Geological Society of India

REGIONAL CHAPTER, ODISHA

Programme

NATIONAL SEMINAR

Nature-CM 2026

Natural Resources and their Utilisation with Special Reference to Critical Minerals

November 14-16, 2026 ◆ Venue: Auditorium, CSIR-IMMT, Bhubaneswar

DAY 1 14th November, 2026

09:00 AM – 10:00 AM	**Registration of Delegates (Auditorium Foyer)**

INAUGURAL SESSION (Venue: IMMT Main Auditorium)

Details in Invitation

TECHNICAL SESSION I: PRE-LUNCH PLENARY TRACK

THEME 01 National Resource Assessment

11:45 AM – 12:05 PM	**Keynote Address 1: Overview of Exploration of Mineral resources of the country with special reference to critical minerals** Dinesh Vitthalrao Ganvir, Director General, GSI
12:05 PM – 12:25 PM	**Keynote Address 2: Critical & Strategic Minerals: Global Supply Vulnerabilities and India's Nuclear Fuel Security** Dheeraj Pande, Director, AMD
12:25 PM – 12:40 PM	**Oral Presentation 1: Petrological and Fluid Inclusion Studies of Base Metal Mineralisation in the Lal Heti Area, Western Bastar Craton, Central India: Implications for Ore Genesis** V.V. Sesha Sai, D.B.K. Khuntia, and Subhashree Lenka
12:40 PM – 12:55 PM	**Oral Presentation 2: Concealed Kimberlite Pipe in the Timmasamudram Kimberlite Cluster, India: Insights from Gravity, Magnetic, Geological, and Indicator Mineral Studies** Arijit Barik, Abhisheka V.R., R. B. Singh, S. R. Baswani, Nand Kishore Yadav, Venkanna Banothu, Avantika Singh, Vikash Tripathy, Apurba Banerjee, S. Ravi, and M.L. Dora

12:55 PM – 01:10 PM	**Oral Presentation 3: Structure and Metallogeny of the Singhbhum Craton-Gangpur Mobile Belt Boundary: Insights from the Bamra-Chhatam Sector** J. P. Mohakul, K. K. Behera, Arup Ratan Manna, Maya Tripathi, Tusarkant Sethy, Anupam Mondal, Raja Ahirwar, Swarnali Mondal, and P. K. Panda
01:10 PM – 01:25 PM	**Oral Presentation 4: Geological Exploration of Critical Minerals for Sustainable Resource Security: Emerging Opportunities in India with Special Reference to the State of Odisha** Ashit Kumar Swain, Abhilipsa Dash, Sangitsarita Nanda, Reenu Joshi, and Sanjaya Kumar Dash
01:30 PM – 02:30 PM	**LUNCH BREAK (Designated Dining Hall)**
02:30 PM – 03:30 PM	**Poster Session – Day 1 (Foyer / Poster Area)**

PARALLEL TECHNICAL SESSIONS (POST-LUNCH)

THEME 02 Mineral Exploration

TIME	THEME 02 Mineral Exploration (Main Auditorium)	THEME 02 Mineral Exploration (S.S. Bhatnagar Hall)
03:30 PM – 03:45 PM	**Oral Presentation 5: Space - Time Control Rare Earth Element Metallogeny in India: Implications for Exploration** Yamuna Singh	**Oral Presentation 15: Mineralogical and Geochemical Constraints on the Kanigiri and Podili A-type Granites** Kh. Laksana Singh, C.S. Sindhuja, and M. Ram Mohan
03:45 PM – 04:00 PM	**Oral Presentation 6: Indian kimberlites, lamproites and lamprophyres: Can they be potential targets for niobium?** Fareeduddin	**Oral Presentation 16: Carbon-Buffered Niobium Mineralization via Retrograde Fluid-Graphite Redox Reaction** Sneha Bhaumik, Saptarshi Mallick, Moumita Mondal, Jayaprakash Mahakul, and Anima Gogoi
04:00 PM – 04:15 PM	**Oral Presentation 7: The 4Ts (Tantalum, Tin, Titanium, Tungsten): Critical Elements for Future Green Energy Transition** G. Nagendra Babu, G. Praveen, T. Shiva Kumar, S. V. Satyanarayana, and Ch. Ravi	**Oral Presentation 17: Bismuth Metallogenesis in the Mahakoshal Belt, Central Indian Tectonic Zone** Muduru L. Dora, Tushar Meshram, Srinivas R. Baswani, M. Santosh, Gladsen Bage, Rajkumar Meshram, Mahesh Korakoppa, K Chandramouleeswara Rao, Ravi Kumar Umrao, and Kirtikumar Randive
04:15 PM – 04:30 PM	**Oral Presentation 8: Pathfinder Targeting in Aravalli Basement Against Age/Tectonically-Matched Western Australian Analogues** B. H. Lodhia, P. Agrahari, A. Priyadarshi, and B. I. A. McInnes	**Oral Presentation 18: Unveiling a Tonian Magmatic Excursion: Insight into the Fenite Hosted Critical Element Enrichments** Monika Mishra, Manish Banerjee, Debojit Talukdar, Sandip Nandy, and Chiluvuru Ravi Kumar
04:30 PM – 04:45 PM	**Oral Presentation 9: Conceptual Wilson Cycle Metallogeny in Proterozoic-Phanerozoic History in Karbi Hills** Dilip Majumdar and Abhijit Gogoi	**Oral Presentation 19: Mineral-System-Guided AI and Benchmarking for Gold Exploration: Bhukia JGB Case Study** Satya Nanda Mohanty, Somit Mohanty, and Ashley Brown

TIME	THEME 02 Mineral Exploration (Main Auditorium)	THEME 02 Mineral Exploration (S.S. Bhatnagar Hall)
04:45 PM – 05:00 PM	**Oral Presentation 10: Petrogenesis/Rare-metal Potential of Lithium-bearing Leucogranites/Pegmatites, Kathghora Area** Asit Kumar Mishra, Lipisudha Badapanda, and Satya Narayana Mahapatro	**Oral Presentation 20: Spatial Variability and Diagenetic Evolution of Glauconite in the Kachchh Basin, India: A Comparative East–West Sub-Basin Study of the Lower Cretaceous Bhuj Formation** Sneha Bhaumik, Sreemoyee Chakraborty, Saptarshi Mallick, Asthajita Bhuyan, Kalyan Kumar Neog, Rosalin Das, Jayaprakash Mahakul, Satyananda Maiti, and Bhoomika Mod
05:00 PM – 05:15 PM	**Oral Presentation 11: Geochemistry of Two Stages of Mafic-Ultramafic Magmatism around Singhbhum Shear Zone** Arup Ratan Manna, Saptarshi Mallick, Arun Kumar Kujur, J. P. Mohakul, Manoranjan Mohanty, and Rosalin Das	**Oral Presentation 21: Petrogenesis Governing REE Enrichment in the Dudhi Granitoid Complex, CITZ** Ravi Kumar Umrao, Shahid Iqbal, Arguslal A. Ashok, Pushpesh Narayan, and M.L. Dora
05:15 PM – 05:30 PM	**Oral Presentation 12: Geochemical/Mineralogical Changes in a Deep Weathering Profile over Sukinda Ultramafic Complex** Dev Lalatendu, Biswajeet Lenka, Sourav Misra, and J. P. Mohakul	**Oral Presentation 22: Evolution of Ni-Co-As-Sb Mineralization in the Tungeisuni Block, Sukinda Ultramafic Complex** Suvranshu Sekhar Baral and Geetanjali Rana
05:30 PM – 05:45 PM	**Oral Presentation 13: Structural Controls and REE Geochemistry of Graphite Mineralisation: Khalpadar Prospect** Jugal Kishore Duruka, Ananta Kumar Das, Ramesh Behera, Sasmita Sahoo, and Prabal Kumar Chand	**Oral Presentation 23: Geological Features and Carbon Isotope Signatures of Betul Graphite Deposit, Madhya Pradesh** Biswajeet Lenka, Shradha Shukla, R.K. Sharma, S. S. Sarkar, and S. Goswami
05:45 PM – 06:00 PM	**Oral Presentation 14: Lithium Potential in LCT Pegmatites of Mangalur Schist Belt, Eastern Dharwar Craton, India** M. Satyanarayanan, K. Thillairaj, G. Parthasarathy, C.S. Sindhuja, Ajay Kumar Singh, and Dheeraj Pande	**Oral Presentation 24: Critical Elements Redistribution (V-Ga-Li) during Lateritization of Deccan Trap Basalts** Janmejaya Sahoo, S. K. Samala, and M. L. Dora
06:00 PM – 07:30 PM	**CULTURAL PROGRAMME** **(Classical & Folk Art of Odisha, Main Auditorium)**	
07:30 PM ONWARD	**WELCOME GALA DINNER** **(Amrapali, CSIR-IMMT Auditorium Lawn)**	

DAY 2 15th November, 2026

TECHNICAL SESSION III: FORENOON PLENARY TRACK
THEME 02 Mineral Exploration (Main Auditorium)

09:00 AM – 09:20 AM	**Keynote Address 3: Role of AI - ML in mineral exploration** Prof A.K. Porwal (IIT, Mumbai)
09:20 AM – 09:40 AM	**Keynote Address 4: Strategic Critical Mineral Resource Extraction and Metallurgical Processing Technologies** Dr. Kali Sanjay (Chief Scientist, CSIR-IMMT)
09:40 AM – 09:55 AM	**Oral Presentation 25: Mineralogical and Geochemical Characteristics of Critical Elements Associated with Lower Gondwana Coals of the Ib Valley Basin, India** Sambit Dalai, Nilima Dash, and Bibhuranjan Nayak
10:00 AM – 10:15 AM	**Oral Presentation 26: Isotope geochemistry and high-spatial-resolution microanalysis in critical mineral exploration: challenges, emerging tracers, and future pathways for India** Susobhan Neogi, Trisrota Chaudhuri, and Sandip Nandy
10:15 AM – 10:30 AM	**Oral Presentation 27: In Situ Trace Element Geochemistry of Magnetite in Critical Mineral Exploration – A Review** Aindrila Mukherjee and Sisir K. Mondal
10:30 AM – 10:45 AM	**Oral Presentation 28: Vibrational Spectroscopic Studies of Selected Critical Minerals from India using FTIR and Laser Micro-Raman Methods** Bhaskar J. Saikia, G. Parthasarathy, Rashmi R. Borah, and B. Saravanan
10:45 AM – 11:00 AM	**Oral Presentation 29: Geological, mineralogical and fluid-inclusion constraints on Copper mineralisation in Cherlopalle–Kanaganapalle area, Ramagiri–Penakacherla Schist Belt, Eastern Dharwar Craton, southern India** Smita Priyadarshini Ojha, V.V. Sesha Sai, Sini Raj, and Animesh Thakur
11:00 AM – 11:15 AM	**Oral Presentation 30: Critical Mineral Prospective of the Nampisha Area of the Naga Hills Ophiolite (NHO), Indo-Myanmar Orogenic Belt, Manipur** Biswaranjan Mohanty, Ringphami Awungshi, and Ranjit G. Khangar
11:15 AM – 11:30 AM	**Oral Presentation 31: Supervised Machine Learning (SML) Models for Gold Mineralization** P.V.S. Raju, Mudili Venkata Sai, and Saleem Ahmed Khan
11:30 AM – 11:45 AM	**Oral Presentation 32: The Daspalla Graphite Belt: India's Critical Mineral Push and an Emerging Greenfield Frontier in the Eastern Ghats Mobile Belt, Nayagarh District, Odisha** Tarini Prasad Sahoo, Kallola Kumar Behera, and Biswajeet Lenka
11:45 AM – 12:00 PM	**TEA BREAK**

TECHNICAL SESSION IV:
Theme 3 ENERGY TRANSITIONS & STRATEGIC METALS (Main Auditorium)

12:00 PM – 12:15 PM	**Oral Presentation 33: Exploring Lithium-Cesium-Tantalum (LCT) Pegmatites in the Bihar Mica Belt: Implications for Lithium and other Critical Mineral Exploration** Sujith M.S., Suraj P. Vichhi, H.S. Rajaraman, and S.K. Dash

12:15 PM – 12:30 PM	**Oral Presentation 34: Graphite Mineralization at Gunkalam and Ambativalasa areas, Eastern Ghats Mobile Belt, India: Insights from Petrography, XRD, and Raman Spectroscopy** Raghunath Mishra, Murari Prasad Kesari, Snigdha Dash, and Apurba Banerjee
12:30 PM – 12:45 PM	**Oral Presentation 35: New exploration data on vanadium and graphite mineralization in Daba Gamlin-Liromoba areas of Arunachal Pradesh, India: A stimulus to ramp up technology development on metal extraction from silicates?** Siddhartha Karmakar, Diethovilie Pieru, Mrinal Kanti Mukherjee, Parminder Singh Sethi, Biswaranjan Mohanty, Muduru L Dora, Ravi Kumar Umrao, and Arindam Gantait
12:45 PM – 01:00 PM	**Oral Presentation 36: Mineralogy, Petrology and Geochemistry of REE-bearing Granites of Son Valley Crystallines** Abhishek Verma and Sakthi Saravanan Chinnasamy
01:00 PM – 02:00 PM	**LUNCH BREAK**
02:00 PM – 03:00 PM	**Poster Session – Day 2 (Foyer / Poster Area)**

PARALLEL TECHNICAL SESSIONS (POST-LUNCH)

TIME	THEME 03 Critical Minerals in Energy Transition (Main Auditorium)	THEME 04 Resource Extraction & Processing (S.S. Bhatnagar Hall)
03:00 PM – 03:15 PM	**Oral Presentation 37: Secondary Extraction for Lithium: Cleaner, Smarter, and Greener way to achieve SDGs** Krutika Jangale, Pratik Godbole, M. L. Dora, Kaustubh Deshpande, Sanjeevani Jawadand, Rajkumar Meshram, and Kirtikumar Randive	**Oral Presentation 41: Green Collector to Enhance Flotation Selectivity of Low-grade Rock Phosphate Ore: Targeting Carbonate and Fluorapatite Separation** Gayatri Deepaksingh Hazare, Shashanka Shekhar Sahoo, Ranjan Kumar Dwari
03:15 PM – 03:30 PM	**Oral Presentation 38: Influence of Particle-Size Distribution on Geochemical Characteristics of Fly Ash** Payaswini Das, Bibhuranjan Nayak, and Nilima Dash	**Oral Presentation 42: Mechanistic Insights into Hydroxamate Collector Adsorption in the Flotation of Rare-Earth-Bearing Fluorapatite** Pravanjani Swain, Shivkumar Angadi, Swagat S. Rath
03:30 PM – 03:45 PM	**Oral Presentation 39: Mineral prospectivity mapping using multi-source geoscience data: A novel approach to REE exploration in Dharwar craton, South India** Ajoy K. Padhi, C. Venkateswar Reddy and Bibhu P. Das	**Oral Presentation 43: Extraction of Rare Earth Elements by Deep Eutectic Solvent** Soumyashree Priyadarshinee, K.J. Sankaran, Benadict Rakesh
03:45 PM – 04:00 PM	**Oral Presentation 40: Integrating Electrical Tomography and Geological mapping to delineate platinum group elements (PGEs) enriched chromite layers in Sittampundi Anorthosite Complex, Southern India** Dewashish Kumar, Arun Kumar Ojha, Ankurjyoti Sarmah, M. Satyanarayanan, and Prakash Kumar	**Oral Presentation 44: Fly ash: Holistic Utilization and Rare Earth Elements (REE) Recovery** Bhagat Lal Tudu, Vijay, Alok Jyoti Bahalia, and Abhaya Kumar Sahoo, Abdul Rauf Sheik,and Kali Sanjay

04:00 PM – 04:15 PM	**Hall Consolidation (Delegates assemble in Main Auditorium)**

04:15 PM – 04:45 PM	Presentation on Field Trip to Notara, Nayagarh District on 16.11.2026 and Valedictory Function (Awards for Best Poster Entries & Certificates distribution)
04:45 PM – 05:00 PM	Tea Break (Delegates assemble in Main Auditorium)
05:00 PM – 07:30 PM	ANNUAL GENERAL MEETING (AGM) High-level official annual meeting of the Geological Society of India
07:00 PM ONWARD	CONCLUDING GALA DINNER (Amrapali, CSIR-IMMT Auditorium Lawn)

DAY 3 16th November 2026

Field Trip to Notara, Itamati, Nayagarh District Odisha, Distance - 100 Km

- Assembly at IMMT Seminar Venue at 07.00 AM
- Departure from IMMT Seminar Venue at 07.30 AM
- Arrival at Notara, Itamati, Nayagarh : 11.00 AM (Packed Breakfast Enroute)
- Field work around Notara – 11.00 AM – 01.30 PM
- LUNCH – 01.30 PM - 02.30 PM at Notara
- Concluding Session and Discussion: 02.30 PM – 03.30 PM
- Arrival IMMT Seminar Venue – 06.00 PM