



Press Release

**IIT Bhubaneswar receives award for developing satellite-based technology for Bauxite prospecting and exploration in Odisha**

**Bhubaneswar, 14<sup>th</sup> January 2026:** Dr. Ashim Sattar, Assistant Professor, Indian Institute of Technology (IIT) Bhubaneswar was awarded for developing satellite-based technology for Bauxite prospecting and exploration in Odisha published in Journal of Geochemical Exploration, in the 4<sup>th</sup> Odisha Mining and Infrastructure International Conference 2026. The event was graced by Shri. Sampad Swain, Industries and Skill Development Minister, Government of Odisha.

Dr. Ashim Sattar and his research group successfully identified potential bauxite depositional sites at a regional-scale across the Koraput and Rayagada districts of Odisha using advanced hyperspectral satellite remote sensing. The study integrated hyperspectral satellite data, field surveys, geochemical and petrographic assessments, and laboratory spectral studies. Together, these techniques provide a robust framework for first-order mapping of potential bauxite deposits. This pioneering study marks the first large-scale remote sensing-based assessment of bauxite zones in Odisha.

Bauxite, the primary ore of aluminum, is a critical raw material for industries such as aerospace, construction, and packaging. With the global aluminum market projected by Credit Suisse to face a supply shortfall by 2030, ensuring a stable domestic supply has become a strategic priority for India. Odisha holds an estimated 2.3 billion tonnes of bauxite reserves, accounting for over 50% of India's total resources. However, much of this mineral lies in challenging terrains of the Eastern Ghats, making traditional exploration time-consuming, expensive, and environmentally intensive.

Using hyperspectral imaging, the IIT Bhubaneswar team leveraged the concept of spectral signature which is a distinctive pattern of electromagnetic response of earth materials to detect potential bauxite-bearing zones across two districts of Odisha. This technique can offer a cost-effective, rapid, and eco-friendly approach to support sustainable mineral exploration in Odisha and beyond.

The findings are expected to support the mining industry and policymakers in identifying potential Bauxite exploration zones, optimizing resources, and minimizing environmental impacts. This initiative lays the foundation for next-generation mineral mapping and sustainable resource management in Odisha.

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