



DEPARTMENT OF CHEMISTRY

(DST FIST SUPPORTED)

BIT MESRA, RANCHI

NEWSLETTER

ChemOreiká
(JANUARY-JUNE '25)



Editors:

Dr. Sumit Mishra

Dr. Joydeep Dhar

Student Editors:

Abhijit Pingal Sanga

Nipun Tirkey



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DEPARTMENT OF CHEMISTRY



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The faculty members from the Department of Chemistry are engaged in research in pure chemistry, applied and interdisciplinary areas of all branches of chemistry, specializing in emerging materials for various applications from biomaterials, environmental remediation, energy harvesting materials, composites, sensors, supercapacitors, drug discovery and molecular modelling to theoretical chemistry and quantum chemistry research.

SPECIALIZATION IN CHEMISTRY

INORGANIC



Dr. Sumit Mishra



Dr. Subhendu Naskar



Dr. Barnali Dasgupta Ghosh



Dr. Deep Shikha



Dr. Atul Kumar

RESEARCH AREAS:
Biopolymers & Biomaterials,
Coordination Chemistry,
Bioinorganic Chemistry,
Nanomaterials &
Nanocomposites,
Supramolecular Chemistry.

PHYSICAL



Prof. P. K. Chattaraj



Dr. Gautam Sen



Dr. S. S. Mahapatra



Dr. Joydeep Dhar



Dr. Debdutta Chakraborty

RESEARCH AREAS:
Computational Chemistry,
Electrochemistry, Polymers,
Energy Materials.

ORGANIC



Prof. Ashoke Sharon



Dr. Pradip Kar



Dr. Anirban Pradhan

RESEARCH AREAS:
Medicinal Chemistry, Molecular Modeling and Drug Design, Sensor Materials, Novel Aromatics, Materials for Energy Production and Storage



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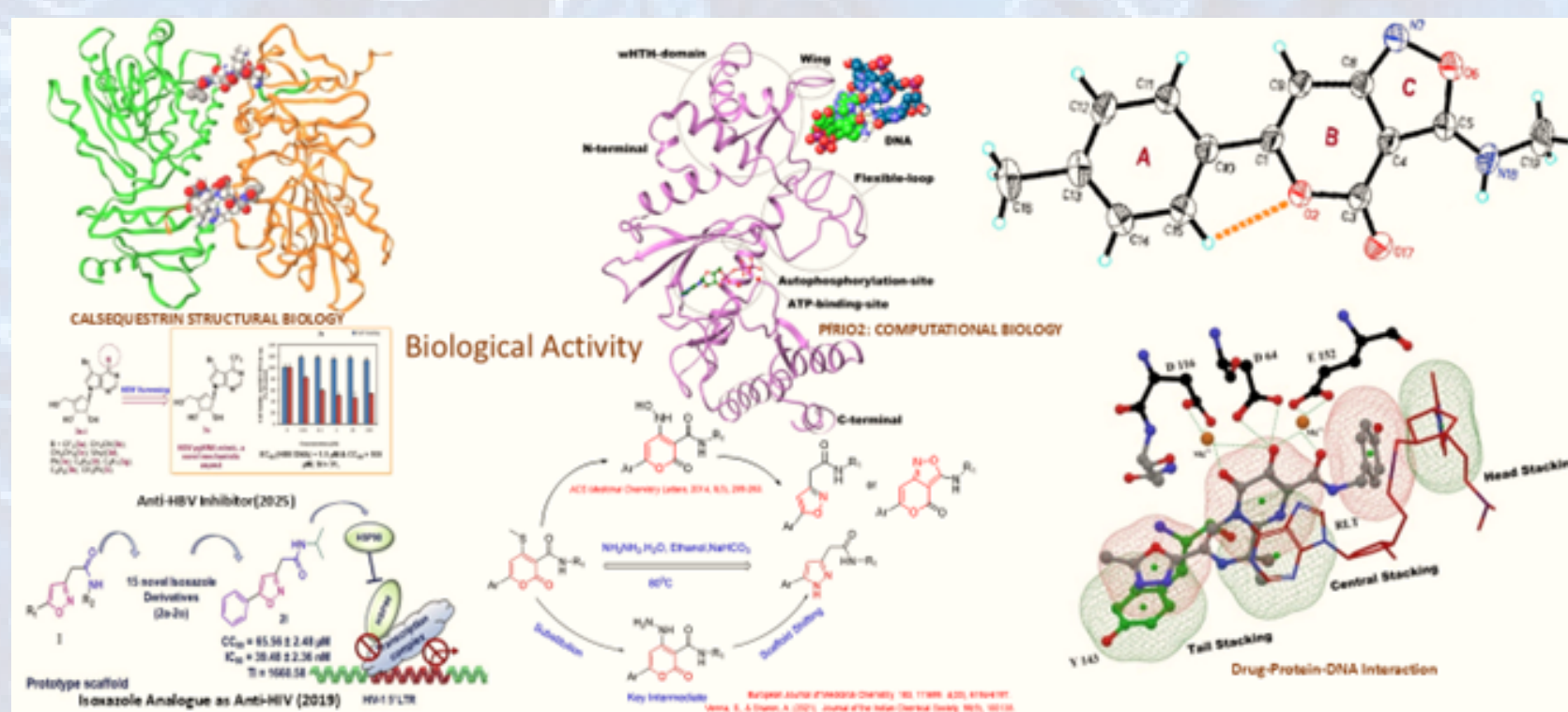
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DR. ASHOKE SHARON RESEARCH GROUP



DDER RESEARCH GROUP

RESEARCH HIGHLIGHTS



RECENT PATENTS AND PUBLICATIONS

1. Japanese Patent (JP2024-022940 dated Feb 19, 2024) Filed on "Anti-SARS-CoV-2 Drug Development" through International Joint Research Collaboration of Birla Institute of Technology and Kagoshima University, Japan.
2. Protein hydrogel for Topical Application and Formulation for Skin regeneration/Wound Healing; Ashoke Sharon, A.Basu, N. C. Bal; Indian Patent App. No: 202031000910; Complete Specification Filing date: Jan. 08, 2020. GRANTED PATENT NO: 396049 [Date of Grant: 02/05/2022]
3. Samunuri, R., Toyama, M., Kasula, M., Jha, A. K., Okamoto, M., Baba, M., & Sharon, A. (2025). Synthesis, Cytotoxicity, and Mechanistic Evaluation of 7-Deazapurine-Based Neplanocin Analogues as Selective Anti-HBV Agents. *Chemistry Select*, 10(22), 00784. IF: 2.4
4. Kasula, M., Toyama, M., Samunuri, R., Jha, A. K., Okamoto, M., Baba, M., & Sharon, A. (2025). Pyrazolo [3, 4-d] pyrimidine-based neplanocin analogues identified as potential de novo pharmacophores for dual-target HBV inhibition. *RSC Medicinal Chemistry*, 16(4), 1740-1745. IF: 4.5
5. Joshi, G.; Yadav, U. P.; Rafiq, Z.; Grewal, P.; Kumar, M.; Singh, T.; Jha, V.; Sharma, P.; Eriksson, L. A.; Srinivas, L.; Dahibhate, N. L.; Srivastava, P.; Bhutani, P.; Mishra, U. K.; Sharon, A.; Banerjee, U. C.; Sharma, N.; Chatterjee, J.; Tikoo, K.; Singh, S.; Kumar, R., Design and Synthesis of Topoisomerases-Histone Deacetylase Dual Targeted Quinoline-Bridged Hydroxamates as Anticancer Agents. *Journal of Medicinal Chemistry* 2025, 68 (3), 2849-2868. IF: 6.8

CURRENT RESEARCH SCHOLARS

Dr Afsana Parveen, Shivam Kumar, Preeti Christina Beck, Kumari Suprita, Parmeshwar Kumar.

RESEARCH OBJECTIVES

- Organic Synthesis: Carbocyclic Nucleoside, Heterocyclic, and Green Synthesis
- Computational Chemistry/Biology & Molecular Modeling-Based Drug/Molecular Design for Target Enzyme
- Small Molecule X-Ray Crystallography, Structural and Non-Covalent Interaction Studies

INDUSTRY/ACADEMIA COLLABORATIONS

- Kagoshima University, Japan
- ICMR-NIMR Ranchi,
- NCCS Pune
- Dr. Reddy Lab Hyderabad,
- PI Industries Udaypur
- Central University of Punjab

ACHIEVEMENTS:

- The pyridone class of molecules is patented and under development as potential antiviral candidates in collaboration with Kagoshima University, Japan..
- Isoxazole-oxadiazole class of the molecule are patented (Granted Patent) and currently in development in Collaboration with ICMR-NIMR to control malaria.



ENERGY HARVESTING RESEARCH GROUP



CURRENT RESEARCH SCHOLARS

Abhijit Pingal Sanga, Sajal Nandi, Praneet Kumar Pathak

IMsc project student: Praharsh Priyam

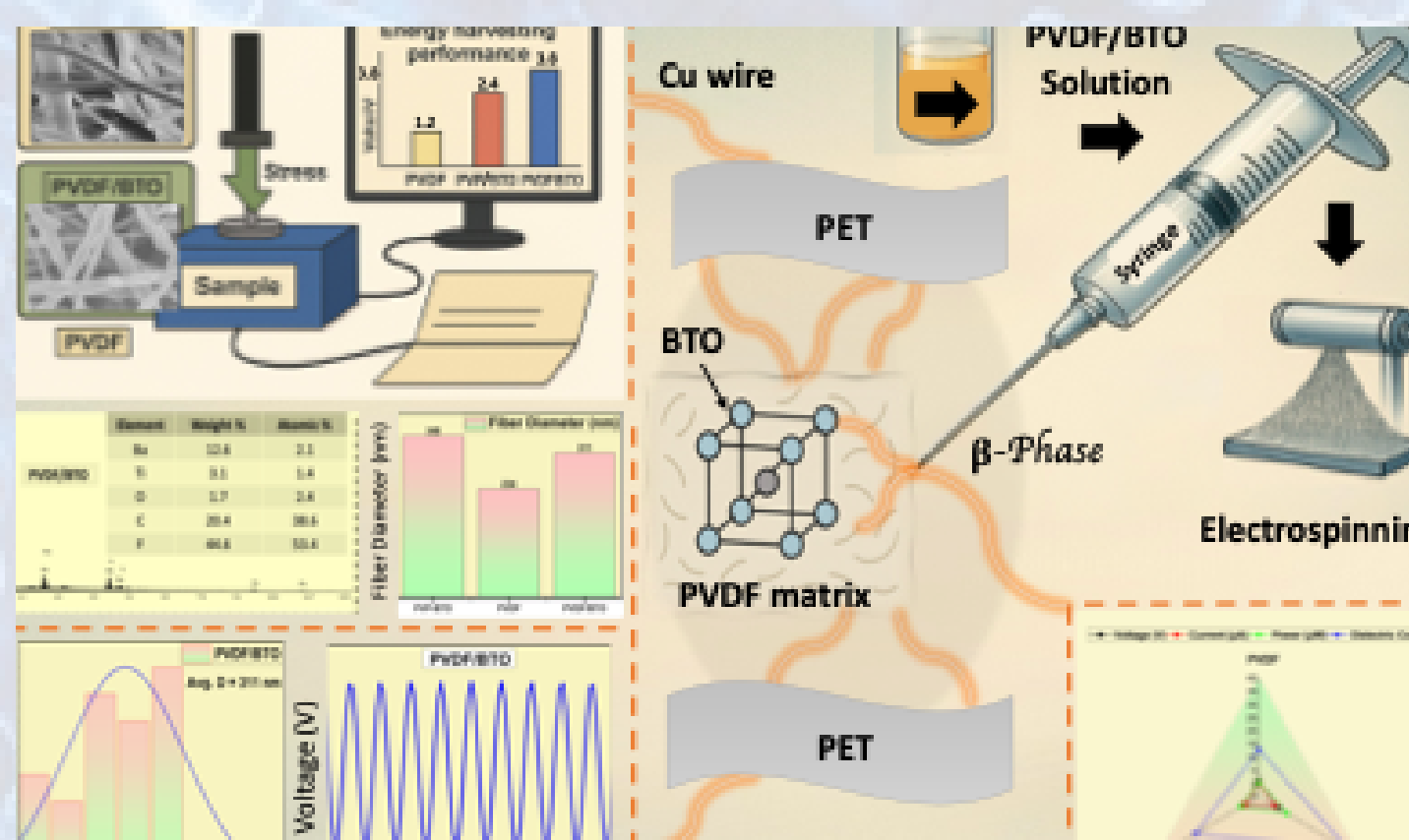
RESEARCH OBJECTIVES

We develop nanocomposite materials-including ceramics, bio-polymers, biomaterials, metal-organic frameworks, and hybrid systems, for energy harvesting applications, optimizing their piezoelectric and dielectric properties for efficient energy conversion, while also exploring their use in water remediation, controlled release systems, sustainable packaging, smart and self-powered devices.

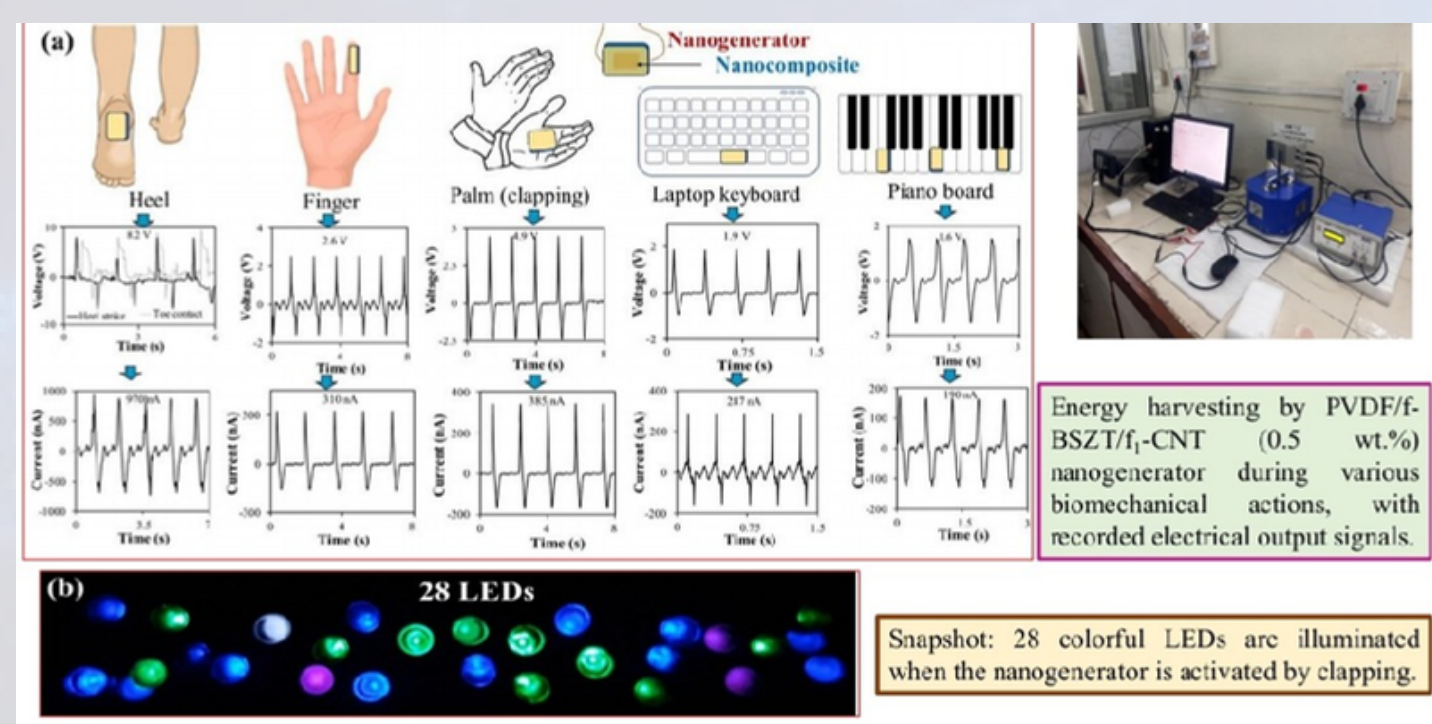
RECENT PATENTS AND PUBLICATIONS

1. Patent Published: Eco-smart Superhydrophobic coating from Egg Shell Biowaste and a Method thereof, Application No.202531071643 A, Inventor: S.Roy, B. Dasgupta Ghosh, Published 08/08/2025
- 2.A. Sanga, B. Dasgupta Ghosh*, Electrospun PVP-barium titanate nanofibers: Tailoring morphology and enhancing piezoelectric performance for advanced applications, Ceramic International, 51 (28), 2025, Pages 57100-57114. - 27/09/2025.
- 3.A. Mukherjee, S. Roy, B. Dasgupta Ghosh*, Ultra-Enhanced Energy Harvesting and Storage in PVDF Composites via Flake-to-Rod Transformed Ag-Doped ZnO Nanorods for Smart Wearables and Embedded Security Devices, Chemical Engineering Journal 522 (2025) 167751.- 25/08/2025.
- 4.A. Sanga, S. Nandi, S. Roy, B. Dasgupta Ghosh*Influence of Barium titanate on Electrospun Piezoelectric and Non-Piezoelectric Polymer Nanofibers Toward Energy Harvesting Applications, Innovation of Chemistry & Materials for Sustainability 2 (2), (2025) 135-150. -5/09/2025
- 5.A. Mukherjee, R. Malik, S. Roy, P. Kar, T. Bal, B. Dasgupta Ghosh*, Fabrication of Polyvinylalcohol-zinc oxide paper ash composite: A novel, sustainable and antimicrobial food packaging materia, Journal of Vinyl and Additive Technology (2025) 1-22. IF 3.8 - 02/04/2025

RESEARCH HIGHLIGHTS



Ceramic-polymer nanocomposite for energy harvesting applications



Energy harvesting by PVDF/f-BSZT/f1-CNT (0.5 wt %) nanogenerator during various biomechanical actions, with recorded electrical output signals and 28 colourful LEDs are illuminated by clapping



- A one-week hands-on training programme was organised in the Department of Chemistry on “Method validation and applications of GC & GC-MS/MS Techniques” from 27th - 31st January, 2025.
- A technical presentation on NMR was delivered by a representative from JOEL on 10th January, 2025.



- Dr. Anirban Pradhan organized “National Science Day (NSD-25)” “Empowering Indian Youth for Global Leadership in Science and Innovation for Viksit Bharat @ 2047” on 28th February 2025, sponsored by IIC BIT Mesra.
-
- Talk on software (Molsoft) was organised in the Department of Chemistry on 16th April, 2025.



- Dr. Ashok Jha, Head Tech OPs, Sapla Organics/Suven Pharmaceuticals Ltd. delivered a talk on institute-industry collaboration, joint academia research programmes, student internship and collaborative work in the Department of Chemistry on 4th May 2025.

**FACULTIES ACHIEVEMENTS**

- Dr. Sumit Mishra delivered a talk on “World Water Day 2025” as a resource person at LNM University, Bihar on 22nd March, 2025.
- Dr. Sumit Mishra attended a 5-day FDP on Emerging technologies & applications of AI in science & humanities as a resource person at RTC institute of Technology from 23rd – 27th June, 2025.
- Dr. S.S. Mahapatra attended the “NEP-2020 Orientation & Sensitization Programmes organized at IIT (ISM), Dhanbad from 23rd June to 5th July 2025.
- Dr Gautam Sen published a book titled “Engineering polyvinyl pyrrolidone products by microwave techniques – processing, characterization and applications” in Elsevier with ISBN: 9780443315404.
- Dr. Gautam Sen served as Chairperson (track III/Science and innovation) in the international conference ‘Developed India @ 2047: Charting Multidisciplinary and Multi-Institutional pathways for inclusive growth and global leadership’ held on 4-5th April 2025 at Gossner College, Ranchi, Jharkhand, India.
- Dr. Joydeep Dhar delivered an invited lecture at the “3rd International Conference on Energy Functional Materials/Molecules & Nanotechnology (ICEFN2025)” organized by Kumaun University, Nainital from 20th -22nd March 2025.
- Dr. Anirban Pradhan delivered an invited talk on “Metal Free Porous Carbon Materials Based Electrocatalyst for Green Hydrogen Fuel Production” at the 30th ISCB International Conference (ISCBC-2025) in the University of Lucknow from 27th - 29th January 2025.
- Dr. Anirban Pradhan delivered a talk on Electrochemical Hydrogen Evolution Reaction: Kinetic & Mechanistic Study in a One-Week Workshop on Green Hydrogen: The Future of Clean Energy. Department of Mechanical Engineering, BIT- Mesra, Ranchi, Supported by ANRF, Govt. of India, 20- 24th January 2025.
- S. S. Mahapatra delivered a talk as a Keynote Speaker on Electrochemical Hydrogen Evolution Reaction: Kinetic & Mechanistic Study in a One-Week Workshop on Green Hydrogen: The Future of Clean Energy. Department of Mechanical Engineering, BIT- Mesra, Ranchi, Supported by ANRF, Govt. of India, January 20-24, 2025.



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ACHIEVEMENTS

SCHOLARS ACHIEVEMENTS



- Ms. Smita Singh defended her PhD thesis titled “Microwave based synthesis of novel graft copolymers of [2-(methacryloxyethyl) trimethylammonium chloride (MAETMAC) and their applications” on 30th January, 2025.



- Ms. Neha Kumari defended her PhD thesis titled "Development of Isoxazole-Oxadiazole analogs as possible antivirals" on 15th February, 2025.



- Ms. Leena Priya defended her PhD thesis titled “Development of Poly(m-aminophenol) Silver Nanocomposite Based Sensors for Nitrogenous Contaminants in Aqueous Medium” on 6th May, 2025.

- Ms. Sahina Khatun won the 1st Prize in Poster presentation at National Science Day-2025 organized by IIC-BIT Mesra, held on 28th February, 2025.



- Mr Mukul Deo won the Young Scientist Award by the Royal Society of Chemistry at “The Bhawanipur Education Society College, Kolkata”.



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MESSAGE FROM ALUMINI



Name: Shubhadeep Saha

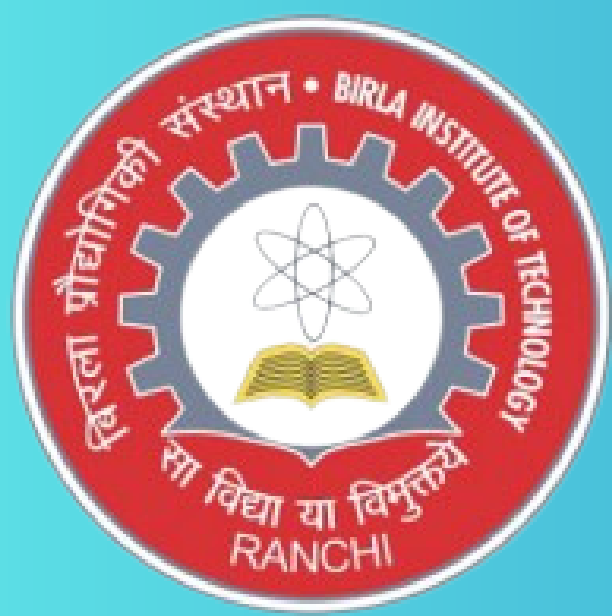
BSc: BIT Mesra

Current Designation: Incoming PhD Student

Organization: University of Illinois Chicago(UIC)

E-mail: shubhadeep14saha@gmail.com

Pursuing a Bachelor's degree in Chemistry at BIT Mesra provided a strong foundation for my academic journey. The supportive faculty not only helped me grasp fundamental concepts but also encouraged me to explore career opportunities in the field of chemistry. In my third year, I joined Prof. Sumit Mishra's lab, where I worked on water treatment methods alongside PhD students in a materials research lab. This experience sparked my interest in inorganic nanomaterials, which I continued to explore during my MSc at IISER-TVM. The rigorous coursework and excellent teaching by the faculty enabled me to excel in national-level MSc entrance examinations, including JAM, HCU, and IISER-TVM, ultimately leading me to pursue my master's at IISER-TVM in the same domain.



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MESSAGE FROM ALUMINI



Name: Saurav Choudhury

MSc: BIT Mesra

Current Designation: Ph.D. researcher

**Organization: The University of Melbourne,
Australia**

E-mail: Choudhursaurav92@gmail.com

From Classroom Curiosity to Cutting-Edge Research my journey with Birla Institute of Technology (BIT), Mesra, began when I joined the Integrated M.Sc. (IMSc) program in Chemistry, marking the start of a deeply formative chapter in my academic life. BIT gave me a strong foundation in chemical sciences, hands-on experience in laboratory research, and, most importantly, an environment that nurtured curiosity and independent thinking. I still remember the excitement of my first research project and the engaging discussions with faculty that helped shape my scientific perspective. After completing my degree at BIT, I am pursuing my research interests further through graduate studies, focusing on synthetic organic and polymer chemistry. I am currently in The University of Melbourne, Australia, working as a Ph.D. researcher on donor-acceptor conjugated polymers for optoelectronic applications such as singlet fission in solar energy harvesting. My work combines molecular synthesis with photophysical characterization, bridging chemistry and materials science. Looking back, I owe much of my scientific foundation and confidence to the rigorous training and supportive mentors at BIT. The values and discipline I developed during those early years continue to guide and inspire my research journey today.



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RESEARCH FACILITIES

The Department of Chemistry is equipped with several state-of-the-art laboratories with advanced instruments.

The Department houses many sophisticated instruments for in-house and collaborative research

- NMR Spectrometer (400 MHz),
- UV-vis spectrophotometer,
- IR spectrometer,
- Fluorimeter
- Solar simulator,
- Sourcimeter
- Microwave reactor,
- Rotary evaporator,
- Polarimeter,
- Electrochemical analyzer and others

Recently, new instrumentation facilities have been added to the department:

- Gas Chromatography (GC) was installed on 7th May 2025.
- Gel Permeation Chromatography (GPC) System (Waters) installed on 14th May 2025.



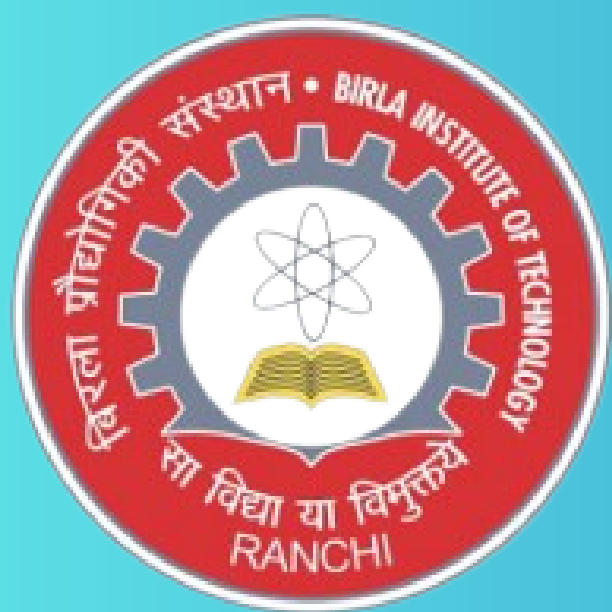
Gel Permeation Chromatography (GPC)



Gas Chromatography (GC)



Sr. No.	Project Title	PI/Co-PI/Collaborator	Funding Agency	Date of Sanction	Sanctioned Amount (Rs.)	Duration
1	Biocompatibility and mechanical studies of nanostructured HAP, metal doped nanostructured HAP on alumina by RF Magnetron Sputtering Deposition	Dr. Deep Shikha (PI)	DST-SERB	28/02/2022	2,771,824	3.5 years
2	Electrospun PVDF based piezoelectric nanocomposite energy harvesters for self-powered smart wearable and implantable electronics	Dr. Barnali Dasgupta Ghosh (PI)	ANRF	14/2/2023	4,819,474	3 Years
3	Investigating the Effect of Molecular Doping in Halide Perovskites Based Energy Harvesting Devices	Dr. Joydeep Dhar (PI)	SRG-SERB	22/12/2023	3,009,160	2 Years
4	Development of Low cost Electrocatalysts for the Hydrogen production by Water Splitting	Subhendu Naskar (PI) S.S. Mahapatra (Co-PI)	SERB (CRG/2023/001349)	16/3/2024	4,416,016	3 Yrs
5	Metal organic frameworks and sequential electrocoagulation for remediation of mining effluents	Dr Sumit Mishra (	ANRF(CR G/2021/007402)	2/3/2022	2,501,400	3 Yrs

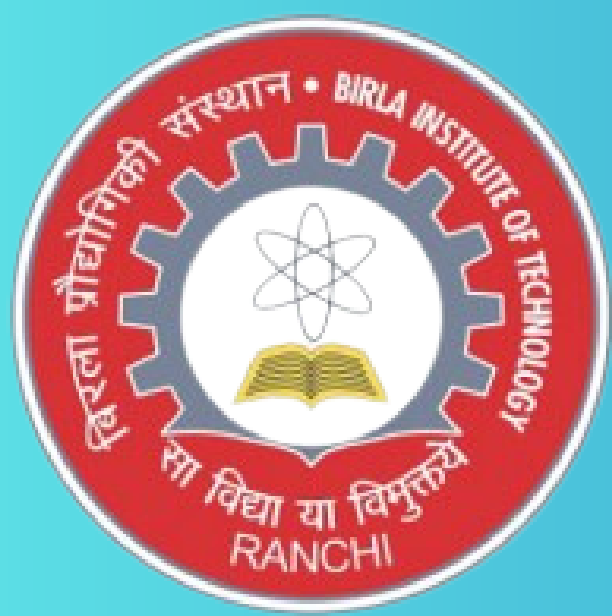


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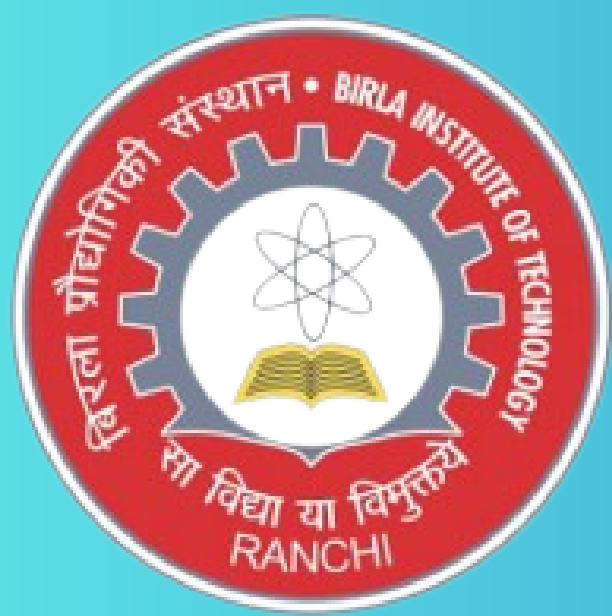
ONGOING PROJECTS

Sr. No.	Project Title	PI/Co-PI/Collaborator	Funding Agency	Date of Sanction	Sanctioned Amount (Rs.)	Duration
6	Facility for Material Characterization with solid state NMR & BET analyzer	Head, Dept of Chemistry	DST FIST (TPN 108047)	Dec 2024	270 lacs	5 Yrs
7	Polyphenylenediamine /silver hybrid based non-enzymatic gutamate sensor	Dr. Pradip Kar (PI)	ANRF-SERB (CRG)	21/5/2024	2656016/-	3 years
8	Collaborative research cum consultancy project: Synthesis and characterization of sustainable hydrogels, aerogels and Foams for advanced applications	Dr Sumit Mishra(PI) Dr Ashoke Sharon(Co- PI)	MMU Haryana	2025-2026	13,968,000	Ongoing

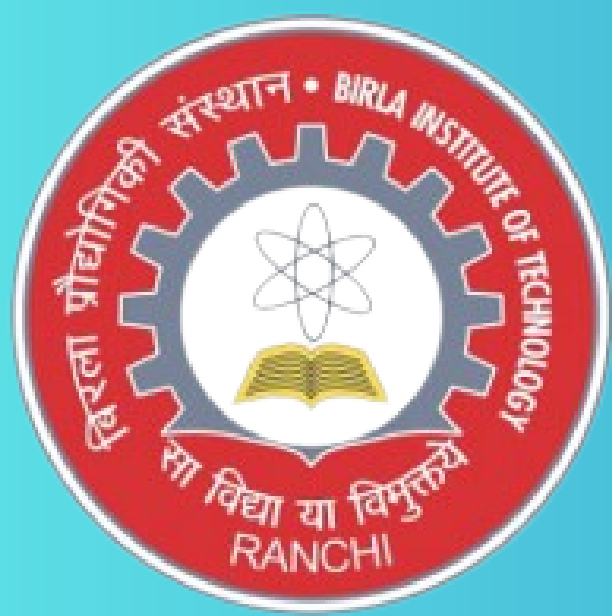


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1. Samanta, S.; Pradhan, A. Metal-Free Carbon-Based Porous Materials, a Promising Electrocatalyst for Hydrogen Fuel Production. *Chem. Commun.* 2025, 61, 8108–8119.
2. De, A.; Mishra, S. Rod-Shaped Copper-Based Metal-Organic Framework: An Efficient UV-Activated Photocatalyst for Congo Red Degradation. *Colloids Surf. C: Environ. Aspects* 2025, 100080.
3. Kumari, N.; Chaturvedi, V.; Mishra, S. A Comprehensive Review on Multifunctional Adhesives/Bio Adhesives and Its Applications. *Int. J. Adhes. Adhes.* 2025, 103987.
4. De, A.; Singh, V.; Dhar, J.; Mishra, S. Zn (II) Based Fluorescent Metal-Organic Framework as a 'Turn-Off' Sensor for Al^{3+} and Fe^{3+} Ions in Aqueous Solution: Synthesis, DFT Calculations and Hirshfeld Surface Analysis. *J. Mol. Struct.* 2025, 1329, 141426.
5. Tirkey, N.; Mishra, S. Evaluation of Neem Gum-Poly (Acrylic Acid) Based Adsorbent for Cationic Dye Removal Using Adsorption Isotherm, Kinetics and Thermodynamics: Linear Regression Models. *Int. J. Biol. Macromol.* 2025, 307, 142059.
6. Mukherjee, A.; Malik, R.; Roy, S.; Kar, P.; Bal, T.; Ghosh, B. D. Fabrication of Polyvinylalcohol-Zinc Oxide Paper Ash Composite: A Novel, Sustainable and Antimicrobial Food Packaging Material. *J. Vinyl Addit. Technol.* 2025, 31, 1032–1053.
7. Kamal, N.; Choudhury, A.; Mahapatra, S. S. Advances in Conducting Polymer-Based Electrodes for Supercapacitors: A Focus on Binder-Free Integration. *J. Macromol. Sci. Part A* 2025, 908, 15690.
8. Sanakal, S. I.; Das, A.; Babu, A.; Kar, P.; Nutalapati, V.; Datta, K. K. R.; Banerjee, S.; Maji, S. Alginate-Aminoclay/CuO Nanocomposite Beads: A Sustainable and Green Approach for Catalytic Reduction of Toxic Nitroaromatic Compounds. *J. Environ. Chem. Eng.* 2025, 13, 115398.
9. Purnima; Sharma, V.; Priya, L.; Deo, M.; Kundu, S.; Kar, P. Characteristics of Lithium Ion Loaded Poly(m-aminophenol) as Solid State Electrolyte. *Ionics* 2025, 31, 1597–1609.
10. Kumar, R.; Shikha, D. Enhanced Mechanical, Corrosion-Resistant, and Biocompatible Properties of Co-Doped Hydroxyapatite Nanocoatings on Alumina for Orthopaedic Implant Applications. *Ceram. Int.* 2025, 51, 34399–34414.



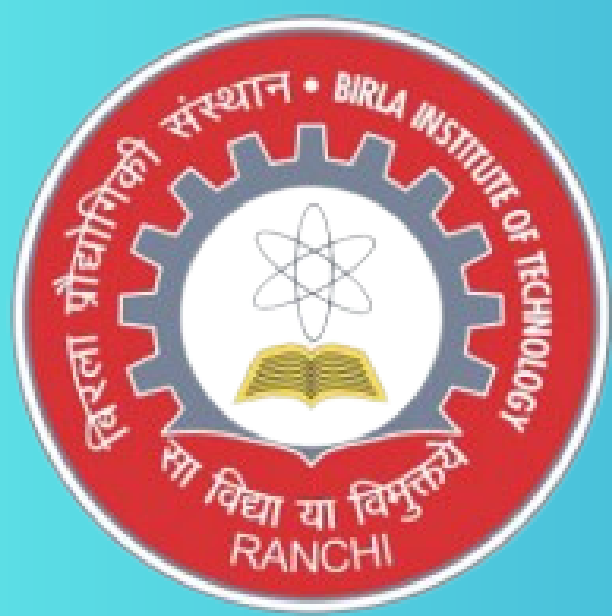
11. Kumar, R.; Topno, U.; Shikha, D.; Anand, S.; Sinha, S. K.; Mohanty, P. K.; Mhaske, S. High Antioxidant Activity, Enhanced Cytocompatibility, Improved Apatite Formation, and Moderate Thrombogenicity of Copper-Doped Hydroxyapatite Attributed to Structural Changes Analysed Using EDX, FTIR, XRD, and FESEM. *BioNanoSci.* 2025, 15, 323.
12. Kumar, R.; Shikha, D.; Anand, S.; Sinha, S. K.; Mohanty, P. K.; Mhaske, S.; Kumar, A.; Mukhopadhyay, A. Integration of 3% Silver-Doped Hydroxyapatite Coated on Alumina Using Radio Frequency Magnetron Sputtering for Superior Bioactivity, Mechanical and Electrical Properties, and Wear Resistance. *ACS Biomater. Sci. Eng.* 2025, 11 (5), 2622–2638
13. Abate, S.; Endalew, S. A.; Abebaw, B. T.; Kumar, R.; Mashke, S.; Shikha, D.; Sinha, S. K. Synthesis and Antioxidant Applications of Silver Oxide Nanoparticles via Kniphofia Foliosa Extract. *Next Res.* 2025, 2 (2), 100239.
14. Rai, D.; Mahanty, A.; Kumar, R.; Shikha, D.; Anand, S.; Sinha, S. K. Effects of Sintering Temperature on the Microstructure, Microhardness, and Corrosion Resistance of Hydroxyapatite. *J. Mater. Eng. Perform.* 2025.
15. Mahanty, A.; Kumar, R.; Shikha, D.; Guerra-Lopez, J. R. Comparative Investigation of Structural, Mechanical, Corrosion, Thrombogenicity, and Antimicrobial Properties of 1.5 wt% and 10 wt% PVA Doped Hydroxyapatite. *Ceram. Int.* 2025, 51 (5), 5778–5789.
16. Kumar, R.; Shikha, D.; Sinha, S. K.; et al. Assessment of Antioxidant Activity, Thrombogenicity and MTT Assay of Bioceramic Phosphate as a Biomaterial. *J. Aust. Ceram. Soc.* 2025, 61, 333–343.
17. Das, D.; Chakraborty, D.; Machine Learning Prediction of Physicochemical Properties in Lithium-Ion Battery Electrolytes With Active Learning Applied to Graph Neural Networks. *J. Comput. Chem.*, 2025, 46, e70009.
18. Khan, S.; Sengupta, S.; Khan, M. A.; Jana, N. C.; Bagh, B.; Naskar, S. Electrocatalytic proton reduction by mononuclear cobalt complexes of bis(benzimidazolyl)pyridine ligands: experimental and theoretical study; *New J. Chem.*, 2025, 49, 16134
19. Khan, Md. A.; Khan, S.; Sengupta, S.; Naskar, S.; Electrocatalytic water oxidation by molecular cobalt-terpyridine complexes in alkaline medium: experimental and theoretical study; *New J. Chem.*, 2025, 49, 6963
20. Pal, R.; Chakraborty, B.; Chattaraj, P. K.; Soft Computing Technique towards the Geometry Optimization of Atomic Clusters in Computational Studies: From Molecules to Materials, (Ed.) A.K.Srivastava, Invited article, CRC Press, 2025, 116–139



21. Chakraborty, B.; Chattaraj, P. K.: Exploring the Possibility of a Planar Tetracoordinate Boron in BXY_3 ($X = B, Al, Ga$; $Y = C, Si, Ge$) Clusters: A Theoretical Study; J. Comput. Chem., 2025, 46, e27525
22. Das, P.; Chattaraj, Bare and ligand-stabilized planar hexacoordinate boron (phB) in $ABeC_2B_4$ ($A = P, As, Sb, \text{ and } Bi$) clusters”, J. Chem. Theory Comput., Special Issue on “Developments of Theoretical and Computational Chemistry Methods in Asia”, Invited article, 2025, 21, 776.
23. Jana, G.; Chattaraj, P. K.; Exploring Advanced Nanostructures and Functional Materials for Efficient Hydrogen Storage: A Theoretical Investigation on Mechanisms, Adsorption Process, and Future Directions, Front. Chem., Invited article, Special topic on, “New Materials and Processes for Hydrogen Storage and Transformation: Syntheses, Characterization, and Mechanistic Advancements”, 2025, 13, 1525140.
24. Poddar, A.; Zhao, D.; Ayers, P.; Liu, S.; Chattaraj, P. K.; What Dictates the α -Effect in Gas-Phase SN_2 Reactions? A Density Functional Theory Study, J. Phys. Chem. A, 2025, 129, 1847.
25. Poddar, A.; Chattaraj, P. K.; In Silico QSPR Studies Based on CDFT and IT Descriptors” Materials Informatics I: Methods, (Ed.) K. Roy, Springer Nature, 2025
- Jana, G.; Chattaraj, P. K.; A careful scrutiny of the aromaticity in anionic polynitrogen clusters”, Phys. Chem. Chem. Phys., 2025, 27, 13694-13704
26. Vignerresse, J. L.; Poddar, A.; PK Chattaraj, P. K.; Felsic trans-porphyrin deposits and associated ore (Sn, Ta, Nb, pegmatites) viewed from physics, chemistry (cDFT) and geologic contexts, Lithos, 2025, 108200.
27. Saha, R. Chattaraj, P. K.; Hepta-Coordinated Vanadium Stabilized Alkaline Earth Dimers: A DFT Study”, Phys. Chem. Chem. Phys., 2025, 27, 18504-18510.

BOOK CHAPTERS

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2. Kar, P.; Deo, M.; Priya, L.; Bage, N.; Kundu, S. Electrical Biosensors. In Fundamentals of Biosensors in Healthcare, Vol 1; Hasnain, M. S., Nayak, A. K., Aminabhavi, T. M., Eds.; Academic Press/Elsevier: 2025; pp 137–166. ISBN: 9780443216589.



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IMSC BATCH 2020

