Centenary Lecture Series-6

Prof. Sudarsan Ghosh Discusses Advances in Machining with Textured Tools at IIT (ISM) Dhanbad's Centenary Lecture Series – 6

As part of the prestigious Centenary Lecture Series celebrating 100 years of academic and research excellence, the Department of Mechanical Engineering, IIT (ISM) Dhanbad, hosted **Prof. Sudarsan Ghosh**, from the Department of Mechanical Engineering, IIT Delhi, for its sixth distinguished lecture.

Held on **15th April 2025** at the Department Seminar Room, Prof. Ghosh delivered an insightful talk on **"Application of Textured Cutting Tools in Machining."** The lecture focused on the role of micro-texturing in cutting tools to improve machining performance by reducing tool wear, cutting forces, and friction—ultimately enhancing tool life and surface finish. Drawing from his extensive research, Prof. Ghosh presented experimental and modelling perspectives that underscore the future of sustainable and high-performance manufacturing.

The event was attended by **Prof. N.K. Singh, and Prof. Kailash Jha** along with senior faculty members. Students and research scholars engaged actively during the interactive session that followed the talk.

The event was coordinated by Prof. Abhijeet Sethi, Coordinator, Centenary Lecture Series, Mechanical Engineering Department.

The Centenary Lecture Series continues to bring leading experts to IIT (ISM) Dhanbad, promoting cross-disciplinary learning, innovation in engineering, and academic enrichment as the institute marks its centenary milestone.

About Dr. Sudarshan Ghosh,

Prof. Sudarsan Ghosh, currently a Professor in the Department of Mechanical Engineering at IIT Delhi, is a distinguished academic with extensive expertise in grinding of ceramics and superalloys, machining of titanium alloys, surface engineering, and sustainable machining using nanofluids and solid lubricants. With over two decades of academic and research experience, he has held key teaching and research positions at premier institutes including IIT Delhi, IIT Guwahati, and IIT(ISM) Dhanbad. His notable achievements include leading and contributing to multiple high-value sponsored research projects funded by agencies such as the Ethiopian Government and DST, with a cumulative funding exceeding ₹1 crore. As a Principal Investigator, he has pioneered work on cryogenically coupled vibratory EDMP and advanced grinding of titanium using nanofluids and liquid nitrogen, pushing the boundaries of sustainable manufacturing. He has also led impactful consultancy projects, including a ₹16.26 lakh project for Mitsubishi Heavy Industries Ltd., Japan, focusing on predictive modelling of cutting forces and tool wear. Prof. Ghosh's research contributions are well documented in prestigious journals such as Journal of Materials Science and Metallurgical and Materials Transactions A, reflecting his commitment to advancing precision manufacturing technologies.