



Indian Institute of Technology (Indian School of Mines) Dhanbad



GEO SCOPE

APPLIED GEOLOGY NEWS

VOLUME 2 | JUNE 2026



Prof. Shushanta Sarangi
Head, Applied Geology
Email: agl@iitism.ac.in

Editors

Prof. Pintu Prusty
Mr. Sukhendu Jana
Prof. Alik S. Majumdar

Publications

- Mohammed-Aslam, M. A., Bala, R., Rizvi, S. S., **Prusty, P.**, & Khan, S. (2026). Geochemical modeling, hydrogeochemistry and appraisal of groundwater quality of Mangura Nala watershed using statistical tools and geographic information system. Discover Geoscience, 4(1), 158.
- Pal, S., **Bhaumik, A. K.**, Tikadar, S., Mahato, S. K., & Pal, A. (2026). Coprolites and Neodiapsida remains from the Early Triassic Panchet Formation, India. Historical Biology, 1-27.
- **Sarkar, K.**, Rahman, T., Shyam Raj, B., & Singh, T. N. (2026). Lithological control on machine learning-based prediction of rock strength parameters using P-wave velocity: Kripamoy Sarkar et al. Journal of Earth System Science, 135(3), 161.
- Siddiqui, M. S., Pradhan, S. P., Bhapkar, P. V., **Hazra, B.**, & Vishal, V. (2026). Influence of CO₂ Saturation on the Mechanical Behavior of Quartz and Clay-Rich Sandstone and Their Thermal Responses under Inert and Oxidic Conditions. Energy & Fuels, 40(16), 8956-8979.
- Singh, A. K., Pandey, B., **Hazra, B.**, & Singh, P. K. (2026). Sunflower structure of pyrite in Lignite of Western Kachchh, Gujarat (India): Insights on its origin and mechanism. International Journal of Coal Science & Technology, 13(1), 38.
- Vishal, V., Chandra, D., Mahanta, B., Koperna, G., GD, V., **Hazra, B.**, ... & Singh, T. N. (2026). An atlas of geological carbon sequestration potential in CBM-rich coalfields of India. International Journal of Greenhouse Gas Control, 155, 104700.

Welcome New Faculties



Prof. Rahul Kumar

Assistant Professor

Specialisation: Planetary Science

Machine learning



Prof. Rahul Kumar Kaushal

Assistant Professor

Specialisation: Quantitative Earth

Surface Sciences, Geomorphology

Awards and Achievements

Prof. Ajoy Kumar Bhaumik delivered a keynote lecture on the topic “Foraminifera: How are they useful for hydrocarbon exploration?” in the 30th Indian Colloquium on Micropaleontology and Stratigraphy (ICMS) organised at IIT Bhubaneswar on 10.06.2026.

Prof. Ajoy Kumar Bhaumik has been recognised as an External Expert for the procurement of a Field Emission Scanning Electron Microscope (FESEM) in the Department of Metallurgical and Materials Engineering at National Institute of Technology Raipur.



Prof. Ajoy Kumar Bhaumik and **Prof. Udit Bansal** served as Reviewers for the evaluation of ongoing Prime Minister's Research Fellowship (PMRF) candidates for the June 2026 evaluation session.

Prof. Ajoy Kumar Bhaumik has been selected as a National Post-Doctoral Fellowship (NPDF) Expert Core Committee Member under ANRF, DST for the tenure May 2026 to May 2028.

Prof. Deepak Kumar Jha has been appointed as an Associate Editor of Geoarchaeology (Wiley & Sons), recognizing his expertise and contributions to the fields of geoarchaeology and Earth sciences.

Prof. Kripamoy Sarkar has been honoured with the Editor of Distinction Award 2026 by the Journal of Earth System Science (Springer Nature) in recognition of his outstanding editorial contributions.



Prof. Pintu Prusty has been honoured with the Editor of Distinction Award 2026 by the Scientific Reports (Springer Nature) in recognition of his outstanding editorial contributions.

Prof. Rahul Kumar Kaushal has been selected for the prestigious ANRF Ramanujan Fellowship 2026, awarded by the ANRF, Government of India, in recognition of his outstanding research excellence and potential.

Ms. Nitika Millicent Patrick from the Micropaleontology Laboratory presented the paper “Grain Size Analysis as a Tool for Reconstructing Plio–Pleistocene Indian Summer Monsoon Variability in the Western Bay of Bengal” by Patrick, N. M., Vats, N., Bhaumik, A. K., Mohanty, S., Chattopadhyay, K.,” in the 30th Indian Colloquium on Micropaleontology and Stratigraphy (ICMS) organised at IIT Bhubaneswar on 10.06.2026.



Mr. Koustav Chattopadhyay from the Micropaleontology Laboratory has been selected for a three-month research visit to Vrije Universiteit Brussel, Belgium. He commenced his visit on 27 June 2026, providing an excellent opportunity to advance his research through international academic collaboration.

Prof. Deepak Kumar Jha and **Prof. Pintu Prusty** have jointly installed a rain gauge system at the Department of Applied Geology to monitor and understand the long-term variability of monsoonal rainfall and its influence on the local hydrological cycle.



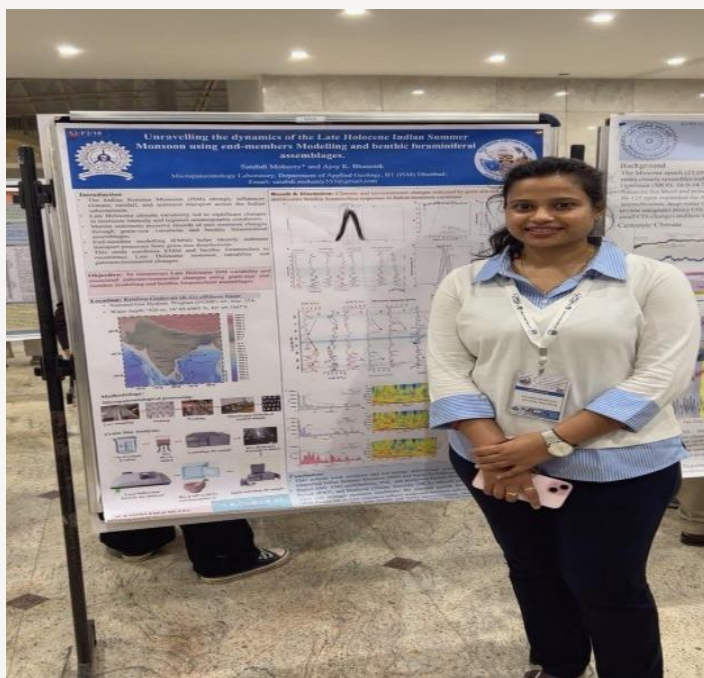


Prof. Udita Bansal served as a Member of Yuva Sangam Phase VI, held at IIT (ISM), Dhanbad from 12-20 June 2026. Yuva Sangam, a flagship youth exchange programme of the Ministry of Education, Government of India under the Ek Bharat Shreshtha Bharat (EBSB) initiative, aims to foster national integration by enabling young participants to experience the diverse culture, heritage, and developmental achievements of paired states across India.

Conferences and Workshops

Dr. Satabdi Monhanty from the Micropaleontology Laboratory presented the paper “Unravelling the dynamics of the Late Holocene Indian Summer Monsoon using end-members Modelling and benthic foraminiferal assemblages, by Mohanty, S., and Bhaumik, A. K.” in the 30th Indian Colloquium on Micropaleontology and Stratigraphy (ICMS) organised at IIT Bhubaneswar on 10.06.2026.

Ms. Nitika Millicent Patrick from the Micropaleontology Laboratory presented the paper “Grain Size Analysis as a Tool for Reconstructing Plio–Pleistocene Indian Summer Monsoon Variability in the Western Bay of Bengal, by Patrick, N. M., Vats, N., Bhaumik, A. K., Mohanty, S., Chattopadhyay, K.,” in the 30th Indian Colloquium on Micropaleontology and Stratigraphy (ICMS) organised at IIT Bhubaneswar on 10.06.2026.



Ms. Lopamudra Roy from the Micropaleontology Laboratory presented the paper “Size variability of Gephyrocapsa coccolith and its relationship with Total Organic Carbon content: implications of Pleistocene monsoon variability in northeast Indian Ocean” by Roy, L., Ghosh, A. K., Bhaumik, A. K.” in the 30th Indian Colloquium on Micropaleontology and Stratigraphy (ICMS) organised at IIT Bhubaneswar on 10.06.2026.

Prof. Udita Bansal attended and delivered an oral presentation on “Mineralogical and Geochemical Characterization of Cretaceous Green Silicates of the Mahadek Formation, Shillong Shelf” at JpGU-AGU Joint Meeting 2026 in Chiba, Japan from 24th to 29th May 2026.



Prof. Deepak Kumar Jha participated in the International Continental Scientific Drilling Program (ICDP) Early Career Researcher Workshop, “The Next Generation,” held in Chiba, Japan, from 21-23 May 2026. The visit, including travel and accommodation, was fully supported by ICDP and the GFZ Helmholtz Centre for Geosciences, Germany.

Ms. Megha Chowdhury from the Engineering Geology Laboratory presented the paper “Evolution of Geomechanical and Pore Structure in Thermally Altered Coal and Shale: Significance for Subsurface CO₂ Storage” by Chowdhury, M., Hazra, B., Sarkar, K., and Vishal, V. in the EGU General Assembly 2026 organised at Vienna, Austria during 3-8 May 2026. EGU26-1087, <https://doi.org/10.5194/egusphere-egu26-1087>



Ms. Saheli Ghosh Dastidar from the Engineering Geology Laboratory presented the paper “Experimental Investigation of Geochemical Interactions between Supercritical CO₂ and Shale” by Ghosh Dastidar, S., Sarkar, K., Chandra, D., Vishal, V., and Hazra, B. in the EGU General Assembly 2026 organised at Vienna, Austria during 3-8 May 2026. EGU26-756, <https://doi.org/10.5194/egusphere-egu26-756>

Ms. Arya Vinod from the Photogeology and Image Processing Laboratory presented the paper “A Novel Method for Rapid and Reliable Estimation of GCV of Coal Using Mid-Infrared FTIR Spectroscopy and a Multi-Model Machine Learning Approach” in the EGU General Assembly 2026 organised at Vienna, Austria during 3-8 May 2026. The paper was presented in Session GI2.1: Artificial Intelligence in Geosciences: applications, innovative approaches and new frontiers. She received an “Early Career Scientist” grant from the EGU as well as International Travel Support (ITS) from the Institute.



Prof. Pintu Prusty participated in the National Seminar on “Recent Trends in Geo-Sciences (RTGS - 2026)” held at Department of Geology, Khallikote Unitary University, Berhampur during 28-29 April 2026.

In Media

Search

VASUDEVAN MUKUNTH

READ LATER

Petrographic thin-section image an *Ammonia* sp. microfossil in the Gaj formation of the Dwarka Basin. | Photo Credit: DOI: 10.1017/jpa.2025.10198

In February, a large team of researchers from IIT-Bombay, Vrije Universiteit Brussels (Belgium), the Indian Statistical Institute, IIT (ISM) Dhanbad, and IISER-Kolkata reported that the fossil beds in the Dwarka Basin date back to the early Miocene epoch. They identified 42 species of snails, including four species new to science, that indicated the area was once warm and rich in nutrients.

Prof. Ajoy Kumar Bhaumik's research was prominently featured in "The Hindu", one of India's leading national newspapers, recognizing the importance and impact of his scientific work.