Name of the Journal:

Online International Interdisciplinary Research Journal

Publisher Name and City:

Dr. Somnath Kisan Mandal, Kolhapur, Maharashtra

ISSN No.:

2249 – 9598

Month and Year of Publication:

May-June 2026

Page No:

22 – 30

Abstract:

Dendrophthoe falcata (L.f.) Ettingsh is a widespread hemiparasitic plant belonging to the Loranthaceae family. Due to its prevalence, it can be easily identified by the locals. It is commonly known as giant-mistletoe and honey-suckle mistletoe. Its vernacular names include Vanda (Sanskrit), Banda (Hindi) and Banda-jhar (Santhali). Its host plant is either an ornamental or a fruit-bearing plant, thereby acquiring a significant share of nutrients from the host. It possesses various ethnomedicinal properties and its application benefits to cure various ailments which includes, skin diseases and wounds, cancer, ulcer, asthma, paralysis, impotence, menstrual irregularities, etc. This research study aims to compare the secondary metabolites of *Dendrophthoe falcata* (L.f.) Ettingsh growing on *Madhuca longifolia* (J. Konig) J.F. Macbr. and *Buchanania lanzan* Spreng. The preliminary phytochemical screening revealed the presence of carbohydrates, reducing sugar, saponins, alkaloids, phenols, tannins, and flavonoids in *Madhuca longifolia* (J. Konig) J.F. Macbr. *Buchanania lanzan* Spreng showed the presence of carbohydrates, reducing sugar, alkaloids, phenols, tannins, and flavonoids. This depicts the parasite growing on *Madhuca longifolia* (J. Konig) J.F. Macbr has greater secondary metabolite properties than *Buchanania lanzan* Spreng.

Keywords: *Dendrophthoe falcata* (L.f.) Ettingsh, Loranthaceae, angiospermic, *Madhuca longifolia*, *Buchanania lanzan*

Research Article-02

Title of the article:

***Lamellidens marginalis* :A Super bio-filter of fresh water ecosystem**

Authors:

Ritesh Kumar Shukla^{1*}, Akalesh Kumar Verma², Shiv Shankar Prasad³, Namram Sushindrajit Singh², Sandeep Chandra⁴, Rajeev Ranjan Shrivastava⁴, Ajay Minj⁵, Prabhat Kennedy Soreng⁶, & N. Venkat Appa Rao¹

Name of the Journal:

The Applied Biology and Chemistry Journal

ISSN No: 2582-8789
Month and Year of Publication: March 2026
Page No: 71002 (1-15)
DOI: <https://doi.org/10.52679/tabcj.2026.71002>

Abstract

Freshwater mussels are important bio-filters in aquatic ecosystems, capable of improving the water quality by removing suspended particles through their filter-feeding activity. However, no detailed studies are available on the filtration of polluted water by freshwater mussels under controlled laboratory conditions, hence, this study was conducted. The filtration efficiency of the mussel *Lamellidens marginalis* was evaluated in polluted Subarnarekha River water and aged tap water under controlled laboratory settings. Two sets of aerated aquaria, each containing 20 liters of either polluted river water or aged tap water, were used-one set with mussels and control set without mussels. Physiochemical parameters including pH, temperature, electrical conductivity, total dissolved solids and turbidity were monitored at 24-hour intervals over a four-day period to assess the impact of mussel filtration on water quality. The turbidity decreased from 191.33 ± 6.9 NTU to 2.4 ± 0.55 NTU in the polluted river water with mussels, and from 1.43 ± 0.11 NTU to 0.76 ± 0.05 NTU in the aged tap water. Similar declines were observed in other parameters. In contrast, no significant changes were observed in the control aquaria without mussels. These findings highlight the exceptional bio-filtration capacity of mussels. Therefore, conserving these species and utilizing them as models for bio-filtration systems is recommended.

Keywords- Aquaculture, Bivalves, Ecosystem engineer, Freshwater mussels, Water pollution

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Research Article – 01

Title of the article:

Mathematical Derivation in Electrosynthesis of Polyacrylic Acid

Author(s):

Smita Singh¹, Sumanta K Sengupta¹, Mamta M. Topno, Praween Surin and Ushir R. Sen

Name of the Journal:

International Journal of Catalysis and Chemical Engineering

ISSN No.:

3068-9368

Month and Year of Publication:

Oct, 2025

Volume & Issue:

1 (2)

Abstract

Electrosynthesis of polyacrylic acid was carried out in the solution of zinc nitrate in N,N-Dimethylformamide. The locus of polymerization was found to be the anodic compartment. The yields were determined at different current densities and different monomer concentrations. Considering the assumptions of different steps in this electrosynthesis, mathematical derivation was carried out. This mathematical derivation was substantiated experimentally.

Keywords- Mathematical Derivation, Electrosynthesis, Polyacrylic Acid

Research Article – 02

Title of the article:

Investigation of electrode metals and supporting electrolytes in the electrochemical polymerization of acrylamide

Author(s):

Smita Singh, Sumanta K Sengupta, Mamta M. Topno, Praween Surin and Ushir R. Sen

Name of the Journal:

International Journal of Catalysis and Chemical Engineering

Publisher Name and City:

Prime

ISSN No.:

3068-9368

Month and Year of Publication:

Oct, 2025

Page No:

01-05

Abstract:

Electrosynthesis of polyacrylic acid was carried out in the solution of zinc nitrate in N,N-Dimethylformamide. The locus of polymerization was found to be the anodic compartment. The yields were determined at different current densities and different monomer concentrations. Considering the assumptions of different steps in this electrosynthesis, mathematical derivation was carried out. This mathematical derivation was substantiated experimentally.

Keywords: Mathematical Derivation, Electrosynthesis, Polyacrylic Acid

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No. of Ph.D Scholars Registered till now 1



Research Article – 01

Title of the article:

Ultra-low thermal conductivity and dielectric stability in novel high-entropy perovskite oxides for advanced thermal and electronic applications

Author(s):

Rupesh Kumar, Raj Kumar Singh, Kumari Mamta, Sumit Kumar Roy, and Sushil Kumar Pandey

Name of the Journal:

J Mater Sci

Publisher Name and City:

Springer Nature

Listed in SCOPUS:

Yes

Listed in Web of Science:

Yes

ISSN No.:

0028-0836

Month and Year of Publication:

27 January 2026

Page No:

264

DOI:

<https://doi.org/10.1007/s10854-026-16570-z>

Abstract

In The concept of high-entropy has recently emerged as a promising strategy in the development of advanced thermal barrier coating (TBC) materials. By introducing mass and size disorder through the incorporation of multiple distinct cations at a single crystallographic site in mixed oxides, high-entropy oxides (HEOs) can be designed to exhibit stabilized single-phase structures with intrinsically low thermal conductivities. In this work, we report the successful solid state synthesis and comprehensive characterization of three novel single-phase high-entropy perovskites: $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Mn}_{1/5})\text{O}_3$, $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Ce}_{1/5})\text{O}_3$, and $\text{Sr}(\text{Ti}_{1/4}\text{Zr}_{1/4}\text{Hf}_{3/20}\text{Sn}_{1/4}\text{Mn}_{1/10})\text{O}_3$. The compounds $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Mn}_{1/5})\text{O}_3$, $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Ce}_{1/5})\text{O}_3$, and $\text{Sr}(\text{Ti}_{1/4}\text{Zr}_{1/4}\text{Hf}_{3/20}\text{Sn}_{1/4}\text{Mn}_{1/10})\text{O}_3$ exhibit the low thermal conductivities of approximately $1.84 \text{ Wm}^{-1} \text{ K}^{-1}$, $1.72 \text{ Wm}^{-1} \text{ K}^{-1}$, and $0.72 \text{ Wm}^{-1} \text{ K}^{-1}$, respectively, at 800 K. The Sr-based compound exhibits an ultra-low average thermal conductivity of $\sim 0.63 \text{ Wm}^{-1} \text{ K}^{-1}$, which remains nearly constant over the temperature range of 300–800 K. This value corresponds to an almost 68% reduction compared to the benchmark thermal barrier coating (TBC) material, 8 mol% yttria-stabilized zirconia (8YSZ), highlighting its strong potential as a next-generation TBC candidate. The observed ultra-low, amorphous-like thermal conductivity is primarily attributed to enhanced phonon scattering induced by severe lattice distortion and high configurational entropy. Moreover, electrical characterization reveals a highly stable dielectric constant up to 200 °C, accompanied by low dielectric loss, indicating additional potential for electronic and capacitive applications. The room temperature ac conductivity for sample $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Mn}_{1/5})\text{O}_3$, $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Ce}_{1/5})\text{O}_3$ and $\text{Sr}(\text{Ti}_{1/4}\text{Zr}_{1/4}\text{Hf}_{3/20}\text{Sn}_{1/4}\text{Mn}_{1/10})\text{O}_3$ are $1.05 \times 10^{-6} \text{ S/m}$, $1.01 \times 10^{-6} \text{ S/m}$ and $1.63 \times 10^{-6} \text{ S/m}$ respectively, at 1 kHz frequency, which shows the highly insulating nature of the samples. These findings highlight the multifunctional character of high entropy perovskites and position them as promising candidates for

thermal barrier coatings, dielectric components, and a broad range of high-temperature applications. Further investigation is warranted to fully realize and optimize their multifunctional potential.

Research Article – 02

Title of the article:	A Novel Multi-Cation High-Entropy Ceramic $\text{Sr}(\text{Ti}_{0.25}\text{Zr}_{0.25}\text{Hf}_{0.15}\text{Sn}_{0.25}\text{Mn}_{0.1})\text{O}_3$ for Advanced Functional Electronic Applications
Author(s):	Rupesh Kumar, Darakhshan Eqbal, Sushil Kumar Pandey, Sumit Kumar Roy, Kumari Mamta, Raj Kumar Singh
Name of the Journal:	Chemistry Select
Publisher Name and City:	Wiley-VCH
Listed in SCOPUS:	Yes
Listed in Web of Science:	Yes
ISSN No.:	2365-6549
Month and Year of Publication:	19 December 2025
Page No:	2365-6549
DOI:	https://doi.org/10.1002/slct.202505242

Abstract:

In this paper, we report the synthesis, microstructure characterization, and electrical properties of a novel high-entropy perovskite oxide $\text{Sr}(\text{Ti}_{0.25}\text{Zr}_{0.25}\text{Hf}_{0.15}\text{Sn}_{0.25}\text{Mn}_{0.1})\text{O}_3$, a family of oxides widely studied due to their unique and fascinating properties. $\text{Sr}(\text{Ti}_{0.25}\text{Zr}_{0.25}\text{Hf}_{0.15}\text{Sn}_{0.25}\text{Mn}_{0.1})\text{O}_3$ was synthesized using the conventional solid-state reaction method. Structural characterization through powder x-ray diffraction and field-emission scanning electron microscopy confirms the formation of a single-phase cubic perovskite (space group Pm-3m) with a uniform, highly dense, and structurally stable microstructure. Electrical measurements conducted over the temperature range of 35°C–495°C and the frequency range of 100 Hz–1 MHz reveal a complex conduction mechanism along with thermally activated non-Debye-type relaxation at elevated temperatures. Impedance, modulus, and Nyquist analyses indicate that charge transport is dominated by electron mobility at lower temperatures, whereas defect-mediated processes become increasingly significant at higher temperatures. These features are attributed to the combined effects of configurational entropy and local lattice disorder. Overall, the material exhibits multifunctional electrical characteristics suitable for electroceramic applications, including energy storage components, thermal management systems, and high-temperature electronic devices.

Research Article – 03

Title of the article:	Lead-free high-entropy $\text{Ba}(\text{Ti}_{0.2}\text{Zr}_{0.2}\text{Hf}_{0.2}\text{Sn}_{0.2}\text{Ce}_{0.2})\text{O}_3$ ceramics: Structural stabilisation and impedance spectroscopic insights for high-temperature electronic applications
Author(s):	Rupesh Kumar, Raj Kumar Singh, Kumari Mamta, Sumit Kumar Roy, Sushil Kumar Pandey
Name of the Journal:	Processing and Application of Ceramics
Publisher Name and City:	University of Novi Sad, Faculty of Technology
Listed in SCOPUS:	Yes
Listed in Web of Science:	Yes
ISSN No.:	2406-1034
Month and Year of Publication:	20 March 2026
Page No:	58–63
DOI:	https://doi.org/10.2298/PAC2601058K

Abstract

A novel high-entropy perovskite, $\text{Ba}(\text{Ti}_{0.2}\text{Zr}_{0.2}\text{Hf}_{0.2}\text{Sn}_{0.2}\text{Ce}_{0.2})_{0.3}$, was successfully synthesized through a conventional solid-state reaction route and sintered at 1350 °C for 12 h. Powder X-ray diffraction (PXRD) and Rietveld refinement confirmed the formation of a single-phase cubic structure with space group $\text{Pm}\bar{3}\text{m}$. Scanning electron microscopy coupled with energy-dispersive X-ray (EDX) spectroscopy mapping revealed a uniform microstructure and homogeneous elemental distribution. The electrical properties were investigated using impedance spectroscopy over a temperature range of 35 °C to 495 °C and a frequency range of 100 Hz to 1 MHz. The real part of impedance decreased with increasing temperature, indicating negative temperature coefficient of resistance (NTCR) behavior. The imaginary impedance and electrical modulus spectra exhibited temperature-dependent relaxation peaks shifting toward higher frequencies, confirming thermally activated charge transport. Nyquist plot analysis revealed separate contributions from bulk grains and grain boundaries, demonstrating mixed bulk and interfacial conduction mechanisms. These results establish $\text{Ba}(\text{Ti}_{0.2}\text{Zr}_{0.2}\text{Hf}_{0.2}\text{Sn}_{0.2}\text{Ce}_{0.2})_{0.3}$ as a promising candidate for high-temperature electronic and sensing applications

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Research Article – 01

Title of the article:

Water Soluble 3D-Metal-Based Molecular Catalysts for Hydrogen Evolution

Author(s):

Mohammad Adnan Khan, Sonal Shruti, Sahanwaj Khan, Sumita Hazra and Subhendu Naskar

Name of the Journal:

Comments on Inorganic Chemistry

Publisher Name and City:

Taylor & Francis

Listed in SCOPUS:

Yes

Listed in Web of Science:

Yes

ISSN No.:

0028-0836

Month and Year of Publication:

27 Jan 2026

Page No:

1-42

DOI:

<https://doi.org/10.1080/02603594.2026.2616775>

Abstract

The surface of earth receives energy equivalent to 120000 TW/ hr, which is much higher than annual global requirement. The unlimited sunlight and the abundant ocean water challenged scientists to utilize it for energy production. Photochemical water splitting is an inspiration from the natural photosynthesis. Production of carbohydrate using CO₂ during water splitting is one of the most efficient co-factor-based reaction in plants. Incorporating first row transition metals in tailored ligand scaffolds mimic photosynthetic water oxidation catalyst. The review focuses on the chemistry of water-soluble molecular catalysts incorporated with earth abundant metals generating hydrogen in aqueous medium

Keywords: Green fuel 3-D metals molecular catalysts

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Research Article – 01

Title of the article:

A Comprehensive Statistical and Experimental Investigation of Physicochemical and Microbial Contaminants Removal Efficiency and Application of Nanomaterials in Water Purification in Ranchi District, Jharkhand (India)

Author(s):

Anita Karmakar and Manas Rajhans Choubey

Name of the Journal:

Journal Of Research In Chemistry

Publisher Name and City:

Akinik Publication, New Delhi, India

ISSN No.:

2709-9423

Month and Year of Publication:

Oct, 2025

Page No:

157-165

DOI:

<https://doi.org/10.22271/reschem.2025.v6.i2b.270>

Abstract

Water contamination has emerged as a critical environmental and public health challenge, particularly in rapidly urbanizing regions such as Ranchi district in Jharkhand, India. The increasing presence of physicochemical pathogens, heavy metals, and microbial contaminants in water sources necessitates the development of advanced purification technologies beyond conventional methods. In this context, nanotechnology offers innovative and efficient solutions due to the unique physicochemical properties of nanomaterials, including high surface area, enhanced reactivity, and multifunctional capabilities. The present study investigates the application of nanomaterials in water purification through a case study of Ranchi district. Water samples were collected from multiple locations representing urban, semi-urban, and rural areas and analyzed for key parameters such as pH, turbidity, total dissolved solids (TDS), arsenic, lead, and microbial contamination (*E. coli*). Nanomaterial-based treatment techniques were applied, and statistical analysis including descriptive statistics, paired t-test, ANOVA, correlation, and regression was conducted to evaluate treatment efficiency. The results indicate significant improvement of water quality across all parameters, with removal efficiencies exceeding 85% for most contaminants and over 99% for microbial reduction. Statistical tests confirm that the improvements are highly significant ($p < 0.001$). The Water Quality Index (WQI) showed a transformation from poor to good category after treatment. Furthermore, cost analysis demonstrates the economic feasibility of nanomaterial-based purification systems. The study concludes that nanotechnology provides a sustainable, efficient, and scalable solution for water purification, particularly in regions facing complex contamination challenges. The findings contribute to environmental management strategies and support the adoption of advanced technologies for ensuring safe drinking water.

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Web of Science ID: IUQ-0475-2023



Research Article-01

Title of the article: **Aqueous two-phase system enabled dual-layered hydrogels with tunable nanoparticle localization**

Authors: Kambekar, Aniruddha; Nandhagopal, Vignesh; Mehta, Aditya; Kumar, Yashwant; Singh, Reman Kumar; Pushpavanam, Karthik

Name of the Journal: ACS Applied Polymer Materials

Publisher Name and city: American Chemical Society

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 2637-6105

Month and Year of Publication: 15-July-2025

Page No: 10062–10073

DOI: <https://doi.org/10.1021/acsapm.5c01687>

Abstract

Hydrogels are cross-linked polymeric networks capable of absorbing large amounts of water and have been widely explored for applications in drug delivery, tissue engineering, biosensing, and environmental remediation. The recent development of dual-layered hydrogels (DLHs) has expanded their potential, enabling spatial control over their mechanical and chemical properties. Furthermore, incorporating nanoparticles into each of these layers introduces unique optical, electronic, or catalytic properties, expanding the scope of these materials. However, complex processes often hinder the fabrication of DLHs, requiring precise control over the reaction conditions. This poses challenges in achieving a uniform nanoparticle distribution without aggregation. This work presents an approach for synthesizing DLHs with an aqueous two-phase system (ATPS), integrating phase separation and selective nanoparticle localization, followed by subsequent polymerization. Using a model system of poly(ethylene glycol) (PEG) and dextran (DEX) to generate the ATPS, we combined acrylamide, bis(acrylamide), and Irgacure (photoinitiator) to fabricate DLHs. Rheological studies provided insights into the viscoelastic behavior of DLHs, while mercury porosimetry was employed to analyze the pore size distribution. We illustrate that citrate-capped gold nanoparticles can be localized within the PEG-rich layer, while bovine serum albumin (BSA)-capped silver nanoparticles can be localized within the DEX-rich layer. We performed molecular dynamics simulations to investigate the factors contributing to the preferential partitioning. Finally, we exploit the fabricated DLHs with localized nanoparticles to catalyze the conversion of p-nitrophenol to p-aminophenol in the presence of gold nanoparticles. Upon laser irradiation at 450 nm, the reaction rate is further enhanced due to photothermal heating induced by the silver nanoparticles. We anticipate that this process offers a fabrication route toward multifunctional DLHs with spatially organized nanoparticles, opening avenues for advanced catalytic and responsive materials

Research Article-02

Title of the article:	Photoinduced chromophore dissociation resulting in aggregation-induced red fluorescence
Authors :	Yashwant Kumar, Krishna Agrawal, Manisha Ojha, Reman Kumar Singh, Karthik Pushpavanam
Name of the Journal:	Communications Biology
Publisher Name and city:	Nature Publishing
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	2399-3642
Month and Year of Publication:	02 September 2025
Page No:	1331
DOI:	https://doi.org/10.1038/s42003-025-08779-1

Abstract

Fluorescent molecules are essential for bioimaging and visualizing cellular localization, functionalities, including biosensing, ion sensing, and photochromism. The photocleavable fluorescent protein PhoCl1 belongs to a sub-class of green-to-red photoconvertible β -barrel fluorescent protein and has a characteristic green fluorescence conferred by the chromophore *p*-HBI. In contrast to other photoconvertible proteins, that shift their fluorescence from green-to-red upon photoexposure, PhoCl1 has been reported to render itself non-fluorescent by releasing the 9 amino-acid C-terminal peptide fragment (CTPF) bearing the photo-transformed red chromophore from the β -barrel. Here we show the fate of photoreleased chromophore which shows an unexpected dim red fluorescence. We attribute this dim red fluorescence to the aggregation of CTPF molecules which is validated through dynamic light scattering measurements. We further characterize the aggregated CTPF through various optical techniques to determine the excitation/emission maxima, fluorescence lifetime, quantum yield and rotational correlation time through fluorescence anisotropy. We assessed the red fluorescence behavior under diverse environmental conditions including variations in pH, NaCl, and temperature. Molecular dynamics simulations support our experimentally observed aggregation of CTPF molecules. We supplemented these studies with quantum mechanics/molecular mechanics study which indicated the role of the chromophore in the photodissociated peptide fragment in the generation of dim red fluorescence. These findings not only provide insight into the behavior of fluorescent chromophore-peptide conjugate but also potentially lay the groundwork for developing light-activated fluorescence systems, AIE-based biosensors, and tunable biomaterials for protein tagging and responsive material design.

Research Article-03

Title of the article:	Well-Tempered Metadynamic Simulations Provide Insights and Leads for Designing Effective Allosteric Inhibitors against SARS-CoV-2 RNA-Dependent RNA Polymerase
Authors:	Wilbee D Sasikala, Reman Kumar Singh, Kathiresan Natarajan
Name of the Journal:	Journal of Chemical Information and Modeling
Publisher Name and city:	American Chemical Society
Listed in Scopus::	Yes
Listed in web of science:	Yes
ISSN No:	1549-960X
Month and Year of Publication:	15-October-2025

Abstract

Drug development against RNA viruses is challenging due to continuously emerging mutational variants. RNA-dependent RNA polymerases (RdRp) of most RNA viruses are conserved in their catalytic and allosteric sites, making them a promising target for drug development and repurposing. Some RdRp allosteric inhibitors of Hepatitis C Virus (HCV) have undergone Phase I and II clinical trials. Aiming to rationally design RdRp inhibitors to combat emerging and life-threatening RNA viruses, we explored the binding modes and mechanisms of HCV RdRp allosteric inhibitors against HCV and SARS-CoV-2 RdRps through molecular docking, molecular dynamics (MD), and well-tempered metadynamic (WT-MD) simulations. Twelve allosteric inhibitors of HCV were screened based on their binding free energy profile through WT-MD simulations to understand the binding modes and their inhibitory mechanisms. Our results suggest that these inhibitors have a higher binding affinity toward HCV RdRp and a weaker binding affinity toward different allosteric sites of SARS-CoV-2 RdRp. WT-MD simulations provided details about the binding modes of these inhibitors in HCV and SARS-CoV-2 RdRp. The preliminary functional group modifications of lead molecules identified through WT-MD showed improved binding energy toward SARS-CoV-2 RdRp. WT-MD simulations provide insights into the binding modes of these inhibitors in HCV and SARS-CoV-2 RdRp and also provide structural insights, leads, and principles for designing effective allosteric inhibitors to combat future SARS-CoV-2 and other RNA virus outbreaks.

Research Article-04

Title of the article:	Promiscuous binding peptides—Computational screening reveals higher-affinity peptides for gold binding beyond phage display selections
Authors:	M Aditya, P Adwaith, A Krishna, KS Reman, K Pushpavanam
Name of the Journal:	Biointerphases
Publisher Name and city:	AIP Publishing
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	1559-4106
Month and Year of Publication:	31-October-2025
Page No:	051010
DOI:	https://doi.org/10.1116/6.0004790

Abstract

Peptides that selectively bind to inorganic surfaces play a crucial role in nanobiotechnology, biomaterials, and biosensing applications. While phage display has been the predominant method for identifying such peptides, its selection process is influenced by propagation biases and experimental constraints, which may lead to the exclusion of peptides with superior binding affinity. In this study, we implement a molecular dynamics simulation to systematically assess the binding affinity of 46 solid-binding peptides, which were manually curated from literature with previously identified affinities to various surfaces to Au(111). We perform a comprehensive analysis, including interaction energy calculations, molecular mechanics/Poisson–Boltzmann-surface area, root mean square deviation, and distance of each residue with Au(111) to elucidate the molecular determinants of solid-binding peptide–Au(111) interactions. Our results reveal that while phage display-derived peptides exhibit affinity, several peptides not previously categorized as Au(111) binding show stronger affinity than the experimentally identified Au-binding sequences. We propose the term “promiscuous binding peptides” to describe these sequences, which demonstrate high affinity for surfaces beyond their original selection targets. Our

findings highlight the limitations of experimental selection techniques and emphasize the potential of computational screening in identifying higher-affinity peptides toward the target metal interfaces. This study establishes a foundation for advancing the rational design of functional solid-binding peptides

Research Article-05

Title of the article:	Bio-Adsorptive Recovery of Silica Nanoparticles Using Supercharged Green Fluorescent Proteins
Authors:	Tridib Das, Krishna Agrawal, Shreevadsaa A. Mohanakrishnan, Reman Kumar Singh, Karthik Pushpavanam
Name of the Journal:	Langmuir
Publisher Name and city:	American Chemical Society
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	1520-5827
Month and Year of Publication:	May 14, 2026
Page No:	14070–14078
DOI:	https://doi.org/10.1021/acs.langmuir.6c00130

Abstract

Silica nanoparticles (SiNPs) produced during semiconductor manufacturing possess dimensions in the nanometer range with a high net negative surface charge, imparting them with exceptional colloidal stability. These, when released into the environment, persist for extended periods, leading to ecological and health risks. Although conventional treatment strategies such as coagulation–flocculation and membrane-based separations are effective, they depend on nonbenign chemical additives and are prone to fouling, respectively. Motivated by this, we introduce a bioadsorptive recovery strategy that exploits recombinantly expressed supercharged green fluorescent proteins (scGFPs), which act as an adsorbent to selectively capture SiNPs (adsorbate) through tunable electrostatic interactions under aqueous conditions. A panel of scGFP was systematically evaluated to validate electrostatics-driven adsorption onto silica nanoparticles. The highly charged protein variants act as multivalent linkers, simultaneously binding multiple silica nanoparticles and thereby inducing nanoparticle–nanoparticle bridging and aggregation. This was monitored through the intrinsic fluorescence of scGFP and a complementary colorimetric silicate ion assay. The critical role of electrostatics was highlighted through molecular dynamics and metadynamics simulations. The applicability of these proteins was demonstrated through single-batch adsorption with a reuse capacity of up to three times. Additionally, to translate this interaction into a solid-phase recovery system, silica microparticles were sequentially coated with scGFP and assessed for their ability to adsorb SiNPs in a simple single-pass column adsorption. Together, these findings establish a tunable, charge-driven, and fully aqueous protein-based platform for SiNP recovery, offering a promising alternative to conventional separation methods used in semiconductor wastewater treatment

Research Article-06

Title of the article:	Colorimetric Environmental Sensors for Amine and Alkylating Fumigant Using Nicotinic and Isonicotinic Squaramide Ligands
Authors:	P. Lasitha, Reman Kumar Singh, G. Naresh Patwari
Name of the Journal:	Chemistry Select
Publisher Name and city:	European Chemical Societies
Listed in Scopus:	Yes
Listed in web of science:	Yes

ISSN No: 2365-6549
Month and Year of Publication: 28 April 2026
Page No: e05561
DOI: <https://doi.org/10.1002/slct.202505561>

Abstract

Multianalyte squaramide ligands have been utilized to investigate the real-time detection of biogenic amines, aliphatic amines, and toxic alkylating agricultural fumigants colorimetrically in solution and the gas phase. Here, the careful design of the ligand was found to show an instant (a few seconds) color change in the presence of aliphatic primary amines such as methyl amine and, hence, has been effectively utilized for identifying the freshness of the food samples, where a filter paper-based test-kit was found to sense the presence of biogenic amines in less than a minute. The ligands were also found to exhibit visual sensing ability for methyl iodide, a carcinogenic agricultural fumigant that has been effectively detected colorimetrically through the nucleophilic substitution reaction of the pyridinic ligand, assisted by basic media. Compared to the traditionally known ligands, the squaramide in this study offers the sensing of gaseous amines and toxic fumigants, eliminating the need for long incubation times or temperatures at the ppm level by producing colored compounds of deprotonated squaramide and highly delocalized azo squaramide. The study favors using simple ligands, where positional changes in the pyridinic nitrogen of two ligands determine the sensing ability, also indicated by the computational study

Research Article-07

Title of the article: **Intercalator-dependent modulation of charge transport in DNA**
Authors: Sunil R. Patil, Reman Kumar Singh & Arnab Mukherjee
Name of the Journal: Molecular Physics
Publisher Name and city: Taylor & Francis Online
Listed in Scopus: Yes
Listed in web of science: Yes
ISSN No: 1362-3028
Month and Year of Publication: 20 May 2026
Page No: 2672032
DOI: <https://doi.org/10.1080/00268976.2026.2672032>

Abstract

DNA's intrinsic structural flexibility limits its application in nanoelectronics. Here, we investigate the effect of molecular intercalation on the electronic and charge-transport properties of DNA using density functional theory combined with non-equilibrium Green's function and Landauer-Büttiker approaches. Three experimentally derived intercalated systems containing Ru-complexes, daunomycin (including bis-daunomycin), and proflavine were analysed and compared with native DNA. The results show that intercalation significantly alters DNA conductance by up to two orders of magnitude, depending on the intercalator. Ru-complexes and daunomycin enhance conductance through reduced HOMO-LUMO gaps and improved orbital delocalisation, whereas proflavine suppresses hole transport by introducing localised states and disrupting π -stacking interactions. These findings demonstrate that intercalation provides an effective strategy for tuning the electronic behaviour of DNA and highlights its potential for DNA-based nanoelectronic applications

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4. Membership No. 146595 5. The Geological Association and Research Centre Balaghat (M.P)

Research Article – 01

Title of the article: **Remote Sensing and GIS Based Terrain Analysis: A Case Study of Bhera River Watershed, Ranchi- Ramgarh Districts, Jharkhand, India**

Author(s): Mable Martha Toppo, Neetu Kumari and Sreyasi Ray

Name of the Journal: Journal of Geography, Environment and Earth Science International

DOI: 0.9734/jgeesi/2026/v30i11009

Publisher Name and City: Sciencedomain international, Hooghly, West Bengal

ISSN No.: 2454-7352

Month and Year of Publication: January, 2026

Page No: 1 – 13

Abstract:

Remote sensing (RS) and geographic information system (GIS) based terrain analysis is essential for characterizing watershed dynamics and aids in sustainable land and water resource management, particularly in hard rock terrain where primary porosity is minimal, and topography and lithology pose challenges for groundwater and erosion control. Despite advancement in geospatial techniques, integrated terrain- hydrological evaluations remain limited for watersheds in hard rock terrain, particularly in Jharkhand because of its diverse physiography and effects of multiple tectonism. This study aims to highlights the potential of geomatic techniques in assessing seven key terrain parameters, lithology, geomorphology, lineaments, soil, slope, drainage, and hydrological indices (NDWI, NDMI, EWI) for sustainable management of Bhera River watershed, Ranchi- Ramgarh districts, Jharkhand. The Bhera watershed, having an area of 269 sq. km, lies within the Chotanagpur Plateau and is characterised by dissected plateaus, undulating hills, and diverse lithology ranging from Precambrian granites and gneisses to Gondwana sediments. The thematic maps were generated using Visual and Digital Image interpretation, using the sources from existing thematic maps, satellite imageries- Landsat 8 and 9 (Date of acquisition- 20th and 22nd November 2023), SRTM (Date of acquisition- 1st November 2023), and survey of India toposheets at 1:50,000 scale. The study reveals geologically complex landscape with dominant pediplains (70% coverage) indicating moderate groundwater potential, moderate structural control, luvisols as the dominant soil type with good nutrient retention, dendritic to sub-dendritic drainage pattern indicating uniform lithology and varied slopes heightening runoff and erosion risks. Hydrological indices highlight sparse water bodies (NDWI: -0.43 to 0.11), moderate vegetation moisture (NDMI: -0.09 to 0.26), and predominantly dry to sparsely vegetated soils (EWI: -0.60 to -0.35). These findings underscore the watershed's vulnerability to erosion and groundwater overexploitation despite adequate rainfall (1100-1400 mm annually), emphasizing the need for integrated RS-GIS approaches for terrain evaluation to guide conservation strategies and sustainable management in similar hard rock regions.

Keywords: Remote sensing; GIS; watershed; terrain analysis.

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Research Article-01

Title of the article: **Transient magneto electro hydrodynamic flow in inclined porous channel: a numerical study**

Authors: Premful Kumar, Vijay Kumar Mehta,

Name of the Journal: Zeitschrift fur angewandteMathematik und Physik ZAMP

Publisher Name and city: Springer

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 1420-9039

Month and Year of Publication: April -2026

Page No: 1-22

DOI: <https://doi.org/10.1007/s00033-026-02796-8>

Abstract.

This study numerically investigates the transient magnetohydrodynamic flow of an electrically conducting Newtonian fluid with spatially varying viscosity in an inclined porous channel. The analysis accounts for the coupled influences of a uniform magnetic field, an induced electric field, gravitational acceleration, and Darcy–Brinkman flow resistance. A constant pressure gradient initiates the flow, subject to no-slip and physically consistent initial conditions. The non-dimensional Navier–Stokes equations are solved using a finite difference approach to characterize the velocity field, volumetric flow rate, and wall shear stresses. Results show that magnetic and electric forces substantially dampen the flow motion while spatial viscosity variation and porosity exert strong control over the shear and transport rates. The combined action of channel inclination and electromagnetic effects governs the overall momentum transport and flow development. The findings provide new physical understanding into magnetohydrodynamic and electrohydrodynamic transport in porous media with implications for advanced thermal management, electrochemical processing, and controlled fluid transport in engineering systems.

Keywords. Magnetohydrodynamic flow, Newtonian fluid, Porous medium

Research Article-02

Title of the article: **Effective Strategies for Parents to Manage their Children's Online Activities Using AI/ML**

Authors: Kripa Singh, Muskan Pandey, Abhishek Kumar, Vijay Kumar Mehta, Rohit Kumar Sinha, Ritesh Kumar

Name of the Journal: International Conference on intelligent computing, Network and security

Publisher Name and city: IEEE

Listed in Scopus:	Yes
ISSN No:	979-8-3315-8337-8
Month and Year of Publication:	March -2026
Page No:	1-6
DOI:	https://ieeexplore.ieee.org/abstract/document/11537615

Abstract.

The growing prevalence of the online platforms among the children poses growing challenges to the supervision of parents. The study questions the development of artificial intelligence (AI) and machine learning (ML) to supplement parental controls with the introduction of content filtering, predictive behaviour, real-time observation, and adaptive intervention. With the application of Long Short-Term Memory (LSTM) networks to forecasting time-series, decision-making using Random Forest, and dynamic reconfiguration of screen-time restrictions using Q-learning algorithms, the proposed system can be used to predict and control screen-use. Experiments on synthetic behavioural datasets were high in predictive accuracy ($R^2 = 0.98$, $MAE = 5.4min$) on screen-time forecast and having perfect classification accuracy ($AUC = 0.91$) on lock/allow choices. The Q-learning module exhibited cumulative positive rewards (~ 120) in adaptive policy learning, thus supporting the effectiveness of the Q-learning in personalized screen-time regulation. Although the approach increases digital safety, it also causes ethical concerns, in particular, with privacy and possible over-surveillance, which adds to the need to ensure responsible artificial intelligence that, reduces safety imperatives and child autonomy.

Keywords. Digital Parenting, Online Safety, Screen Time, Behavior Tracking, Privacy, Content Filtering, AIML.

Research Article-03

Title of the article:	Convolearn: A Conversational AI Framework for Enhancing Student Learning and Feedback Mechanisms
Authors:	Poonam Kumari, Abhishek Kumar, Ravi Kumar Burman, Vijay Kumar Mehta
Name of the Journal:	International Journal of Engineering Development and Research
Publisher Name and city:	IJEDR2601795
ISSN No:	2321-9939
Month and Year of Publication:	March -2026
Page No:	365-377

Abstract.

Machine learning (ML) and artificial intelligence (AI) have significantly transformed scientific research in recent years. Among these technologies, chatbot technology has advanced considerably. A chatbot is an automated system designed to simulate human-computer conversation in natural language. Chatbots communicate with users in a conversational manner and respond to their needs based on feedback and interaction history. Although users interact with a machine, the system creates the impression that they are communicating with a human. Chatbots have applications in various domains, including content production, customer support, and natural language processing. A chatbot's adaptive learning capabilities enable it to customize its responses according to individual student requirements, thereby fostering a personalized and efficient learning environment. The chatbot not only assists with queries but also provides guidance on study strategies, learning resources, and subject-specific content. Its user-friendly interface enhances accessibility, making it a valuable resource for learners with diverse preferences. There have been notable developments in the use of chatbot technology in classrooms, offering innovative approaches to improving student experiences. The educational chatbot presented in this research is designed to provide individualized and engaging learning interactions. ConvoLearn utilizes NLP and ML techniques to understand user inquiries and deliver a dynamic, adaptive learning environment. At the beginning of the current decade, chatbots proliferated rapidly. Internet

communication has experienced significant growth due to the widespread adoption of interactive technologies, often integrated with artificial intelligence. Chatbots are not only components of virtual assistants but are also used by organizations and governments to promote products, ideas, and services through applications, web portals, and instant communication platforms. This paper first provides a theoretical and historical overview, then discusses the challenges associated with employing chatbots as teaching aids, and finally outlines the fundamental procedures and difficulties involved in building such systems.

Keywords: Educational Chatbot, Artificial Intelligence, Natural Language Processing, Machine Learning, Personalized Learning, ConvoLearn.

Book Chapter-01

Title of the Chapter: **Analysis of an SVIR Model in presence of vaccination**
 Authors: Pappu Mahto, Vijay Kumar Mehta, Ajay Arun Minj
 Book Title: Advanced Topics in Mathematical Sciences and Computation
 Publisher Name and city: DeepScience
 ISBN No: 978-93-7185-650-8
 Month and Year of Publication: May, 2026
 Page No: 362-372
 DOI: <https://doi.org/10.70593/978-93-7185-296-8>

Introduction:

Mathematics possesses a rare and quiet beauty. It is not merely a tool for calculation but a language of patterns, symmetries, and truths that transcend culture and time. From the elegant spiral of a nautilus shell to the hidden order in prime numbers, mathematics reveals that the universe is not chaos but structure. This beauty, however, is not ornamental; it is functional. The same elegance that delights the pure mathematician also empowers the applied scientist to see through complexity and grasp what truly matters. Mathematics today is no longer the solitary pursuit of abstract theorems; it is a collaborative enterprise that speaks directly to the world's most pressing problems. Yet the communities working on theory, computation, and real-world applications too often remain apart. This volume seeks to change that. By gathering contributions from diverse fields, like fractional calculus, fluid dynamics, epidemic modelling, machine learning, and optimization, it offers a platform where ideas meet and methods merge. The hope is to inspire not just reading, but genuine cross-disciplinary engagement.

Keywords: Applied Mathematics, Computation, Convergence Analysis, Numerical Approximation, Numerical Technique, Fractional Calculus

Patents Designed and Registered:

Patent Number	Patent Title	Registration Date	Name of the Issuer
498926-001	HYBRID MULTI-FUNCTIONAL CONTROL DISPLAY DEVICE	19-06-2026	Intellectual Property of India, Government of India.
202631025180	Hybrid Metaheuristic and Ensemble Learning system for Real- Time Predictive and Prescriptive Decision	27-03-2026	Intellectual Property of India, Government of India.
202631025179	Multi-Objective Optimization Framework for sparse circular Antenna Array Synthesis	13-03-2026	Intellectual Property of India, Government of India.

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Research Article-01

Title of the article: **Wavelet-RNN: A randomized neural network with wavelet-transform-based feature extension**

Authors: Manoj Kumar Singh, Prakrut Moon

Name of the Journal: Neurocomputing

Publisher Name and city: Elsevier

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 1872-8286

Month and Year of Publication: September -2025

Page No: 1-31

DOI: <https://doi.org/10.1016/j.neucom.2025.131515>

Abstract

The random vector functional link (RVFL) network is a leading shallow randomized neural network (RNN) known for its simple architecture and fast training. However, conventional RVFL networks have limited capacity to capture localized and multi-scale features, which restricts their effectiveness in modeling complex data

patterns. Moreover, their dependence on random feature mappings often leads to suboptimal representations, especially in real-world datasets. To overcome these limitations, we introduce the Wavelet-transformed RVFL network (Wavelet-RNN), which integrates wavelet decomposition to enhance feature extraction. By leveraging wavelet transformation, our model effectively captures both spatial and frequency-domain information, improving generalization and robustness. This approach enables a more accurate representation of localized patterns and multi-scale structures, which conventional RVFL networks often overlook. To assess the effectiveness of the proposed Wavelet-RNN, we conduct extensive empirical studies on 20 binary and 20 multiclass real-world datasets from the UCI repository. Experimental results demonstrate that Wavelet-RNN consistently outperforms both standard RVFL and state-of-the-art RNN variants, showcasing superior robustness and effectiveness across diverse datasets.

Keywords Randomized neural network (RNN) Random vector functional link (RVFL) Wavelet transformation, Enhanced features.

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Book Chapter-01

Title of the Chapter: **Analysis of an SVIR Model in presence of vaccination**
Authors: Pappu Mahto, Vijay Kumar Mehta, Ajay Arun Minj
Book Title: Advanced Topics in Mathematical Sciences and Computation
Publisher Name and city: DeepScience
ISBN No: 978-93-7185-650-8
Month and Year of Publication: May, 2026
Page No: 362-372
DOI: <https://doi.org/10.70593/978-93-7185-296-8>

Introduction:

Mathematics possesses a rare and quiet beauty. It is not merely a tool for calculation but a language of patterns, symmetries, and truths that transcend culture and time. From the elegant spiral of a nautilus shell to the hidden order in prime numbers, mathematics reveals that the universe is not chaos but structure. This beauty, however, is not ornamental; it is functional. The same elegance that delights the pure mathematician also empowers the applied scientist to see through complexity and grasp what truly matters. Mathematics today is no longer the solitary pursuit of abstract theorems; it is a collaborative enterprise that speaks directly to the world's most pressing problems. Yet the communities working on theory, computation, and real-world applications too often remain apart. This volume seeks to change that. By gathering contributions from diverse fields, like fractional calculus, fluid dynamics, epidemic modelling, machine learning, and optimization, it offers a platform where ideas meet and methods merge. The hope is to inspire not just reading, but genuine cross-disciplinary engagement.

Keywords: Applied Mathematics, Computation, Convergence Analysis, Numerical Approximation, Numerical Technique, Fractional Calculus

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Research Article-01

Title of the article: **Lamellidens marginalis: A super bio-filter of freshwater ecosystems**
 Authors: Shukla, R. K., Verma, A. K., Prasad, S. S., Singh, N. S., Chandra, S., Shrivastava, R. R., Minj, A., Soreng, P. K., & Rao, N. V. A.
 Name of the Journal: The Applied Biology & Chemistry Journal
 Publisher Name and city: Integrative Centre for Research & Innovation in Biology (ICRIB), Chandigarh
 ISSN No: 2582-8789
 Month and Year of Publication: March 2026
 Page no: 1- 15

Freshwater mussels are important bio-filters in aquatic ecosystems, capable of improving the water quality by removing suspended particles through their filter-feeding activity. However, no detailed studies are available on the filtration of polluted water by freshwater mussels under controlled laboratory conditions, hence, this study was conducted. The filtration efficiency of the mussel *Lamellidens marginalis* was evaluated in polluted Subarnarekha River water and aged tap water under controlled laboratory settings. Two sets of aerated aquaria, each containing 20 liters of either polluted river water or aged tap water, were used-one set with mussels and a control set without mussels. Physiochemical parameters including pH, temperature, electrical conductivity, total dissolved solid and turbidity were monitored at 24-hour intervals over a four-day period to assess the impact of mussel filtration on water quality. The turbidity decreased from 191.33 ± 6.9 NTU to 2.4 ± 0.55 NTU in the polluted river water with mussels, and from 1.43 ± 0.11 NTU to 0.76 ± 0.05 NTU in the aged tap water. Similar declines were observed in other parameters. In contrast, no significant changes were observed in the control aquaria without mussels. These findings highlight the exceptional bio-filtration capacity of mussels. Therefore, conserving these species and utilizing them as models for bio-filtration systems is recommended.

Book Chapter-01

Title of the Chapter: **Analysis of an SVIR Model in presence of vaccination**
 Authors: Pappu Mahto, Vijay Kumar Mehta, Ajay Arun Minj
 Book Title: Advanced Topics in Mathematical Sciences and Computation
 Publisher Name and city: DeepScience
 ISBN No: 978-93-7185-650-8
 Month and Year of Publication: May, 2026
 Page no: 362-372
 DOI: <https://doi.org/10.70593/978-93-7185-296-8>

Introduction:

Mathematics possesses a rare and quiet beauty. It is not merely a tool for calculation but a language of patterns, symmetries, and truths that transcend culture and time. From the elegant spiral of a nautilus shell to the hidden order in prime numbers, mathematics reveals that the universe is not chaos but structure. This beauty, however, is not ornamental; it is functional. The same elegance that delights the pure mathematician also empowers the applied scientist to see through complexity and grasp what truly matters. Mathematics today is no longer the solitary pursuit of abstract theorems; it is a collaborative enterprise that speaks directly to the world's most pressing problems. Yet the communities working on theory, computation, and real-world applications too often remain apart. This volume seeks to change that. By gathering contributions from diverse fields, like fractional calculus, fluid dynamics, epidemic modelling, machine learning, and optimization, it offers a platform where ideas meet and methods merge. The hope is to inspire not just reading, but genuine cross-disciplinary engagement.

Keywords: Applied Mathematics, Computation, Convergence Analysis, Numerical Approximation, Numerical Technique, Fractional Calculus

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 No. of Ph.D Scholars Registered till now 2 (1 submitted)



Research Article-01

Title of the article: **Effect of Sm^{3+} doping on the structural and electrical conduction in PbTiO_3 ceramics**
 Authors: Shyamanand Pandey, Sumit Kumar Roy and Swarat Chaudhuri
 Name of the Journal: Processing and Application of Ceramics
 Publisher Name & City : National Library of Serbia, Novi Sad
 Listed in Scopus: Yes
 Listed in web of science: Yes
 ISSN No: 1820-6131
 Month and Year of Publication: June, 2025
 Vol. (Page Nos.): 19[2] (139-149)
 DOI: <https://doi.org/10.2298/PAC2502139P>

Abstract

In the present study we have synthesized nanocrystalline Sm doped Lead Titanate ferroelectric ceramic (PST) $\{\text{Pb}_{1-3x/2}\text{Sm}_x\text{TiO}_3\}$ for $x=0.01$ using Planetary Ball Mill (PBM) and solid-state reaction method. The PST ceramics sintered at 800°C , 900°C , 1000°C and 1100°C is investigated for structural and conductivity analysis. The structural study through X-Ray Diffraction (XRD) confirms tetragonal phase of the prepared ceramics. The average crystallite sizes of the ceramics sintered at different temperatures vary from ~ 22.16 nm to ~ 33.84 nm. It is observed that the activation energies for all the sintered samples lies in the range of $(0.03\sim 0.15)$ eV in the ferroelectric phase and $(0.43\sim 0.81)$ eV in the paraelectric phase about the phase transition temperature $\sim 475^\circ\text{C}$. The variation of Density of States (DOS) at Fermi level with temperature at different frequencies is investigated for PST ceramics. The experimental investigation of DOS is compared with computational studies using material simulation software quantum espresso for optimized geometry. The studies of dc and ac conductivity confirms migration between long range potential wells of the charge carriers and polaron induced charge-hopping mechanism in these nano ferroelectric ceramics respectively.

Keywords- Perovskite, Planetary Ball Mill, Activation energy, Polaron hopping, Density of states

Research Article-02

Title of the article: **Synthesis and optical properties of $\text{Mn}^{2+}/\text{Mn}^{4+}$ doped ZnWO_4 powders for multi-purpose applications**
 Authors : Swagata Chakraborty, Joydip Dutta, Swarat Chaudhuri and Mitesh Chakraborty
 Name of the Journal: Processing and Application of Ceramics
 Publisher Name and City : National Library of Serbia, Novi Sad
 Listed in Scopus: Yes
 Listed in web of science: Yes

ISSN No: 1820-6131
 Month and Year of Publication: October, 2025
 Vol. (Page nos.): 19[3] (288 – 292)
 Page No: <https://doi.org/10.2298/PAC2503288C>

Abstract

In the present investigation, we have synthesized ZnWO₄, ZnWO₄: Mn²⁺ and ZnWO₄: Mn⁴⁺ ceramics at 1 mol% doping concentration each by the conventional solid-state reaction method. The structural and microstructural studies have been performed using X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM) and Raman spectroscopy. The effect of peak shifts in XRD patterns on the lattice parameters is analysed in the prepared samples. Raman studies confirm the presence of Mn²⁺ and Mn⁴⁺ in the host matrix. The chromaticity parameters of the prepared samples are evaluated using a Commission Internationale de l'Éclairage (CIE) diagram. The study of the downconversion spectra of the prepared samples using an ultra-violet (UV) laser source suggests that transition metal-doped ceramics are a significant class of materials that can produce emissions for cool light-emitting diode (LED) applications.

Keywords- ceramics, spectroscopy, lattice parameters, photoluminescence

Research Article-03

Title of the article:	A comprehensive review on graphene/CdS nanocomposites: From synthesis to multifunctional applications
Authors:	Prabin Kumar Mahato, Swarat Chaudhuri, Prashanta Patra, Disilwa Seth and Himanshu
Name of the Journal:	Next Materials
Publisher Name and city:	Elsevier, Amsterdam
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	2949-8228
Month and Year of Publication:	October, 2025
Vol. (Page nos.):	9 (101240 - 101255)
DOI:	https://doi.org/10.1016/j.nxmte.2025.101240

Abstract

Since the invention of graphene and associated nanocomposites specifically those which involve the incorporation of CdS and various transition metals have appeared as promising nanostructures for diverse range of applications viz. energy storage, photocatalysis, sensing, etc. The outstanding mechanical, thermal, electrical, photocatalytic traits of graphene along with suitable band gap and other characteristics of CdS, enabled advanced materials performance of graphene/ CdS nanocomposites resulted into enhancement in microstructural, optical, electrical, topological properties which open the avenue for active roles to different devices. The present review article offers an all-inclusive overview to graphene/ CdS nanocomposites's chemistry, develop methodologies viz. chemical vapour deposition, solvothermal along with detailed characterization using amicable techniques like XRD, SEM, Raman spectroscopy, etc. The effect of doping of transition metals on the properties of graphene/ CdS nanostructures is critically reported, highlighting significant enhancements in photocatalytic performance along with charge transfer dynamics. Present review article also identifies the practical issues in mass scale production along with potential research strategies to tune graphene-based nanocomposites for versatile technological applications.

Keywords- Graphene/CdS, Nano-composite, Transition metal, Optronics, Photocatalytic activity

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 No. of Ph.D Scholars Registered till now: 3 (1 Awarded)



Research Article-01

Title of the article: **Ultra-low thermal conductivity and dielectric stability in novel high-entropy perovskite oxides for advanced thermal and electronic applications**

Authors: Rupesh Kumar, Raj Kumar Singh, Kumari Mamta, Sumit Kumar Roy & Sushil Kumar Pandey

Name of the Journal: J Mater Sci: Mater Electron

Publisher Name and city: Springer, New York

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 0957-4522

Month and Year of Publication: Jan-2026

Vol.(Page no.): 37:264 (1-14)

DOI: <https://doi.org/10.1007/s10854-026-16570-z>

Abstract:

The concept of high-entropy has recently emerged as a promising strategy in the development of advanced thermal barrier coating (TBC) materials. By introducing mass and size disorder through the incorporation of multiple distinct cations at a single crystallographic site in mixed oxides, high-entropy oxides (HEOs) can be designed to exhibit stabilized single-phase structures with intrinsically low thermal conductivities. In this work, we report the successful solid state synthesis and comprehensive characterization of three novel single-phase high-entropy perovskites: $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Mn}_{1/5})\text{O}_3$, $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Ce}_{1/5})\text{O}_3$, and $\text{Sr}(\text{Ti}_{1/4}\text{Zr}_{1/4}\text{Hf}_{3/20}\text{Sn}_{1/4}\text{Mn}_{1/10})\text{O}_3$. The compounds $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Mn}_{1/5})\text{O}_3$, $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Ce}_{1/5})\text{O}_3$, and $\text{Sr}(\text{Ti}_{1/4}\text{Zr}_{1/4}\text{Hf}_{3/20}\text{Sn}_{1/4}\text{Mn}_{1/10})\text{O}_3$ exhibit the low thermal conductivities of approximately $1.84 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$, $1.72 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$, and $0.72 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$, respectively, at 800 K. The Sr-based compound exhibits an ultra-low average thermal conductivity of $\sim 0.63 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$, which remains nearly constant over the temperature range of 300–800 K. This value corresponds to an almost 68% reduction compared to the benchmark thermal barrier coating (TBC) material, 8 mol% yttria-stabilized zirconia (8YSZ), highlighting its strong potential as a next-generation TBC candidate. The observed ultra-low, amorphous-like thermal conductivity is primarily attributed to enhanced phonon scattering induced by severe lattice distortion and high configurational entropy. Moreover, electrical characterization reveals a highly stable dielectric constant up to 200 °C, accompanied by low dielectric loss, indicating additional potential for electronic and capacitive applications. The room temperature ac conductivity for sample $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Mn}_{1/5})\text{O}_3$, $\text{Ba}(\text{Ti}_{1/5}\text{Zr}_{1/5}\text{Hf}_{1/5}\text{Sn}_{1/5}\text{Ce}_{1/5})\text{O}_3$ and $\text{Sr}(\text{Ti}_{1/4}\text{Zr}_{1/4}\text{Hf}_{3/20}\text{Sn}_{1/4}\text{Mn}_{1/10})\text{O}_3$ are $1.05 \times 10^{-6} \text{ S/m}$, $1.01 \times 10^{-6} \text{ S/m}$ and $1.63 \times 10^{-6} \text{ S/m}$, respectively, at 1 kHz frequency, which shows the highly insulating nature of the samples. These findings

highlight the multifunctional character of high-entropy perovskites and position them as promising candidates for thermal barrier coatings, dielectric components, and a broad range of high-temperature applications. Further investigation is warranted to fully realize and optimize their multifunctional potential.

Keywords- Entropy, Perovskites, Conductivity, Phonon scattering

Research Article-02

Title of the article:	A Novel Multi-Cation High-Entropy Ceramic Sr(Ti_{0.25}Zr_{0.25}Hf_{0.15}Sn_{0.25}Mn_{0.1})O₃ for Advanced Functional Electronic Applications
Authors:	Rupesh Kumar, Darakhshan Eqbal, Sushil Kumar Pandey, Sumit Kumar Roy, Kumari Mamta, Raj Kumar Singh
Name of the Journal:	Chemistry Select
Publisher Name and city:	Wiley, New Jersey
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	2365-6549
Month and Year of Publication:	Dec-2025
Vol. (page nos.):	48 (1-10)
DOI:	https://doi.org/10.1002/slct.202505242

Abstract

In this paper we report the synthesis, microstructure characterization, and electrical properties of a novel high-entropy perovskite oxide Sr(Ti_{0.25}Zr_{0.25}Hf_{0.15}Sn_{0.25}Mn_{0.1})O₃, a family of oxides widely studied due to their unique and fascinating properties. Sr(Ti_{0.25}Zr_{0.25}Hf_{0.15}Sn_{0.25}Mn_{0.1})O₃ was synthesized using the conventional solid-state reaction method. Structural characterization through powder x-ray diffraction and field-emission scanning electron microscopy confirms the formation of a single-phase cubic perovskite (space group Pm-3m) with a uniform, highly dense, and structurally stable microstructure. Electrical measurements conducted over the temperature range of 35°C–495°C and the frequency range of 100 Hz–1 MHz reveal a complex conduction mechanism along with thermally activated non-Debye-type relaxation at elevated temperatures. Impedance, modulus, and Nyquist analyses indicate that charge transport is dominated by electron mobility at lower temperatures, whereas defect-mediated processes become increasingly significant at higher temperatures. These features are attributed to the combined effects of configurational entropy and local lattice disorder. Overall, the material exhibits multifunctional electrical characteristics suitable for electroceramic applications, including energy storage components, thermal management systems, and high-temperature electronic devices.

Keywords- Perovskite, Microstructure, Electroceramics, Nyquist plot

Research Article-03

Title of the article:	Electrical properties of Banana-Sisal fiber-Sawdust reinforced Epoxy-Resin composite
Authors:	Niharika Kumari, Himanshi Kumari, Sumit K. Roy, M.K. Paswan and K. Prasad
Name of the Journal:	IOP Conference Series: Materials Science and Engineering
Publisher Name and city:	Institute of Physics, Bristol
Listed in Scopus:	Yes
Listed in web of science:	Yes

ISSN No: 1757-899X
 Month and Year of Publication: Dec-2025
 Vol. (Page nos.): 012001 (1-12)
 DOI: <https://doi.org/10.1088/1757-899X/1341/1/012001>

Abstract

Natural fiber-reinforced composites (NFCs) have recently gained considerable interest due to their advantageous economic, environmental, and mechanical properties. Abundant, renewable natural fibers, such as banana, sisal, and sawdust, offer easy accessibility and cost-effectiveness, rendering them suitable for composite applications. While earlier studies primarily focused on NFCs' physical, mechanical, and wear properties, more recent research has pivoted towards investigating their dielectric and electrical properties, given NFCs' distinct behavior as organic-based insulating materials. In this study, an NFC sample was fabricated using 20 wt.% of reinforcing fibers, specifically sisal and sawdust, within an 80 wt.% epoxy resin matrix. The composite preparation followed the hand lay-up method in accordance with ASTM standards. This work examines the dielectric, impedance, and AC conductivity characteristics of the NFC, with particular emphasis on their dependence on frequency and temperature. Furthermore, an effort has been made to elucidate the conduction mechanism within the NFC sample. The impedance and AC conductivity measurements reveal a negative temperature coefficient of resistance, akin to semiconductor behavior, in the prepared NFC. Additionally, the sample exhibits low thermal conductivity ($0.17 \text{ W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$) at room temperature, suggesting its potential utility in thermal insulation for automotive, building infrastructure, non-load-bearing infill materials, interior acoustic/thermal panel, applications.

Keywords- Composites, dielectric, impedance, ac conductivity

Research Article-04

Title of the article: **First-principles investigation of structure, electronic and optical properties of newly synthesized double perovskite $\text{Nd}_2\text{FeTiO}_6$ for optoelectronic applications**

Authors: Kumar Mrityunjay, Rahul K. Singh, Sanat K. Mukherjee, Sumit K. Roy

Name of the Journal: Processing and Application of Ceramics

Publisher Name and city: National Library of Serbia, Novi Sad

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 2406-1034

Month and Year of Publication: Dec-2025

Vol. (Page nos.): 19 [4] (359-366)

DOI: <https://doi.org/10.2298/PAC2504359K>

Abstract

Double perovskite $\text{Nd}_2\text{FeTiO}_6$ (NFTO) compound was comprehensively studied to evaluate its promising characteristics for optoelectronic applications. Structure, electronic and optical properties were analysed by firstprinciples calculations. The crystal structure of NFTO was found to be monoclinic with space group $P2_1/c$, and its structural stability was confirmed through calculated formation energy and octahedral factor, and also by experimental results. The electronic band structure analysis indicates an indirect bandgap of 0.57 eV using PBE-GGA and 1.513 eV with mBJ potential, aligning closely with the experimental value of 1.77 eV obtained from UV-visible spectroscopy. Detailed optical property investigations demonstrate significant absorbance in the UV-visible range, indicating multiple electronic

transitions. Additionally, the dielectric function analysis of the compounds highlights promising dielectric properties and efficient light absorption, making NFTO a suitable candidate for solar cells, photovoltaic and other optoelectronic devices.

Keywords: double perovskite, density functional theory, band gap, optical properties, dielectric function

Research Article-05

Title of the article:	Exploration of ecofriendly multifunctional material: investigating the dielectric, ferroelectric, and optical properties of $\text{Bi}_{0.5}(\text{Na}_{0.78}\text{K}_{0.22})_{0.5}\text{TiO}_3$
Authors:	Rahul K. Singh, Mrityunjay Kumar & Sumit K. Roy
Name of the Journal:	J Mater Sci: Mater Electron
Publisher Name and city:	Springer, New York
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	0957-4522
Month and Year of Publication:	Oct, 2025
Vol.(Page nos.):	44 [1] (117-126)
DOI:	https://doi.org/10.1007/s10854-025-15886-6

Abstract

In this work, a comprehensive investigation was conducted on lead-free $\text{Bi}_{0.5}(\text{Na}_{0.75}\text{K}_{0.22})_{0.5}\text{TiO}_2$ (BNKT) ceramic. An extensive study was essential to fully understand the multifunctional properties of BNKT and its potential for next-generation electronic applications. BNKT ceramics were prepared using the conventional solid-state reaction route. Structural analysis was performed using X-ray diffraction (XRD), Raman spectroscopy, and field-emission scanning electron microscopy (FESEM). Dielectric and impedance properties were studied across a range of temperatures and frequencies. Ferroelectric behavior was examined through P-E hysteresis loops, and energy storage capabilities were assessed. UV-visible spectroscopy was employed to determine the bandgap. X-ray diffraction (XRD) analysis confirmed a pure tetragonal phase with no secondary phases, while Raman spectroscopy revealed distinct Ti-O vibrational modes. Microstructural analysis using FESEM displayed uniformly distributed quasi-cubic grains. Dielectric studies demonstrated a typical relaxor ferroelectric behavior with a broad transition around 335 °C, a high dielectric constant ($\epsilon_r = 1137$), and a low dielectric loss ($\tan\delta = 0.264$) at room-temperature (1 kHz), making the material suitable for capacitors and energy storage devices. Impedance spectroscopy revealed a transition from positive to negative temperature coefficient resistance (PTCR to NTCR) around 100 °C. Ferroelectric hysteresis (P-E) loops exhibited a pinched shape, further confirming relaxor characteristics. Notably, the energy storage efficiency reached 33.6%, even under moderate electric fields, attributed to optimized domain configurations and minimal energy dissipation. UV-visible spectroscopy revealed indirect and direct bandgaps of 2.86 eV and 3.12 eV, respectively, indicating potential for optoelectronic applications.

Keywords: Composite index, Quality of life, Environmental degradation, Socio-economic disparity, mining areas, Jharia.

Research Article-06

Title of the article:	Tuning the β-phase in BNBT/PVDF composite films: structural and impedance study
Authors:	Santosh Rajwar, Rahul K. Singh, Santosh K. Singh, Sumit K. Roy & Kamal Prasad
Name of the Journal:	Journal of Polymer Research
Publisher Name and city :	Spriger, Taipei
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	1022-9760
Month and Year of Publication:	July, 2025
Vol. (Page nos.):	261(1-16)
DOI:	https://doi.org/10.1007/s10965-025-04484-z

Abstract

The development of lead-free piezoelectric materials is essential for advancing flexible electronics and sustainable energy harvesting applications. In this study, Ba_{0.06}Na_{0.47}Bi_{0.47}TiO₃ (BNBT) doped polyvinylidene fluoride (PVDF) composite films were synthesized using a solution-casting technique to enhance the electroactive β -phase content. Structural characterization through X-ray Diffraction, Fourier Transform Infrared Spectroscopy, and Scanning Electron Microscopy confirmed the α -to- β phase transformation, with BNBT particles acting as nucleation sites. Differential Scanning Calorimetry demonstrated decreased crystallinity and phase stability, while dielectric studies revealed a significant enhancement in the dielectric constant due to optimized β -phase formation. The dielectric data show a peak both in dielectric constant and dielectric loss at $x = 0$ (RT) and $x = 0.025$, followed by a decline, then a rise from $x = 0.1$ onward due to increased ceramic content. Impedance and modulus spectroscopy confirmed improved charge transport, reduced resistive losses, and thermally activated relaxation dynamics. The Nyquist plot analysis further validated decreased bulk resistance and increased conductivity with rising temperature, indicating improved electrical performance. The results establish that the β -phase of PVDF stabilizes at a lower doping concentration than reported by other studies.

Keywords- Polyvinylidene fluoride (PVDF), dielectric, Nyquist plot, Spectroscopy

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 Web of Science ID: IWM-3945-2023
 Membership to professional body: 1. Life Membership of Indian Association of Physics Teachers (IAPT)
 No. of Ph.D Scholars Registered till now: 2



Research Article-01

Title of the article: **Enriched upconversion emission and electrical properties of $\text{Er}^{3+}/\text{Yb}^{3+}/\text{Mn}$: ZnW^{04} phosphors for display and anti-counterfeit applications**

Authors: Mitesh Chakraborty, Swagata Chakraborty and Joydip Dutta

Name of the Journal: Material Science in Semiconductor Processing

Publisher Name and City : Elsevier, Amsterdam

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 1369-8001

Month and Year of Publication: June-2025

Volume No. (Pages): 192 (109404-109413)

DOI: <https://doi.org/10.1016/j.mssp.2025.109404>

Abstract:

The upconverting codoped/ tridoped ZnWO_4 : $\text{Er}^{3+}/\text{Yb}^{3+}/\text{Mn}$ materials have been synthesized for structural, electrical and optical studies. The X-ray diffraction (XRD) investigation confirms the highly crystalline monoclinic phase of the prepared material. The elemental mapping indicates complete incorporation of the raw ingredients in the host. Charge transfer band (CTB) is observed between the Mn^{4+} and O^{2-} ions in the interval 239-282 nm of the Diffuse Reflectance Spectra (DRS). Some characteristic absorption bands of Mn^{3+} ion due to ${}^5\text{E}/\rightarrow{}^5\text{E}/$ transition is also observed in the region 806-908 nm of the DRS spectra. We have also reported the Raman and Fourier transform of Infra-red (FTIR) vibrations of the optimized sample in the present investigation. The temperature dependant EPR spectra infers cation vacancies in the host matrix. The XPS study confirms the mixed state of Mn^{4+} and Mn^{3+} ion in the host material. The CIE spectra and photometric calculations shows that these high colour purity phosphors may be explored to design cool LEDs. The investigation of electrical parameters advocates display applications in the temperature region 30 $^{\circ}\text{C}$ to 100 $^{\circ}\text{C}$ of the prepared material. The anti-counterfeit application is also demonstrated in the present study.

Keywords- Phosphor; vacancies; upconversion; downconversion; dielectrics

Research Article-02

Title of the article: **Improved electrical and spectroscopic characteristics in $\text{Tm}^{3+}/\text{Yb}^{3+}$ co-doped TWPTi glasses for blue emitting display devices**

Authors: Joydip Dutta, Lakshmi Mukhopadhyay, Mitesh Chakraborty and Vineet Kumar Rai

Name of the Journal:	Journal of Molecular Structure
Publisher Name and city:	Elsevier, Amsterdam
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	0022-2860
Month and Year of Publication:	August, 2025
Volume (Page nos.):	1348[2] (143406-143411)
DOI:	10.1016/j.molstruc.2025.143406

Abstract

The upconversion (UC) emission properties in the $\text{Tm}^{3+}/\text{Yb}^{3+}$ doped/co-doped TWPTi glasses prepared by the conventional melt-quenching technique upon excitation with a diode laser lasing at 980 nm have been reported. The UC emission spectra of synthesized glasses exhibit intense blue and weak red emission band. The energy transfer processes between the rare earths have been discussed to understand the involved UC mechanism. The detailed analysis about dielectric study shows evidence of Maxwell-Wagner type relaxations in the optimized sample. Investigation about dc and ac conductivity confirms localized hopping of small polarons due to some defect states through variable range hopping mechanism. Judd-Ofelt theory has been applied to evaluate the intensity parameters by using the UV-Vis-NIR absorption spectrum. The radiative properties viz., radiative lifetime, oscillator strength, transition probability and branching ratios have been determined. The CIE colour coordinate of the prepared glasses have been calculated using the chromaticity diagram and their possible application in blue emitting displays have been inferred.

Keywords- Glass; Absorbance; Dielectric; Conductivity; Upconversion

Research Article-03

Title of the article:	Synthesis and optical properties of $\text{Mn}^{2+}/\text{Mn}^{4+}$ doped ZnWO_4 powders for multi-purpose applications
Authors:	Mitesh Chakraborty, Swagata Chakraborty, Joydip Dutta and Swarat Chaudhuri
Name of the Journal:	Processing and Application of Ceramics
Publisher Name & City :	National Library of Serbia, Novi Sad
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	1820-6131
Month and Year of Publication:	October, 2025
Volume (Page nos.):	19[3] (288 – 292)
DOI:	https://doi.org/10.2298/PAC2503288C

Abstract

In the present investigation, we have synthesized ZnWO_4 , $\text{ZnWO}_4:\text{Mn}^{2+}$ and $\text{ZnWO}_4:\text{Mn}^{4+}$ ceramics at 1 mol% doping concentration each by the conventional solid-state reaction method. The structural and microstructural studies have been performed using X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM) and Raman spectroscopy. The effect of peak shifts in XRD patterns on the lattice parameters is analysed in the prepared samples. Raman studies confirm the presence of Mn^{2+} and Mn^{4+} in the host matrix. The chromaticity parameters of the prepared samples are evaluated using a Commission Internationale de l'Éclairage (CIE) diagram. The study of the downconversion spectra of the prepared samples using an ultra-violet (UV) laser source suggests that transition metal-doped ceramics are a significant class of materials that can produce emissions for cool light-emitting diode (LED) applications.

Keywords- ceramics, spectroscopy, lattice parameters, photoluminescence

Research Article-04

Title of the article:	Stark sub-levels in the NIR activated Er³⁺/ Ce codoped Zirconia: A multi-functional material for solid state lighting and optical thermometry applications
Authors:	Mitesh Chakraborty , Joydip Dutta,, Santosh Kumar and Vineet Kumar Rai
Name of the Journal:	Journal of Molecular Structure
Publisher Name and city:	Elsevier, Amsterdam
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	0022-2860
Month and Year of Publication:	August, 2025
Volume (Page nos.):	1348[2] (143406-143411)
DOI:	10.1016/j.molstruc.2025.145186

Abstract

Upconversion phosphors by codoping ZrO₂: Er³⁺ (1 mol%), Ce (0 mol%, 1 mol%, 3 mol%, and 5 mol%) powder samples have been successfully synthesized using a solid-state reaction route. The X-ray Diffraction (XRD) patterns reveal the monoclinic phase of the prepared samples. The EDX analysis reveals the presence of desired elements in the prepared compound. The analysis of diffuse reflectance spectra (DRS), Raman, and X-ray photoelectron spectroscopy (XPS) studies substantiates the coexistence of Ce³⁺ and Ce⁴⁺ ions in the host matrix. All bands in the upconversion (UC) emission spectra are related to the Er³⁺ ion. Co-doping of Ce in the host improves the luminescent intensity of Er³⁺ bands by the cross-relaxation process. The temperature sensing property using the fluorescence intensity ratio (FIR) in the red region of the prepared material has been discussed using Stark sub-levels of the ⁴F_{9/2} state of Er³⁺ ion in the (300-519) K range. The Stark splitting occurs due to the perturbation effect of spin-orbit coupling (SOC), which modifies the crystal field interaction of the doped rare-earth ions at the lattice sites in the host. The maximum thermal sensitivity value for stark levels in the red region is 0.002198 K⁻¹. The prepared phosphor may be used as a temperature sensor and display device application.

Keywords- Rare earth; phosphor; valence state; upconversion; temperature sensing; stark levels.

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 Journal of Physics D: Applied Physics



Research Article-01

Title of the article: **N rich a-SiNx: H as a prospective material for EUV/soft x-ray mirror: A soft x-ray reflectivity analysis near Si L2, 3 absorption edge.**

Authors : Harsh Gupta, Mohammed H. Modi, Pariksha Malik, R. K. Bommali, Pankaj Srivastava, Santanu Ghosh

Name of the Journal: Journal of Applied Physics

Publisher Name and city: American Institute of Physics, Melville, New York

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 1089-7550

Month and Year of Publication: July-2025

Page No: 138, 035302

DOI: <https://doi.org/10.1063/5.0265559>

Abstract

We report the effect of the stoichiometry (from Si-rich to N-rich) of PECVD-grown a-SiNx:H thin films on their optical properties in the soft X-ray regime. The stoichiometry ($x = [N]/[Si]$) of thin films varied from 0.25 to 1.48 with the control of the flow of precursor gases. The soft x-ray reflectivity was performed in the vicinity of the Si L2,3 absorption edge energy region to evaluate the soft X-ray optical behaviour of these non-stoichiometric thin films. Reflectivity analysis suggests the possible tunability of optical constants of a-SiNx:H thin films with stoichiometry. N-rich a-SiNx:H shows promising optical constant values comparable to widely used SiC for the application of soft X-ray/extreme ultraviolet (EUV) mirrors and for masks in next-generation EUV-based 13.5 nm lithography technology.

Keywords- Fourier transform spectroscopy, Optical constants, Optical properties, Thin-films, X-ray reflectivity, Synchrotron radiation, Stoichiometry.

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Research Article-01

Title of the article: **Enriched upconversion emission and electrical properties of $\text{Er}^{3+}/\text{Yb}^{3+}/\text{Mn}$: ZnWO_4 phosphors for display and anti-counterfeit applications**

Authors : Mitesh Chakraborty, Swagata Chakraborty and Joydip Dutta

Name of the Journal: Material Science in Semiconductor Processing

Publisher Name and City : Elsevier, Amsterdam

Listed in Scopus: Yes

Listed in web of science: Yes

ISSN No: 1369-8001

Month and Year of Publication: 15-June-2025

Volume No. (Pages): 192 (109404-109413)

DOI: <https://doi.org/10.1016/j.mssp.2025.109404>

Abstract:

The upconverting codoped/ tridoped ZnWO_4 : $\text{Er}^{3+}/\text{Yb}^{3+}/\text{Mn}$ materials have been synthesized for structural, electrical and optical studies. The X-ray diffraction (XRD) investigation confirms the highly crystalline monoclinic phase of the prepared material. The elemental mapping indicates complete incorporation of the raw ingredients in the host. Charge transfer band (CTB) is observed between the Mn^{4+} and O^{2-} ions in the interval 239-282 nm of the Diffuse Reflectance Spectra (DRS). Some characteristic absorption bands of Mn^{3+} ion due to ${}^5\text{E}/\rightarrow{}^5\text{E}/$ transition is also observed in the region 806-908 nm of the DRS spectra. We have also reported the Raman and Fourier transform of Infra-red (FTIR) vibrations of the optimized sample in the present investigation. The temperature dependant EPR spectra infers cation vacancies in the host matrix. The XPS study confirms the mixed state of Mn^{4+} and Mn^{3+} ion in the host material. The CIE spectra and photometric calculations shows that these high colour purity phosphors may be explored to design cool LEDs. The investigation of electrical parameters advocates display applications in the temperature region 30 °C to 100 °C of the prepared material. The anti-counterfeit application is also demonstrated in the present study.

Keywords- Phosphor; vacancies; upconversion; downconversion; dielectrics

Research Article-02

Title of the article: **Synthesis and optical properties of $\text{Mn}^{2+}/\text{Mn}^{4+}$ doped ZnWO_4 powders for multi-purpose applications**

Authors: Swagata Chakraborty, Joydip Dutta, Swarat Chaudhuri and Mitesh Chakraborty

Name of the Journal: Processing and Application of Ceramics

Publisher Name and city:	National Library of Serbia, Novi Sad
Listed in Scopus:	Yes
Listed in web of science:	Yes
ISSN No:	1820-6131
Month and Year of Publication:	October, 2025
Vol. (Page nos.):	19[3] (288 – 292)
DOI:	https://doi.org/10.2298/PAC2503288C

Abstract

In the present investigation, we have synthesized ZnWO_4 , $\text{ZnWO}_4: \text{Mn}^{2+}$ and $\text{ZnWO}_4: \text{Mn}^{4+}$ ceramics at 1 mol% doping concentration each by the conventional solid-state reaction method. The structural and microstructural studies have been performed using X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM) and Raman spectroscopy. The effect of peak shifts in XRD patterns on the lattice parameters is analysed in the prepared samples. Raman studies confirm the presence of Mn^{2+} and Mn^{4+} in the host matrix. The chromaticity parameters of the prepared samples are evaluated using a Commission Internationale de l'Éclairage (CIE) diagram. The study of the downconversion spectra of the prepared samples using an ultra-violet (UV) laser source suggests that transition metal-doped ceramics are a significant class of materials that can produce emissions for cool light-emitting diode (LED) applications.

Keywords- ceramics, spectroscopy, lattice parameters, photoluminescence

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 No. of D.Sc Scholars Registered till now 02



Research Article – 01

Title of the article: **Comparative morphometric and meristic analysis of four different freshwater fish species from kanke dam reservoir, Ranchi, Jharkhand (India)**
 Author(s): Abhimanyu Kumar., Ramita Kumari., Deepshikha Samdershi and Bharti Singh Raipat
 Name of the Journal: International journal of Fisheries and Aquatic Studies
 ISSN No.: 2347-5129
 Month and Year of Publication: June, 2025
 Page No: 185 – 193

Abstract:

The present investigate was aimed to study 23 morphometric and 10 meristic features of four different fish species (Labeo rohita, Catla catla, Tilapia, Silver carp) collected from Kanke Dam, Ranchi, Jharkhand. Data were represented as mean $\pm$ S.D. The morphometric characters were correlated with total length using regression equation. The regression coefficient was highest in the case of pelvic fin length ($b = 1.4$) and lowest in caudal fin length ($b = 0.05$) for Labeo rohita. It was highest in fork length ($b = 9$) and lowest in pelvic fin length ($b = 1$) for Tilapia. In Catla catla, it was maximum in standard length ($b = 22.05$) and minimum in caudal peduncle length ($b = -2.873$). In Silver Carp, it was maximum in caudal peduncle length ($b = 1.333$) and minimum in fork length ($b = -4$). The study provided baseline data on structural diversity and ecological adaptations, which can aid in fisheries management, conservation and monitoring.

Keywords: Morphometric, meristic, Labeo, catla, reservoir, regression

Research Article – 02

Title of the article: **Butterflies from the St. Xavier's College, Ranchi Campus**
 Author(s): Kumar, M., Osga, J., Mahto, D., Minz, P. A., Herenj, S., Kunkal, S., Mahto, S., Khan, M., Pratap, R., Ranjan, R., & Raipat, B. S.
 Name of the Journal: Vat-Vriksha
 ISSN No.: 3139-8049
 Month and Year of Publication: July 2025
 Page No: OM06

Abstract:

Among the arthropod phylum's most beautiful insects are butterflies. They are well-known for having vividly colored wings that have drawn interest from scientists and amateurs alike. Butterflies participate in the vital process of pollination when they visit vibrant flowers and nectar-feed. In doing so, their bodies gather pollen grains and transport them to other blooms. Numerous studies have revealed a sharp fall in butterfly populations worldwide, putting at risk pollination—an essential ecological service

that butterflies provide. Finding them and preserving them is urgently needed right now. In response to these concerns, the current project was started with the goal of creating a checklist of butterflies (Order: Lepidoptera, Suporder: Rhopalocera) on the campus of St. Xavier's College in Ranchi. The center of Ranchi city is where the college campus is situated. Despite being in the middle of a city, the college campus is covered in artificial and natural greenery that is lush and green and draws butterflies. The review of the literature reveals that no prior verified report of any study on butterflies on college campuses exists. During a 6-month period, from August 2022 to February 2023, 18 butterfly species from 5 families were identified in the current study.

Keywords: Butterfly, checklist, diversity, Ranchi, Rhopalocera.

Research Article – 03

Title of the article: Impact of coal mine water on the histology of liver of *Clarias batrachus* (Linnaeus, 1758)
Author(s): Shruti, S., Kumari, R., Samdershi, D., & Raipat, B. S.
Name of the Journal: Asian Journal of Fisheries and Aquatic research
ISSN No.: 2582 – 3760
Month and Year of Publication: September 2025
Page No: 108 – 116

Abstract:

Aim: Increased instances of mining to obtain various sorts of minerals and energy forms have been reported to impose serious ill effects on the environment. Coal is one such energy form which is being extensively mined in the regions of Jharkhand. The following experiment was designed to investigate the effect of coal mine water on the histology of liver of *Clarias batrachus*. **Study Design:** Fish were randomly divided into 3 groups with 5 fishes in each. Group 1 was kept as control, whereas fish in group 2 and 3 were exposed to 65% V/V of coal mine water collected from Pachwara North coal mines, Pakur, Jharkhand for 21 and 30 days, respectively. **Place and Duration of Study:** The study was conducted in the Department of Zoology, St. Xavier College, Ranchi during March 2025 to May 2025. **Original Research Article.**

Methodology: After 21 and 30 days, fish were sacrificed and liver tissues were procured, blotted free of blood and fixed in Bouin's solution. The tissues were dehydrated, cleared and embedded into paraffin blocks. 5µm thin sections were cut and stained with H&E stain following routine laboratory protocol. Photomicrography was done using image analyzer for comparative analysis.

Results: Control liver showed normal architecture of intact central vein, roughly hexagonal hepatocytes with centrally placed nucleus alternating with sinusoids of normal diameter. In the treated group for 21 days, congested central vein, vacuolization and irregular sinusoids were notably visible. The damage intensified on exposure for 30 days showing time-dependent increase in the histological damage.

Conclusion: This showed that there were observable alterations in the liver histology upon exposure to coal mine water and the degree of damage intensified as duration of exposure increased. This warrants effective management of coal mine effluents prior to its disposal in the water bodies.

Keywords: Coal mine water; *Clarias batrachus*; liver; hepatocytes; central vein; blood vessels

Research Article – 04

Title of the article: Integrative morpho-molecular analysis of *Papilio polytes*, *Papilio polymnestor* and *Euploea core* from Jharkhand (India) using advanced biotechnological and Bioinformatic Approaches.
Author(s): Kumar, M., Ranjan, R., Raj, P., Tirkey, S., Kumar, A., Hembrom, T., Prasad, S. M., & Singh, R. B.
Name of the Journal: Biotechnologia Acta
ISSN No.: 2410 – 776X
Month and Year of Publication: Aug, 2025
Page No: 46 – 59
DOI: <https://doi.org/10.15407/biotech18.04.046>

Abstract:

Plants and butterflies have a coevolutionary relationship, and butterflies are essential to the ecosystem. They serve as ecosystem indicators as well since research on their populations and behaviour can reveal how healthy an environment is. They are efficient pollinators, and particular species have been known to migrate great distances to spread pollen, which causes genetic variety in plant species and increases their chances of surviving.

Aim. This work aimed to study the morpho-molecular features of *Papilio polytes*, *Papilio polymnestor*, and *Euploea core* from the Jharkhand state of India.

Methods. The study spans different areas from five districts, viz. Chatra, Koderma, Giridih, Godda, Ramgarh of the state. The specimens were collected, examined, and physical specimens of each species were submitted to the Insect Collection, Record and Identification, of the Department of Zoology, St. Xavier's College, Ranchi, and Voucher numbers were obtained. Modern biotechnological and bioinformatics tools were used in this work, five specimens of each species were sequenced for the mitochondrial cytochrome oxidase subunit 1 (CO1), on the basis of which the BLAST (Basic Local Alignment and Search Tool) search was performed for identification of the species on the basis of matching scores with sequences present in the nucleotide sequence databases.

Results.

The latest biotechnologies were used. After identification, the sequences were submitted to GenBank, and accession IDs were obtained. The sequences were used to prepare a phylogenetic tree to ascertain the relationships among the collected specimens.

Conclusions. There is a paucity of knowledge related to the morphology and taxonomy of butterflies of the state; thus, this study is the first attempt of its kind. The study revealed significant intraspecific variation among specimens of *Euploea core*. The least variation was exhibited among specimens of *Papilio polymnestor*. The study contributes to the knowledge related to butterfly species of *Papilio polytes*, *Papilio polymnestor*, and *Euploea core*. It will be helpful in further studies related to the conservation and monitoring of the species.

Keywords: Morpho-molecular, Jharkhand, India, *Papilio polytes*, *Papilio polymnestor*, *Euploea core*, BLAST, phylogeny

Research Article – 05

Title of the article:

Impact assessment of anthropogenic activities on surface water quality of two lentic ecosystem in municipal dump site Jhiri, Ranchi: Physicochemical and correlation intervention

Author(s):

Pipas Kumar, Richa Kerketta, Preeti Kujur, Bharti S Raipat, and Kanchita Toppo

Name of the Journal:

Engineering letters

DOI:

<https://doi.org/10.5281/zenodo.18934346>

Publisher Name and City:

International Association of Engineers, Hong Kong

Listed in SCOPUS:

Yes

Listed in Web of Science:

Yes

ISSN No.:

1816-093X/1816-0948

Month and Year of Publication:

March, 2026

Page No:

1 – 20

Abstract:

This study aimed to assess physicochemical parameters and their correlations in two lentic ecosystems adjacent to Jhiri municipal dump site, Ranchi, Jharkhand, India. This investigation focuses on contamination of the leachate from the landfill site on surface water quality and health of the aquatic ecosystem. Water samples were collected from two existing lentic sites (enumerated as Sample A and Sample B) during the pre-monsoon period.

A total of eight physicochemical parameters were analyzed following American Public Health Association standard methods. It includes pH, dissolved oxygen, chloride, total hardness, calcium, magnesium, carbon dioxide, and total alkalinity. Inter-parameter relationships were established by Pearson correlation analysis. Sample A exhibited pH 8.72, dissolved oxygen 7.6 mg/L, chloride 76.68 mg/L, total hardness 180 mg/L, calcium 40.88 mg/L, magnesium 19.00 mg/L, carbon dioxide 2.2 mg/L, and alkalinity 20 mg/L. Sample B showed pH 8.53, critically depleted dissolved oxygen 0.68 mg/L, chloride 53.96 mg/L, total hardness 12 mg/L, calcium 16.03 mg/L, magnesium 6.82 mg/L, carbon dioxide 2.2 mg/L, and alkalinity 30 mg/L. Statistical analysis revealed exceptionally strong positive correlations between total hardness and calcium ($r = 0.999$, $p < 0.001$), calcium and magnesium ($r = 0.974$, $p < 0.01$), and total hardness and magnesium ($r = 0.989$, $p < 0.001$), indicating coupled carbonate mineral dissolution processes. Moderate correlations between chloride and hardness parameters ($r = 0.882$, $p < 0.05$) suggested common contamination sources. The fifteen-fold hardness variation and eleven-fold dissolved oxygen difference demonstrated substantial spatial heterogeneity within the lake system. Severely depleted dissolved oxygen in Sample B (0.68 mg/L) indicates critical hypoxia from organic pollution, likely attributable to landfill leachate infiltration. Strong parameter correlations confirm natural geochemical processes dominate water chemistry, while spatial variations suggest differential contamination exposure. This study establishes that improperly managed landfill sites significantly compromise the nearby surface water quality, creating conditions unsuitable for aquatic life, human health, and well-being.

Keywords: Jhiri Lake, Ranchi, Jharkhand, Lentic ecosystem, physicochemical parameters, water quality assessment, municipal solid waste, leachate

Research Article – 06

Title of the article:	Ecosystem Services provided by Dragonflies (Odonata): Specific Context - Jharkhand; Broader perspectives – India and Global
Author(s):	Kumar, M., Raj, R., Bharti, P., Sonal, A., Tigga, A., Ranjan, R., & Singh Raipat, B.
Name of the Journal:	Vat-Vriksha
DOI:	https://doi.org/10.5281/zenodo.18125864
Publisher Name and City:	Vat-Vriksha, Ranchi
ISSN No.:	3139-8049
Month and Year of Publication:	January, 2026
Page No:	OM05

Abstract:

Dragonflies (order Odonata) provide a suite of ecosystem services that link freshwater and terrestrial systems. This review synthesizes current knowledge on the biological roles of dragonflies: their regulating, supporting, cultural and limited provisioning services, emphasizing evidence (where available) from the Indian state of Jharkhand, and situating that evidence within the wider context of India and global research. We highlight dragonflies as predators regulating insect populations, bioindicators of freshwater quality, contributors to nutrient cycling and food-web connectivity, and as a focus for citizen science and cultural ecosystem services. The review identifies the paucity of work from Jharkhand, outlines research gaps, and proposes recommendations for integrating odonate-based monitoring into wetland management in Jharkhand.

Keywords: Dragonfly, Odonata, ecosystem services, Jharkhand, freshwater wetlands, pest-control, bioindicators, India

Research Article – 07

Title of the article:	Estimation of protein in <i>Oecophylla smaragdina</i> adults and larvae
Author(s):	Minz S.L., Chakroborty M., Srivastava P., Raipat B. S.
Name of the Journal:	Vat-Vriksha
DOI:	https://doi.org/10.5281/zenodo.17985638

Publisher Name and City: Vat-Vriksha, Ranchi
ISSN No.: 3139-8049
Month and Year of Publication: January, 2026
Page No: 1 – 4

Abstract:

Edible insects are an exceptional source of nutrition for humans. In the forested regions of Jharkhand, notably in Ranchi, Gumla, and Simdega, red weaver ant (*Oecophylla smaragdina*) thrives in its natural habitat. The consumption of both ants and their larvae is widespread. This ant species is utilized for various purposes and primarily due to their high nutritional value. In the current study, protein estimation was carried out using Lowry's method, of *Oecophylla smaragdina* samples from Pokla village in Jharkhand. It was found that for each 1 g powdered samples of adults and larvae, the protein content was 1.578 mg/ml and 2.039 mg/ml respectively.

Keywords: Edible insects, *Oecophylla smaragdina*, Nutritional source, Protein estimation, Lowery's method, Nutritional comparison

Research Article – 08

Title of the article: Impact of bauxite ore powder on histomorphology of renal tissue of Spotted Snakehead fish, *Channa punctatus* (Bloch, 1793).
Author(s): Kumari, R., Kumar, M., Samdershi, D., & Singh Raipat, B.
Name of the Journal: Asian Journal of Fishers and Aquatic Research
DOI: 10.9734/ajfar/2026/v28i21060
ISSN No.: 2582 - 3760
Month and Year of Publication: February, 2026
Page No: 33 – 40

Abstract:

Bauxite extraction and the waste it produces are recognized as major contributors to water pollution, especially in areas lacking effective environmental controls. The runoff from bauxite mining contains heavy metals and alkaline compounds. These compounds have been reported to impose deleterious impact not only on physico-chemical properties of nearby soil and water bodies, but also on the organisms inhabiting in them. Present study was aimed to assess the impact of bauxite exposure on the histological structure of the kidney in *Channa punctatus*. Fish were divided into 3 groups with 5 individuals in each. Group 1 served as control. Fish in group 2 and 3 were treated with low (1/10th of LC50; 0.4212 g/L) and high (1/3rd of LC50; 1.5 g/L) dosage of bauxite powder, respectively. 24 h LC50 (4.212 g/L) of the bauxite was taken from previously published report. Duration of the exposure was kept acute (15 days) and chronic (30 days) for group 2 and 3, respectively. At the end of the experiment, kidney tissues of fish from each group were collected and processed for histological preparation. The tissue sections were stained with hematoxylin and eosin for evaluation of histological changes. Histological alterations in the kidney post-intoxication with bauxite were expressed in terms of presence of clusters of hematopoietic cells, disintegration in renal epithelium, cytoplasmic vacuolization, loss of nucleus, focal lipidosis and distortion of glomerulus and Bowman's capsule. The extent of damage increased with increasing the dose and duration of exposure. The findings demonstrated that bauxite exposure induced significant renal histomorphological alterations in *Channa punctatus*, highlighting its potential ecological risk in freshwater environments. This study supports the use of *Channa punctatus* as a sentinel species for aquatic pollution monitoring and underscores the need for stricter regulation for bauxite mining activities.

Keywords: *Channa punctatus*; bauxite; kidney histology; heavy metals; mining pollution; renal damage; bioindicator; aquatic toxicity

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1. The Applied Biology and Chemistry Journal. eISSN: 2582-8789
2. Biophilia Insights. eISSN: 3108-2904
3. Vat Vriksha. eISSN: 2582-8789
No. of Ph.D. Scholars Registered 2



Research Article – 01

Title of the article: **Estimation of Spatio-Temporal Extent of Free-Floating Aquatic Plant Pistia stratiotes in Parts of Subarnarekha River Course Using Remote Sensing**
Author(s): Chandra, S., Shukla, R. K., & Prasad, S. S.
Name of the Journal: Geographical Perspective
Publisher Name and City: AGBJ, Patna
ISSN No.: 0970-809X
Month and Year of Publication: October, 2025
Page No: 84 – 89

Abstract:

Rivers serve as a vital water resource, fulfilling multi-facet requirements such as for drinking purpose, irrigation, fish farming etc. Lotic water bodies like river provides congenial ecological niche to promote growth of varied aquatic plants including water hyacinth, Eichhornia crassipes and Pistia stratiotes. This study aims to estimate the spatio-temporal growth and spread of the free-floating aquatic plant Pistia stratiotes on the water surfaces of the Subarnarekha River and Getalsud Reservoir near Ranchi city. These plants float freely on the water surface, estimating their exact extent through physical surveys alone is challenging. Remote sensing serves as a valuable tool, offering time-specific, synoptic views of the entire area. The present study emphasizes the integration of physical surveys with remote sensing techniques to estimate the surface coverage of free-floating aquatic vegetation. Our findings indicate that Pistia stratiotes exhibits an increase in surface coverage from October 2022 (autumn) to April 2023 (early summer) over study area. A declining trend in surface coverage is observed after April, 2023 (summer), coinciding with increased temperature condition, limited surface water availability, underscores the importance of effective water resource management for sustainable urban living. The study shows vulnerability of freshwater to exotic aquatic plant growth and attempts to establishes a method to estimate spread of aquatic plant, rate of vegetative growth over water surface.

Keywords: Remote Sensing and GIS, Pistia stratiotes, aquatic plant, Subarnarekha River, Ranchi, Urban sustainability, Drinking water supply

Research Article – 02

Title of the article: **Distribution of gastrin and secretin immunoreactive cells in the gut of an Indian Skipper frog, Euphlyctis cyanophlyctis (Schneider): An immunohistochemical study**
Author(s): Ritesh Kumar Shukla., N Venkat Appa Rao
Name of the Journal: The Applied Biology & Chemistry Journal
DOI: <https://doi.org/10.52679/tabcj.2025.64001>

Publisher Name and City: Integrative Centre for Research & Innovation in Biology (ICRIB), Chandigarh, India
ISSN No.: 2582-8789
Month and Year of Publication: December, 2025
Page No: 1 – 15

Abstract:

The present investigation deals with the identification, localization, and mapping of gastrin and secretin-producing endocrine cells in different regions of the alimentary canal of *Euphlyctis cyanophlyctis* (Schneider) through the immunohistochemical (IHC) technique. G-IR (gastrin immunoreactive) cells of both the open and the closed types were present abundantly in the gastric mucosa of the pyloric region, in comparison to that of the fundic region. The open type of cells had long protoplasmic extensions reaching up to the lumen, suggesting the lumone concept of gastrin secretion. While the closed types were restricted towards the basal region of the mucosa and occurred in polymorphic forms ranging from rounded, oval, pyramidal, to amoeboid appearance. The closed type of G-IR cells was recorded in the duodenal mucosa, revealing the source of intestinal gastrin. Thus, suggesting a hormone-lumone-parahormone concept of gastrin secretion. The S-IR (secretin immunoreactive) cells were localized in both the duodenal and ileum regions of the alimentary canal. Comparatively, the number of S-IR cells was abundant in the duodenal mucosa, with respect to the ileum region. In the myenteric plexus of the ileum region, abundant secretin immunoreactivity was recorded, indicating that secretin not only acts as a hormone but also acts as a neuromodulator. All the S-IR cells were of the closed type, and no open type has been observed in the present study. The immunohistochemical study of amphibian gut endocrine cells provide valuable insights into gut health, gastrointestinal disorders, and the physiology and phylogeny of gut endocrine cells, thereby contributing to a deeper understanding and reframing of amphibian gut biology.

Keywords: Immunohistochemistry; Gut endocrine cells; Indian Skipper frog; *Euphlyctis cyanophlyctis*; Gastrin; Secretin

Research Article – 03

Title of the article: **Lamellidens marginalis: A super bio-filter of freshwater ecosystems**
Author(s): Shukla, R. K., Verma, A. K., Prasad, S. S., Singh, N. S., Chandra, S., Shrivastava, R. R., Minj, A., Soreng, P. K., & Rao, N. V. A.
Name of the Journal: The Applied Biology & Chemistry Journal
DOI: <https://doi.org/10.52679/tabcj.2026.71002>
Publisher Name and City: Integrative Centre for Research & Innovation in Biology (ICRIB), Chandigarh, India
ISSN No.: 2582-8789
Month and Year of Publication: March, 2026
Page No: 71002

Abstract:

Freshwater mussels are important bio-filters in aquatic ecosystems, capable of improving the water quality by removing suspended particles through their filter-feeding activity. However, no detailed studies are available on the filtration of polluted water by freshwater mussels under controlled laboratory conditions, hence, this study was conducted. The filtration efficiency of the mussel *Lamellidens marginalis* was evaluated in polluted Subarnarekha River water and aged tap water under controlled laboratory settings. Two sets of aerated aquaria, each containing 20 liters of either polluted river water

or aged tap water, were used-one set with mussels and a control set without mussels. Physiochemical parameters including pH, temperature, electrical conductivity, total dissolved solids and turbidity were monitored at 24-hour intervals over a four-day period to assess the impact of mussel filtration on water quality. The turbidity decreased from 191.33 ± 6.9 NTU to 2.4 ± 0.55 NTU in the polluted river water with mussels, and from 1.43 ± 0.11 NTU to 0.76 ± 0.05 NTU in the aged tap water. Similar declines were observed in other parameters. In contrast, no significant changes were observed in the control aquaria without mussels. These findings highlight the exceptional bio-filtration capacity of mussels. Therefore, conserving these species and utilizing them as models for bio-filtration systems is recommended.

Keywords: Aquaculture, Bivalves, Ecosystem engineer, Freshwater mussels, Water pollution

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Research Article – 01

Title of the article:

Educational Outcomes and Child Development: Impact of School WASH Facilities Under Jal Jeevan Mission: A review

Author(s):

Pipas Kumar

Name of the Journal:

Solovyov Studies ISPU

DOI:

10.37896/ispu73.6/010

Publisher Name and City:

Ivanovo State Power Engineering University, Russian Federation

Listed in SCOPUS:

Yes

Listed in Web of Science:

Yes

ISSN No.:

2076-9210

Month and Year of Publication:

June, 2025

Page No:

1123-1133

Abstract:

Access to Water, Sanitation, and Hygiene (WASH) facilities in educational institutions fundamentally shapes children's health, educational participation, and cognitive development. The Jal Jeevan Mission (JJM), launched in August 2019, prioritized providing

functional tap water connections to schools and anganwadi centres alongside household coverage. By August 2024, JJM successfully provided tap water connections to 9.27 lakh schools (95% coverage) and 9.64 lakh anganwadi centres (96% coverage), representing unprecedented progress in school WASH infrastructure. This review examines the multifaceted impacts of school WASH facilities on educational outcomes and child development, synthesizing evidence from India and comparable contexts globally. Evidence

indicates that improved school WASH facilities can increase attendance by 5-14%, reduce diarrheal disease incidence by 30-50%, and improve educational achievement through direct

health effects and indirect pathways. However, realizing these benefits requires ensuring functionality beyond mere infrastructure provision, maintaining water quality and system reliability, integrating WASH education into curricula, and addressing broader socioeconomic determinants of educational access.

Keywords: Jal Jeevan Mission, school WASH, educational outcomes, child development, water access, menstrual hygiene management, school attendance, India

Research Article – 02

Title of the article: Progress and Impact of Jal Jeevan Mission in Ranchi District, Jharkhand: A Sustainable Development Perspective Review

Author(s): Pipas Kumar

Name of the Journal: International Journal of Environment and Climate Change

DOI: 10.9734/ijecc/2026/v16i15221

ISSN No.: 2581-8627

Month and Year of Publication: January, 2026

Page No: 133-148

Abstract:

One of India's flagship water supply program, Jal Jeevan Mission (JJM) was Initiated in August 2019. It represents India's premier water and water related infrastructure endeavour aimed at supplying Functional Household Tap Connections (FHTC) for all 193.2 million rural residences. This analysis evaluates the JJM execution and systemic challenges, focusing specifically on the Ranchi district of Jharkhand. As an integrated part of achieving Sustainable Development Goal 6 (SDG 6), the mission has seen rapid development, increasing national coverage from 17% to 47.5% by March 2022. As of August 2019, from a baseline connection of only 3.77 lakh households (6.16%) with tap water, Jharkhand reached approximately 26.39 lakh households (43%) by March 2022, representing a massive addition of 22.62 lakh connections in 31 months. Beyond infrastructure, the program is a vital public health outcome, estimated to prevent 400,000 water borne diseases especially diarrheal deaths and 14 million Disability Adjusted Life Years (DALYs). Furthermore, the mission acts as an economic and social catalyst, projected to generate nearly 60 lakh person-years of construction labor and sustained employment in operations and maintenance (O&M). Despite these gains, the long-term success of the mission depends on addressing critical gaps in water quality, climate-resilient sourcing, and the financial sustainability of the supply networks." However, Jharkhand faces hurdles like mining areas, topography, insurgency, schedule areas that make water infrastructure development mission much harder to implement than in the plains. This review synthesizes available evidence on JJM's progress and impact while identifying critical gaps requiring attention for sustainable achievement of universal rural water access.

Keywords: Jal Jeevan Mission, SDG 6, rural water supply, water security, health impacts, India, Jharkhand, employment generation, sustainability

Research Article – 03

Title of the article: **Impact assessment of anthropogenic activities on surface water quality of two lentic ecosystem in municipal dump site Jhiri, Ranchi: Physicochemical and correlation intervention**

Author(s): Pipas Kumar, Richa Kerketta, Preeti Kujur, Bharti S Raipat, and Kanchita Toppo

Name of the Journal: Engineering letters

DOI: <https://doi.org/10.5281/zenodo.18934346>

Publisher Name and City: International Association of Engineers, Hong Kong

Listed in SCOPUS: Yes

Listed in Web of Science: Yes

ISSN No.: 1816-093X/1816-0948

Month and Year of Publication: March, 2026

Page No: 1 – 20

Abstract:

This study aimed to assess physicochemical parameters and their correlations in two lentic ecosystems adjacent to Jhiri municipal dump site, Ranchi, Jharkhand, India. This investigation focuses on contamination of the leachate from the landfill site on surface water quality and health of the aquatic ecosystem. Water samples were collected from two existing lentic sites (enumerated as Sample A and Sample B) during the pre-monsoon period.

A total of eight physicochemical parameters were analyzed following American Public Health Association standard methods. It includes pH, dissolved oxygen, chloride, total hardness, calcium, magnesium, carbon dioxide, and total alkalinity. Inter-parameter relationships were established by Pearson correlation analysis.

Sample A exhibited pH 8.72, dissolved oxygen 7.6 mg/L, chloride 76.68 mg/L, total hardness 180 mg/L, calcium 40.88 mg/L, magnesium 19.00 mg/L, carbon dioxide 2.2 mg/L, and alkalinity 20 mg/L. Sample B showed pH 8.53, critically depleted dissolved oxygen 0.68 mg/L, chloride 53.96 mg/L, total hardness 12 mg/L, calcium 16.03 mg/L, magnesium 6.82 mg/L, carbon dioxide 2.2 mg/L, and alkalinity 30 mg/L.

Statistical analysis revealed exceptionally strong positive correlations between total hardness and calcium ($r = 0.999$, $p < 0.001$), calcium and magnesium ($r = 0.974$, $p < 0.01$), and total hardness and magnesium ($r = 0.989$, $p < 0.001$), indicating coupled carbonate mineral dissolution processes. Moderate correlations between chloride and hardness parameters ($r = 0.882$, $p < 0.05$) suggested common contamination sources. The fifteen-fold hardness variation and eleven-fold dissolved oxygen difference demonstrated substantial spatial heterogeneity within the lake system. Severely depleted dissolved oxygen in Sample B (0.68 mg/L) indicates critical hypoxia from organic pollution, likely attributable to landfill leachate infiltration. Strong parameter correlations confirm natural geochemical processes dominate water chemistry, while spatial variations suggest differential contamination exposure. This study establishes that improperly managed landfill sites significantly compromise the nearby surface water quality, creating conditions unsuitable for aquatic life, human health, and well-being.

Keywords: Jhiri Lake, Ranchi, Jharkhand, Lentic ecosystem, physicochemical parameters, water quality assessment, municipal solid waste, leachate

SOCIAL SCIENCES



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No. of Ph.D Scholars Registered till now

6 (4 Awarded)

Membership to professional body

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Book Chapter-01

Title of the Book Chapter:

COVID-19, Lockdown, and the Plight of Return Migrants of Jharkhand

Authors :

Harishwar Dayal

Title of the Book:

COVID-19 and Labor Migration in India

Publisher Name and city:

Routledge

Listed in Scopus:

Yes

ISBN No:

9781041358145

Month and Year of Publication:

January, 2026

Page No:

219-237

DOI:

DOI: 10.4324/9781003729679

Abstract:

Migration is a vital livelihood strategy for Jharkhand's population, but the COVID-19 pandemic and subsequent lockdowns severely disrupted it. This article explores the plight of Jharkhand's migrant workers during the 2020 lockdowns, documenting severe distress, job and wage losses, hostility from employers and landlords, and arduous journeys home.

Keywords: Jharkhand, Migrant Workers, COVID-19 Pandemic, Lockdown, Livelihood, Return Migration



COVID-19 AND LABOR MIGRATION IN INDIA

EVIDENCES FROM THE PANDEMIC

Edited by
Kunal Keshri, S. Irudaya Rajan, and Kirti Gaur



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Research Article-01

Title of the article: **Rural Reconstruction Through Women Empowerment: Insights from SHGs in Rural Jharkhand**
 Authors: Dr. Dhiraj Mani Pathak
 Name of the Journal: SEDME (Small Enterprises Development, Management & Extension Journal): A worldwide window on MSME Studies
 Publisher Name and city: SAGE Publications India Pvt. Ltd., New Delhi, India
 ISSN No: 0970-8464
 Month and Year of Publication: January 22, 2026
 Vol- Issue: 53 (1)
 Page No: 50-58

Abstract

This study investigates the role of women's self-help groups (SHGs) in fostering rural reconstruction through empowerment in Jharkhand, India. Drawing on primary survey data from 105 SHG members in Giridih district, we employ a logistic regression model to analyse how participation in SHGs influences women's economic autonomy, social mobility and decision-making power within households. Results indicate that income enhancement and awareness of legal rights significantly increase women's participation in household decision-making and community-level dispute resolution. By situating these findings within Rabindranath Tagore's vision of rural reconstruction and India's contemporary agenda of Atmanirbhar Bharat, the study demonstrates how SHGs bridge historical ideals and modern development policy. We argue that SHGs are not only microfinance institutions but also agents of socio-political transformation. The article contributes to debates on grassroots empowerment by providing empirical evidence and policy insights for strengthening SHG-based interventions in rural development.

Keywords- Women empowerment, self-help groups, rural reconstruction, Atmanirbhar Bharat, Jharkhand

Research Article-02

Title of the article: **Ethnicity and EU Policy Framework: A Critical Assessment of the Treatment meted out Minorities in Europe and Mechanisms in Place for their Protection**
 Authors: Pathak, Dhiraj Mani and Shreya Pandey
 Name of the Journal: Political Discourse
 Publisher Name and city: Prof. R.S. Yadav, Kurukshetra, Haryana, Indian Journals.com
 ISSN No: 2395-2229
 Month and Year of Publication: December 2025
 Page No: 207-223

Abstract

Although the EU has layered treaties, directives and agencies intended to safeguard ethnic minorities, everyday discrimination persists in many member states. This study combines qualitative document analysis with an examination of FRA and OECD survey material to trace where legal commitments stop short of changing lived experience. Framed by three strands of ethnicity theory — Primordialism, Instrumentalism and Constructivism — the analysis shows that dominant legal remedies tend to treat discrimination as an individual, juridical problem while underestimating the political uses of ethnicity and the structural conditions that reproduce exclusion. Survey evidence indicates that, in 2023, more than 56% of respondents from ethnic minority backgrounds reported having faced discrimination, underscoring a persistent implementation gap despite decades of normative development. Key obstacles identified are weak enforcement and monitoring, political instrumentalisation of ethnic identities, fragmented institutional responsibilities across European and national bodies, and a mismatch between individualised legal routes and collective, community-level harms. The paper closes with three policy priorities: (1) bolstering enforcement and monitoring tools; (2) adopting structural reforms that tackle systemic drivers of exclusion; and (3) recognising ethnicity as a social and political phenomenon that demands collective as well as individual remedies.

Keywords – Ethnic minorities, Discrimination, European union, Anti-discrimination law, Minority rights, Policy implementation

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3. Life Membership of Indian National Cartographers Association INCA Hyderabad LM No-3133
4. Life Membership of Goa Geographer.

Reviewer/Member of editorial board

1. Shrinkhala

No. of Ph.D Scholars Registered till now

12 (7 Awarded)

Research Article-01

Title of the article: **Urban Water Supply Management and Sustainability: A Case Study of Ranchi Municipal Corporation Area**

Authors: Shephali Prakash, Dr Rajeev Ranjan Shrivastava

Name of the Journal: International Journal of Trend in Scientific Research and Development(IJTSD)

ISSN No: 2456-6470

Month and Year of Publication: 15-July-2025

Page No: 186-193

Abstract

Water is indispensable to all biotic life. It recharges soil, flows into streams, evaporates into the atmosphere, and completes its cyclic journey, thereby sustaining ecological balance. Human dependence on water is constant, making equitable access, judicious utilisation, and conservation essential for sustainable development. This paper examines urban water supply in Ranchi city, which relies primarily on surface water from river-fed dams amid rapid urban expansion. It analyses demand–supply dynamics, projected population growth, user charges collected by the Ranchi Municipal Corporation (RMC), and equitable distribution across city subdivisions. Although current supply appears adequate, rising population pressure on land and surface water resources-governed by seasonal rainfall-necessitates robust storage, distribution, and quality management strategies. The Drinking Water and Sanitation Department handles storage and supply, while the RMC manages collection and distribution. Water quality parameters, including dissolved oxygen (DO) and biological oxygen demand (BOD), were assessed at three major dams (Getalsud/Rukka, Hatia/Dhurwa, and Kanke). The study underscores the urgency of supplementary measures such as mandatory rainwater harvesting to ensure long- term sustainability.

Keywords- Urban water supply, sustainability, population projection, dam management, water quality, Ranchi Municipal Corporation.

Research Article-02

Title of the article:	Gender Disparity in Education among Scheduled Tribes in Jharkhand
Authors:	Shikha Rani, Dr. Rajeev Ranjan Shrivastava
Name of the Journal:	Geographical Outlook
Publisher Name and city:	University Department of Geography, Ranchi University, Ranchi
ISSN No:	0433-4515
Month and Year of Publication:	Dec, 2025
Page No:	79-90

Abstract

Education is important for enhancing individual capabilities and personal growth and supporting social mobility by overcoming structural barriers. Education makes a very significant contribution to developing a more equitable and inclusive society. India has made considerable growth in the literacy rate, rising from 18.3 % in 1951 to 72.98 % in 2011. However, this advancement has not been uniformly distributed across all social groups, with Scheduled Tribes (STs) experiencing persistent educational disparities. With this background, this paper aims to assess the gender disparity within the scheduled tribe group of Jharkhand. The study has utilized data from the Census of India, which includes the number of literate and illiterate in the Scheduled tribe group in Jharkhand, followed by calculating the literacy rate for males and females, and the Gender Disparity Index (GDI) in the ST community has been calculated. GDI is calculated as the ratio of female to male literacy. Findings reveal substantial inter-district variations in gender disparities. Districts such as Giridih, Koderma, Deoghar, and Godda exhibit higher gender disparity in literacy and score between 0.555 and 0.584. Conversely, Latehar, Lohardaga, Hazaribagh, Ramgarh, and Khunti demonstrate comparatively lower gender disparity with index values between 0.663 and 0.720. The districts that have very low gender disparity in both rural and urban literacy are Gumla, Ranchi, Simdega, and Chatra.

The study highlights the necessity for targeted policy interventions to overcome gender disparities in education among ST populations in Jharkhand. By prioritizing the education of tribal girls, Jharkhand can pave the way for a more inclusive and prosperous future.

Keywords- Gender, Literacy, Education, Scheduled Tribe

Research Article-03

Title of the article:	Lamellidens marginalis :A Super bio-filter of fresh water ecosystem
Authors:	Ritesh Kumar Shukla ^{1*} , Akalesh Kumar Verma ² , Shiv Shankar Prasad ³ , Namram Sushindrajit Singh ² , Sandeep Chandra ⁴ , Rajeev Ranjan Shrivastava ⁴ , Ajay Minj ⁵ , Prabhat Kennedy Soreng ⁶ , & N. Venkat Appa Rao ¹
Name of the Journal:	The Applied Biology and Chemistry Journal
ISSN No:	2582-8789
Month and Year of Publication:	March 2026
Page No:	71002 (1-15)

Abstract

Freshwater mussels are important bio-filters in aquatic ecosystems, capable of improving the water quality by removing suspended particles through their filter-feeding activity. However, no detailed studies are available on the filtration of polluted water by freshwater mussels under controlled laboratory conditions, hence, this study was conducted. The filtration efficiency of the mussel *Lamellidens marginalis* was evaluated in polluted Subarnarekha River water and aged tap water under controlled laboratory settings. Two sets of aerated aquaria, each containing 20 liters of either polluted river water or aged tap water, were used-one set with mussels and control set without mussels. Physiochemical parameters including pH, temperature, electrical conductivity, total dissolved solids and turbidity were monitored at 24-hour intervals over a four-day period to assess the impact of mussel filtration on water quality. The turbidity decreased from 191.33 ± 6.9 NTU to 2.4 ± 0.55 NTU in the polluted river water with mussels, and from 1.43 ± 0.11 NTU to 0.76 ± 0.05 NTU in the aged tap water. Similar declines were observed in other parameters. In contrast, no significant changes were observed in the control aquaria without mussels. These findings highlight the exceptional bio-filtration capacity of mussels. Therefore, conserving these species and utilizing them as models for bio-filtration systems is recommended.

Keywords- Aquaculture, Bivalves, Ecosystem engineer, Freshwater mussels, Water pollution

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- iii) Life member Indian Society of Remote Sensing (ISRS) [L 3720]
- iv) Life member Indian Red Cross Society (IRCS) Jharkhand State Branch [10565 of 2010-11]

Reviewer/Member of editorial board

1. Jharkhand Journal of Development and Management Studies, XISS Ranchi

No. of Ph.D Scholars Registered till now

10 (2 Awarded, 1 submitted)

Research Article-01

Title of the article: **A Geographical Analysis of Government initiatives to promote sericulture in Rural Jharkhand**

Authors: Amit Kumar Hansdak, Dr. Shiv Kumar

Name of the Journal: Geographical Outlook

Publisher Name and city: University Department of Geography, Ranchi University, Ranchi

ISSN No: 0433-4515

Month and Year of Publication: Dec-2025

Issue/Vol: XXXIV (2)

Page No: 21-28

Abstract

Sericulture, which provides underprivileged groups, especially women, with a steady source of income, has tremendous potential to assist rural Jharkhand. The state is ideally suited for growing sericulture due to its proficiency in silk production and advantageous agro-climatic conditions. Encouraging this sector can improve rural livelihoods, fight poverty, and spur economic development in impoverished regions.

This study uses secondary data to assess how government programs and policies have affected the promotion of sericulture as a long-term revenue stream and evaluate how well these initiatives help expand sericulture and enhance rural livelihoods. Even while awareness and comprehension have increased, obstacles, including inadequate infrastructure, a lack of funding, and insufficient market networks, still stand in the way of achieving its full potential. The research recommends focused actions to solve these problems and guarantee sericulture's long-term viability as a source of income. The recommendations are meant to help authorities improve sericulture tactics and promote rural Jharkhand's financial sustainability.

Keywords- Sericulture, Rural Livelihoods, Government Interventions, Sustainability

Research Article-02

Title of the article:	पूर्वी सिंहभूम के जनजातीय महिलाओं की शैक्षणिक स्थिति: चुनौतियाँ और संभावनाएँ
Authors:	प्रियंका मंडल, डॉ. शिव कुमार
Name of the Journal:	Geographical Outlook
Publisher Name and city:	University Department of Geography, Ranchi University, Ranchi
ISSN No:	0433-4515
Month and Year of Publication:	Dec-2025
Issue/Vol:	XXXIV (2)
Page no:	148-158

Abstract

पूर्वी सिंहभूम झारखंड के औद्योगिक एवं खनन क्षेत्र युक्त जिलों में से एक है। यहाँ एक बड़ी आबादी जनजातियों की है, जिसकी शैक्षणिक स्थिति बाकी समुदायों की तुलना में अत्यंत सोचनीय है। जैसा कि हम सभी जानते हैं 'शिक्षा' एक सशक्त व सम्पूर्ण जीवन जीने के लिए अत्यंत आवश्यक घटक है। 'शिक्षा के बिना मनुष्य पशु के समान होता है', वस्तुतः शिक्षा प्राप्त करना व शिक्षा प्रदान करना दोनों अत्यंत जरूरी कार्य है। शिक्षा प्राप्त करने का अधिकार स्वयं हमें हमारे संविधान के द्वारा मौलिक रूप से प्रदान की गई है। कहने का अर्थ यह है कि अनुच्छेद 21 (क) के तहत 14 वर्ष तक सभी बच्चों को, बिना किसी लिंग, जाति, धर्म, नृजातीयता तथा क्षेत्र के भेदभाव के राज्य के द्वारा मुफ्त शिक्षा प्रदान करने की व्यवस्था की गई है। अतः आदिवासी बच्चों एवं महिलाओं के लिए यह अत्यंत जरूरी हो जाता है कि उनके शिक्षा स्तर को सुधारने के लिए किये जा रहे सरकारी प्रयासों पर शोध किया जाए। इसके अतिरिक्त यह भी अनुसंधान योग्य तथ्य है कि पूर्वी सिंहभूम क्षेत्र के आदिवासी महिलाओं की शैक्षणिक स्थिति क्या है? वे कौन सी मूल समस्याएं हैं जो उनके शिक्षा प्राप्ति के समक्ष देखी जा रही है? आदिवासी महिलाओं के शैक्षणिक स्तर को सुधारने के लिए कौन से सरकारी प्रयास किये जा रहे हैं? आदिवासी महिलाओं के विद्यालय ड्रॉप आउट के पीछे कौन से कारण विद्यमान हैं? इसके अतिरिक्त आदिवासी महिलाओं के शिक्षा के स्तर को सुधारने के लिए और कौन से नए उपाय व समाधान किये जा सकते हैं?

प्रस्तुत शोध कार्य पूर्वी सिंहभूम जिले के पोटका प्रखण्ड के आदिवासी महिलाओं के शैक्षणिक स्थिति को जानने के उद्देश्य से किया गया है। वस्तुतः इन महिलाओं की शैक्षणिक स्थिति को सुधारकर उन्हें झारखंड तथा भारत के मुख्य आर्थिक धारा में जोड़ने की आवश्यकता है। ताकि भारतीय अर्थव्यवस्था में उनकी उत्पादकता का लाभ लिया जा सके। इसके अतिरिक्त शिक्षा प्राप्त कर स्वयं ये महिलायें सशक्त बनेंगी और अपने जीवन को और अधिक बेहतर बना पायेंगी।

Keywords- आदिवासी महिला, शिक्षा, विद्यालय ड्रॉप आउट, नृजातीयता, अर्थव्यवस्था

Research Article-03

Title of the article:	Latehar: Jharkhand's Jewel of Nature, Rivers, and Forests
Authors:	Juhi Teresa Kujur, Dr. Shiv Kumar
Name of the Journal:	Geographical Outlook
Publisher Name and city:	University Department of Geography, Ranchi University, Ranchi
ISSN No:	0433-4515
Month and Year of Publication:	Dec-2025
Issue/Vol:	XXXIV
Page No:	53-67

Abstract

The Latehar district of Jharkhand has a unique natural landscape characterized by its varied geological formations and intricate hydrological regimes. The drainage system, ecological characteristics, and tourism potential of the district have been the subject of this study. The main aim is to examine how Latehar's geomorphology impacts its river systems, groundwater patterns, and biodiversity, and to identify important natural places concerning eco-tourism. Data for it is collected from various sources, such as, the Aquifer Mapping Report (2020-21), India State of Forest Report (2021), and the Tiger Conservation Plan (2013-23), the research applies a descriptive type of research based on secondary

data and government data. The research indicates that the area predominantly exhibits a dendritic drainage pattern, which is typical where granite gneiss rocks are prevalent. There is also a radial drainage pattern in some of the higher regions such as Netarhat plateau. Marginal plateau springs and tributaries such as the Burha River and Aksi River are essential for surface supply and groundwater. Latehar is also rich in various forest ecosystems and the Palamau Tiger Reserve, featuring more than 970 plant species and several endemic environments. Observations indicate a high interaction among geology, water system, and biodiversity that not only maintains ecological equilibrium but also aids in eco-tourism. Eco-tourism promotion through sustainable tourism development in spots such as Lodh Falls, saptavahini fall, and Garu can contribute to conservation and livelihoods of people.

Keywords- Geology, drainage system, biodiversity, eco-tourism, groundwater

Research Article-04

Title of the article:	A Comparative Study on Income Patterns in Traditional vs. Diversified Agriculture: A Case of Asanbani Village
Authors :	Amit Kumar Hansdak, Dr. Shiv Kumar
Name of the Journal:	Geographical Outlook
Publisher Name and city:	University Department of Geography, Ranchi University, Ranchi
ISSN No:	0433-4515
Month and Year of Publication:	Dec-2025
Issue/Vol:	XXXIV
Page No:	207-217

Abstract

The economic sustainability and viability of rice farming and sericulture in Asanbani village, which is situated in the Ranishwar block of the Dumka district of Jharkhand, are critically examined in this study. The study compares the socioeconomic effects, difficulties, and profitability of the two livelihood options using primary data from field interviews and secondary sources. Results show that, in spite of its seasonality, sericulture provides more time and economic resilience than traditional rice farming, which is still susceptible to changes in the weather and the market. Infrastructural limitations impacting both sectors and low youth engagement are also highlighted in the study. The findings highlight how important it is to diversify agriculture, provide technical assistance, and implement policy changes in order to improve rural livelihoods and guarantee sustainable development in areas that are semi-marginalized and tribal.

Keywords- Sericulture, Rice Cultivation, Agricultural diversification, Rural Livelihoods, Sustainable Development

Research Article-05

Title of the article:	A Geographical Study of Decadal Study (2001-2011) of Literacy in Bero Block of Ranchi District
Authors :	Sonalika Satpathy & Dr. Shiv Kumar
Name of the Journal:	Vedanjali
Publisher Name and city :	Vedic Educational Research Society, Varanasi
ISSN No:	2349-364X
Month and Year of Publication:	Dec-2025
Issue/Vol :	XXIV
Page No:	235-240

Abstract

According to census of India 2001 total literacy of Bero block was 56 % out of which male literacy was

only 28%. and female literacy was only 17%. According to the census of India 2011 the actual literacy rate at Bero block is 67% out of which male literacy is 77% and female literacy is 57%. Rural urban migration in Bero block because of various determinants there is Increase in literacy rate. Though the increasing rate is very slow in Bero block region. The objective of the study is to find out difference in literacy rate in decade (2001-2011) in Bero block region. The data collected from secondary sources such as census of India etc. 15 villages are taken as sample villages for the study. There is mostly positive difference between literacy rate can be observe in both years (2001-2011), Although the growth is slow and also the rate of female literacy is increasing but the extremely, slow and very less difference can be same between both the years. The reasons behind poor condition of female literacy rate early marriage and poor support to education to female after marriage Rural urban migration causing increasing in population in the region and this population fully depending upon the limited number of schools that are in these villages which affects their education and intensifying the imbalance and inequality in education of the Bero block region.

Key words- Education, Literacy, School, Difference, Male, Female

Research Article-06

Title of the article:	Economic Determinants of Rural- Urban Migration: A Case Study of Bero Block, Ranchi District
Authors:	Sonalika Satpathy & Dr. Shiv Kumar
Name of the Journal:	Shabdarnav
Publisher Name and city:	Samnvay foundation, Mujaffarpur, Bihar
ISSN No:	2395-5104
Month and Year of Publication:	July-Dec-2025
Issue/Vol:	XXII
Page No:	260-265

Abstract

Rural urban migration is one of the most common factor in the population distribution in the over the globe. In various type of migration the rural-urban migration is most common in the most of the places in the world. In the Bero block region the same type of pattern of migration can be observe, there are 15 villages are taken as sample villages to understand that how Economic determinant that are encouraging the rural urban migration in the such as the social determinant, cultural determinant, demographic determinant though most common is economic determinant. In the region of Bero block experiencing the rural urban migration. To find out the economic determinants that is responsible for the increasing the rate of rural urban migration in the region of Bero block region. The data has been collected by primary as well as secondary data. The findings of the study is that the economic determinants such as Lack of employment, Landlessness, Low wages, Slow economic growth that are causing rural urban migration in the region of Bero block. In Bero region the rural urban migration is increasing day by day and people are migrating towards the region and economic determinants is reasons behind rural urban migration is in search of better income opportunity is the reason behind migration in Bero block.

Key words- *Poverty, Employment, low wages, Economic Growth, Population*

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Membership to professional body	1. Indian society of Remote Sensing, IIRS, Dehradun- L4342 2. National Association of Geographers, India (NAGI), New Delhi, LM No- 2017 3. Indian National Cartographic Association (INCA), Hyderabad, LM no- 3135 4. Association of Geographers of Bihar and Jharkhand (AGBJ)- LM 1334 5. Foundation of Practicing Geographers, Kolkata- LM 268
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No. of Ph.D Scholars Registered till now 6 (1 Awarded)

Research Article-01

Title of the article:	Estimation of spatio-temporal extent of free-floating aquatic plant pistia stratiotes in parts of Subarnarekha river course using remote sensing
Authors:	Sandeep Chandra, Ritesh Kumar Shukla, Shiv Shankar Prasad
Name of the Journal:	Geographical Perspective
Publisher Name and city:	Association of Bihar & Jharkhand, Patna
ISSN No:	0970-809X
Month and Year of Publication:	Dec-2025
Issue/Vol:	XXVI
Page no:	84-99

Abstract

Rivers serve as a vital water resource, fulfilling multi-facet requirements such as for drinking purpose, irrigation, fish farming etc. Lotic water bodies like river provides congenial ecological niche to promote growth of varied aquatic plants including water hyacinth, Eichhornia crassipes and Pistia stratiotes. This study aims to estimate the spatio-temporal growth and spread of the free-floating aquatic plant Pistia stratiotes on the water surfaces of the Subarnarekha River and Getalsud Reservoir near Ranchi city. These plants float freely on the water surface, estimating their exact extent through physical surveys alone is challenging. Remote sensing serves as a valuable tool, offering time-specific, synoptic views of the entire area. The present study emphasizes the integration of physical surveys with remote sensing techniques to estimate the surface coverage of free-floating aquatic vegetation. Our findings indicate that Pistia stratiotes exhibits an increase in surface coverage from October 2022 (autumn) to April 2023 (early summer) over study area. A declining trend in surface coverage is observed after April,

2023 (summer), coinciding with increased temperature condition, limited surface water availability, underscores the importance of effective water resource management for sustainable urban living. The study shows vulnerability of freshwater to exotic aquatic plant growth and attempts to establish a method to estimate spread of aquatic plant, rate of vegetative growth over water surface.

Keywords- *Remote Sensing and GIS, Pistia stratiotes, aquatic plant, Subarnarekha River, Ranchi, Urban sustainability, Drinking water supply*

Research Article-02

Title of the article: **Geospatial Assessment of Aquaculture Development Using an Aquaculture Feasibility Index (AFI) With Field-Based Validation: A Case Study of East Singhbhum District, Jharkhand**

Authors: Aritra Mondal and Dr. Sandeep Chandra

Name of the Journal: Journal of the Practising Geographers, Kolkata

Publisher Name and city: Foundation of Practicing Geographers, Kolkata

ISSN No: 0975 – 3850

Month and Year of Publication: Apr-2026

Issue/Vol: 22 (2)

Page no: 01-13

Abstract

Inland aquaculture feasibility in plateau regions is shaped by the interaction between environmental resources and human pressure. This study evaluates block-level aquaculture feasibility in East Singhbhum District, Jharkhand, using a geospatial Aquaculture Feasibility Index (AFI) that integrates surface-water availability and population density. Surface-water bodies were delineated from post monsoon Landsat-8 OLI imagery (2023), and demographic data were derived from the Census of India (2011). The results show clear spatial variation across the district. Blocks such as Boram, Dhalbhumgarh, and Gurabanda exhibit high feasibility due to favourable water availability and moderate population pressure, while urban-industrial blocks such as Golmuri-cum-Jugsalai and Baharagora show low feasibility. Field-based observations across selected feasibility zones confirm clear correspondence between AFI values and ground realities, with increasing reliance on management and technological intervention as natural feasibility declines. Overall, the AFI functions as a planning-oriented index that captures natural aquaculture capacity rather than mere activity presence. The integrated geospatial and field-based approach offers a framework for prioritising sustainable inland aquaculture development in plateau regions of eastern India.

Keywords- Aquaculture Feasibility Index(AFI); Inland Aquaculture; GIS and Remote Sensing; Field Validation; East Singhbhum

Research Article-03

Title of the article: **Land Use change analysis within 5 Km buffer of Major roads of Hazaribagh district, Geographical outlook**

Authors: Kumari Priya, Dr. Sandeep Chandra

Name of the Journal: Geographical Outlook

Publisher Name and city: University Department of Geography, Ranchi University, Ranchi

ISSN No: 0433-4515

Month and Year of Publication: Dec-2025

Issue/Vol: XXXIV

Page no: 69-78

Abstract

This paper analyses Land Use Land Cover (LULC) changes within a 5 km buffer zone along major roads which includes National Highways (NH) and State Highways (SH). The study has been done in Hazaribag district, Jharkhand for the time of 2017 and 2024. Multi-temporal satellite imagery has been used and classification is done by GIS based techniques. Transformation in the spatial pattern of Land cover has been detected. The analysis revealed a significant increase in built-up areas. There was marginal decline in forest area. Water bodies showed changes as well. This study highlights the influence of Transport development on land cover which has proximity to major roads. Buffer-based analysis is done to assess the spatial distribution and intensity of land cover change. The findings suggests that there is need for integrated transport and land use planning to ensure sustainable development of a developing district. This research helps planners and policymakers in regional growth management by providing decision support tools.

Keywords: Land use Land Cover, Buffer Zone, Change detection, Sustainable Development

Research Article-04

Title of the article:	Exploring groundwater prospects and related socio-economic conditions: A case study of Patratu Block, Ramgarh District, Jharkhand
Authors:	MD. Sayeed Anwar, Aritra Mondal, Dr. Sandeep Chandra
Name of the Journal:	Geographical Outlook
Publisher Name and city:	University Department of Geography, Ranchi University, Ranchi
ISSN No:	0433-4515
Month and Year of Publication:	Oct-2025
Issue/Vol:	XXXIV
Page No:	125-136

Abstract

This study examines groundwater potential and socio-economic factors in three villages of Patratu Block, Ramgarh district (Batuka, Rochap, Terpa). A structured household survey (45 respondents: 30 male, 15 female) collected data on water sources, groundwater use, satisfaction, water quality, and socio-economic attributes. Results show that most households rely on wells and handpumps, with supplemental surface water (ponds/streams) especially in summer. Satisfaction with water availability varies by age, with older residents generally more content than younger. Photographic field observations illustrate local water conditions and emerging groundwater use. Occupations are largely agrarian and labour-based. Overall, current water demand is modest given low population density, but seasonal shortages and quality issues are evident. Groundwater resources appear underutilized (with Patratu block not yet “critical” in development), *suggesting scope for managed expansion*. Block-level groundwater prospect maps provided by Jharkhand Space Applications Centre (JSAC) and refined by the authors have been used. Integration of such maps with community surveys can guide sustainable water supply solutions.

Keywords: Groundwater, Socio-Economic, Ramgarh District

Research Article-05

Title of the article:	Assessing Quality of Life in Jharia Coal Field of India: A Composite Index Approach
Authors:	Akanksha, Surbhi Sinha and Sandeep Chandra
Name of the Journal:	Journal of North Eastern Geographer
Publisher Name and city:	NORTH-EAST INDIA GEOGRAPHICAL SOCIETY, Guwahati
ISSN No:	0973-0915

Month and Year of Publication: June, 2025
Issue/Vol: 44 (1)
Page No: 117-126

Abstract

Quality of life is defined as people's perception of their position about life and living in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns (WHO, 1997). It is commonly evaluated through a composite index which includes key parameters, such as income (including earnings), education (including educational attainment), and health (access to clean drinking water, healthcare and child mortality). In Jharia coalfield, where coal mining has significantly affected the environment and social conditions, assessing quality of life is important to understand the impacts on local residents. Data obtained from household surveys and official records facilitated comparing the areas most and least affected by mining. Educational gaps are visible, characterized by reduced enrolments at school due to inadequate educational infrastructure and the necessity for children to contribute towards income generation for their homes. Health outcomes are alarming, described by many cases of respiratory disorders and insufficient access to treatment. The composite index highlights the necessity for targeted interventions to address these disparities and enhance living circumstances in the area. This technique provides a helpful instrument to assess and improve the quality of life in resource-abundant yet socio-economically disadvantaged areas.

Keywords: Composite index, Quality of life, Environmental degradation, Socio-economic disparity, mining areas, Jharia.

Research Article-06

Title of the article: **Lamellidens marginalis :A Super bio-filter of fresh water ecosystem**
Authors: Ritesh Kumar Shukla^{1*}, Akalesh Kumar Verma², Shiv Shankar Prasad³, Namram Sushindrajit Singh², Sandeep Chandra⁴, Rajeev Ranjan Shrivastava⁴, Ajay Minj⁵, Prabhat Kennedy Soreng⁶, & N. Venkat Appa Rao¹
Name of the Journal: The Applied Biology and Chemistry Journal
ISSN No: 2582-8789
Month and Year of Publication: March 2026
Page no: 71002 (1-15)
DOI: <https://doi.org/10.52679/tabcj.2026.71002>

Abstract

Freshwater mussels are important bio-filters in aquatic ecosystems, capable of improving the water quality by removing suspended particles through their filter-feeding activity. However, no detailed studies are available on the filtration of polluted water by freshwater mussels under controlled laboratory conditions, hence, this study was conducted. The filtration efficiency of the mussel *Lamellidens marginalis* was evaluated in polluted Subarnarekha River water and aged tap water under controlled laboratory settings. Two sets of aerated aquaria, each containing 20 liters of either polluted river water or aged tap water, were used-one set with mussels and control set without mussels. Physiochemical parameters including pH, temperature, electrical conductivity, total dissolved solids and turbidity were monitored at 24-hour intervals over a four-day period to assess the impact of mussel filtration on water quality. The turbidity decreased from 191.33 ± 6.9 NTU to 2.4 ± 0.55 NTU in the polluted river water with mussels, and from 1.43 ± 0.11 NTU to 0.76 ± 0.05 NTU in the aged tap water. Similar declines were observed in other parameters. In contrast, no significant changes were observed in the control aquaria without mussels. These findings highlight the exceptional bio-filtration capacity of mussels. Therefore, conserving these species and utilizing them as models for bio-filtration systems is recommended.

Keywords- Aquaculture, Bivalves, Ecosystem engineer, Freshwater mussels, Water pollution

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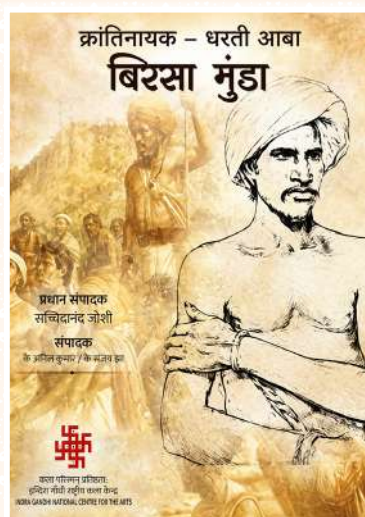
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No. of Ph.D Scholars Registered till now

3



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The Soul of Birsa Munda and the Nation	80
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Book Chapter-01

Title of the Chapter:

Bhagwan Birsa: The God of Jharkhand

Author:

Dr. Sanjay Kumar Sinha

Book Title:

क्रांतिनायक - धरती आबा बिरसा मुंडा

Publisher Name and city:

इंदिरा गाँधी राष्ट्रीय कला केंद्र, नई दिल्ली

ISBN No:

9788119380121

Month and Year of Publication:

December 2025

Page No:

105-115

Introduction-

Bhagwan Birsa: The God of Jharkhand by **Dr. Sanjay Kumar Sinha** explores the life and legacy of Birsa Munda as a tribal leader, social reformer, and freedom fighter. The study highlights his resistance to colonial rule, his efforts to preserve indigenous identity, and his enduring contribution to tribal rights and social justice in Jharkhand.

Keywords- Birsa Munda, Tribal Nationalism, Jharkhand

Sl. No.	Name Research Scholar	Date of Registration	Topic of Ph.D.
1.	Aman Pradhan	24 Nov, 2025	The impact of political alliances and electoral trends in Jharkhand: A Historical perspective from 1963 to 2024
2.	Nandan Kumar	13 Mar, 2026	झारखण्ड की खड़वार जनजाति का सामाजिक, धार्मिक और आर्थिक परिवर्तन 1947-2025) : एक अध्ययन

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Research Article-01

Title of the article: **Chotangapur and Colonial forest laws**
Authors: Anju Oseema Maria Toppo
Name of the Journal: International Research Journal of Human Resource and Social Sciences
Vol and Issue: 13 (5)
ISSN No: 2349-4085
Month and Year of Publication: May 2026

Abstract

Following the Battles of Plassey (1757) and Buxar (1764), the British gradually transformed their commercial presence in India into political domination. Driven largely by imperial and economic interests, especially the demand for military timber and other forest products, the colonial government introduced laws to establish control over India's forests. In one hand the British imposed their control in the area conceiving their commercial interests, while in the other they showed their concerns for climatic changes, soil corrosion, declining water supplies for irrigation and lessening of agricultural production. However these concerns were merely for normalizing and streamlining forest policy. This approach of the British profoundly affected the lives of the indigenous people as they were expected to give up their natural and traditional ways and imitate the colonial powers. The intervention restricted the customary rights and traditional practices of Adivasi communities. This article examines the changing relationship between forests, the colonial state and Adivasis in two sections. The first analyses the emergence of British forest conservancy laws and their commercial foundations. The second explores their implementation in Chotanagpur and assesses their ecological and socio-economic impact on the region's forests and Adivasi communities.

Keywords- Colonial, Conservancy, Commercial, Customary, Adivasi

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Research Article-01

Title of the article:

S.D.G 2030 : Opportunities or Obligations, a reality check

Authors:

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Name of the Journal:

World Focus

Publisher Name and city:

World Focus Publishing House, New Delhi

ISSN No:

3107 - 4413

Month and Year of Publication:

May, 2026

Page No:

95-99

Abstract

With just five years to reach the Sustainable Development Goals, we need to shift into overdrive.” — António GUTERRES, Secretary-General of the United Nations.

“There are no passengers on the earth Spaceship. We are all crew.”- Marshall McLuhan (1964). All of us are on board the spaceship called planet Earth and either we shall sail successfully together or sink unfortunately together. Thus, life on earth needs to be made sustainable. Or, for that matter, we need to adopt the Sustainable Development Goals for a happy and self-fulfilling life. SDG goals are interconnected and inter-dependent. An achievement of one goal strengthens the prospects of the other and vice-versa. With four years remaining to achieve the Sustainable Development Goals (SDGs), this article makes a frank assessment of our current position as far as Goals achieved and obstacles in the way of the achievement of the SDGs are concerned.”

Research Article-02

Title of the article:

Democracy As Soft Power: India and Asean in the Indo Pacific

Authors:

Dr. Saumya Maniny Sinha

Name of the Journal:

Shodh Prabha

Publisher Name and city:

Global Publications, Kanpur

ISSN No:

3108-2890/3108-2726

Month and Year of Publication:

May, 2026

Page No:

111-128

Abstract

India has maintained its long history of democratic rule in the post-colonial world despite a considerable diversity with respect to race, ethnicity, religion, language, etc. India has sustained constitutional governance through an independent judiciary system, regular elections and a pluralist social order. These democratic values have been reflected not only in India's domestic political institutions, but also in

how India conducts itself externally, especially in the Indo Pacific region. This research inspects whether democracy can serve as an influencing force for regional diplomacy without being coercive or using political intervention. The study observes the use of democratic values as a soft power in India-ASEAN relations, especially within a region that contain diverse political systems from electoral democracies to authoritarian regimes. The research questions motivating this study include: (1) What role does India diplomatically play as a democratic country with respect to ASEAN? (2) How far does democracy encourage political resilience and normative cooperation amongst the countries of Indo-Pacific? and (3) How can India promote democratic values within the ASEAN region while maintaining ASEAN's existing norm of non-interference? The primary objective is to evaluate how democracy can be used as a non-coercive tool in the pursuit of regional diplomacy for India. The paper follows a qualitative and analytical approach. It analyses policy documents, institutional cooperation frameworks, and diplomatic initiatives to study the normative nature of India-ASEAN relations. The key findings suggest that instead of being a political standard, democracy can be used as a normative resource for increasing trust and building cooperative relationships as India has used capacity-building, parliamentary exchanges and governance-related cooperation. Ultimately, the research concludes that using democratic values as a soft power diplomacy can build India's credibility as a stabilising partner.

Keywords: Democracy, India-ASEAN Relations, Indo-Pacific, Political Resilience, Pluralism, Soft Power

Book Chapter-01

Title of the Book Chapter:	The possibilities of a Uniform Civil Code in India: Challenges, Prospects and Path ahead
Authors :	Dr. Saumya Maninya Sinha & Ankit Kumar
Title of the Book:	Uniform civil code: A commendable decision after independence
Publisher Name and city:	Mewadev Granth Academy, Banda,U.P
ISBN No:	978-81-984072-1-4
Month and Year of Publication:	December, 2025
Page No:	76 - 90

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Membership to professional body

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- Life Member of Economic Association of Jharkhand.

Reviewer/Member of editorial board

- Ressonance

No. of Ph.D Scholars Registered till now

10 (1 awarded, 1 submitted)

Research Article-01

Title of the article:

The Middle-Way of Diplomacy: Buddhism and Japan-India Relations

Authors:

Dr. Ashutosh Kumar Pandey & Popelka Mitra

Name of the Journal:

South India Journal of Social Sciences

Vol/Issue:

Vol. 23, no. 3

ISSN No:

0972-8945

Month and Year of Publication:

June 2025

Page No:

9-22

DOI:

<https://doi.org/10.62656/SIJSS.v23i3.1932>

Abstract

Buddhism has served as a uniting factor between Japan and India from its historical origins in cultural exchanges to its current function in economics, diplomacy, and soft power tactics. A fundamental principle of Buddhism, the Middle Way promotes peace and balance while providing a structure for collaboration and dispute resolution. The study analyzes the role of Buddhism in both countries' soft power strategies, exploring its influence on political systems, governance, and bilateral relations. This research explores the historical ties that were established by Buddhist monks, the use of common Buddhist history in political and economic partnerships, and the ways in which both nations use Buddhism to improve their international reputation. It examines instances of cross-cultural dialogue, where Buddhist values such as empathy and mindfulness have influenced political relations. Additionally, the research looks at how Buddhist principles are integrated into policy decisions, shaping strategic choices that impact diplomatic efforts, including Comprehensive Economic Partnership Agreements (CEPA). The research underscores the importance of understanding the shared cultural heritage between the two nations and how it influences global cooperation, cultural diplomacy, and conflict resolution. By studying these dynamics, the research sheds light on the role of Buddhism in fostering diplomatic ties and enhancing global reputations.

Keywords- Buddhism, Soft Power, Bilateral ties, Diplomatic Efforts, Cross-Cultural

Research Article-02

Title of the article:	Maldives ke Sandarbh me Bharat aur Chin ki Videsh Niti: Ek Tulnatmak Aadhyan
Authors:	Divya Megha Tirkey, Ashutosh Kumar Pandey
Name of the Journal:	Bharatiya Rajniti Vigyan Shodh Patrika
Vol/Issue:	Saptadash , Ank-Dwitiya
ISSN No:	2229-452X
Month and Year of Publication:	July-December, 2025
Page No:	45 pp
DOI:	https://doi.org/10.62656/SIJSS.v23i3.1932

Abstract

हिंद महासागर में एक रणनीतिक द्वीपीय राष्ट्र 'मालदीव', भारत और चीन की विदेश नीतियों की प्रतिस्पर्धा का केंद्र बना हुआ है। प्रस्तुत शोध पत्र भारत की पड़ोसी-प्रथम नीति और चीन की बेल्ट एंड रोड इनिशिएटिव आधारित रणनीति की तुलना करता है, जिसमें आर्थिक सहायता, सुरक्षा सहयोग और राजनीतिक प्रभाव के आयामों पर अध्ययन केंद्रित है। जहाँ भारत की पड़ोसी प्रथम नीति के अंतर्गत सुरक्षा, मानवीय सहयोग और आर्थिक सहयोग के माध्यम से मालदीव के साथ अपने पारंपरिक संबंधों को बनाये रखा है। वहीं चीन की बेल्ट एंड रोड इनिशिएटिव जिसके अंतर्गत मालदीव में बड़े पैमाने पर आर्थिक निवेश के द्वारा बुनियादी विकास परियोजनाओं के माध्यम से अपने प्रभाव को स्थापित किया है। जिससे इस क्षेत्र की भू राजनीतिक समीकरण में बदलाव दृष्टिगोचर होते हैं। 2025 तक के विकासों से स्पष्ट होता है कि मालदीव की आर्थिक चुनौतियाँ और जलवायु संकट दोनों देशों की नीतियों को प्रभावित कर रहे हैं, जिससे क्षेत्रीय संतुलन की आवश्यकता उजागर होती है। प्रस्तुत शोध आलेख में मालदीव संबंधी भारत एवं चीन की विदेश नीति का अध्ययन विश्लेषण तुलनात्मक दृष्टिकोण से किया गया है तथा आर्थिक निवेश, सैन्य सहयोग और क्षेत्रीय स्थिरता आदि विषयों पर आधारित मालदीव की विदेश नीति में दोनों शक्तियों के बीच संतुलन बनाने के प्रयासों को समझने का प्रयास भी किया गया है। अंततः यह लेख भारत एवं चीन के दीर्घकालिक प्रभावों का मूल्यांकन करता है और मालदीव की संप्रभुता व स्वतंत्र विदेश नीति के लिए संभावित चुनौतियों को रेखांकित करता है।

Keywords- पड़ोसी प्रथम नीति, बेल्ट एंड रोड इनिशिएटिव, रणनीतिक संतुलन, आर्थिक सहायता, सुरक्षा सहयोग

Research Article-03

Title of the article:	India's Cultural Diplomacy under mission LIFE: A Soft Power Approach to Achieve Global Sustainability
Authors:	Rohit Tikey and Ashutosh Kumar Pandey
Name of the Journal:	World Focus
Vol/Issue:	VOL-46 NUMBER 553
ISSN No:	2230-8458
Month and Year of Publication:	January, 2026

Abstract

Global environmental changing condition is among the great problems of the recent era. India took an effort by LIFE (Lifestyle for environmental) at the global level to address this challenge. As it pushes individual and communities to take action that help to build a sustainable future because our everyday choices matter. The Mission LIFE serves as a unique framework of environmental diplomacy and soft power because it emphasizes sustainable living rooted in Indian civilization ethos of harmony with nature, and collective responsibility. The paper analyses India's Mission LIFE as environmental initiatives on the international stage and has been presented and recognized at the UNFCCC COP26, G20 Forums, World Economic Forums, United Nations global launches, and UNDP conferences. The study highlights how mission LIFE support sustainable lifestyles which influence India's diplomacy by aligning sustainability with ethics, tradition and modern technology. The paper concludes that Mission LIFE is a powerful diplomatic tool for India at global level as it not only enhance India's image but also in making global norms for sustainable behaviour towards lifestyles change of the world to protect earth. India's diplomacy improves global connections, established peace and cooperation among the nation.

Keywords- LiFE, Soft Power, Sustainability, Environmental Diplomacy

Research Article-04

Title of the article: **India's Climate Leadership through the Solar Alliance Framework : Climate Diplomacy and Sustainable Development Outcomes"**

Authors: Neha Paswan and Ashutosh Kumar Pandey

Name of the Journal: World Focus

Vol/Issue: VOL-46 NUMBER 553

ISSN No: 2230-8458

Month and Year of Publication: January,2026

Abstract

India has established itself as a prominent actor in the world climate diplomacy. The prominence of the country is apparent due to its leadership position in the International Solar Alliance. The alliance on solar energy is a grouping of sunshine countries situated in the torrid zone of the globe. Co-founded by India in 2015, the solar alliance is committed towards fostering solar energy, sustainable growth and clean energy transitions. The paper studies how India has evolved as a leading voice of environmental diplomacy at the world stage through its leadership in the solar energy platform.

Keywords- Buddhism, Soft Power, Bilateral ties, Diplomatic Efforts, Cross-Cultural

Research Article-05

Title of the article: **मिशन LiFE के आलोक में भारत की पर्यावरणीय कूटनीति: वैश्विक स्थिरता की प्राप्ति हेतु एक सॉफ्ट पावर दृष्टिकोण**

Authors: Rohit Tirkey& Dr. Ashutosh Kumar Pandey

Name of the Journal: World Focus

Vol/Issue: VOL-46 NUMBER 553

ISSN No: 2230-8458

Month and Year of Publication: January,2026

Abstract

वैश्विक जलवायु परिवर्तन आज के समय की सबसे गंभीर चुनौतियों में से एक है। इसके समाधान हेतु भारत सरकार ने 'लाइफस्टाइल फॉर एन्वायरनमेंट' (मिशन LiFE) की शुरुआत की है, जो व्यक्तियों और समुदायों को टिकाऊ भविष्य के लिए प्रेरित करता है। मिशन LiFE भारतीय सभ्यता के मूल्यों और सामूहिक जिम्मेदारी को केंद्र में रखते हुए पर्यावरण कूटनीति और सॉफ्ट पावर का एक विशिष्ट ढांचा प्रस्तुत करता है। यह पहल अंतर्राष्ट्रीय मंचों—जैसे UNFCCC COP26, G20, विश्व आर्थिक मंच, संयुक्त राष्ट्र और UNDP—पर भारत की भूमिका को रेखांकित करती है। मिशन LiFE नैतिकता, परंपरा और आधुनिक तकनीक को जोड़कर भारत की कूटनीति को सशक्त बनाता है। यह अध्ययन इस बात पर प्रकाश डालता है कि मिशन LiFE किस प्रकार टिकाऊ जीवन-शैलियों का समर्थन करता है, जो नैतिकता, परंपरा और आधुनिक तकनीक के साथ स्थिरता को जोड़कर भारत की कूटनीति को प्रभावित करता है। अनुसंधान पत्र निष्कर्ष निकालता है कि मिशन LiFE वैश्विक स्तर पर भारत के लिए एक शक्तिशाली कूटनीतिक उपकरण है, क्योंकि यह न केवल भारत की छवि को बढ़ाता है, बल्कि पृथ्वी की रक्षा के लिए दुनिया की जीवन-शैलियों में बदलाव के लिए टिकाऊ व्यवहार हेतु वैश्विक मानदंड बनाने में भी सहायता करता है। भारत की कूटनीति वैश्विक संबंधों में सुधार करती है और राष्ट्रों के बीच शांति तथा सहयोग स्थापित करती है।

मुख्य शब्द - लाइफस्टाइल फॉर एन्वायरनमेंट, भारतीय सभ्यता, पर्यावरण कूटनीति, सॉफ्टपावर, टिकाऊ जीवन-शैली

Research Article-06

Title of the article: **Artificial Intelligence, Law, and Ethics in India: Navigating the Path to responsible AI Governance, Indian Journal of Society and Politics**

Authors: Ashutosh Kumar Pandey

Name of the Journal: Indian Journal of Society and Politics

Vol/Issue: Vol 13 (01)

ISSN No: 2348-0084
Month and Year of Publication: 2026
Page No: 43-46

Abstract

Artificial Intelligence (AI) is rapidly transforming society, particularly in India, impacting key sectors like governance, finance, healthcare, and law enforcement. AI enhances efficiency but also raises legal and ethical issues, such as accountability and data privacy. Legal structures struggle to adapt to AI's rapid progress, requiring regulation from multiple fields. The paper examines how artificial intelligence interacts with both legal considerations and ethical guidelines in India through its examination of the regulatory environment together with ethical dilemmas and policy measures. The paper presents principal conclusions from the AI Summit 2025 by focusing on India's influence in global AI governance development.

Keywords- Artificial Intelligence, AI Regulation in India, AI Ethics, AI and Law, Indian AI Policy, AI Summit 2025

Research Article-07

Title of the article: **Sacred corridors and strategic connectivity: Buddhist geographies and India –ASEAN cooperation.**
Authors: Dr. Ashutosh Kr. Pandey and Popelka Mitra
Name of the Journal: GeoJournal
Publisher Name and city: Springer Nature
Listed in Scopus: YES
Vol/Issue: 91, 27
ISSN No: 0343-2521
Month and Year of Publication: Feb, 2026
DOI: <https://doi.org/10.1007/s10708-026-11587-7>

Abstract

A prominent example of cultural diplomacy is the intentional use of the shared Buddhist heritage of India and the Association of Southeast Asian Nations (ASEAN) to fortify diplomatic relations. The notion that "holy geographies" can serve as diplomatic pathways is examined in this study. It looks at how popular Buddhist pilgrimage routes, especially those that connect Bodh Gaya, India, to Bagan, Myanmar, and beyond, are being utilised to advance regional integration, political civility, and economic cooperation. These days, religion and culture are effective tools for regional cooperation in the age of soft power and multipolar diplomacy. Through a number of case studies, such as India-Myanmar (Bagan), India-Thailand (Bodh Gaya corridor), and India-Vietnam (Nalanda–Dong Thap engagement), this paper explores the intersection of religion, diplomacy, and geopolitics, drawing on international relations theory, cultural diplomacy, and postcolonial studies. The key objectives of this paper are to assess models of collaboration between India and ASEAN, comprehend the function of pilgrimage circuits in cultural diplomacy, and examine the policy and infrastructure results of Buddhist diplomacy. Drawing on constructivist theory and qualitative analysis of policy documents, pilgrimage flows, and institutional cooperation mechanisms, this study demonstrates that Buddhist pilgrimage circuits operate as sites of identity construction, diplomatic trust-building, and soft power projection in India–ASEAN relations. It investigates a range of MoU's, tourist partnerships, and international agreements in order to comprehend the ways in which Buddhism is employed as a soft power tool. This essay comes to the conclusion that incorporating religious history into contemporary diplomacy opens up new avenues for Asian regionalism and establishes India as a key player in the changing cultural and geopolitical environment of ASEAN

Keywords- India, ASEAN, Pilgrimage circuits, Economic opportunities, Buddhism, Geopolitics

Book-01

Title of the Book:

Grassroots Governance: Democratic Decentralization and Panchayati Raj in India

Authors:

Dr. Pervez Shahid Ali and Dr. Ashutosh Kumar Pandey

Publisher Name and city:

Book Rivers

Vol/Issue:

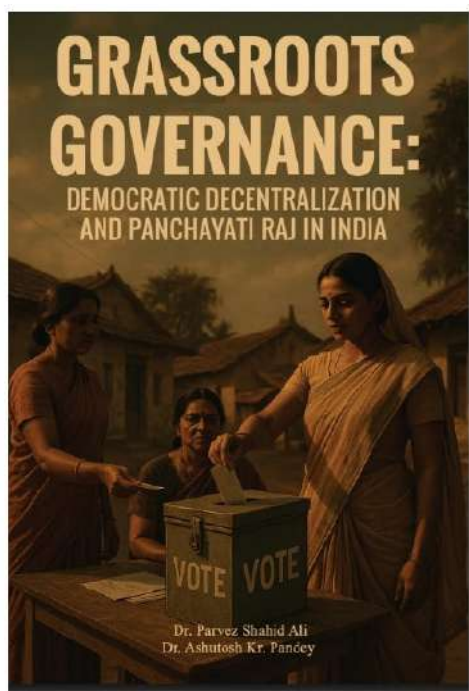
VOL-46 NUMBER 553

ISBN No:

978-9368844259

Month and Year of Publication:

March, 2026



Book Chapter-01

Title of the Book Chapter:

AN OVERVIEW OF THE INDIGENOUS FOUNDATIONS OF THE INDIAN CONSTITUTION

Authors:

Dr. Ashutosh Kumar Pandey , Ankita Rituraj

Title of the Book:

Bharatiya Jurisprudence and Indian Knowledge System: Vedas to Verdict

Publisher Name and city:

Iterative International Publishers IIP

Vol/Issue:

V5B26, IIP Series, Volume 5

ISBN No:

978-93-7020-704-2

Month and Year of Publication:

July , 2025

Page No:

40-47

DOI:

<https://www.doi.org/10.58532/nbennurBJIKSW4>

Abstract-

The Indian Constitution is a remarkable synthesis of indigenous Bharatiya jurisprudence and modern legal thought, reflecting a confluence of ancient traditions and colonial influences. Rooted in dharmic principles, the Indian legal system has long upheld ideals of justice, equity, and duty, as seen in texts such as Arthashastra, Rigveda and the philosophies of Nyaya and Mimamsa schools. These foundational concepts resonate in constitutional provisions such as fundamental rights, directive principles, and decentralized governance. Simultaneously, colonial legal structures introduced rule of law, parliamentary democracy, and codified statutes, shaping the modern constitutional framework. This article explores the influences of Bharatiya jurisprudence on constitutional ideals by examining certain core principles of the Constitution such as secularism, directives principles of state policy and the panchayati raj systems that embody India's indigenous legal heritage alongside Western legal doctrines. Through a doctrinal approach, it argues that the Indian Constitution is not merely an extension of colonial governance but a dynamic document that harmonizes India's rich legal traditions with contemporary jurisprudential principles.

Keywords- Indian Constitution, Indigenous legal traditions, Bharatiya jurisprudence and Dharmic principles

Book Chapter-02

Title of the Book Chapter:	Regional Aspiration and Political Development of Uttarakhand and Jammu and Kashmir: A Comparative Study
Authors:	Rohit Tirkey, Dr. Ashutosh Kumar Pandey
Title of the Book:	The Making of New Jammu and Kashmir: After Article 370
Publisher Name and city:	A.R. Publishing Co., Delhi.
ISBN No:	978-93949834-45-3
Month and Year of Publication:	March, 2026

Abstract-

Regional aspirations have played a central role in shaping India's political landscape, influencing processes of state formation, governance, and democratic development. Regional identity and political development has shaped the formation and development of both Uttarakhand and Jammu Kashmir; both these regions seem distinct in socio-culture identities as well as injustices, but both of their political trajectories has diverged differently. On one hand Uttarakhand's statehood movement cumulated in their peaceful reorganization of their state whereas Jammu and Kashmir complex history involved in multiple accession, insurgency as well as revocation of its special status in 2019. Both states represent a significant case for sub-national mobilization within Indian federalism. This paper tries to highlight, showcase and compare their institutional outcomes, electoral politics, as well as development and demonstrate how regional aspirations can reshape their political institutions their developmental outcomes differ due to variations in conflict intensity, centre-state relations, and socio-economic conditions.

Keywords- Regional Aspirations, State Politics, Federalism, Political Institutions

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 Web of Science ID: QSO-7073-2026



Research Article-01

Title of the article: **Ethnicity and EU Policy Framework: A Critical Assessment of the Treatment meted out Minorities in Europe and Mechanisms in Place for their Protection**
 Authors: Pathak, Dhiraj Mani and Shreya Pandey
 Name of the Journal: Political Discourse
 Publisher Name and city: Prof. R.S. Yadav, Kurukshetra, Haryana, Indian Journals.com
 ISSN No: 2395-2229
 Month and Year of Publication: December 2025
 Page No: 207-223

Abstract

Although the EU has layered treaties, directives and agencies intended to safeguard ethnic minorities, everyday discrimination persists in many member states. This study combines qualitative document analysis with an examination of FRA and OECD survey material to trace where legal commitments stop short of changing lived experience. Framed by three strands of ethnicity theory — Primordialism, Instrumentalism and Constructivism — the analysis shows that dominant legal remedies tend to treat discrimination as an individual, juridical problem while underestimating the political uses of ethnicity and the structural conditions that reproduce exclusion. Survey evidence indicates that, in 2023, more than 56% of respondents from ethnic minority backgrounds reported having faced discrimination, underscoring a persistent implementation gap despite decades of normative development. Key obstacles identified are weak enforcement and monitoring, political instrumentalisation of ethnic identities, fragmented institutional responsibilities across European and national bodies, and a mismatch between individualised legal routes and collective, community-level harms. The paper closes with three policy priorities: (1) bolstering enforcement and monitoring tools; (2) adopting structural reforms that tackle systemic drivers of exclusion; and (3) recognising ethnicity as a social and political phenomenon that demands collective as well as individual remedies.

Keywords – Ethnic minorities, Discrimination, European union, Anti-discrimination law, Minority rights, Policy implementation

Book Chapter-01

Title of the Book Chapter: **India and IMEC**
 Authors: Shreya Pandey and Dr. Dhiraj Mani Pathak
 Title of the Book: India and Western Europe: Engagement, Contestation, Cooperation by Rajendra K. Jain
 Publisher Name and city: Springer Nature Singapore
 ISBN No: 978-981-95-2988-9
 Month and Year of Publication: April 2026
 Page No: 481-494

Abstract-

The chapter examines the strategic, economic, and political potential of the India-Middle East-Europe Economic Corridor (IMEC), with a particular focus on its implications for global supply chains, job creation, and the future trajectory of EU-India relations. It explores the structural design of IMEC, assesses its potential benefits and challenges, and situates it within the broader geopolitical and economic context of twenty-first-century connectivity initiatives.

Book Chapter-02

Title of the Book Chapter:	Resurrection, Reckoning, Reasoning and the Rise of the EU and India in the new Geo-political Setting
Authors:	Shreya Pandey and Dr. Dhiraj Mani Pathak
Title of the Book:	The European Union in an Illiberal World by Nicholas Sowels, Jan Wouters, Michal Dulak and Maria C. Latorre (eds.)
Publisher Name and city:	UK: Global Policy Journal, Durham University, Wiley- Blackwell
Listed in Scopus:	Yes
ISBN No:	9798233971150
Month and Year of Publication:	2025
Page No:	52-62

Abstract-

In the last chapter of this Part, Resurrection, Reckoning, Reasoning and the Rise of the EU and India in the New Geo-Political Setting, Shreya Pandey and Dhiraj Mani Pathak investigate the structural, regulatory and political determinants shaping the prospects of the longnegotiated EU-India Free Trade Agreement (finally sealed on 27 January 2026), treating the agreement as both an economic instrument and a normative platform for cooperation between two democratic, diversity-based political entities. Through a detailed assessment of trade volumes, sectoral asymmetries, regulatory frictions, and bargaining positions, the chapter shows that EU-India cooperation remains constrained by incompatible regulatory standards, competing interpretations of sovereignty, and a tendency for rhetoric to outpace substantive policy convergence.

SELF FINANCE DEPARTMENTS



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Research Article – 01

Title of the article: **Lamellidens marginalis: A super bio-filter of freshwater ecosystem**
 Author(s): Ritesh Kumar Shukla, Akalesh Kumar Verma, Shiv Shankar Prasad, Namram Sushindrajit Singh, Sandeep Chandra, Rajeev Ranjan Shrivastava, Ajay Minjs, Prabhat Kennedy Soreng, & N. Venkat Appa Rao
 Name of the Journal: The Applied Biology & Chemistry Journal
 Publisher Name and City: Integrative Centre for Research & Innovation in Biology, India.
 ISSN No.: 2582-8789
 Month and Year of Publication: 31 March 2026
 Page No: 1 – 15

Abstract:

Freshwater mussels are important bio-filters in aquatic ecosystems, capable of improving the water quality by removing suspended particles through their filter-feeding activity. However, no detailed studies are available on the filtration of polluted water by freshwater mussels under controlled laboratory conditions, hence, this study was conducted. The filtration efficiency of the mussel *Lamellidens marginalis* was evaluated in polluted Subarnarekha River water and aged tap water under controlled laboratory settings. Two sets of aerated aquaria, each containing 20 litres of either polluted river water or aged tap water, were used—one set with mussels and a control set without mussels. Physiochemical parameters including pH, temperature, electrical conductivity, total dissolved solids and turbidity were monitored at 24-hour intervals over a four-day period to assess the impact of mussel filtration on water quality. The turbidity decreased from 191.33 ± 6.9 NTU to 2.4 ± 0.55 NTU in the polluted river water with mussels, and from 1.43 ± 0.11 NTU to 0.76 ± 0.05 NTU in the aged tap water.

Similar declines were observed in other parameters. In contrast, no significant changes were observed in the control aquaria without mussels. These findings highlight the exceptional bio-filtration capacity of mussels. Therefore, conserving these species and utilizing them as models for bio-filtration systems is recommended.

Keywords: Aquaculture, bivalves, ecosystem engineer, freshwater mussels, water pollution

Research Article – 02

Title of the article: **Estimation of Spatio-Temporal Extent of free-floating Aquatic Plant *Pistia stratiotes* in parts of Subarnarekha River course using Remote Sensing**
 Author(s): Sandeep Chandra, Ritesh Kumar Shukla, Shiv Shankar Prasad
 Name of the Journal: Geographical Perspective
 Publisher Name and City: The association of Geographers Bihar & Jharkhand, Patna
 ISSN No.: 0970-809X
 Month and Year of Publication: October, 2025
 Page No: 84 – 99

Abstract:

Rivers serve as a vital water resource, fulfilling multi-facet requirements such as for drinking purpose, irrigation, fish farming etc. Lotic water bodies like river provides congenial ecological niche to promote growth of varied aquatic plants including water hyacinth, Eichhornia crassipes and Pistia stratiotes. This study aims to estimate the spatio-temporal growth and spread of the free-floating aquatic plant Pistia stratiotes on the water surfaces of the Subarnarekha River and Getalsud Reservoir near Ranchi city. These plants float freely on the water surface, estimating their exact extent through physical surveys alone is challenging. Remote sensing serves as a valuable tool, offering time-specific, synoptic views of the entire area. The present study emphasizes the integration of physical surveys with remote sensing techniques to estimate the surface coverage of free-floating aquatic vegetation.

Our findings indicate that Pistia stratiotes exhibits an increase in surface coverage from October 2022 (autumn) to April 2023 (early summer) over study area. A declining trend in surface coverage is observed after April, 2023 (summer), coinciding with increased temperature condition, limited surface water availability, underscores the importance of effective water resource management for sustainable urban living. The study shows vulnerability of freshwater to exotic aquatic plant growth and attempts to establishes a method to estimate spread of aquatic plant, rate of vegetative growth.

Keywords: Remote Sensing and GIS, Pistia stratiotes, aquatic plant, Subarnarekha River, Ranchi, Urban sustainability, Drinking water supply

Chapter(s) published / Book Details

Title of the chapter:	Current Progress in The Degradation of Azo Dyes
Author(s):	Dr. Ramesh Kumar and Dr. Shiv Shankar Prasad
Name of the Book:	Interdisciplinary Advances in Business Management, Engineering and Health Science
Publisher Name and City:	ABS Academy, J.P. Avenue, Sagarbhanga, Durgapur-11
ISBN No.:	978-93-5692-586-1
Month and Year of Publication:	February, 2026
Page No:	454 – 461

Preview:

The history of obtaining dyes started from natural resources such as indigo from Indigofera tinctoria, purple colour from snail, red coloured dye from campeachi wood, etc. (Zollinger, 1987; Brunello, 1973), but the formation of synthetic dyes began with the production of picric acid when treating indigo with nitric acid by Woulfe in 1971. However, the real dye synthesis began with Perkin in 1956, when he successfully synthesized the purple dye known as 'aniline purple' (Cova et al. 2017). The use of chromogens with synthetic substrates was initiated with reactive dyes such as yellow, blue, and red for cellulose dyeing (Luchtman, 2023). Germany and Switzerland were the centres of dye manufacture before the First World War, but today thousands of dye producers are available, including Dystar, Specialty Chemicals, Calas, and Nippon Kayakee. Indigo dye was a major dye available during the early 19th century, known as the bluejeans era'. Dyes are mainly applied in the dye clothes in the textile industry. The following steps are used for colouring of textile (Ibrahim, 2011):

1. Sizing and de-sizing - the first steps started with preparation to provide tensile strength of fibers with treatments of starch, polyvinyl alcohol, carboxy methyl cellulose, etc., followed by washing with excess water to remove this sizing material.
2. Scoring and bleaching- the second step initiated with removal of impurities by treatments with sodium hydroxide, Sodium hypochlorite, and hydrogen peroxide.
3. Mercerizing and dyeing- The final steps provide luster with the addition of coloring reagents.

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Conference Proceeding -01

Title of the article: **Integrating Sustainability Into Quick Commerce Framework For The Indian Context**
Authors: Prof. Dr. Abhijit Dey & Prof. Dr. Anirban Biswas
Name of the Journal: Sustainable Human Centric Growth through Technology in a Dynamic Business World
Publisher Name and city: Indian Society for Training & Development, Kolkata Chapter
ISBN No: 978-81-977844-4-6
Month and Year of Publication: Nov, 2025

ABSTRACT

In the recent years we have seen a paradigm shift in the shopping habits of the Indian consumers because of the emergence of the Quick Commerce companies. The Quick Commerce companies like Blinkit, Zepto, BigBasket, Swiggy Instamart etc. are promising the ultra-quick delivery of everyday essentials often within 10-30 minutes into the door steps of the consumers. The growth of Quick Commerce has become possible due to the rapid digitalization, shift in the consumer demands, convenience and speed but it also raises the concern for the long-term sustainability. The quick delivery is contributing to more carbon emissions, increase in packaging waste and a rising concern towards the welfare of the gig workers and issues related to profitability. This paper takes into consideration the various literature reviews, industry reports and market analysis related to the Quick Commerce. The study also focuses on the effect of Quick Commerce companies on the traditional Brick-and-Mortar stores. It also deals with the changing consumer buying behaviour due to advent of technology. The major focus is on the sustainability issues such as the economic feasibility, environmental sustainability and social issues. The research study focuses on the recent developments in the technology and the important role played by the various stakeholders such as government, start-ups and consumers towards a sustainable future of the Quick Commerce companies.

Keywords: Sustainability, Quick Commerce, Digitalization, Gig Workers, Start-Ups, Consumer Demands.

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Research Article – 01

Title of the article:

Corporate Social Responsibility and Youth Perception

Author(s):

Dr. Rakesh Kumar Dixit, Ekta Arya, Dr. Deependra Kumar Sinha

Name of the Journal:

Indian Journal of Current Trends In Management Science

ISSN No.:

0976 - 1845

Month and Year of Publication:

August, 2025

Page No:

1-26

Abstract:

This research paper aims to explore the level of awareness, perception, and expectations regarding Corporate Social Responsibility (CSR) among young individuals. In the modern business environment, CSR is no longer optional; it is increasingly expected by stakeholders, especially the youth, who represent the future of the consumer and workforce population. The central research problem addressed in this study is the apparent gap between awareness of CSR as a concept and the actual understanding of its implementation and impact.

To investigate this, a descriptive and analytical research design was adopted. Primary data was collected through a structured questionnaire distributed via Google Forms, targeting college students. The sampling method used was convenience sampling, and individual responses were collected. The questionnaire included a mix of multiple-choice, Likert-scale, and ranking questions. The data was analyzed using percentage analysis and visualized through charts to identify patterns and trends.

The results revealed that while a majority of respondents (87%) were aware of the term CSR, only a smaller percentage demonstrated a deep understanding of its practices. The most recognized CSR activities were environmental protection, healthcare, education, and charitable donations. Over 80% of participants acknowledged CSR as very important, with many viewing it as both a moral obligation and a strategic business tool. Significantly, more than 70% stated they would prefer buying from a socially responsible company, even at a higher price. Environmental sustainability and fair labour practices emerged as top priorities among respondents.

Keywords: Corporate Social Responsibility (CSR), Corporate Leaders, Young Individuals, Multidimensional concept and Voluntary commitments.

Research Article – 02

Title of the article:

Financial Support from Parents and its Impact on Financial Satisfaction Among College Students

Author(s):

Dr. Deependra Kumar Sinha

Name of the Journal:

Indian Journal of Current Trends In Management Science

Publisher Name and City: Institute of Management Studies, Ahmednagar
ISSN No.: 0976 - 1845
Month and Year of Publication: August, 2025
Page No: 78 – 98

Abstract:

This study helps us to analyse the implication of parental financial support on wellbeing of college students. Parental support helps the students to meet the major costs such as school fees, shifting fees, maintenance, purchase of books and living expenses. Such support reduces the pressure on students to earn money so that they can focus more on academics and developing skills for a brighter future. On the other hand, the students also need to learn budgeting and other ways in order to establish a balance between being financially sufficient from the money provided by the parents. These practices help the students to be financially independent and learn the important habit of saving money, which will in turn benefit them in future.

Keywords: Financial Satisfaction, Budgeting Skill, Financial Independence, Expense Management.

Research Article – 03

Title of the article: **How Club, Society and NGO Serve As Catalyst For Academic and Personal Development**
Author(s): Dr. Deependra Kumar Sinha
Name of the Journal: International Journal for Multidisciplinary Research (IJFMR)
ISSN No.: 2582-2160
Month and Year of Publication: October, 2025
Page No.: 1 - 16

Abstract:

Clubs, societies, and non-governmental organizations (NGOs) are becoming more and more important in influencing students' overall development in higher education. These platforms offer chances for community involvement, networking, skill development, and leadership in addition to traditional classroom instruction. This study looks at how student involvement in organizations, societies, and clubs affects their academic performance and personal development. The results, which were derived from survey data gathered from St. Xavier's College, Ranchi undergraduate students, show gains in active participants' academic engagement, communication, teamwork, and confidence. According to the study, participation in extracurricular activities improves academic performance by encouraging motivation, peer learning, and skill development. It also helps students get ready for their future careers and social obligations.

Keywords: Club, Society, NGO, Academic Development, Personal Development and Social Development

Research Article – 04

Title of the article: **Financial Literacy And Investment Preferences Of College Students And Young Professionals**
Author(s): Dr. Deependra Kumar Sinha
Name of the Journal: IOSR Journal Of Economics and Finance (IOSR-JEF)
ISSN No.: e-ISSN: 2321-5933, p-ISSN: 232
Month and Year of Publication: November, 2025
Page No: 58 – 73

Abstract:

This study investigates the interrelationship between financial literacy, risk tolerance, fintech adoption, income level, and investment preference among young professionals in India. Using data collected from 47 respondents, the research applies logistic regression, mediation, and moderation models to examine four hypotheses (H_1 – H_4) concerning how behavioural and contextual factors shape investment decisions. The findings reveal that financial literacy, while generally high among respondents, does not independently predict investment in market-linked products. Risk tolerance shows a weak mediating effect, indicating that knowledge improves awareness but not necessarily risk-taking behaviour. Income level exerts limited moderating influence, whereas fintech use emerges as a significant factor-fintech users are over five times more likely to invest in market-linked instruments than non-users. The visual analyses further confirm that fintech accessibility enhances investment participation across literacy levels. The study concludes that technological engagement and behavioural confidence, rather than knowledge or income alone, are the primary drivers of modern investment behaviour. The findings emphasize the need for integrated financial education and digital empowerment programs to bridge the gap between literacy and financial participation among young professionals.

Keywords: Financial Literacy; Risk Tolerance; Fintech Adoption; Income Level; Investment Preference; Behavioural Finance

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Research Article – 01

Title of the article: **Corporate Social Responsibility and Youth Perception**
Author(s): Dr. Rakesh Kumar Dixit, Ekta Arya, Dr. Deependra Kumar Sinha
Name of the Journal: Indian Journal of Current Trends In Management Sciences
ISSN No.: 0976 - 1845
Month and Year of Publication: August, 2025
Page No: 78 – 98

Abstract:

This research paper aims to explore the level of awareness, perception, and expectations regarding Corporate Social Responsibility (CSR) among young individuals. In the modern business environment, CSR is no longer optional; it is increasingly expected by stakeholders, especially the youth, who represent the future of the consumer and workforce population. The central research problem addressed in this study is the apparent gap between awareness of CSR as a concept and the actual understanding of its implementation and impact.

To investigate this, a descriptive and analytical research design was adopted. Primary data was collected through a structured questionnaire distributed via Google Forms, targeting college students. The sampling method used was convenience sampling, and individual responses were collected. The questionnaire included a mix of multiple-choice, Likert-scale, and ranking questions. The data was analyzed using percentage analysis and visualized through charts to identify patterns and trends.

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Keywords: Corporate Social Responsibility (CSR), Corporate Leaders, Young Individuals, Multidimensional concept and Voluntary commitments.

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 Web of Science ID: IXD-8711-2023



- Reviewer/Member of editorial board
1. Reviewer in American Journal of Business, Emerald Publishing – Clarivate, England.
 2. Editorial Board Member in International Journal for Novel Research in Economics, Finance and Management
 3. Reviewer in International Journal of Innovative Research in Technology

Research Article – 01

Title of the article: **A Study on The Impact of Modern Marketing & Advertising in Today's Competitive World**
 Author(s): Dr. Shakil Anwar Siddique
 Name of the Journal: Journal of Novel Research and Innovative Development
 Publisher Name and City: IJ Publication, Philippines
 ISSN No.: 2984-8687
 Month and Year of Publication: September, 2025
 Page No: a169 - a175

Abstract:

This paper explores advertising and marketing development as well as its impact through disparate times, from its rudimentary forms in very early commerce to the digitized phenomenon that is powered by AI. The effects of technological advancement, changing consumer habits, and socio-economic shifts are documented in marketing strategies. The research concerning noticeable paradigm shifts from print and broadcast advertising to online, social media, and mobile marketing is primarily about the outcome that each of them has on consumer-brand engagement. Also, some emerging trends, such as AI, AR, and VR, are on the verge of changing campaigns for years to come. The overall understanding that this review gives is how marketing continues to evolve and adapt to the changing dynamics of a global marketplace.

Keywords: Advertising, Marketing, Consumer

Research Article – 02

Title of the article: **A Review on The Role of Emotional Branding in Luxury Goods Marketing**
 Author(s): Dr. Shakil Anwar Siddique
 Name of the Journal: International Journal of Innovative Research in Technology
 Publisher Name and City: Solaris Publication, Ahmedabad
 ISSN No.: 2349-6002
 Month and Year of Publication: December, 2025
 Page No: 6672-6678

Abstract:

The Indian market's perception of luxury goods is evolving rapidly, driven by rising disposable incomes, globalization and shifting customer aspirations. As a result, luxury goods are shaping a new consumer mindset in India, where exclusivity, authenticity and experiential value define the modern luxury experience. Emotional branding plays a pivotal role in luxury goods market by creating deep and lasting connections and to evoke emotions between consumers and brand. Emotional attachment is cultivated through heritage, brand values and consistent engagement, making customers feel a part of elite community. Digital influence and celebrity endorsements have further amplified the desirability of luxury goods making them more accessible and aspirational.

Keywords: Brand, Emotional Branding, Luxury Goods

Research Article – 03

Title of the article:	Impact of social media marketing in consumer buying behavior with reference to Ranchi
Author(s):	Dr. Shakil Anwar Siddique
Name of the Journal:	Organizational Development Journal
Publisher Name and City:	Organization Development Institute, Ann Arbor – USA
Listed in SCOPUS:	Yes
Listed in Web of Science:	Yes
ISSN No.:	0889-6402
Month and Year of Publication:	January, 2026
Page No:	95-103

Abstract:

The present paper seeks to analyze buying behavior of consumers, especially students, towards social media marketing, in the select area of Ranchi, Jharkhand, India. This paper aims to scientifically investigate the function of social media in consumer decision-making. A quantitative study explores the extent to which social media use affects experiences. Outsiders are currently increasingly dominating consumer opinions of goods and services in developed spaces, which affects judgments made in the detached space. Customers are more engaged with online social networking since advertisers have no control over the content, timing, or frequency of customer conversations. The findings indicate that consumer satisfaction is influenced by social media use during the information search and alternative evaluation phases, with satisfaction increasing as the consumer advances through the process toward the final purchase decision and post-purchase review. The convenience sampling method is adopted for the study. The data is mostly collected from under-graduation students. A well-structured questionnaire was used to get information from the respondents, besides the secondary sources of information being referred to.

Keywords: Social Media, Social Media Marketing, Ranchi, Marketing, Consumer, Consumer Buying Behavior

Research Article – 04

Title of the article:	A Study on Employee Engagement And Retention Strategies At Hospitality Sector With Reference To Radisson Blu Ranchi
Author(s):	Dr. Shakil Anwar Siddique
Name of the Journal:	International Journal for Novel Research in Economics, Finance and Management
Publisher Name and City:	True Data Science Pvt Ltd, Madhya Pradesh – India
ISSN No.:	3048-7722
Month and Year of Publication:	February, 2026
Page No:	10

Abstract:

The present paper seeks to analyze buying behavior of consumers, especially students, towards social media marketing, in the select area of Ranchi, Jharkhand, India. This paper aims to scientifically investigate the function of social media in consumer decision-making. A quantitative study explores the extent to which social media use affects experiences. Outsiders are currently increasingly dominating consumer opinions of goods and services in developed spaces, which affects judgments made in the detached space. Customers are more engaged with online social networking since advertisers have no control over the content, timing, or frequency of customer conversations. The findings indicate that consumer satisfaction is influenced by social

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Keywords: Social Media, Social Media Marketing, Ranchi, Marketing, Consumer, Consumer Buying Behavior

Research Article – 05

Title of the article:

Impact of Artificial Intelligence, Chatbots, And Automation Tools on Digital Marketing Effectiveness, Customer Engagement, And Brand Loyalty

Author(s):

Dr. Shakil Anwar Siddique

Name of the Journal:

INTERNATIONAL JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD

Publisher Name and City:

Organization Development Institute, Ann Arbor – USA

ISSN No.:

2455-0620

Month and Year of Publication:

March, 2026

Page No.:

104-112

Abstract:

Artificial Intelligence (AI), chatbots, and marketing automation tools are transforming digital marketing by enabling data-driven decision-making, personalized customer experiences, 3. 4. and efficient marketing operations. This study investigates the impact of AI technologies on digital marketing effectiveness, customer engagement, and brand loyalty. A quantitative research methodology was used with 250 respondents consisting of digital consumers and marketing professionals. Statistical tools including descriptive statistics, reliability testing, correlation, regression analysis, and ANOVA were used through SPSS. Results show a strong positive relationship between AI adoption and marketing performance. AI- powered chatbots significantly enhance customer engagement and brand loyalty. Organizations implementing AI marketing tools experience improved conversion rates and customer retention. AI chatbots increase conversion rates by around 23% and resolve customer queries 18% faster, highlighting their role in improving marketing effectiveness and customer experience.

Keywords: Artificial Intelligence, Chatbots, Marketing Automation tools

Research Article – 06

Title of the article:	Impact of Fintech Application on Financial Literacy Among Undergraduate Students
Author(s):	Dr. Shakil Anwar Siddique
Name of the Journal:	Journal of Xidian
Publisher Name and City:	Science Press, Italy
Listed in SCOPUS:	Yes
ISSN No.:	243-251
Month and Year of Publication:	April, 2026
Page No:	1001-2400

Abstract:

The rapid adoption of Financial Technology (FinTech) applications has transformed the way young individuals interact with financial services. This study examines the impact of FinTech applications on financial literacy among undergraduate students, with a focus on understanding how digital financial tools influence knowledge, awareness, and financial behavior. A quantitative research design was employed, and data were collected from 120 undergraduate students using a structured questionnaire. The instrument measured FinTech usage, financial literacy, and financial behavior on a five-point Likert scale.

Data were analyzed using SPSS, employing descriptive statistics, reliability testing, correlation analysis, and linear regression. Graphical tools including bar charts, pie charts, scatter plots, and histograms were used to illustrate trends and relationships. The findings reveal that students exhibit high FinTech usage, moderate financial literacy, and positive financial behavior. Correlation analysis shows a strong positive relationship ($r = 0.62$) between FinTech usage and financial literacy, and regression analysis confirms that FinTech usage has a significant positive impact on financial literacy ($p < 0.05$, $R^2 = 0.384$).

The study concludes that while FinTech applications enhance financial awareness and promote responsible financial behavior, they are not sufficient alone to ensure comprehensive financial literacy. Integration of formal financial education alongside the use of FinTech tools is recommended to develop well-informed, financially capable undergraduate students. The study contributes to the growing body of literature on digital financial literacy and technology adoption, providing insights for students, educational institutions, and policymakers to improve financial education in the digital era.

Keywords: FinTech Applications, Financial Literacy, Undergraduate Students, Financial Behavior, Digital Financial Education

Research Article – 07

Title of the article:	A Study on the Need & Benefits of Vocational Programmes at Undergraduate Level - Bridging Gap Between Students and Workplace - Students Perspective
Author(s):	Dr. Shakil Anwar Siddique
Name of the Journal:	Journal of Xidian
Publisher Name and City:	Science Press, Italy
Listed in SCOPUS:	Yes
ISSN No.:	1001-2400
Month and Year of Publication:	August 2025
Page No:	392-399

Abstract:

In the present era the students want to earn just after the completion of their basic education, so there is a much need of professional courses that helps the students to attain this goal. Students who receive vocational education gain practical, useful skills that they can apply immediately upon graduation and throughout their program. Through vocational education schools and programmes, there are numerous industry and career opportunities available. The National Center for Educational Statistics reports that the various sectors/domain like finance, marketing, retail, banking, insurance, office administration, construction, and consumer services are the most sought-after professions. Strong job markets and professional development, a wide range of possibilities for vocational programmes/courses, and investment value are the three primary categories of the advantages of a vocational education. With the equipped knowledge in the required field the student can get placed just after the completion of undergraduate programme. The course curriculum of vocational programme is designed in such a way that it acts as a bridge between the student and the industry.

This paper tries to led focus on the need and benefit of professional/vocational programmes that really helps the students in getting the job also a hand on experience that helps them in the workplace.

Keywords: Vocational, Opportunities, Job Oriented

Research Article – 08

Title of the article:	Understanding the Customer Preference and Adoption of Electric Vehicles over the Other with Reference to Ranchi
Author(s):	Dr. Shakil Anwar Siddique
Name of the Journal:	Organizational Development Journal
Publisher Name and City:	Organization Development Institute, Ann Arbor, USA
Listed in SCOPUS:	Yes
ISSN No.:	0889-6402
Month and Year of Publication:	July 2025
Page No:	73-80

Abstract:

Electric vehicles (EVs), with their very low or no CO₂ emissions, low noise levels, high efficiency and flexibility in grid operation and integration, are the key to achieving a sustainable transport sector in the future. Promising technology. This paper provides an overview of customer preference of electric vehicle adoption over the others.

Understanding the customer preference and adoption of electric vehicles involves several factors like environmental concern, cost saving, technological advancement, government policies, infrastructure, innovation and brand perception.

Understanding and addressing these factors can the policy maker, manufacture and marketers to encourage the adoption of electric vehicles by meeting consumer and overcoming barriers to their updates. Additionally, charging standards and mechanisms and the relative impact of vehicle charging on the grid are presented.

Keywords: Electric Vehicles, Adoption, Customer Preference

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Research Article – 01

Title of the article: **Impact of Fintech Application on Financial Literacy Among Undergraduate Students**
 Author(s): Hussain Ahmed
 Name of the Journal: Journal of Xidian
 Publisher Name and City: Science Press, Italy
 ISSN No.: 1001-2400
 Listed in Scopus: Yes
 Listed in Web of Science: Yes
 Month and Year of Publication: April, 2026
 Page No: 243-251
 DOI: <https://doi.org/10.5.5281/zenodo.19626268>

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Keywords: FinTech Applications, Financial Literacy, Undergraduate Students, Financial Behavior, Digital Financial Education

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Research Article - 01

Title of the article: **Corporate Social Responsibility and Youth Perception**
Author(s): Dr. Rakesh Kumar Dixit, Ekta Arya, Dr. Deependra Kumar Sinha
Name of the Journal: Indian Journal of Current Trends In Management Sciences
ISSN No.: 0976 - 1845
Month and Year of Publication: August, 2025
Page No: 78 – 98

Abstract:

This research paper aims to explore the level of awareness, perception, and expectations regarding Corporate Social Responsibility (CSR) among young individuals. In the modern business environment, CSR is no longer optional; it is increasingly expected by stakeholders, especially the youth, who represent the future of the consumer and workforce population. The central research problem addressed in this study is the apparent gap between awareness of CSR as a concept and the actual understanding of its implementation and impact.

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Keywords: Corporate Social Responsibility (CSR), Corporate Leaders, Young Individuals, Multi-dimensional concept and Voluntary commitments.

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 Web of Science ID: IWL-9450-2023
 No. of Ph.D Scholars Registered till now 01



Research Article-01

Title of the article: **Predictive machine learning model for forecasting transportation related air pollution in Jharkhand till 2034**
 Authors: Abhishek Kumar, Jeevitesh Ranjan, Ravi Kumar Burman, Somnath Dasgupta, Kamaldeep Kamaldeep, Binod Kumar
 Name of the Journal: AIP Conference Proceedings
 Publisher Name and city: AIP Publishing LLC
 Listed in Scopus: Yes
 ISSN No: 0094-243X
 Month and Year of Publication: Nov, 2025
 Page No: 020010-1 to 020010-14
 DOI: <https://doi.org/10.1063/5.0310642>

Abstract

Transport pollution, especially air pollution, is a major public health issue which is a major concern in the overall sustainability of the environment. This research develops a machine learning-based model to predict air pollution caused by transportation in Jharkhand until 2034. Using hypothetical data, the study focuses on forecasting key pollutants such as PM2.5, PM10, NOx, SOx, CO, and Air Quality Index (AQI). Long Short-Term Memory Neural Networks are applied in the model to effectively capture the intricate relationships among air quality, meteorological conditions, and transportation indicators. The research also examines the potential impact of interventions like electric vehicle (EV) adoption and increased public transport usage on reducing pollution levels. The findings give policymakers practical information that can be used to predict future trends in air pollution and develop mitigation plans for the adverse effects on the environment and public health caused by vehicle emissions. The model serves as a valuable tool to guide sustainable transportation policies and improve air quality control. Upcoming projects can apply the model to real-world data and extend its application to other regions facing similar challenges.

Keywords- Electric vehicles, Quality assurance, Air pollution, Artificial neural networks, Machine learning, Public and occupational health and safety.

Research Article-02

Title of the article: **A comparative study of fraud detection algorithm in food delivery systems**
 Authors: Sneha Lata Tigga, Ravi Kumar Burman, Abhishek Kumar, Nishant Kumar, Biresh Kumar, Kamaldeep Kamaldeep
 Name of the Journal: AIP Conference Proceedings

Publisher Name and city: AIP Publishing LLC
Listed in Scopus: Yes
ISSN No: 0094-243X
Month and Year of Publication: July, 2025
Page no: 020005-1 to 11
DOI: <https://doi.org/10.1063/5.0289764>

Abstract

Fraud is a considerable risk to food delivery systems, resulting in tremendous losses and damage to consumer confidence. The idea behind conducting this research is therefore to study the performance of logistic regression, decision tree and SVM in the detection of fraud in food delivery systems and compare them under various metrics. This training and testing is conducted using real transaction data provided by food delivery platforms. Those key performance indicators include confusion matrix, accuracy, precision, recall, and f1-score. An analytical comparison brought forth some merits and demerits of these algorithms while detecting different kinds of frauds, including 'fake' orders, identity theft, fraudulent refunds, and payment fraud. This has led us to further study the effect on the performance of the algorithms due to feature engineering and data imbalance. Such study's findings will guide one in selecting what the best fraud detection means would be expected to achieve in food delivery systems, to minimize financial loss and enhance customer experience. Data imbalance on the algorithms' performance. The findings of this study provide valuable insights for selecting the most suitable fraud detection approach for food delivery systems, aiming to minimize financial losses and enhance customer experience.

Keywords- fraud detection, food delivery, machine learning, SVM, logistic regression, decision tree, performance comparison.

Research Article-03

Title of the article: **AI-Assisted Vs Human Decision making In Strategic Business Management**
Authors: Abhishek Kumar, Jeevitesh Ranjan, Ravi Kumar Burman, Somnath Dasgupta, Kamaldeep Kamaldeep, Binod Kumar
Name of the Journal: Journal of Emerging Technologies and Innovative Research (JETIR)
Publisher Name and city: Journal of Emerging Technologies and Innovative Research (JETIR)
ISSN No: 2349-5162
Month and Year of Publication: May, 2026
Page No:

Abstract

Artificial Intelligence (AI) is becoming an important part of modern business decision-making, especially in areas such as marketing, pricing, forecasting, and strategic planning. This study compares AI-assisted decision-making with human decision-making in business strategy. The research was conducted using 100 participants divided into two groups one using only human judgment and the other using AI assistance. Data was collected through business case-based questionnaires related to pricing, marketing, and market expansion decisions. The findings show that AI-assisted participants made more structured and analytical decisions, while the human-only group relied more on intuition, creativity, and practical understanding. However, most respondents believed that AI should support human managers rather than replace them completely. Overall, the study suggests that combining AI support with human judgment leads to more effective strategic business decision-making.

Keywords- Artificial Intelligence (AI), Strategic Decision-Making, Human Decision-Making, AI-Assisted DecisionMaking, Algorithm Aversion, Algorithm Appreciation, Business Strategy, Human-AI Collaboration, Managerial Decision-Making, Trust in AI.

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729926



Research Article-01

Title of the article:

An analysis of widely used data security systems in cloud based computing, scope and challenges.

Authors:

Gurpreet Singh

Name of the Journal:

International Journal of Innovative Research in Technology

Publisher Name and city:

International Journal of Innovative Research in Technology

ISSN No:

ISSN: 2349-6002

Month and Year of Publication:

August 2025

DOI:

IJIRT183438

Abstract:

Along with the growing convenience and ease of storage of data on clouds and its OTG access, challenges of its security and confidentiality are also increasing with the same pace. Traditionally, the attempts of malicious access of data stored on clouds are considered as the major risk. At present the severity of this risk is becoming more complex. This is because, with the enhancements in technology, the number of cloud service providers is rising and this rising number is causing difficulties to administrate and monitor the overall scenario. When we think about the consequences of this, we understand that the service providers too can access the data in a malicious way and current means of security has no provisions to deal with this situation. At present SaaS (Storage as a service) is most popular utilization of cloud computing and current security provisions are limited up to the identification of user by some credentials like user id and passwords or biometric means in some cases. The valid users may be confirmed with this but the data stored on cloud is fully available to the service providers and they can access it without restrictions. In our study, we are analyzing this unseen aspect of data security and suggesting some ways to safeguard the data from that particular kind of security threat.

Keywords- SaaS, Biometric security, OTG access

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Book

Authors:

Santosh Kiro and Ugen Tshewang

Title of the Book:

Shibu Soren- A dream of the Soil

Publisher Name and city:

Booksmith, New Delhi

ISBN No:

9-788196-586362

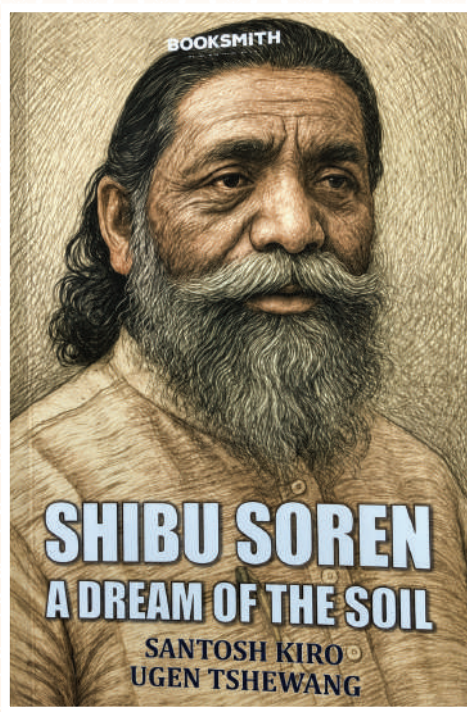
Month and Year of Publication:

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Pages:

246

Shibu Soren: A Dream of the Soil is a detailed, politically grounded biography of the iconic tribal leader Shibu Soren, authored by the prominent Jharkhand-based journalist Santosh Kiro alongside Ugen Tshewang. It stands out as a highly anticipated English-language resource mapping out the tribal empowerment and separate statehood movement in Jharkhand.



Special Contribution / Representation of College at Distinguished Platforms by Faculty Members



Dr. Fr. R. Pradeep Kujur, S.J.
Principal, St. Xavier's College, Ranchi



Mrs. Shalini Minz
Dept of Zoology (Environmental Science)



Dr. Ajay Kumar Srivastava, HOD
Department of Botany



Shri Birendra Kumar Sinha, HOD
Dept of Political Science

Dr. Ashutosh Pandey,
Dept of Political Science



Certificate of Attendance

This document certifies that Assistant Professor Shreya Pandey attended the 2025 EUSAAP Macau Conference entitled "*The EU, its Policies and Relations in Times of Transitions*" held on 8 and 9 June 2025 at the University of Macau. Assistant Professor Shreya Pandey presented the paper "EU-India Bilateral Construction 2025: Time for a Rethink and a Rejig in Troubled Waters" which is co-authored with Assistant Professor Dhiraj Mani Pathak. The conference was co-organised by the European Union Studies Association Asia Pacific (EUSAAP), the University of Macau (UM), the Institute of European Studies of Macau (IEEM) and the European Studies Association Macau (EUSA-Macau).

Yvonne Grosek
Yvonne Grosek
EUSAAP, Project Manager

Dr. Shreya Pandey, Dept of Political Science



Dr. Marcus Barla, HOD
Department of Economics

तुंगलीड
- टिबरू लेराड या' खड़िया उला'

अंक : 16

मेमोन : 9 अंक : 16 मघेल लेरड-सरबुडा' लेरड 2025

इलियास बाअ	खड़िया डा' रो रीति-रिवाज खड़िया जाइत या' मु'डा' कभनेइत
डॉ. तरकेलेंग कुल्लू	झारखण्ड या' 32 जनजाति या' पारिव
निमन्ती कुल्लू	गिड़िछ छुटटी

संत जेवियर्स कॉलेज, ट्राइबल रिसर्च सेन्टर
राँची, झारखण्ड द्वारा प्रकाशित

तुंगलीड
टिबरू लेराड या' खड़िया उला'

अंक : 17

मेमोन : 9 अंक : 17 इदरेल-पुसरेल लेरड 2025

इलियास बाअ	खड़िया डा' रो रीति-रिवाज
डॉ. तरकेलेंग कुल्लू	खड़िया एसाड या' आवाज आवकी डॉ. रोज केरकेडा
रि म केरकेटटा	खड़िया लोकगीत ते वन उपकरण
डॉ. तरकेलेंग कुल्लू	खड़िया एडओन परीक्षा 2025 पुसरेल या' जुनुड
रोहित कुल्लू	खड़िया लोक कथा
निमन्ती कुल्लू	बेतो'ड

संत जेवियर्स कॉलेज, ट्राइबल रिसर्च सेन्टर
राँची, झारखण्ड द्वारा प्रकाशित

एयोन

तुरिया चन्डु: रे ओड़ोड तन मुंडा
जगर ससडकिर साहिति सकम.

अंक-16

सिरमा-9 लेनेका: 16 चन्डु: जनवरी-जून 2025

रेमिस कन्डुलना	छोटानागपुर मुंडा स्टुडेन्ट्स एसोसिएशन रेअ: हुड़िङ्ग इतिहास
निरल अनुकरण होरो	मुण्डा कोअ: तइनो: जिवन
मार्टिन सुरीन	मुण्डा पुरखा दुरङ साहिति रे रसि ओड़ो: रसि सिंगर
डॉ. जोन कन्डुलना	पुरखा दुरङको रेअ: मुण्डारी दुरङ मुटन हनाटिङ
डॉ. खातिर हेमरोम	गमुनि: प्रो. दुलाय चन्द्र मुण्डा
मरकुस बारला	मुण्डा पुरखा दुरङ
डॉ. खातिर हेमरोम	मुबुएते मुण्डा जगर रेअ: मड़न

संत जेवियर्स कॉलेज, ट्राइबल रिसर्च सेन्टर
राँची, झारखण्ड द्वारा प्रकाशित

एयोन

तुरिया चन्डु: रे ओड़ोड तन मुंडा
जगर ससडकिर साहिति सकम.

अंक-17

सिरमा-9 लेनेका: 17 चन्डु: जुलाई-दिसम्बर 2025

जोवाकिम तोपनो	टोनङ दुरङको
रेमिस कन्डुलना	बुरु बुरु दिसुम बुरुको
शबनम समद	मुण्डा दुरङ को रेयअ: उदुव् दस्तुर
डॉ. जोन कन्डुलना	मुण्डा कोअ: ससंकिर ससनदिदि
डॉ. खातिर हेमरोम	बिर दिसुम झारखण्ड
निरल अनुकरण होरो	दिसुम अबुअ:
जोवाकिम तोपनो	किमिन सला
डॉ. जोन कन्डुलना	भारत दिसुम रेन मूद होड़ो ओकोए तनको ?
बेनेदिक्त कन्डुलना	मुदई बुल बोंगा
असरीता कन्डुलना	डॉ० भीमराव अंबेडकर अ: जिवन ओड़ो: उडु:

संत जेवियर्स कॉलेज, ट्राइबल रिसर्च सेन्टर
राँची, झारखण्ड द्वारा प्रकाशित

अंक-16

मारसाल

लेखा : 16 सेरमा : 09 चौदो : जनवरी-जून 2025

सानताइ कोवा: रान मुरगान (संताली औपधियाँ)
पारसीगुरु - प्रो. (डा.) के. सी. दुइ

- | | | |
|-------------------|-----------------------|----------------------|
| 1. मीम दारे | 38. दुदरी दारे | 75. ज्ञापण आका |
| 2. अकावला दारे | 39. पावधिया दारे | 76. मुरय आका |
| 3. मुपय दारे | 40. लोवा दारे | 77. औत कोठका |
| 4. कवहा दारे | 41. पावड दारे | 78. होतल माही |
| 5. मेवय दारे | 42. पुराई आका | 79. होतल आका |
| 6. कुव दारे | 43. औत मेवय दारे | 80. होतल पाव |
| 7. कुल दारे | 44. मुटी मुरिच दारे | 81. मुन दाल |
| 8. सिंजी दारे | 45. अलाकवाही माही | 82. रानका दाल |
| 9. मालकोम दारे | 46. बीस दारे | 83. मिनी |
| 10. माल दारे | 47. मियु दारे | 84. लोवा बाहा दारे |
| 11. कटीज दारे | 48. मालकोम दारे | 85. हेंडम बाहा |
| 12. मुनका दारे | 49. मुना दारे | 86. हेंडम वसाली |
| 13. सखोजन दारे | 50. मियु दारे | 87. कुनजी बाहा दारे |
| 14. लोती दारे | 51. बाब दारे | 88. दुदरी दारे |
| 15. हट दारे | 52. मियु दारे | 89. मुनी पाव |
| 16. लोती दारे | 53. ताले दारे | 90. मुरिच दारे |
| 17. बाई दारे | 54. काही साकाम दारे | 91. इलाइमी दारे |
| 18. खतना दारे | 55. मुकुल दारे | 92. लोह दारे |
| 19. मजुग दारे | 56. कुं कुं दारे | 93. गुमिया दारे |
| 20. दालिम दारे | 57. मुनी दारे | 94. मुदरी माही |
| 21. इना दारे | 58. वा साकाम पास दारे | 95. मालकाज माही |
| 22. लुपुल दारे | 59. हाही लुपुल दारे | 96. लोह माही |
| 23. रोल दारे | 60. एलोका दारे | 97. कुलिम बाहा दारे |
| 24. विमदारी दारे | 61. कमला दारे | 98. औत दारे |
| 25. डिदरी दारे | 62. काबजी दारे | 99. मांमाई दारे |
| 26. एवेल दारे | 63. कवय दारे | 100. जहा दारे |
| 27. कदाम दारे | 64. कवला माही | 101. फिरी पाटी दारे |
| 28. हेंसा दारे | 65. लुलु दारे | 102. सदीम लो दारे |
| 29. सखोजन दारे | 66. पंचाज दारे | 103. कुव दारे |
| 30. विरिच दारे | 67. अमा दारे | 104. पई दारे |
| 31. लोवा दारे | 68. सासा दारे | 105. साक वा |
| 32. लोह लोती दारे | 69. मियु दारे | 106. बविला माही दारे |
| 33. पाकाई दारे | 70. लोह दारे | 107. सख माही दारे |
| 34. कदाम दारे | 71. रालविनी दारे | 108. जेला दारे |
| 35. रानाजी दारे | 72. तेजसाकाम दारे | 109. मोटेर माहीदारे |
| 36. सापारम दारे | 73. पाताल मालुद | |
| 37. बाई बाहा दारे | 74. फिरे बसको | |



संत जेवियर्स कॉलेज, ट्राइबल रिसर्च सेन्टर
राँची, झारखण्ड द्वारा प्रकाशित

अंक-17

मारसाल

लेखा : 17 सेरमा : 09 चौदो : जुलाई-दिसम्बर 2025

पारसीगुरु - प्रो. (डा.) के. सी. दुइ

1. आरा: बुरु गिय सेंदरा सिंगराय पाता
2. बाडका बुरु गिय सेंदरा सिंगराय पाता
3. आयोदिया बुरु गिय सेंदरा, सिंगराय पाता
4. दोलमा बुरु गिय सेंदरा, सिंगराय पाता
5. माराड बुरु गिय सेंदरा, बाहा पाता
6. मान्दार बुरु बोंगा थान बिदिन पाता



संत जेवियर्स कॉलेज, ट्राइबल रिसर्च सेन्टर
राँची, झारखण्ड द्वारा प्रकाशित

चोन्हा अयंग

अंक : 16

सोय चन्दो नू उरखू कुडुख साहित्य पत्रिका

जान-नय गनया-दोय सोय चन्दो : माघ-असाइ (जनवरी-जून) 2025

जॉ. ललिमा कुजूर

आदिवासीर गही महबा कथा

जॉ. प्यारी कुजूर

आदिवासीर गही नेहा कथम परब

मु. सय फा. अलबिनुस मिज

आलकुंज अरा बकपुइ आलकुंज (बछरका)

नि ॥ रानी टोप्यो

नमय राजी झारखंड

मु. सय जस्टिन एक्का

सुइराजना (बछरका)



ट्राइबल रिसर्च सेन्टर, संत जेवियर्स कॉलेज,
राँची, झारखण्ड द्वारा प्रकाशित

चोन्हा अयंग

अंक : 17

सोय चन्दो नू उरखू कुडुख साहित्य पत्रिका

जान-नय गनया-दोय सय चन्दो : सावन-पूस (जुलाई-दिसम्बर) 2025

जॉ. सलिमा कुजूर

कुडुख गही बेजना

जॉ. प्यारी कुजूर

कुडुख खोइहा नू डली नैजपाद नेज

अनमोल कुजूर

भला विज्ञान गही बरजी

नि ॥ रानी टोप्यो

नमय राजी झारखंड

मु. फा. अलबिनुस मिज

आलकुंज अरा बकपुइ कुंज

सुबास कुजूर

मल कोड़े उज्जना सिता खेअनादिम दय

प्रेम उदय कुजूर

दय उज्जना आलर खेअनन मला एलेचनर



ट्राइबल रिसर्च सेन्टर, संत जेवियर्स कॉलेज,
राँची, झारखण्ड द्वारा प्रकाशित



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(Vol. 01, No. 01, January - June 2026)

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Research Day - 2025

हिन्दुस्तान
रांची, जगन्नाथ, 2 सितंबर 2025 06

सिटी की खबरें

शोध जीवन की बौद्धिक सच्चाई और उत्कृष्टता: डॉ. निकोलस



संत जेवियर्स कॉलेज में फादर कामिल बुल्के की जयंती सोमवार को मनाई गई। इस अवसर पर कॉलेज की वार्षिक शोध परीक्षा- स्कोरडेंट का विधीयन करते अतिथि।

रांची, विशेष संवाददाता। जेवियर्स कॉलेज में डॉ. फादर कामिल बुल्के की जयंती को आइन्सब्रूरी व रिसर्च डेवलापमेंट सेल को और से सोमवार को शोध दिवस के रूप में मनाया गया।

इसमें पद धारण फादर कामिल बुल्के की उपलब्धियां व शोध के प्रति लगाव पर व्याख्यान आयोजित किया गया। मुख्य अतिथि कॉलेज के पूर्व

रांची, 02 सितंबर, 2025 दैनिक जागरण

शोध संस्थागत उत्कृष्टता का प्रतीक है: डा. निकोलस



संत जेवियर्स कॉलेज में आयोजित कार्यक्रम में शामिल लोग - डॉ. फादर

जगन्नाथ संवाददाता, रांची : संत जेवियर्स कॉलेज में सोमवार को डा. फा. कामिल बुल्के की जयंती पर आयोजित शोध दिवस का आयोजन किया गया। इस अवसर पर मुख्य अतिथि कॉलेज के पूर्व प्राचार्य डा. फा. निकोलस डे टे एसजे ने धर्मात्म शोध की चुनौतियों को रेखांकित करते हुए बताया कि शोध का विकास डेटे एसजे ने शोध की चुनौतियों पर प्रकाश डालते हुए कहा कि शोध केवल आकादमिक जगत् तक नहीं, बल्कि यह जीवन के और उन्मुख होने के प्रेरित किया।

आजाद सिपाही
रांची, 02 सितंबर, 2025 04

फादर कामिल बुल्के की जयंती मनी



आजाद सिपाही संवाददाता

रांची। संत जेवियर्स कॉलेज में सोमवार को डॉ. फादर कामिल बुल्के की जयंती को आइन्सब्रूरी व रिसर्च डेवलापमेंट सेल द्वारा शोध दिवस के रूप में मनाया गया। इस अवसर पर मुख्य अतिथि कॉलेज के पूर्व प्राचार्य डा. फादर निकोलस डे टे, एसजे ने धर्मात्म शोध की चुनौतियों को रेखांकित करते हुए बताया कि शोध केवल आकादमिक जगत् तक नहीं, बल्कि यह जीवन के और उन्मुख होने के प्रेरित किया।

रांची, जगन्नाथ 02.09.2025 खबर मन्त्र 09

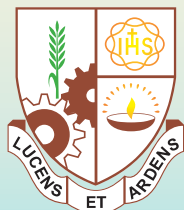
फादर कामिल बुल्के की जयंती मनी

रांची। संत जेवियर्स कॉलेज में सोमवार को डॉ. फादर कामिल बुल्के की जयंती को आइन्सब्रूरी व रिसर्च डेवलापमेंट सेल द्वारा शोध दिवस के रूप में मनाया गया। इस अवसर पर मुख्य अतिथि कॉलेज के पूर्व प्राचार्य डा. फादर निकोलस डे टे, एसजे ने धर्मात्म शोध की चुनौतियों को रेखांकित करते हुए बताया कि शोध केवल आकादमिक जगत् तक नहीं, बल्कि यह जीवन के और उन्मुख होने के प्रेरित किया।

संत जेवियर्स कॉलेज में फादर कामिल बुल्के की जयंती शोध दिवस के रूप में मनाया



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