



Indian Institute of Technology (Indian School of Mines) Dhanbad



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From the HoD's Desk



The Department of Applied Geology nurtures graduates who play key roles in the nation's oil, gas, and mineral exploration, while many alumni bring global recognition through their contributions to leading organizations and research institutions worldwide.

Our students gain a strong foundation through rigorous academics, internships, and fieldwork, equipping them for real-world challenges. The department's distinguished faculty, with advanced training and research experience from top international institutions, enrich both teaching and research, fostering a culture of innovation.

Together—students, faculty, and alumni—we form a dynamic community advancing geoscientific knowledge and contributing to national development and global progress.

Prof. Shushanta Sarangi
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Applied Geology, IIT (ISM) Dhanbad

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Editorial Board

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

Publications

- Padhi A.K., Mukherjee M.K., Bisht B.S., & Saravanan B. (2025). Growth rims in uraninite: Evidence of episodic changes in hydrothermal fluid composition in Rohil uranium deposit, Rajasthan, India. *American Mineralogist*
- Chowdhury M., Sarkar K., Hazra B., Sadeghpour F., Panda M., Vishal V., Ostadhassan M. (2025). Effects of Rapid Thermal Exposure from Igneous Intrusions on the Pore Structure, Thermal Maturity, and Nanomechanical Properties of Coal and Shale. *Energy & Fuels*, 39(33), 15689–15705
- Mazumder M., Tripathy A., Bal A., Liu S., Singh T.N., Pan Z. (2025). Multi-Proxy Assessment of Thermal and Microstructural Evolution in Sub-Bituminous Coal Affected by Igneous Intrusion: Implications for CBM Storage and Transport. *Fuel*, 405, 136414
- Roy L., Ghosh A.K., Bhaumik A.K. (2025). High resolution Miocene to Pleistocene calcareous nannofossil biostratigraphy from northeast Indian Ocean: A comprehensive analysis on biohorizons, global correlation, palaeogeography, palaeoecology and sedimentation. *Deep Sea Research Part II: Topical Studies in Oceanography*
- Mohanty S., Chaudhuri S., Chattopadhyay K., Patrick N.M., Vats N., Bhaumik A.K. (2025). Influence of Monsoon Variability on Hydrographic and Productivity Dynamics in the Western Bay of Bengal during the Late Holocene: A Planktic Foraminiferal Perspective. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 670, 112971
- Mukherjee R., Venkatesh A.S. (2025). Evolution of carbon systems vis-à-vis naturally occurring graphene in a graphite–gold interface. *Journal of Earth System Science*
- Srivastava S., Vikash V., Pal S.K., Kumar R., Kumar S., Mondal S., Bhaumik A.K. (2025). Integrated Geophysical Approach for Bauxite Exploration in Bimarla Mine, Lohardaga, Jharkhand, India. *Mining, Metallurgy & Exploration*
- Kumar P., Das A., Singh S., Pal S., Chatterjee S., & Kujur A.K. (2025). Auriferous sulfide mineral chemistry and its implications on gold mineralization in Parasi-Sindauri area, North Singhbhum Mobile Belt, India. *Ore Geology Reviews*, 180, 106580
- Roy S., Venkatesh A.S. (2025). Optimization of fine coal beneficiation for liquefaction applications using enhanced-gravity techniques. *International Journal of Coal Preparation and Utilization*
- Kumar P., Pal S., Ranjan S., Narayan P., Singh V., Layek S., Das A., & Singh S. (2025). Nature and mode of occurrences of the gold mineralisation in and around Sindauri-Ghanshyampur area of North Singhbhum Mobile Belt, Singhbhum Crustal Province, Eastern India. *Journal of the Geological Society of India*, 101(7), 1127–1133
- Sahoo S., Majumdar A.S., Anand R., Ray D., Fuenlabrada J.M. (2025). Petrogenesis of Mafic–Ultramafic Cumulates in the Mayudia Ophiolite Complex, NE Himalaya: Evidence of an Island Arc Root in Eastern Neo-Tethys. *Minerals*, 15(6), 572
- Prusty P., Mohakud S.K., Mandal A.R., Parray K.A., Farooq S.H. (2025). Assessment of heavy metal contaminations in groundwater and surface water resources of Sukinda valley, Odisha, India. *Geological Journal*, 1–15
- Sathapathy J.S., Singh S., & Sahoo P.R. (2025). Mineralogical and geochemical characteristics of emeralds from the Bahutiya and Gurabanda deposits of Jharkhand, India, and comparison with other world emerald occurrences. *Acta Geologica Sinica (English Edition)*, 99(2), 553–567

- Mishra S., Prasad A.K., Vinod A., Shukla A., Mukherjee S., Purkait B., Varma A.K., Sarkar B.C. (2025). A multi-model approach for estimation of ash yield in coal using Fourier transform infrared spectroscopy. *Scientific Reports*, 15(1), 13786
- Firdaus S., Anwar S., Mohapatra S., Sahoo P.R. (2025). Reflected Light Microscopic Iron ore image dataset for iron ore characterization. *Data in Brief*
- Behera R.C., Singh S., Srivastava S., Vijay Kumar K.S., Barla A., & Pandey, R. (2025). Trace elemental systematics of auriferous sulfides within the dolerites of northern Cuddapah Basin, southern India: Implications for invisible gold mineralization. *Ore Geology Reviews*, 180, 106569
- Sarkar K., Pradhan S.P., Singh T.N. (2025). *Landslides: Analysis, Modeling and Mitigation*. Springer
- Dutta A., Sarkar K. (2025). Insights into the application of limit equilibrium and numerical methods for predicting failure modes in a jointed rock slope. *Journal of Earth System Science*, 134(2), 1–27
- Chatterjee S.M., Manna A., Roy A., Sarkar A.K., Das S., Dutta U. (2025). Significance of c. 1 Ga granites from the South Delhi Fold Belt, NW India: implications for palaeogeographical reconstructions of Rodinia. *Journal of the Geological Society*, 182(3)
- Keshri D., Chatteraj S.L., Pandey R.K., Sarkar K. (2025). Machine Learning-assisted Investigation of Landslide Susceptibility for Aglar Watershed in the Lesser Himalaya Region. *Journal of the Geological Society of India*, 101(3), 384–396
- Ghosh Dastidar S., Sarkar K., Chandra D., Hazra B., Vishal V. (2025). Investigating Pore Characteristics and Their Dependence on Shale Composition: Case Study from a Permian Basin in India. *ACS Omega*, 10(5), 4395–4405
- Roy L., Ghosh A.K., Bhaumik A.K. (2025). Tortonian–Messinian radiolarian events from Northeast Indian Ocean – diversity analysis, palaeogeographic distribution and depositional environment. *Journal of Earth System Science*, 134(32), 1–25
- Karmakar S., Mukherjee M.K., Dora M.L., & Mohanty B. (2025). Differential core-to-periphery emplacement of mafic magma in an Archean Complex and its implications: An example from Southern Granulite Terrain, India. *Precambrian Research*, 418, 107673
- Padhi A.K., Mukherjee M.K., Bisht B.S., Tripathi B.K., Pande D., & Baskaran S. (2025). Mineral chemistry of chlorites and feldspars and their genetic linkage to uranium mineralization: An example from polymetallic uranium deposit in Rohil, Rajasthan, Western India. *Minerals*, 15(1), 41
- Dora M.L., Upadhyay D., Baswani S.R., Meshram T., Mukherjee M.K., Mahapatro S.N., & Randive K. (2025). Age and genesis of hydrothermal Ni-PGE-Te mineralisation in the Gondpipri mafic ultramafic complex, central India: Constraints from zircon U–Pb geochronology and magnetite-pyrite geochemistry. *Mineralium Deposita*, 60(3), 429–452
- Chakraborty P., Singh S., Hazra B., Majumdar A.S., Kumari J. (2024). Spatial distribution, source apportionment, and health risks assessment of trace elements in pre- and post-monsoon soils in the coal-mining region of North Karanpura basin, India. *Science of The Total Environment*, 177173
- Dutta A., Sarkar K. (2024). A neural network model for predicting stability of jointed rock slopes against planar sliding. *Journal of Earth System Science*, 133(201), 1–15
- Mazumder M., Bal A., Tripathy A., Liu S., Singh T.N. (2024). Multiscale Assessment of Transformation in Pore System of Shale during Combustion: An Insight into Poromechanical Response and Sorption Dynamics. *Energy & Fuels*, 38(18), 17510–17524

Patents

- Prasad A.K., Vinod A., Mishra S., Purkait B., Mukherjee S., Shukla A., Desinayak N., Sarkar B.C., Varma A.K. (2025). A method for rapid estimation of phosphorus content in coal and ash using mid-infrared Fourier transform spectroscopy and application of machine learning techniques. Indian Patent No. 202531033924. Published April 11, 2025
- Prasad A.K., Vinod A., Mishra S., Purkait B., Shukla A., Mukherjee S., Sarkar B.C., Varma A.K. (2025). A novel multi-model method of estimation of the gross calorific value (GCV) in coal using mid-infrared fourier transform infrared spectroscopy. Indian Patent No. 202531012376. Published February 28, 2025
- Prasad A.K., Mishra S., Vinod A., Shukla A., Purkait B., Mukherjee S., Varma A.K., Sarkar B.C. (2024). A method of multi-model estimation of carbon in coal using mid-infrared Fourier transform infrared spectroscopy. Indian Patent No. 202431076911. Published October 18, 2024
- Prasad A.K., Mishra S., Vinod A., Shukla A., Mukherjee S., Purkait B., Varma A.K., Sarkar B.C. (2024). Multi-model method and system of estimation of ash yield in coal using mid-infrared Fourier transform infrared spectroscopy. Indian Patent No. 202431065336. Published September 6, 2024

Welcome New Faculties



Prof. Bodhisatwa Hazra
Assistant Professor
Specialisation: Coal Geology



Prof. Deepak Kumar Jha
Assistant Professor
Specialisation: Biogeochemistry



Prof. Pintu Prusty
Assistant Professor
Specialisation: Hydrogeochemistry

R & D Projects (Ongoing)

ANRF funded project titled “Constraints of inhomogeneity and anisotropy on strength mobilization in thermo-mechanical evolution of shear zone: an experimental and field based studies in Son Valley, central India”. Total budget: Rs. 43.85 Lakhs, Period: May 2024 to May 2027, Role: CI, Prof. R.K. Dubey

DST (SERB) funded project titled “Analysis, modelling and mitigation methods for landslides along Bhalukpong-Tawang road in Arunachal Pradesh, India”. Total budget: Rs. 53.56 Lakhs, Period: May 2024 to May 2027, Role: CI, Prof. K. Sarkar

Ministry of Education (Scheme for Transformational and Advanced Research in Sciences) funded project titled “Landslide hazard assessment and mitigation - an integration of simulation techniques and machine learning algorithms in the Himachal Himalayas”. Total budget: Rs. 49.5 Lakhs, Period: May 2024 to May 2027, Role: CI, Prof. K. Sarkar

External funded project titled “Geochemical and mineralogical approach for the classification of pegmatites and related rocks in Koderma, Jharkhand and Mandya, Karnataka to evaluate the economic potentiality for Li-Cs-Rb, Nb-Ta and REE”. Total budget: Rs. 21.01 Lakhs, Period: 2024 to 2027, Role: CI, Prof. R. Anand

External funded project titled “Geochemical and paleomagnetic study of dolerite dykes in Meghalaya Plateau, Northeast India: Implications on mantle processes and geodynamic evolution”. Total budget: Rs. 25.2 Lakhs, Period: 2024 to 2026, Role: CI, Prof. R. Anand

Funding from “IPR Chair Professor, Scheme for Pedagogy & Research in IPRs for Holistic Education and Academia (SPRIHA)”. Total budget: Rs. 144 Lakhs, Period: 2023 to 2028, Role: Major role by Prof. R. Anand in getting the project

ST (SERB) funded project titled “Foraminiferal, geochemical and sedimentological investigations on Holocene sediments of the Bay of Bengal: Unveiling climatic variations, oxygen-deficient environments, and seepage effects”. Total budget: Rs 47.3 Lakhs, Period: 2024-2027, Role: CI, Prof. A.K. Bhaumik

MATRIX, DST (SERB) funded project titled “Application of spectroscopic methods and machine learning algorithms for a rapid and reliable estimate of the gross calorific value (GCV) in high-ash Indian coal”. Total budget: Rs 6.6 Lakhs, Period: 2024-2027, Role as: CI, Prof. A.K. Prasad

DST (SERB) funded project titled “Characterization of sulphide minerals in Indian basemetal and gold deposits for assessment of strategic element recovery opportunity”. Total Budget: 56.76 Lakhs, Period: 2023-2026, Role: PI, Prof. P.R. Sahoo; Co-PI, Prof. A.S. Majumdar

DST (SERB) funded project titled “Lithotype control over gas storage, gas permeability, and geomechanical attributes of coal seams: Implications for Coalbed Methane production and carbon dioxide sequestration in India”. Total budget: Rs 32.34 Lakhs, Period: 2022-2024, Role: CI, Prof. A. Tripathy

DST (SERB) funded project titled “Cretaceous climate evolution in middle latitude Tethys, a study from green-silicates of Mahadek Formation, South Shillong Shelf”. Total budget: Rs 29.26 Lakhs, Period: 2023-2024, Role: CI, Prof. U. Bansal

TEXMIN (DST) funded project titled “Development of AI-Based Integrated System for Exploration Targeting of Copper Deposits”. Total Budget: 24.92 Lakhs, Period: 2023-Present, Role: CI, Prof. M.K. Mukherjee; Co-CI, Prof. B.C. Sarkar, Prof. H. Banka

DST (SERB) funded project titled “Trace element systematics and sulfur isotope signature of auriferous sulfides within the Vempalle dolostone: Implications for refractory gold mineralization in and around Tummalapalle area of South-western Cuddapah basin, Andhra Pradesh”. Total budget: Rs 73.2 Lakhs, Period: 2022-Present, Role: CI, Prof. S. Singh; Co-CI: Prof. Shalivahan

Consultancy Projects

Title: Petrographic study of the rock samples for Proposed 640 MW Indira Sagar Pump Storage Scheme, NHDC Ltd., Funded by: NHDC Ltd., Total budget: 2.06 Lakhs, Period: March 2025, Role: CI, Prof. P.R. Sahoo

Title: Scientific Study for carrying out analysis, modelling and mitigation methods for slope instabilities in Mohonpur Coal Mines of Salanpur Area, ECL, Funded by: Eastern Coalfields Limited, Total budget: Rs. 3.99 Lakhs, Period: 2024 to 2025, Role: CI, Prof. K. Sarkar

Title: Scientific Study for carrying out analysis, modelling and mitigation methods for slope instabilities in Mohonpur Coal Mines of Salanpur Area, ECL, Funded by: Eastern Coalfields Limited, Total budget: Rs. 3.99 Lakhs, Period: 2024 to 2025, Role: CI, Prof. K. Sarkar

Title: Geological Ore Body Modelling of Girar Iron and Gold Ore Block, Uttar Pradesh, Funded by: M/s Fomento Resources Pvt. Ltd., Panaji, Total budget: Rs. 16 Lakhs, Period: May 2025 to Sept 2025, Role: CI, Prof. A.K. Prasad; Co-CI, Prof. S. Singh

Title: Vetting of the Groundwater Modelling Report and Comprehensive Hydrological Report, Gare Palma Sector-I Coal Mine, Funded by: M/s Jindal Power Limited, Total budget: Rs. 13.51 Lakhs, Period: May 2025 to Aug 2025, Role: CI, Prof. A.K. Prasad

Title: Water Quality Modeling for Gare Palma Sector-1 Coal Mine, Raigarh, Chattisgarh, Funded by: M/s Jindal Power Limited, Total budget: Rs. 18.88 Lakhs, Period: June 2025 to Sept 2025, Role: CI, Prof. A.K. Prasad

Title: Resource estimation for titanium and vanadium in beach and dune samples of Talashil Block, Sindhudurg District, Maharashtra, Funded by: M/s Geo Marine Solutions Private Limited, Mangalore, Total budget: Rs. 4 Lakhs, Period: Dec 2024 to Jan 2025, Role: CI, Prof. A.K. Prasad; Co-CI: Prof. A.S. Venkatesh

Title: Detailed mineralogical characterization of chromite ores and petrography of host rocks from Kamarda and Saruabil chromite mines of Tata Steel Ltd, Funded by: Tata Steel Ltd., Total budget: 26.31 Lakhs, Period: June 2024 to Jan 2025, Role: CI, Prof. P.R. Sahoo; Co-CI, Prof. A.S. Venkatesh

Title: Scientific Slope stability study of Filled Ash in Mines Void of Bharatpur South (OCP) Mahanadi Coalfields Ltd., Talcher, Funded by: M/s NALCO Ltd., Angul, Total budget: Rs. 14.92 Lakhs, Period: March 2024 to Aug 2024, Role: CI, Prof. K. Sarkar

Title: Vetting of valuation reports, market research, and estimation of minimum recovery rate and determining the suitability of auction criteria of tailing dumps of Bharat Gold Mines Limited, Funded by: M/S SBI Capital Markets Ltd., Total budget: Rs. 17.7 Lakhs, Period: Ongoing, Role: CI, Prof. M.K. Mukherjee; Co-PI, Prof. D.P. Mishra, Prof. Shravan Kumar

Outreach Activities

Ministry of Earth Sciences (MoES) sponsored national workshop on topic “Critical Mineral Resources: Nature, Recovery & Uses”. Role: CI, Prof. S. Singh

Three days EDP training programme on “Advanced practices for geo-engineering challenges for Hydro Power Project Development”, Funded by: NHPC Limited, Period: 23.10.2024 to 25.10.2024. Role: Coordinator, Prof. K. Sarkar



Awards and Achievements



Prof. M.K. Mukherjee with Dr. Rohan Das, Director of Training and Capacity Building of Geological Survey of India, at Zawar Field Training Center, and with participants during 05-07 July 2025



Mrinal Mukherjee <mrinal@iitism.ac.in>

AAPG IBA Consolidated feedback form

3 messages

Imperial Barrel Award <IBA@aapg.org>

To: "mrinal@iitism.ac.in" <mrinal@iitism.ac.in>

Wed, Jun 18, 2025 at 8:33 PM

Cc: Abdel Fattah Bakhiet <fbakhiet@aol.com>, Imperial Barrel Award <IBA@aapg.org>

Hello, Mukherjee, Mrinal Kanti,

This is to congratulate your team for their outstanding performance in the AAPG Imperial Barrel Award 2025 Semifinal competition. Attached is the feedback form with an assessment of the team's performance during the Semifinal competition.

Clearly the team members have exerted a lot of effort and demonstrated tremendous technical analysis abilities and innovative traits. The team members' performance deserved recognition.

Our gratitude and appreciation are also extended to the faculty advisor, coordinators and mentors for a job well done.

For the benefit of the team, we are sharing the feedback form based on compilation of judges' responses. The feedback consists of three areas.

- Overall assessment
- Areas of strength
- Areas for improvement

We look forward to your team's participation in the future AAPG IBA 2026 program and beyond.

Abdel Fattah Bakhiet

IBA Judging Coordinator

Adriane Hausher | AAPG Programs Coordinator

American Association of Petroleum Geologists

Phone: (918) 560-2664



Prof. M.K. Mukherjee, Faculty advisor of AAPG Student Chapter, Department of Applied Geology, IIT(ISM) Dhanbad guided and supervised the preparation and performance of a team of five students representing the team from the Institute in the "Imperial Barrel Award Competition (IBA 2025)" organized by the American Association of Petroleum Geologists, USA on 13 March 2025. The team consisted of students: Abhimanyu Sarkar & Shubhashish Chakraborty (Applied Geology), Wrick Ghosh & Sohan Kar (Applied Geophysics), & Manish Upadhyay (Petroleum Engineering). The team performed excellently and earned special recognition.

Arya Vinod, a PhD Scholar under Prof. A.K. Prasad received "International Travel Support from ANRF" and "Travel Grant from Japan Geoscience Union (JpGU)" to attend the Japan Geoscience Union Meeting 2025, Makuhari Messe in Chiba City, Japan during 25-30 May 2025

“Prof. H. R. Anireddy Memorial Award-2025” conferred to Prof. Ashutosh Tripathy by the Indian Mining and Engineering Journal

Prof. K. Sarkar joined as Co-Convener in the National Seminar on Technological Advancements for Sustainable Mining and Exploration (TASME-2025) held at CSIR-CIMFR, Dhanbad during January 31 to Feb 1, 2025



Navanita Saha, a PhD scholar under Prof. A.S. Majumdar has been awarded “Early Career Research Award” for best Oral Presentation at “MetMess 2024” Conference held at PRL, Ahmedabad during 20-22 Nov 2024

Prof. A.K. Prasad joined as a life-time member of MGMI and a member of the Technical Committee of the “11th Asian Mining Congress and International Mining Exhibition” to be held during October 30-31, 2025 in J W Marriott, Kolkata

Dr. Satabdi Mohanty from Micropaleontology lab received innovative poster award from Micropaleontology laboratory in the 29th ICMS Conference during 17-19 October 2024

Prof. A.K. Prasad received “Springer Nature Editor of Distinction Award 2025”

Madhurima Mazumder a PhD scholar under Prof. A. Tripathy received Best paper Award at the “International Conference on Safe and Sustainable Mining Technologies 2025”



Prof. A.K. Bhaumik Co-Chaired a session in the 29th ICMS Conference held at Department of Geology, University of Delhi during 17-19 October 2024

Shyam Raj B., a PhD scholar under Prof. K. Sarkar received collaborative PhD research scholarship with Curtin University, Australia

A recent publication (Vinod A, et al. 2024, A novel multi-model estimation of phosphorus in coal and its ash using FTIR spectroscopy. Scientific Reports, 14, 13785) by Arya Vinod, a PhD scholar under Prof. A.K. Prasad is listed as “Chemistry Top 100 of 2024”





Prof. P.R. Sahoo participated and chaired a session in the "37th International Geological Congress (IGC)" held in Busan, Republic of Korea during August 25-31, 2024

Prof. K. Sarkar joined as Associate Editor of "Journal of Earth System Science" for 2024-2026

Prof. A.K. Prasad joined as a member of Editorial Board, Scientific Reports (Springer Nature)

Conferences and Workshops



Prof. P.R. Sahoo delivered a keynote on the topic "Critical mineral exploration potential in India: Appraisal from global context" in the National Conference on "Critical Minerals: Exploration and Exploitation" on 7-8 August 2025 at Jabalpur, Madhya Pradesh



Prof. M.K. Mukherjee, delivered a presentation of a paper titled: Structural Geometry, Geochemistry and Emplacement Scenario of a Gabbro Intrusive in Archaean Bhavani Gneissic Complex, Southern Granulite Terrain, India: Petrogenetic and Metallogenic Implications in the International Conference on 22nd Annual Meeting of the Asia Oceania Geosciences Society (AOGS 2025) held at Singapore during 27 July to 01 August 2025. The presentation received a widespread appreciation from several peers including renowned geophysicist Prof. Gregory Moore of University of Hawaii.



Prof. R. Anand & Prof. P. Prusty presented research papers in the prestigious international conference "Goldschmidt-2025" held at Prague, Czech Republic during July 6-11, 2025



Prof. S. Sarangi delivered invited talks in the National Seminar on “Geology and Exploration of Economic Deposits of Jharkhand” held at Dept. of Geology, Vinoba Bhave University, Hazaribagh during 12-13 July 2025

Prof. S. Singh delivered a Keynote lecture on “Proterozoic Gold Mineralizing System of North Singhbhum mobile Belt: An Ore System Approach) in the two-day seminar, organized by the Department of Geology, Vinoba Bhave University, Hazaribagh during 12-13 July 2025

Avirup Bose, a research scholar under Prof. A.S. Majumdar presented research paper in “Goldschmidt-2025” and participated in Geochemical Mapping Workshop organized by the “Czech Geological Survey” in Prague during July 6-11, 2025



Prof. M.K. Mukherjee was invited by Geological Survey of India to impart training on “Advanced Course in Structural Geology” to their officers at Zawar, Udaipur district, Rajasthan from 05-07 July 2025. The training included lectures, hands-on practical, and rigorous fieldwork, singularly imparted by Prof. M.K. Mukherjee

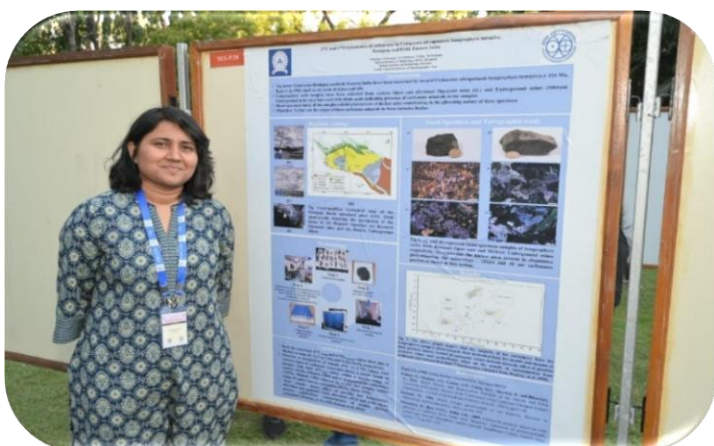
Prof. A.K. Bhaumik conducted One-day workshop on July 3, 2025 for the students of D.P.L.M.A +2 High School, Nawagarh, Dhanbad to introduce them with Geology and its scope

Prof. S. Singh delivered a Keynote lecture on the topic titled “Nanogeoscience in Critical Minerals Exploration: Challenges and Opportunities in India” in the one-day workshop on “Unlocking India’s Critical Minerals for sustainable Future: Facilitating exploration and proposal Development” organized by the Department of Mines and Geology (DGM), Raipur, Chhattisgarh on June 25, 2025

Prof. A. Tripathy with Saheli Ghosh Dastidar, Shyamolima Banerjee, & Megha Chowdhury, PhD scholars of department presented their research at “EGU General Assembly-2025” held at Vienna, Austria during April 27 to May 2, 2025



Prof. S. Singh delivered a Keynote lecture on “Gold metallogeny of the North Singhbhum Mobile belt: An insight through Nanogeoscience” in the one-day seminar on “Advances in geology and Geo resources with special emphasis on Jharkhand” organized by St. Xavier’s College, Ranchi on April 05, 2025



Sangeeta Koner & Abhay Kumar PhD Scholars under Prof. S. Sarangi presented research papers in the “3rd Frontiers in Geosciences Research Conference” held at Physical Research Laboratory, Ahmedabad during 5-7 Feb 2025

Avishek Dutta, a PhD scholar of the department presented research in the National Seminar on “Technological Advancements for Sustainable Mining and Exploration (TASME 2025)” held at CSIR-CIMFR, Dhanbad during Jan 31 to Feb 1, 2025



Prof. P.R. Sahoo delivered an invited talk on “Mineral prospectivity in India: Evidences from Global Metallogeny” in the workshop on Decoding the Indian Continental Lithosphere: From geodynamic scale to Mineral System” organised by Department of Earth Sciences, IIT Bombay on 28th January 2025

Koustav Chattopadhyay, a PhD Scholar under Prof. A.K. Bhaumik completed a hands-on training workshop on 'Genetic tools in foraminiferal research' at Agharkar Research Institute, Pune during 10-13 Dec 2024



Dr. S. Mohanty from the Micropaleontology lab presented research paper in the TROPQUA 2024 held at NIO, Goa during 3-7 November 2024

Prof. U. Bansal delivered an invited talk in the “three-day workshop on Recent Advances in Ichnology and Glauconite Geochemistry” held at Department of Earth Sciences, IIT Bombay during 26-28 October 2024

Prof. S. Singh delivered a Keynote lecture on “Nanogeoscience in Critical Minerals Exploration” in a one-day Workshop-2024 organized by the Directorate of Geology, Department of Mines and Geology, Govt. of Jharkhand on 25 October 2024 on the theme entitled "Exploration of Critical & Strategic Minerals including Gold and Diamond in Jharkhand" sponsored by the NMET, MoM, Govt. of India

Prof. S. Singh delivered a Keynote lecture on “Nanogeoscience in Minerals Exploration: Challenges and Opportunities in India” in the seminar organized by the Coal Mine Planning and Design Limited (CMPDIL), Ranchi on 19 October 2024

Prof. S. Singh delivered an invited lecture on “Nanogeoscience in Critical Minerals Exploration” in the “Madhya Pradesh Mining Conclave 2024”, held at the Kushabhau Thakre International Convention Centre, Bhopal (MP) in the thematic session on “Strategic planning & Technological Advancement in Exploration” during on 17-18 October 2024



Prof. A.K. Bhaumik with Dr. N. Vats & Dr. S. Mohanty from the Micropaleontology lab presented research papers in the 29th Indian Colloquium on Micropaleontology and Stratigraphy (ICMS-2024) conference held at Department of Geology, University of Delhi during 17-19 October 2024

Prof. S. Sarangi delivered an invited talk in the National Seminar on “Geoscience Education in India at crossroads: Bridging Industry Needs and Advancing Sustainable Development Goals” held at IIT Bombay during 18-19 October 2024

Prof. U. Bansal delivered an invited talk in the “National conference on Women in Geosciences: Opportunities, Challenges and Accomplishments” held at National Centre for Earth Science Studies (NCESS) in Thiruvananthapuram, Kerala during 2-4 September 2024

Prof. S. Singh delivered an invited lecture on “Nanogeoscience in Critical Minerals Exploration: Challenges and Opportunities in India” in the International Conference titled "Heavy Minerals & Lithium for Energy Security (REES-2024 Series)" held at Grand Hyatt Kochi, Kerala during 29-30 August 2024



Prof. S. Singh attended seven (36th – 42nd) Executive Committee (EC) meetings of the “National Mineral Exploration Trust (NMET)”, Ministry of Mines, Govt. of India, New Delhi held between July 2024 to June 2025

Prof. S. Singh delivered a lecture as a resource person for the National Education Policy-Orientation and Sensitization Programmes by Malaviya Mission Teacher Training Centre (MMTTC), IIT (ISM) Dhanbad

Student Activities



Abhay Kumar, Sangeeta Koner & Vishakha Sah (PhD Scholars) with MSc-Tech students (Ashutosh Kumar, Naman Nagabanshi, Rajiv Kumar Gope, & Ratikanta Behera) participated in the Summer Schools program during 16-29 June and July 14-27, 2025 held at St. Petersburg Mining University (Empress Catherine II), Russia under the Indo-Russian Collaboration



Susmita Bal (PhD Scholar) with Abhay Kumar & Abhaya Shivam (MSc-Tech) participated in 3-days training program on “Sustainable Ground Water Development and Management” organized by Rajiv Gandhi National Ground Water Training and Research Institute (RGNGWTRI), Raipur during 18-20 August 2025



Abhay Kumar, Shailayee Mukherjee, & Tanmoy Dandapat (PhD Scholars) participated in the GSI's 175th Foundation Day Celebrations and Exhibition held at Kolkata on 4th March 2025. Preety Roy & Sohini Biswas (MSc-Tech) participated in the Student Debate program



Sandipani Chakraborty & Abyartha Kaushik Das, (MSc-Tech) participated in the 33rd Mineral Development Awareness Programme (MDAP-2024) by Society of Geoscientists and Allied Technologists (SGAT), Bhubaneswar, Odisha during Aug 23-25, 2024 and won first prize. MSc-Tech students also participated in 34th MDAP-2025 held during Aug 22-24, 2025

PhD Awarded/Alumni achievements

Dipika Keshri, Prof. K. Sarkar (Guide), Title: Landslide Susceptibility Analysis and Slope Stability Assessment in Aglar Watershed, Uttarakhand, Lesser Himalaya, India, PhD Awarded: Aug 2025

Sameeksha Mishra, Prof. A.K. Prasad (Guide), Title: Rapid estimation of carbon content and ash yield in Indian coal using mid-infrared FTIR spectroscopy, PhD Awarded: Aug 2025

Nirasindhu Desinayak, Prof. A.K. Prasad (Guide), Title: Spatio-temporal dynamics of glaciers, snow cover, and tropospheric temperature in the Hindu Kush Himalayan region, PhD Awarded: Dec 2024

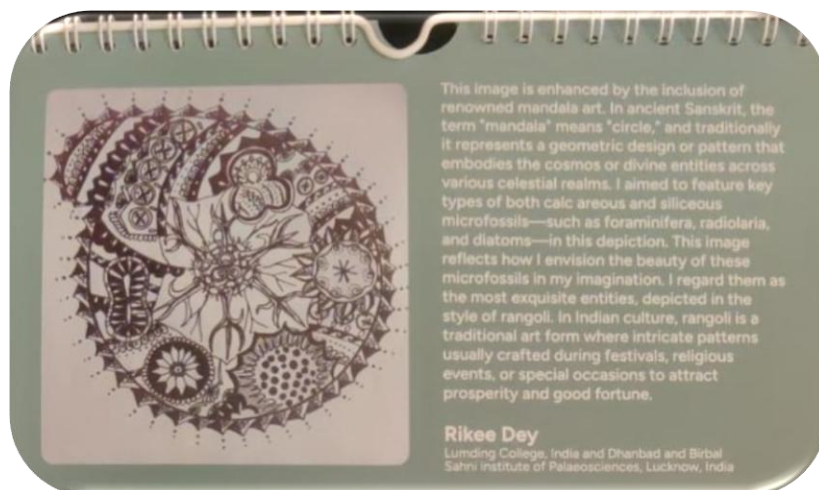
Suren Nayak, Prof. A.K. Prasad (Guide), Title: Spatio-temporal dynamics of land surface temperature and urban heat island effect over India using long-term Modis observations (2000-2023), PhD Awarded: Dec 2024

Swakangkha Ghosh, Prof. A.K. Prasad (Guide), Dr. G. Philip (Wadia Institute of Himalayan Geology, Dehradun) & Prof. T.H. Syed (IIT Kanpur) [External Co-guide(s)], Title: Active tectonics and paleoseismological investigations of the Trans-Yamuna active fault system, northwestern sub-Himalaya, India: Implications for earthquake hazard assessment, PhD Awarded: Dec 2024

Dr. Swakangkha Ghosh from Remote Sensing and GIS lab has joined as a Postdoctoral Researcher in the Key Laboratory of Continental Dynamics of Ministry of Natural Resources, Institute of Geology, Chinese Academy of Geological Sciences, Beijing (China) in July 2025

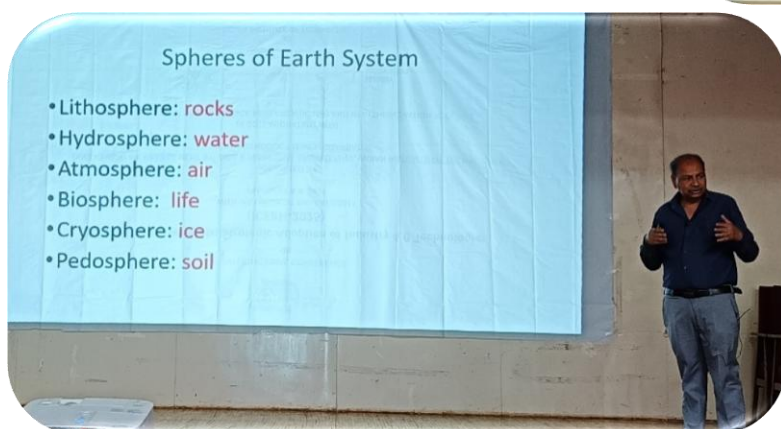
Dr. Abhisikta Goswami from Geochemistry lab has joined as a Post Doctoral Fellow in the G-Lamp Institute, Chonnam National University, College of Natural Science, Gwangju, S-Korea in Dec 2024

Microfossils drawing by Dr. Rikee Dey from Micropaleontology lab has been selected for 'The Micropalaeontological Society (TMS), UK' Annual Calendar 2025



Centenary Events

Prof. M.K. Mukherjee in association with TEXMIN, IIT (ISM) Dhanbad, organized the 1st Centenary Lecture titled “Advancement of Machine Learning and Artificial Intelligence, specifically focusing on applications of IoT and digital twin technology in the mining sector and mineral exploration” delivered by Prof. Asim Tewari, Centre of Machine Intelligence and Data Science, Department of Mechanical Engineering, IIT Bombay held in TEXMIN Smart Class room, i2H Building on 24 January 2025.



Prof. A.K. Bhaumik organized the 2nd Centenary Lecture titled “Mass extinction of life on earth: Past, present and future” delivered by Prof. Sunil Bajpai, Department of Earth Sciences, IIT Roorkee held in in GJLT on 24 February 2025.

Prof. A.K. Bhaumik organized the 3rd Centenary Lecture titled “Indian monsoon system since the Quaternary: Evolving landscape and human society in south Asia” delivered by Prof. Anil K. Gupta, Department of Geology and Geophysics, IIT Kharagpur held in in GJLT on 24 March 2025.



Prof. U. Dutta organized the 4th Centenary Lecture titled “Solution and exsolution of gases in liquid: Principle and some geological applications” delivered by Prof. Pulak Sengupta, Department of Geological Sciences, Jadavpur University held in in GJLT on 29 August 2025.