Indian Institute of Engineering Science and Technology, Shibpur
ভারতীয় প্রকৌশল বিজ্ঞান এবং প্রযুক্তিবিদ্যা প্রতিষ্ঠান, শিবপুর
भारतीय अभियांत्रिकी विज्ञान एवं प्रौद्योगिकी संस्थान, शिबपुर

Biannual Newsletter

# BLUE PLANET

ব্লু প্ল্যানেট

ब्लू प्लेनेट

Published by
**Department of Earth Sciences, IIEST Shibpur**
**Howrah, West Bengal**
Volume 2, Issue 1

BLUE PLANET

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# HOD's DESK

**Volume 2, Issue 1**

Department of Earth Sciences is pleased to extend its greetings during the festive season. I am delighted to announce the publication of the first issue of Volume 2 of our newsletter, Blue Planet, on the occasion of Bengal's "Sharodotsab". Following the publication of Volume 1 of Blue Planet, the Department has welcomed new Faculty Members and Research Scholars. With the valuable advice and encouragement of the Hon'ble Director of IIEST, Shibpur, Professor V.M.S.R. Murthy, the Department is progressing toward a new horizon. The M.Sc. in Applied Geology curriculum has been updated following the National Education Policy (NEP), 2020. New and emerging subjects have been introduced, such as 'Studies on the Critical Minerals' and 'Applications of Artificial Intelligence and Machine Learning in Geosciences'. Students and research scholars are actively working to enhance the visibility of the Department on international and national platforms, guided by the Faculty Members. Recently passed-out students have secured positions in various professional organizations. Furthermore, several students have joined for higher academics at our Institute and other Institutes of National Importance (INIs) like IISC, Bangalore. This issue of Blue Planet will highlight the Department's achievements during the period of April 2025 to September 2025. I would like to express my sincere appreciation to all Faculty Members of the Department, especially Dr. Urbashi Sarkar and Dr. Lopamudra Roy, Research Scholars, and Students for their dedicated efforts in preparing and publishing the Department's newsletter, Blue Planet, in a timely manner.

With best wishes for "Sharodotsab"

Prof. B P Mukhopadhyay, PhD

***Prof. B. P. Mukhopadhyay,*** *Fellow of the Geological Society of India, is the current Head of the Department. He has been the driving force behind the transformation of the Department of Geological Sciences into the Department of Earth Sciences, thereby fostering a multidisciplinary approach to research and learning. He is the founding Head of the Department, and served in this capacity for a cumulative period of 14 years at different intervals. His significant research contributions in the fields of groundwater geology, natural hazards, sedimentology, and basin tectonics are widely recognized and well acclaimed.*

# STUDENT CORNER

**RETROSPECTIVE**

Academic enrichment, personal growth, and memorable experiences. As students of this esteemed department, we have had the privilege of learning under the guidance of dedicated faculty members, engaging in insightful field visits, working in well-equipped laboratories, and being part of an environment that nurtures both knowledge and character.

**Faculty: Guiding Lights**

The faculty of our department has been a constant source of support and inspiration.

- **Prof. Bhabani Sir, our HOD**, has instilled in us the importance of discipline and integrity.
- **Atin Sir**, with his approachable and friendly nature, has inspired us to learn with curiosity and enthusiasm.
- **Ananya Mam** has been a source of warmth and care, guiding us with a parent-like affection.
- **Rajkumar Sir** has been a strong motivator, encouraging us to remain determined in our pursuits.
- **Moumita Mam** has constantly inspired us to embrace hard work and perseverance.
- **Pratik Sir** has stood out for his deep dedication to research, showing us how commitment to academic inquiry and innovation can inspire excellence.

Their mentorship has not only enhanced our academic knowledge but also shaped us into more confident and responsible individuals.

**Laboratories: Hands-On Learning**

Our department is equipped with modern laboratory facilities that have enriched our understanding of Earth Sciences. Petrological microscopes have allowed us to study and analyze minerals in a wide variety of rocks, deepening our grasp of petrography. The sand box models and direct shear machine provided practical insights into structural geology, helping us observe the development of folds, faults, and other deformations in controlled settings. These laboratory sessions bridged the gap between theory and practice, sharpening our analytical and observational skills.

**Field Visits: Learning Beyond the Classroom**

Field training has been an integral part of our academic journey. During our structural field visit to Ghatsila, we observed diverse structural features such as penecontemporaneous folds and inclined folds, which deepened our understanding of deformation processes. At the Surda Copper Mines, Jharkhand, we learned about the methods of copper extraction and the processes involved in grading. Our visit to the Ashoknagar Oil Field gave us exposure to petroleum exploration techniques, the processes of oil extraction, and even allowed us to participate in a fire safety drill, emphasizing the importance of safety in fieldwork.

These experiences not only complemented our classroom learning but also broadened our perspective on the practical applications and challenges of Earth Sciences.

**Looking Ahead**

The past two years have been transformative, teaching us lessons that extend beyond academics. The knowledge gained, the discipline instilled, and the memories created will remain with us as we move forward. The Department of Earth Sciences at IIEST Shibpur has truly been a place of learning, growth, and inspiration, and we look ahead with confidence and gratitude for the journey that lies ahead.

*This is written by Subhankar Dash, who has passed from this department in 2025. He is a passionate geologist and wants to help in the earth's treasure exploration.*

# STUDENT CORNER

**WHAT'S ON NOW**

**Exploring Horizons: The Department of Earth Sciences – IIEST Shibpur**

The Department of Earth Sciences at IIEST Shibpur stands as a lighthouse of excellence, combining a century-old heritage with a forward-looking vision in geoscience education and research. Established as an independent postgraduate science department in 2005, it has rapidly evolved to offer a comprehensive, interdisciplinary curriculum that meets the demands of modern Earth Sciences.

**Academic Excellence and faculty contributions:**

Our department is a home to a team of highly qualified and research-oriented faculty members, whose dedication shapes the academic and research achievements of the department. With a vibrant blend of theoretical teaching, practical learning, and cutting-edge research, the department offers courses in **Hydrogeology with GIS and Remote Sensing, Structural Geology and Geotectonics, Igneous and Metamorphic petrology, mineralogy and geochemistry, Sedimentology and Basin Analysis, Geodynamics and Climatology, and Mining Geology.**

The department promotes hands-on learning through **fieldwork, advanced laboratory experiments, and collaborative research projects,** equipping students with skills to face real-world geoscientific challenges. Faculty actively engage in international collaborations and contribute to global geoscience research.

**Remarkable Research Contributions**

Our faculty's research impact is exemplified by their prolific contributions: **55 research journals** published, **39 conference papers** presented internationally and nationally, **24 books** authored by esteemed faculty. These academic outputs reflect the department's commitment to advancing scientific knowledge and innovation in Earth Sciences.

**Advanced Research & PhD Opportunities**

The department offers vibrant PhD research programs in highly specialized areas such as: Igneous, Metamorphic Petrology and Geochemistry, Structural Geology and Geotectonics, Sedimentation Modelling and Sequence Stratigraphy, Micropaleontology, Hydrogeology and Basin Analysis,

Renowned faculty members guiding research include:

Prof. Bhabani Prasad Mukhopadhyay
Prof. Ananya Mukhopadhyay
Dr. Atin Kumar Mitra
Dr. Moumita Talukdar
Dr. Urbashi Sarkar

**Unique Features and Facilities**

Our department offers have **International collaborations, Industry partnerships** and **advanced labs** in GIS & Remote Sensing, Hydrogeology, Geophysics, Mineralogy, Petrology, and Structural Geology.

Students have achieved internships from : **ONGC, AMD, OMC, P.R.L Ahmedabad, TATA Steel**

**Impact on IIEST and Alumni Success:**

The department plays a pivotal role in strengthening IIEST's reputation as a centre of academic and research excellence. Its graduates have excelled in various fields, securing positions in top institutions and industries such as **UPSC Geoscientists, Hindalco, Tata Steel, ISRO, IISER Bhopal, Arcadis, and the Ministry of Jal Shakti.**

**Our Reflection**

Being part of the Department of Earth Sciences we feel immense pride. The blend of innovative learning, strong mentorship, and real-world applications creates an inspiring environment. We believe this department not only shapes highly competent geoscientists but also contributes significantly to the global scientific community.

*Anwesha Rani Maity, a 2nd year PG student has penned down this piece of writing on behalf of her batch. She has completed her B.Sc. in Geology from Hemvati Nandan Bahuguna Garhwal University, Uttarakhand and is currently pursuing her M.Sc. in Applied Geology at IIEST Shibpur. With a strong academic foundation and passion for Earth sciences, she aspires to become a successful geologist contributing to research and industry advancements.*

# STUDENT CORNER

**THE FRESHERS**

The journey started from Indira Gandhi international airport to Netaji Subhash chandra Bose international airport after that way started from my new journey towards IIEST. Stepping into the campus of the Indian Institute of Engineering Science and Technology (IIEST), Shibpur, on 6 august 2025 for the very first time as an M.Sc. first-year student was an unforgettable moment in my academic journey. After receiving my admission confirmation, the day of physical verification finally arrived, and with it came an atmosphere of anticipation, nervousness, and excitement. Carrying all the required documents and a hopeful spirit, I walked through the gates of this historic institution, realizing that I was about to begin a new chapter in my life.

The process of physical verification itself was meticulous yet systematic. From document checking to signing the official registers, everything was handled with great care by the administrative staff. Though the queues were long and the waiting seemed endless at times, it gave me the chance to interact with fellow students who, like me, had come from diverse parts of the country. Conversations began with simple introductions and soon grew into discussions about our backgrounds, interests, and academic goals. For the first time, I truly felt part of a larger community where each of us carried unique stories but shared the same dream of advancing our education.

As a student of M.Sc., I felt an immediate sense of belonging while walking through the corridors. Meeting faculty members briefly during the verification gave me a glimpse of their dedication and the rigorous yet nurturing environment they have cultivated. Their encouraging words, coupled with the smiles of the supporting staff, eased my nervousness. That day ended with a mixture of relief and joy

The following day was equally memorable, if not more. Free from the administrative formalities, I finally had the chance to explore the campus in detail. Spread over acres of land with its blend of colonial-era architecture and modern facilities, the institute radiated both heritage and progress. The lush greenery, wide pathways, and calm environment created a serene academic atmosphere. Walking around, I realized how fortunate I was to study at a place that not only values intellectual growth but also offers a space where one can connect deeply with nature and history.

That day also marked the beginning of my academic interactions. Orientation sessions introduced us to the course structure, departmental facilities, and research opportunities. Listening to senior professors outline the significance of our program filled me with a sense of purpose. I was particularly inspired by their emphasis on critical thinking, research skills, and interdisciplinary learning, which are at the heart of higher education.

Another highlight was meeting my classmates more closely. Unlike the hurried introductions of the verification day, we now had the time to sit together, share meals in the canteen, and discuss our

expectations for the two years ahead. It was heartwarming to discover how quickly bonds began to form. Many of us discussed our previous academic experiences, while others spoke about their personal journeys of choosing IIEST. It struck me how this institution had brought together such a vibrant and diverse group of minds, and I was eager to learn not just from the teachers but also from my peers.

The second day also offered my first experience of the library. Walking into the massive reading halls, lined with books and journals across countless disciplines, I felt like a child in a treasure trove. The quiet ambience, the sight of students immersed in their work, and the availability of resources left me determined to make the most of these facilities during my academic journey.

Our MSc Geology classes at IIEST are progressing in a very organized and engaging manner, with each subject being handled by highly knowledgeable faculty members. Structural Geology is taught by Atin Sir, whose clear explanations and practical approach make the complex concepts of folds, faults, and deformation processes much easier to understand. Geochemistry and Igneous Petrology are covered by Moumita Ma'am, who not only focuses on theoretical aspects but also emphasizes geochemical applications and the petrological evolution of rocks.

Marine Geology is taught by Urbashi Ma'am, who explains ocean floor processes, marine sediments, and plate tectonics with great clarity, making the subject fascinating. Lopamudra Ma'am handles Mineralogy, giving us a detailed understanding of crystal. structures, optical properties, and mineral identification techniques. Ananya Ma'am introduces us to Earth Materials, providing a strong foundation in the basic building blocks of geology. Together, their combined teaching makes our learning experience enriching and well-structured.

Reflecting on these first days, I realized how important beginnings are. Though filled with challenges—navigating a new environment, handling paperwork, and adjusting to unfamiliar faces—they also carry the joy of discovery and the thrill of new opportunities. My first experience at IIEST, Shibpur was not just about completing formalities; it was about finding my place in an institution with a rich legacy and vibrant future.

*This article is written by Shagun Kashyap, a M.Sc 1st year student, who completed her Bachelor of Science in Geology from Ramlal Anand College, University of Delhi. With a strong academic foundation and a deep interest in the geoscience, she aspires to build her career as a petroleum geologist. She is highly motivated to explore subsurface resources, understand hydrocarbon systems, and wants contribute to this developing field through geology or applied geoscience.*

# NEW FACULTY



*Dr. Urbashi Sarkar*
*Assistant Professor,*
*Dept. of Earth Sciences*
*IIEST, Sibpur*

**Dr. Urbashi Sarkar,** fellow, geological society of India**,** is currently serving as Assistant Professor in the Department of Earth Sciences at the Indian Institute of Engineering Science and Technology (IIEST), Shibpur**.** She previously held the position of Assistant Professor at the Department of Earth Sciences, Assam University, Silchar. Her primary research expertise lies in **micropalaeontology, palaeoclimatology, and sequence stratigraphy**. She has conducted extensive research on **palaeoclimatological reconstruction**, focusing on periods of significant climatic transitions (equivalent to present day global warmimng) such as the Paleocene–Eocene Thermal Maximum, Early Eocene Climatic Optimum, and the Eocene–Oligocene Transition using multiproxy analysis including foraminiferal assemblage, geochemical proxies and sedimentological input**.** Her ongoing work also extends to **foraminifera-based biomonitoring of coastal pollution** along the east coast of India, aiming to establish foraminiferal assemblages as reliable proxies for water quality assessment in stressed marine environments. She has published her findings in several international peer-reviewed journals

Beyond research, Dr. Sarkar is deeply committed to **mentoring students and young researchers**, encouraging critical thinking, scientific communication, and leadership in STEM. She took different **administrative role in Assam University as well as at international The Micropalaeontological Soceity (TMS).** She has supervised more than 40 M.Sc dissertation students, 2 M.Phil students and 1 PhD student.

*Dr. Lopamudra Roy*
*DST-INSPIRE Faculty,*
*Dept. of Earth Sciences*
*IIEST, Shibpur*

Dr. Lopamudra Roy is currently working as a DST-INSPIRE Faculty at the Department of Earth Sciences, Indian Institute of Engineering Science and Technology (IIEST), Shibpur. She has worked as a Post-doctoral Fellow at the Department of Earth Sciences, Indian Institute of Technology Bombay (2024-2025). Dr. Roy pursued her Doctoral research work at Birbal Sahni Institute of Palaeosciences, Lucknow and University of Lucknow as a DST-INSPIRE Fellow from 2018-2023. She has published 12 articles in several reputed national and international journals and 3 book chapters. Her expertise areas are marine micropalaeontology and sedimentary geochemistry with special focus on biostratigraphy and palaeoecology of Neogene marine siliceous microfossils like diatoms, radiolarians, silicoflagellates and calcareous nannofossils. Her current research work is focusing on the interpretation of Miocene to Holocene climate dynamics of Bay of Bengal and Arabian Sea based on microfossil studies and geochemical analyses along with the mathematical modelling on species interactions. She is also studying the Recent sediments of Andaman and Nicobar Islands and correlate with the obtained datasets from Neogene and Quaternary periods to interpret whether any anthropogenic impact is responsible for the climate change or not.

# NEW RESEARCH SCHOLAR

*Juhi Rani*
*Research Scholar,*
*Dept. of Earth Sc.,*
*IIEST, Shibpur*

**Juhi Rani** is from Bokaro Steel City (Jharkhand). She did her higher secondary from Guru Gobind Singh Public School with 90.8% and graduated from RamLal Anand College, University of Delhi with B.Sc (Hons) in Geology. She did her M.Sc from Indian Institute of Engineering Science and Technology Shibpur 9.86 CGPA. She worked as project associate NGRI, Hyderabad before joining PhD under the supervision of Dr. Atin Kumar Mitra in the Earth Science Department. Her area of interest is in Structural Geology, specially to understand the kinematic evolution of shear structures and delineating structural elements using remote sensing data.

*Jajnadatta Pradhan*
*Research Scholar,*
*Dept. of Earth Sc.,*
*IIEST, Shibpur*

**Jajnadatta Pradhan** did his B.Sc (Hons) in Geology from Sambalpur University, Odisha and M.Sc in Applied Geology from Indian Institute of Engineering Science and Technology Shibpur, Howrah. He is currently pursuing PhD in IIEST, Shibpur under the supervision of Dr. Moumita Talukdar in the Earth Science Department. His area of interest mainly lies in Metamorphic Petrology and Geochemistry. His Study area is the Southern Granulite Terrain where study of the High-grade metamorphic rocks, Tectonic frameworks defined by shear zones,

Processes of metamorphism involved and crustal evolution of SGT, Geodynamic significance are the areas where he is currently working. Furthermore, he wants to work on the potential Critical Mineral assemblage in the SGT and it's exploration.

# RESEARCH ACTIVITY



The Department of Earth Sciences, IIEST Shibpur fosters academic excellence and advancing knowledge across diverse disciplines. Our research activities are driven by a commitment to addressing fundamental scientific questions while also responding to the pressing societal and environmental challenges of our time. Faculty members and research scholars in the department actively engage in field-based studies, laboratory experiments, theoretical modeling, and interdisciplinary collaborations. The department emphasizes collaborative, student-centered research, encouraging young scholars to cultivate critical thinking, methodological rigor, and a spirit of innovation. **The following projects** are running by the faculty members of this department as Investigator.

| Project Title | Investigator | Funding Agency | Budget |
|---|---|---|---|
| Detailed Hydrogeological study to asses the sustainability of water sources especially during the lean season for 2 X 500 MW extension project at Sagardighi Thermal Power Project, District Murshidabad, West Bengal, India. | Prof. B. P. Mukhopadhyay<br><br>Dr. Atin Kumar Mitra | West Bengal Power Development Corporation Limited (WBPDCL),<br><br>Govt. of West Bengal. | 22 L |
| Hydrogeological impact assessment on account of the ash pond due to storage of ash slurry in the ash pond and mitigation measures to be taken for avoiding any possible pollution on account of the same on water quality in that area at Sagardighi Thermal Power Plant, West Bengal, India. | Prof. B. P. Mukhopadhyay<br><br>Dr. Atin Kumar Mitra | West Bengal Power Development Corporation Limited (WBPDCL),<br><br>Govt. of West Bengal. | 12 L |
| Petrochemical investigation along two N-S transects in the Granulite Terrane of Southern India: Reconstructing the crustal architecture and the thermotectonic events during the late Archean/early Palaeoproterozoic and Neoproterozoic time | Dr. Moumita Talukdar in collaboration with IISER Kolkata and Jadavpur University, India. | Ministry of Earth Sciences (MoES), India | 65 L (total)<br><br>43 L (IIEST) |
| Unveiling Climate Dynamics from the Miocene to Holocene in the Bay of Bengal and Arabian Sea through High-Resolution Microfossils studies and Geochemical Analyses Integrated with Cal/Val Mathematical Modelling Techniques to Predict the Future Climatic Trends | Dr. Lopamudra Roy | Department of Science & Technology (DST),<br><br>Government of India,<br><br>Ministry of science & Technology | 35L<br><br>(Grant)<br><br>1.25L (p.m. Fellowship) |

The last six months was a good time period in terms of research outcome of the department. The publications are elaborated below:

**Journal Publications (April, 2025-September, 2025)**

1. **Roy, R., Mukhopadhyay, B.P., Chaudhuri, S.** Morphological analysis and stability assessment of upstream terraces: a case study from Teesta river, covering parts of Sikkim and Darjeeling district of West Bengal, India. Environmental Earth Sciences (**IF: 3, Q2 Geology**) 84, 450, pp. 1-21, (2025). https://doi.org/10.1007/s12665-025-12464-1

2. **Choudhury N, Mitra AK, Nath B, Lindsay MD**. Lineament extraction and structural mapping using Landsat-9 OLI and Sentinel-1 SAR data in the Proterozoic North Singhbhum Mobile Belt, Eastern India. Geosystems and Geoenvironment (**IF: 3.037, Q1 in Earth and Planetary Sciences**), (2025), https://doi.org/10.1016/j.geogeo.2025.100392

3. **Choudhury N, Guha S, Lindsay MD, Mitra AK**. Boundary curvature as a first-order control on strain localization in arcuate shear zone: Insights from field observations, analogue and numerical modelling. Journal of Structural Geology (**IF: 3, Q1 Geology**), 20:105557, (2025). https://doi.org/10.1016/j.jsg.2025.105557

4. **Karangara A, Das PK, Mandal N**. Effects of $H_2O$ on structural transitions, and thermoelastic and electronic properties of olivine ($Mg_2SiO_4$) phases: Implications for deep-Earth seismic discontinuities. Journal of Applied Physics (**IF: 2.7, Q2 in Applied Physics**) (2025); https://doi.org/10.1063/5.0283594

**Conference Abstracts (April, 2025-September, 2025)**

1. **Talukdar, M., Sarkar, T., and Chatterjee, R.** Petrology, geochemistry and geochemical modelling of Neoarchean granitoids from Southern Granulite Terrane, India: Implications on Archean tectonics and melting processes. Goldschmidt Conference Prague, 2025.


***Dr. Moumita Talukdar presenting her research at Goldschmidt Conference Prague, 2025***

# STUDENT ENGAGEMENT

**Volume 2, Issue 1**

Student internships/workshops constitute an integral component of academic training, providing a vital link between classroom learning and practical exposure. They offer students the opportunity to gain hands-on experience, develop professional skills, and acquaint themselves with advanced methodologies and research environments.

In the Department of Earth Sciences, students have been encouraged to undertake internships at reputed institutes, universities, research organizations, and industries. These internships not only enhance their technical competence but also broaden their perspectives by exposing them to diverse working cultures and interdisciplinary approaches.

Here, a detailed account of the internships undertaken by our students at different institutes is presented. It highlights the nature of their assignments, skills acquired, and the overall impact of these experiences on their academic and professional growth.

| Sl. No | Academic Batch | Student Name | Organization |
|---|---|---|---|
| 1 | 2023-25 | Sneha Dey | ONGC (MBA Basin, Kolkata) |
| 2 | 2023-25 | Jagrati Gupta | Atomic Minerals Directorate (AMD), Jharkhand |
| 3 | 2023-25 | Rajkishor Dora | OMC (Daitari Iron Mines, Odisha) & ONGC (MBA Basin, Kolkata) |
| 4 | 2023-25 | Sandesh Bardhan | Atomic Minerals Directorate (AMD), Jharkhand |
| 5 | 2023-25 | Sachin Kumar Nayak | Atomic Minerals Directorate (AMD), Jharkhand |
| 6 | 2023-25 | Prasannjit Parida | OMC (Daitari Iron Mines, Odisha) & ONGC (MBA Basin, Kolkata) |
| 7 | 2023-25 | Ragunath Sahoo | Atomic Minerals Directorate (AMD), Jharkhand |
| 8 | 2023-25 | Muskan Kumari | Atomic Minerals Directorate (AMD), Jharkhand & NGRI, Hyderabad |
| 9 | 2023-25 | Paramjeet Mahanta | Atomic Minerals Directorate (AMD), Jharkhand |
| 10 | 2023-25 | Ashish Kumar Behera | Atomic Minerals Directorate (AMD), Jharkhand |
| 11 | 2023-25 | Yangyadatta Sethy | Atomic Minerals Directorate (AMD), Jharkhand |
| 12 | 2023-25 | Subhankar Dash | Atomic Minerals Directorate (AMD), Jharkhand |
| 13 | 2023-25 | Brajeswar Nayak | Atomic Minerals Directorate (AMD), Jharkhand |
| 14 | 2023-25 | Dibyadarshini Panigrahi | ONGC (MBA Basin) |
| 15 | 2023-25 | Laximipriya Sahoo | OMC (Daitari Iron Mines, Odisha) & ONGC (MBA Basin, Kolkata) |
| 16 | 2023-25 | L A Pratish Kumar Palei | OMC (Daitari Iron Mines, Odisha) & ONGC (MBA Basin, Kolkata) |

| | | | |
|---|---|---|---|
| 17 | 2023-25 | Lohit Ranjan Nayak | Atomic Minerals Directorate (AMD), Jharkhand |
| 18 | 2024-26 | Jagamohan Mallick | Atomic Minerals Directorate (AMD), Jharkhand |
| 19 | 2024-26 | Anshuman Khuntia | Geological Survey of India, GEO University, Eastern Coalfeild Limited |
| 20 | 2024-26 | Anisha Bhatt | Atomic Minerals Directorate (AMD), Jharkhand |
| 21 | 2024-26 | Indra Vinay Singh | Physical Research Laboratory, Ahemdabad |
| 22 | 2024-26 | Gouri Sankar Sahoo | Atomic Minerals Directorate (AMD), Jharkhand |
| 23 | 2024-26 | Subhranshu Sau | Atomic Minerals Directorate (AMD), Jharkhand |
| 24 | 2024-26 | Sekh Takshim Parveen | Atomic Minerals Directorate (AMD), Jharkhand |
| 25 | 2024-26 | Asutosh Behera | Atomic Minerals Directorate (AMD), Jharkhand |
| 26 | 2024-26 | Ananya Raj | Tata Steel Limited |
| 27 | 2024-26 | Deepak Kumar Jena | Atomic Minerals Directorate (AMD), Jharkhand |
| 28 | 2024-26 | Preity Rani Das | ONGC, Jorhat |
| 29 | 2024-26 | Sneha Chakraborty | Atomic Minerals Directorate (AMD), Jharkhand, Presidency University |
| 30 | 2024-26 | Priyanka Das | Atomic Minerals Directorate (AMD) |
| 31 | 2024-26 | Pratik Kumar Rout | KCCL, Bhubaneswar |
| 32 | 2024-26 | Aparupa Tripathy | Atomic Minerals Directorate (AMD) |

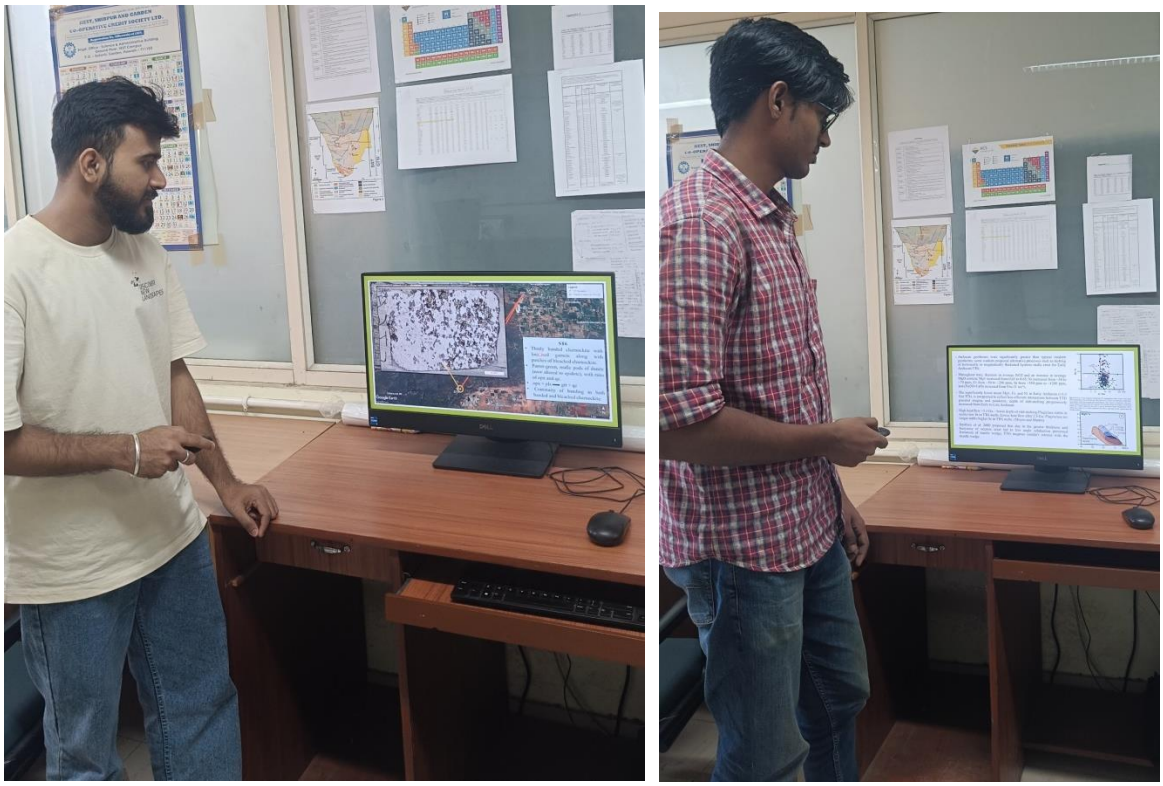
# DEPARTMENTAL ACTIVITY



The Department of Earth Sciences, IIEST Shibpur, actively engages in academic, cultural, and social activities that foster a spirit of learning, collaboration, and responsibility among students, research scholars, and faculty members. Events such as Teacher's Day celebrations provide a platform to honor and express gratitude towards the mentors who shape academic and professional journeys. Research Scholar Presentations encourage young researchers to showcase their ongoing work, exchange ideas, and strengthen the department's research culture. Similarly, the Swachhata Celebration reflects the department's commitment to social responsibility, cleanliness, and sustainability, aligning with national and institutional initiatives and instilling awareness among students.

Together, these activities enrich the academic environment, strengthen the bond within the department, and nurture holistic development beyond classroom learning. Some glimpses of those activities are here.

## Research Scholar Presentation



*Scientific presentation by research scholars*

# Teacher's Day Celebration


# Swachha Shanivar Celebration


# PHOTO GALLERY



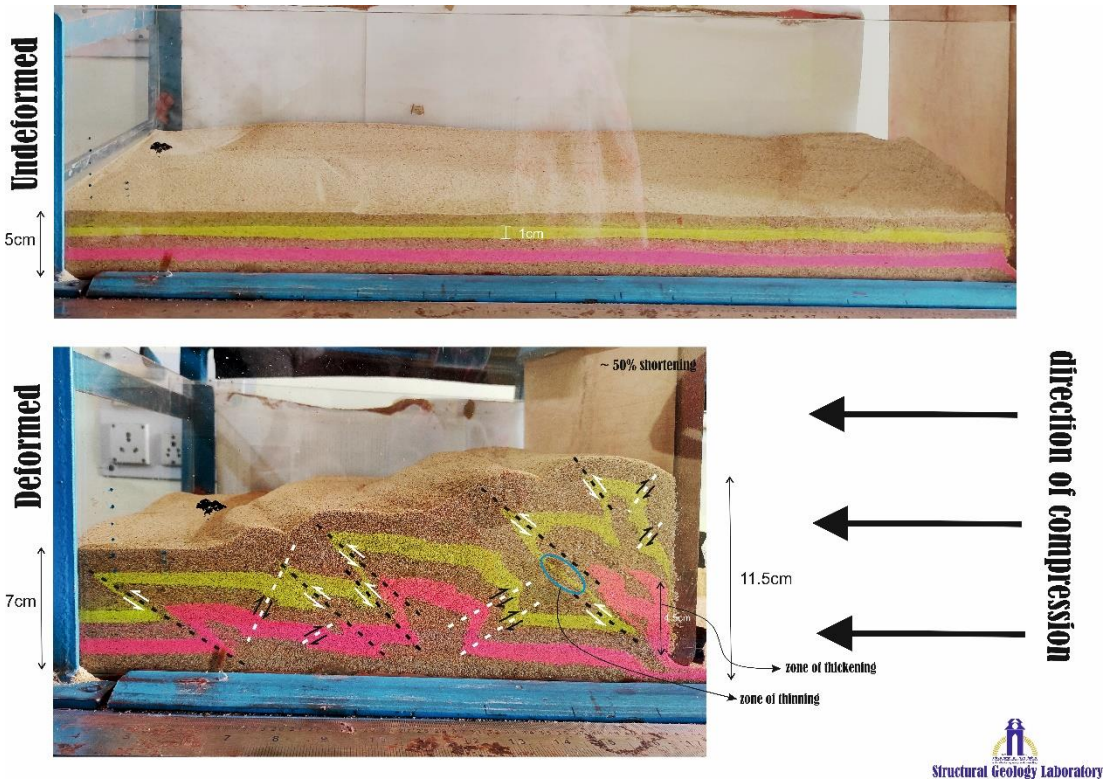
The Earth is a dynamic system, continuously shaped by geological, climatic, and biological processes that leave behind remarkable signatures on its surface and within its depths. Capturing these features through photographs offers a unique perspective on the beauty, diversity, and complexity of our planet.

This photo gallery presents a collection of fascinating images from the realm of Earth Sciences, ranging from striking rock formations and fossils to landscapes shaped by tectonics, rivers, glaciers, and human interaction with the environment. Each photograph not only reflects aesthetic appeal but also serves as a window into the scientific stories that these features convey.

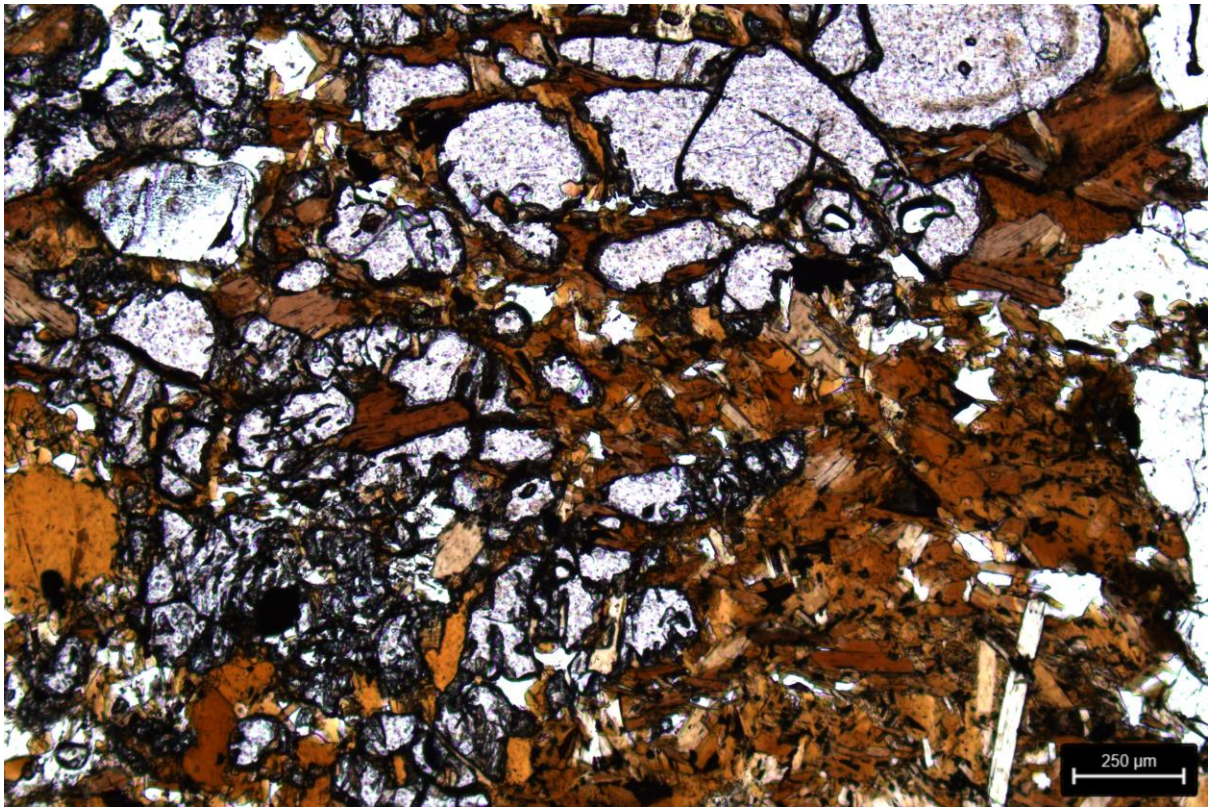
Through this visual journey, we celebrate the wonder of Earth Sciences, inspiring curiosity and appreciation for the processes that continue to mold our ever-changing planet.

*Asymmetrical shear folds within mylonites of Singhbhum Shear Zone (Captured by : Dr. Atin Kumar Mitra).*

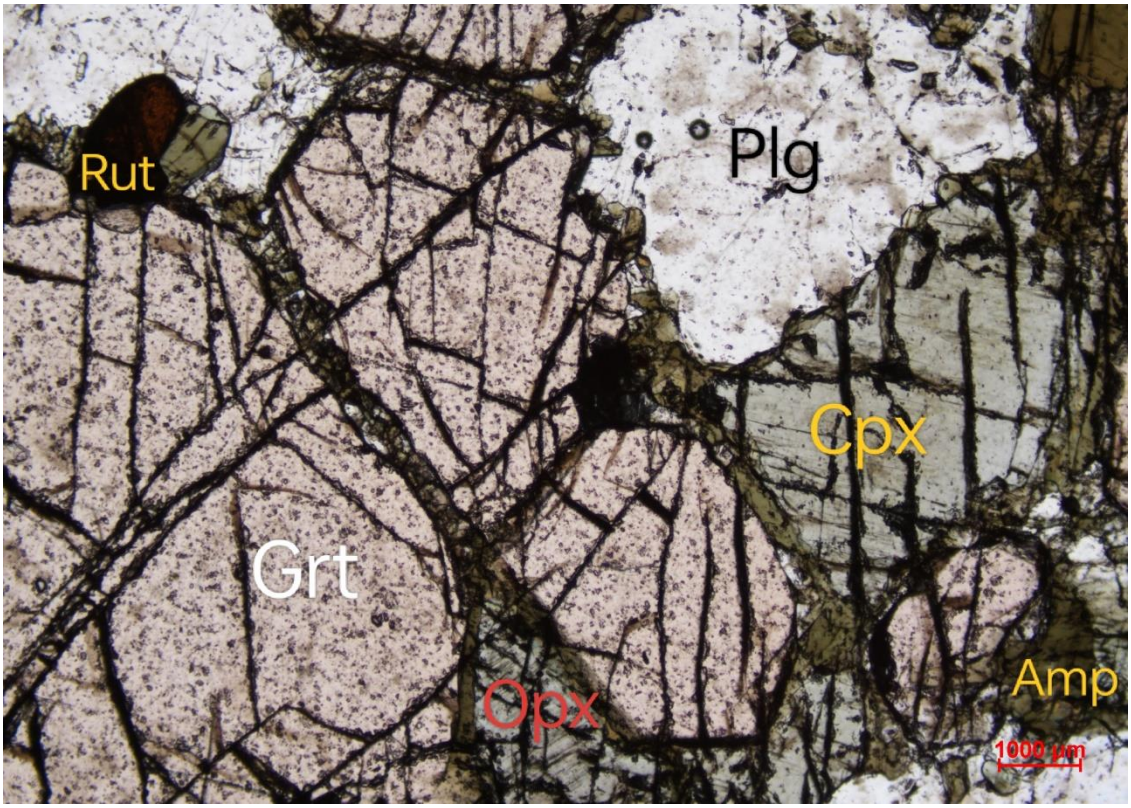
*Large scale boudinaged structure in Murguma Dam, Chhotanagpur Granite Gneissic Complex, Purulia (Captured by: Nandini Choudhury, Research Scholar)*




*Sandbox experiment performed to replicate crustal shortening and associated geological structures in the laboratory under scaled conditions*

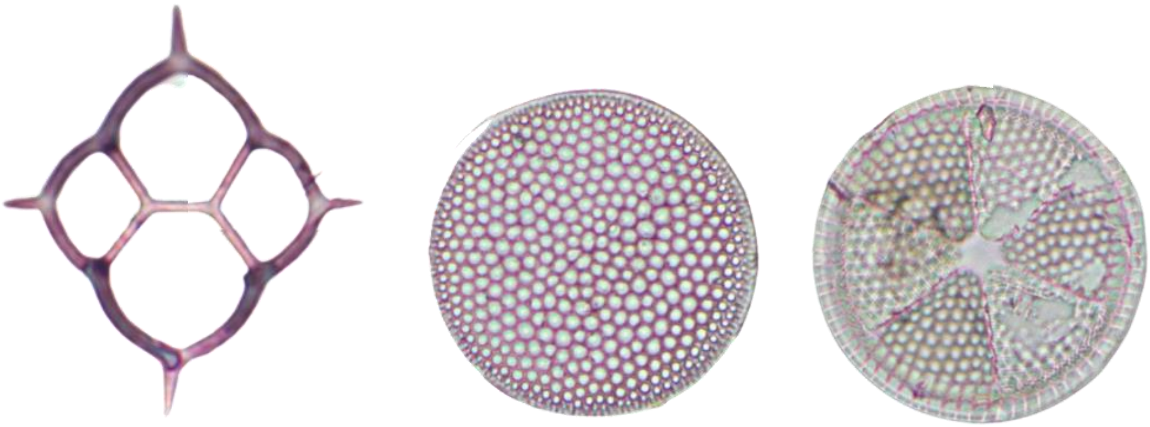



***Phtomicrograph of a metamorphic rock showing Skeletal garnet being replaced by secondary biotite in an enderbite, Clicked by Rabirshi***




***Photomicrograph of metamorphic rocks showing Rims of secondary amphiboles replacing pyroxenes and garnets in a mafic granulite***

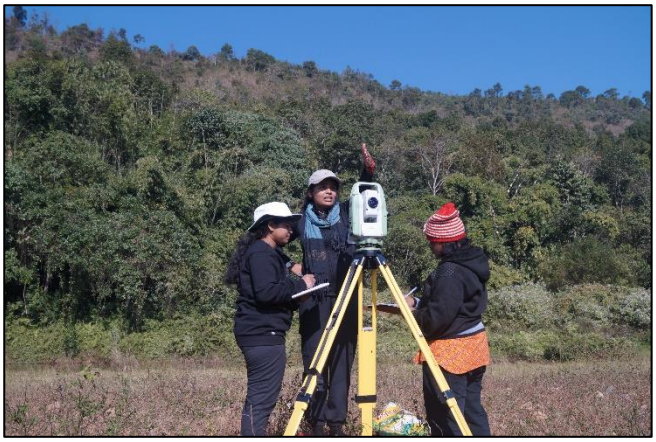
*Wood fossil collected by Vinay and Sumit from Kopili Formation, Assam*



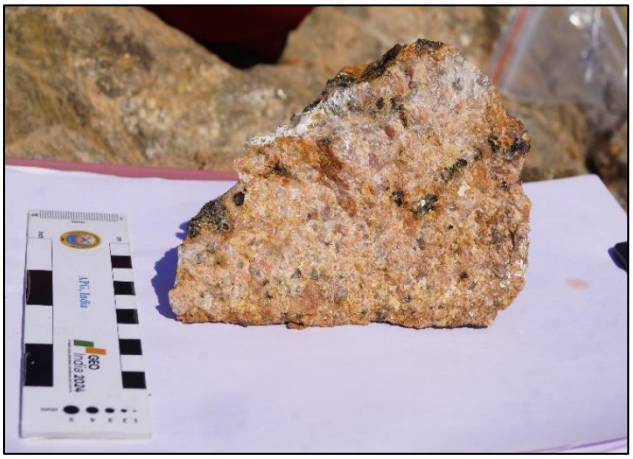
*Some beautiful microfossils collected by Dr. Lopamudra Roy*

*Exposure of the Sedimentary rock outcrop in Kunihar Formation*

*Typical exposures of the river terrace deposit*



*Total station survey across different section of river*



*Rock identification in Assam and Meghalaya*

*Thin section analysis with advanced Microscope in the Laboratory*

*All images showcased in this page originate from research activities conducted in Prof. A. Mukhopadhyay's Laboratory.*

*Taking measurement of ground water level from tube well from Barabazar Block, Purulia. Picture Courtsey: Puja Chaudhury*

*On field analysis of collected ground water sample clicked at Jhalda Block, Purilia. Picture Courtsey: Puja Chaudhury*

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**Volume 2, Issue 1**



***EDITOR's PICK:*** *As the editor of the Department of Earth Sciences newsletter, it gives me great pleasure to present this edition, which highlights the vibrant academic, research, and cultural activities of our department. This newsletter serves as a platform to showcase the achievements of our students, research scholars, and faculty members, while also reflecting on the collaborative spirit that drives our community forward. From research initiatives and field explorations to academic celebrations and outreach programs, each contribution reflects our collective commitment to advancing Earth Science knowledge and nurturing the next generation of geoscientists. I sincerely thank all contributors for their efforts and hope this edition inspires readers to engage further with the dynamic world of Earth Sciences.*

*This assignment marks the very first responsibility entrusted to me after joining the department, and I sincerely thank our respected Head of the Department, Prof. B. P. Mukhopadhyay and all faculty members for placing their trust in me. It excites me to undertake this assignment and to work towards its completion within the span of nearly one month. I remain deeply grateful to all faculty colleagues, research scholars, and students for their constant support and encouragement in this endeavour.*

***Dr. Urbashi Sarkar***