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Inaugural Session Sets the Tone for Three-Day Workshop on AI/ML in the Oil and Gas Industry at IIT (ISM)

The three-day workshop on *Application of AI/ML in the Oil and Gas Industry* commenced on Thursday at IIT (ISM) Dhanbad with an engaging inaugural session highlighting the transformative role of Artificial Intelligence and Machine Learning in the petroleum sector.

Delivering the presidential address, Director Prof. Sukumar Mishra traced the evolution of AI and ML from a phase of early skepticism to today's data-driven resurgence. He observed that the rapid growth of IoT-generated data presents vast opportunities alongside challenges related to data quality, uncertainty and synchronization. Emphasizing the importance of explainable and informed AI, he underlined that engineers must responsibly interpret analytical outputs to convert raw data into meaningful insights, enabling sound decision-making in complex domains such as oil and gas for the benefit of industry and society.

Prof. Vikash Mahto, Head of the Department of Petroleum Engineering, welcomed the Director, distinguished speakers and participants. He described petroleum operations as highly complex and capital-intensive, noting that AI/ML tools are becoming essential for improving efficiency and addressing operational challenges. He termed the workshop a significant platform for knowledge exchange and industry–academia collaboration, urging participants to actively engage in the deliberations.

Earlier, Prof. Keka Ojha, Dean (Continuing Education Program), welcomed the dignitaries and participants and outlined the objectives of the workshop. She highlighted the growing role of AI/ML in reducing uncertainty, risks and costs in offshore exploration and production, and emphasized the workshop's hands-on approach featuring expert lectures and case studies focused on reservoir characterization, performance prediction and informed economic decision-making.

The inaugural day included technical sessions on risk and uncertainties in oil and gas fields, seismic facies analysis using clustering algorithms, the role of data science in modern petroleum operations, AI applications in oil fields, and geomechanics topics such as sonic log prediction and wellbore stability analysis.

Over the next two days, deliberations will cover subsurface modeling, agentic AI, production data analytics, seismic inversion, neural networks, and industry case studies by leading global energy companies, culminating in a panel discussion and valedictory session.

Prof. Sayantan Ghosh, Coordinator of the workshop, proposed the vote of thanks, expressing gratitude to the speakers, participants and organizing team for contributing to a successful inaugural session.

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