A Report on Expert Lecture on "Role of Surface Texturing on Machining of Hard Materials" Organized by Department of Mechanical Engineering on 28.09.2026



Report Submitted by: Dr. Praveen Kumar B, Sr. Assistant Professor & Alumni Coordinator, Department of Mechanical Engineering
Resource person Details: Dr. Arul Kirubakaran D, Assistant Professor, Division of Mechanical Engineering, Karunya Institute of Technology and Sciences, Coimbatore-641114.
Venue: KKB 004
Time: 2.00 PM
Mode of Conduct: Online
Attendees Count: 52 Mechanical Engineering 3rd year students and 1 faculty member.
Report Received on 30.10.2026.

Objective of the Program

1. To provide students with an understanding of surface texturing and its significance in improving machining performance, particularly when machining hard materials.
2. To familiarize students with the influence of surface texturing on friction, wear, cutting forces, tool performance, and surface finish during machining operations.
3. To bridge the gap between theoretical concepts covered in Manufacturing Technology II and advanced industrial and research applications by exposing students to recent developments in machining technology.

Event details:

The Department of Mechanical Engineering organized an expert lecture titled "**Role of Surface Texturing on Machining of Hard Materials**" for students studying Manufacturing Technology II at MITS (Deemed to be University). The lecture aimed to enhance students' understanding of advanced machining techniques and the importance of surface engineering in improving machining efficiency, tool life, and product quality.

The session commenced with a welcome and introductory address by Dr. Praveen Kumar B, Faculty Coordinator, Department of Mechanical Engineering, who highlighted the importance of expert lectures in enriching classroom learning through industry-oriented knowledge, research insights, and practical applications. He emphasized the relevance of advanced machining technologies in modern manufacturing and their role in addressing the challenges associated with machining hard materials.

The introduction of the resource person was delivered by Mr. Hemanth, a third-year Mechanical Engineering student, who introduced Dr. Arul Kirubakaran D, Assistant Professor, Division of Mechanical Engineering, Karunya Institute of Technology and Sciences, Coimbatore – 641114. He welcomed the speaker and highlighted the importance of learning from academic experts working in advanced manufacturing and machining research.

Dr. Arul Kirubakaran D delivered an informative lecture on “Role of Surface Texturing on Machining of Hard Materials.” He explained the concept of surface texturing and its applications in improving the tribological and machining performance of cutting tools and engineering surfaces. The lecture covered how engineered surface patterns can influence friction, tool–chip interaction, heat generation, cutting forces, tool wear, and surface quality during machining operations.

The speaker also discussed the challenges associated with machining hard materials and explained how surface texturing can contribute to improving machining performance and tool life. The session helped students understand the relationship between surface engineering, tribology, and advanced manufacturing processes. Relevant technical examples and research-based insights enabled students to connect the theoretical concepts discussed in Manufacturing Technology II with practical engineering applications.

The lecture was interactive and provided students with an opportunity to broaden their knowledge of emerging manufacturing technologies. It encouraged them to explore advanced machining methods, understand the importance of surface modification techniques, and appreciate the role of research and innovation in developing efficient and sustainable manufacturing processes.

Outcomes of the Event

- Students gained an understanding of surface texturing and its role in improving machining performance while processing hard materials.
- The lecture enhanced students' knowledge of the effects of surface texturing on friction, cutting forces, tool wear, heat generation, and surface finish.
- Students developed an appreciation of the practical applications of surface engineering and advanced machining technologies, strengthening the connection between classroom learning and contemporary manufacturing research.