



છોટુભાઈ ગોપાલભાઈ પટેલ પ્રૌદ્યોગિકી સંસ્થાન, બારડોલી
Chhotubhai Gopalbhai Patel Institute of Technology, Bardoli

Uka Tarsadia University

Department of Mechanical, Automobile, and Mechatronics Engineering, C G Patel Institute of Technology

Guest Lecture

on

“Advances in Mechanical Measurement and
Metrology”

Date	Tuesday, March 10, 2026
Venue	C-105, SRIMCA
Time	11:00 AM to 01:00 PM
Total Number of Participants	45
Name of Expert	Mr. Vishal Tibra, Deputy General Manager, Global CAD Technology, Hazira – Surat
Event Coordinator	Prof. Jayesh Parekh Assistant Professor, Mechanical/ Mechatronics/ Automobile Engineering Department, CGPIT, UTU
Program Objective	To provide students with industry insights into advanced metrology, CMM, and reverse engineering, bridging the gap between theoretical knowledge and modern automated inspection systems.

Program Outline	An expert session by Mr. Vishal Tibra covering CMM fundamentals, reverse engineering principles, and advanced metrology. The program concluded with an exploration of automatic inspection systems, bridging academic concepts with industrial applications.
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Introduction:

The Department of Mechanical, Automobile, and Mechatronics Engineering organized an expert session on Tuesday, March 10, 2026, featuring Mr. Vishal Tibra, Deputy General Manager of Global CAD Technology. With his extensive industry experience, Mr. Tibra delivered an insightful lecture on contemporary trends in metrology and quality assurance.

The session comprehensively covered fundamental concepts of Coordinate Measuring Machines (CMM), the principles and applications of Reverse Engineering, and advancements in Advanced Metrology. A significant highlight was the discussion on Automatic Inspection Systems and their integration into modern manufacturing ecosystems. The lecture successfully bridged the gap between theoretical curriculum and industrial practices, providing students with valuable exposure to cutting-edge technologies shaping the future of manufacturing and quality control. The interactive session concluded with an engaging Q&A round, where students clarified their doubts and explored career opportunities in metrology and CAD technology.

Objective and Significance:

The primary objective of organizing this expert session was to provide students with comprehensive exposure to advanced metrology technologies and their industrial applications. The lecture aimed to familiarize students with the fundamental principles of Coordinate Measuring Machines (CMM) and their role in precision manufacturing. Additionally, the session sought to introduce the concepts of Reverse Engineering, enabling students to understand how existing components can be digitized and reproduced. Another key objective was to demonstrate the significance of Automatic Inspection Systems in enhancing quality control and reducing human error in production lines. Furthermore, the session intended to create awareness about career opportunities in CAD technology and metrology, encouraging students to explore specialized domains within mechanical engineering.

The significance of this guest lecture lies in its ability to bridge the gap between academic learning and real-world industrial practices. In an era where manufacturing is increasingly driven by automation and precision, understanding advanced metrology becomes essential for aspiring engineers. Mr. Vishal Tibra's extensive industry experience provided students with practical insights that textbooks cannot offer. The discussion on CMM and Reverse Engineering highlighted how these technologies contribute to product development, quality assurance, and cost optimization. Moreover, the session on Automatic Inspection Systems emphasized the growing importance of automation in maintaining competitive advantage in global markets. By interacting with an industry expert, students gained clarity on current industry expectations and emerging trends. The lecture also fostered a culture of continuous learning and innovation within the department, inspiring students to pursue research and careers in metrology, CAD technology, and advanced manufacturing systems. Ultimately, such initiatives strengthen the academia-industry interface, preparing students to become industry-ready professionals.

Key Highlights:

- **Expert Guidance:** Mr. Vishal Tibra, Deputy General Manager of Global CAD Technology, shared his extensive industry knowledge and practical experiences with students.
- **Comprehensive Coverage:** The session thoroughly explored four critical topics: Introduction to CMM, Reverse Engineering principles, Advance Metrology, and Automatic Inspection Systems.
- **Industry-Academia Bridge:** The lecture effectively connected theoretical concepts taught in classrooms with real-world industrial applications and current manufacturing trends.
- **Cutting-Edge Technologies:** Students gained exposure to modern quality control methodologies and automated inspection techniques transforming the manufacturing sector.
- **Interactive Learning:** An engaging Q&A session followed the lecture, allowing students to clarify doubts and seek career guidance directly from the industry expert.
- **Career Insights:** The session provided valuable awareness about emerging career opportunities in metrology, CAD technology, and advanced manufacturing domains.

Pictures:









Conclusion:

The expert guest lecture by Mr. Vishal Tibra, Deputy General Manager of Global CAD Technology, proved to be an immensely valuable and enriching experience for students of the

Department of Mechanical, Automobile, and Mechatronics Engineering. His comprehensive presentation on Coordinate Measuring Machines, Reverse Engineering, Advance Metrology, and Automatic Inspection Systems provided profound insights into the evolving landscape of manufacturing and quality assurance.

The session successfully achieved its objective of bridging the gap between academic curriculum and industrial practices. Students gained clarity on how precision measurement technologies are revolutionizing production processes and ensuring superior quality standards. The discussion on Reverse Engineering particularly highlighted how traditional manufacturing is transforming through digital integration.

Mr. Tibra's industry perspective on Automatic Inspection Systems underscored the growing importance of automation in maintaining global competitiveness. His practical examples and real-world case studies made complex technological concepts accessible and engaging. The interactive Q&A session further enhanced learning outcomes, with students actively participating and seeking guidance on career pathways.

The department expresses sincere gratitude to Mr. Vishal Tibra for dedicating his time and sharing his expertise. Such initiatives strengthen the academia-industry interface, preparing students to become competent professionals ready to contribute meaningfully to the manufacturing sector. The lecture will undoubtedly inspire students to explore specialized domains within metrology and advanced manufacturing technologies.

Report Prepared by: Darshan Kapadia

Signature of Head of Department

Date: 11-03-2026