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PRESS RELEASE

IIT (ISM) Dhanbad Alumnus Wins PanIIT Alumni India Hackathon for AI Innovation in Waste Utilization and Cleaner Energy

IIT (ISM) Dhanbad alumnus Deveshi Singh, a 2025 B.Tech graduate in Engineering Physics, has emerged as a theme winner at the AI for Bharat 2 Hackathon, held as part of the PanIIT Bangalore Summit 2026 in Bengaluru, for developing an AI-powered solution aimed at accelerating catalyst discovery for cleaner energy, waste utilization and sustainable industrial applications.

Organised by PanIIT Alumni India in collaboration with the Government of Karnataka, the AI for Bharat 2 Hackathon attracted more than 16,000 participants across 12 themes, emerging as a major national platform for practical AI innovation focused on solving real-world challenges.

Working as a solo participant, Deveshi developed IndicAI, an AI-driven platform under the theme AI Platform for Molecular Discovery in Chemical Catalysis and Synthetic Biology. The innovation focuses on accelerating the discovery of advanced catalysts that can help convert carbon dioxide into methanol, creating possibilities for cleaner fuel production and carbon utilization.

Explaining the inspiration behind the innovation, Deveshi Singh said, “The project was inspired by India’s waste and emissions challenge. According to industry estimates, India generates around 200 million tonnes of domestic waste annually and nearly 3 billion tonnes of carbon dioxide from waste and related sources in India, including burning and incineration. The prototype generates novel catalysts for CO₂-to-methanol conversion, with the aim of supporting cleaner energy, greater self-sufficiency and lower emissions.”

She further said that IndicAI uses variational autoencoders—advanced AI models—to learn the chemical search space and generate promising catalyst candidates. The model can also be fine-tuned for multiple industrial reactions, making it adaptable for applications linked to biodegradable waste and emissions from burning.

Prabhat Kumar (IRS), Chairman, PanIIT Alumni India, said the hackathon was designed to identify and elevate young innovators working on real-world problems.

Ashok Kumar, General Secretary of PanIIT Alumni India and an IIT (ISM) Dhanbad alumnus, said Singh’s success reflects both the student’s calibre and the institute’s culture of innovation.

The achievement highlights IIT (ISM) Dhanbad’s growing footprint in deep-tech and applied innovation, while reinforcing the institute’s emphasis on student-led research addressing sustainability and industrial challenges through artificial intelligence.

The PanIIT Bangalore Summit 2026, inaugurated by Karnataka Governor Thaawarchand Gehlot, brought together over 2,000 delegates, including innovators, founders, investors, policymakers and technology leaders, making it a significant national platform for emerging AI and deep-tech solutions.

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