



KC Group of Research and Professional Institutes Pandoga, Una (H.P.)

REPORT ON EXPERT LECTURE

Emerging Opportunities in Future Technologies: Smart Manufacturing, Semiconductor Manufacturing, Robotics & Automation

1. Introduction

With rapid technological advancements and the advent of Industry 4.0, the global industrial landscape is undergoing a transformative shift. Technologies such as **Smart Manufacturing, Semiconductor Manufacturing, Robotics, and Automation** are redefining production processes, workforce requirements, and business models. In this context, it has become essential for engineering students to understand emerging technologies, industry expectations, and future career opportunities.

Keeping this objective in view, **KC Group of Research & Professional Institutes, Pandoga, Himachal Pradesh**, organized an expert lecture for 3rd and 4th year B.Tech students on **29th January 2026 at 11:00 AM** in the **B-Tech Seminar Hall**. The session aimed to bridge the gap between academic learning and real-world industrial practices by exposing students to future-oriented technologies.

The expert lecture was delivered by **Mr. Bharat Bhushan**, Senior Manager at **NAM:TECH (New Age Makers Institute of Technology)**, Research Park, **IIT Gandhinagar, Gujarat**. The session focused on **emerging opportunities in future technologies**, particularly Smart Manufacturing, Semiconductor Manufacturing, Robotics, and Automation.

2. Objectives of the Expert Lecture

The primary objectives of the session were:

- To create awareness among engineering students about future technology trends
- To introduce the concept of Industry 4.0 and Smart Manufacturing
- To highlight career opportunities in Semiconductor Manufacturing and Automation sectors
- To help students understand industry expectations, skill requirements, and employability
- To motivate students for career planning, higher education, and industry readiness
- To strengthen industry-academia interaction
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3. Profile of the Resource Person

The session was conducted by **Mr. Bharat Bhushan**, an experienced industry and academic professional.

Profile Highlights:

- UG in Electronics & Communication Engineering

- PG in Computer Science
- PG in Management
- Certified Career Counsellor from the University of California, Los Angeles (UCLA)
- 18+ years of experience in Industry and Academia
- Worked with reputed organizations such as:
- KMG Infotech Ltd. (Fortune 500 Company)
- Aakash Institute
- BML Munjal University (Hero Group Initiative)
- Currently working as **Senior Manager at NAM:TECH**

His extensive experience and industry exposure added significant value to the session.

4. About NAM:TECH

NAM:TECH (New Age Makers Institute of Technology) is an industry-aligned education initiative of **ArcelorMittal and Nippon Steel**, located at **Research Park, IIT Gandhinagar, Gujarat**.

- ArcelorMittal is the world's 2nd largest steel manufacturer, operating in more than 16 countries.
- Nippon Steel is the world's 4th largest steel manufacturer, operating in over 15 countries.

NAM:TECH focuses on **Industry 4.0 technologies**, enabling students to work on **real-world industrial problems**, gain hands-on experience, and develop future-ready skills in advanced manufacturing and automation domains.

5. Overview of the Topic

5.1 Smart Manufacturing & Industry 4.0

The speaker explained that **Smart Manufacturing** is the backbone of **Industry 4.0**, where traditional manufacturing systems are integrated with digital technologies such as:

- Internet of Things (IoT)
- Artificial Intelligence (AI)
- Big Data Analytics
- Cloud Computing
- Cyber-Physical Systems

Smart Manufacturing enables real-time monitoring, predictive maintenance, improved productivity, reduced downtime, and better decision-making. Students were informed about how industries are shifting from manual and semi-automated systems to fully connected smart factories.

5.2 Semiconductor Manufacturing

The session highlighted the growing importance of **Semiconductor Manufacturing**, especially in the context of:

- Electronics
- Artificial Intelligence
- Automotive industry
- Telecommunications
- Consumer electronics

The speaker emphasized that India is emerging as a major hub for semiconductor manufacturing due to government initiatives, global demand, and technological advancements. Students were briefed about career opportunities in chip design, fabrication, testing, and quality assurance.

5.3 Robotics & Automation

Robotics and Automation were discussed as key drivers of industrial efficiency and precision. The speaker explained how robots are increasingly used in:

- Manufacturing
- Healthcare
- Logistics
- Agriculture
- Defense and space applications

Students learned about the role of automation engineers, robotics programmers, and system integrators, along with the required technical skills such as control systems, sensors, machine learning, and programming.

6. Session Highlights

- The lecture was interactive and engaging
- Real-world industry examples and case studies were discussed
- Students actively participated and asked questions related to:
 - Career opportunities
 - Skill development
 - Higher education pathways
 - Industry expectations
- The speaker guided students on how to align their academic learning with industry needs
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7. Outcomes of the Session

The expert lecture proved to be highly beneficial and resulted in the following outcomes:

- Enhanced awareness of future technologies and Industry 4.0
- Improved understanding of career opportunities in emerging sectors
- Motivation among students to acquire industry-relevant skills
- Better clarity regarding career planning and higher studies
- Strengthened industry–academia collaboration

8. Participation

The session was attended by **3rd and 4th year B.Tech students**, along with faculty members. The students showed keen interest and actively engaged throughout the session, making it a successful academic and career-oriented activity.

9. Conclusion

The expert lecture on “**Emerging Opportunities in Future Technologies like Smart Manufacturing, Semiconductor Manufacturing, Robotics & Automation**” was successfully conducted at KC Group of Research & Professional Institutes, Pandoga. The session provided valuable insights into future technologies and industry trends, helping students understand the evolving demands of the engineering profession.

Such expert interactions play a crucial role in preparing students for the future by enhancing their technical knowledge, career awareness, and industry readiness. The session aligned well with institutional objectives and contributed significantly to student development and academic enrichment.

Events photograph:



The poster features the KC Group of Institutions logo at the top left, with the text "KC GROUP OF INSTITUTIONS" and "Pandoga | Una" to its right. The main title "EXPERT LECTURE On SMART MANUFACTURING INDUSTRY 4.0" is prominently displayed in the center. Below this, a blue rounded rectangle contains the speaker's name "Mr Bharat Bhushan" and his title "SENIOR MANAGER NAM:TECH, IIT, Gandhinagar, Gujarat." At the bottom, the event details "29th Jan 2026. | 11:00 Am | Seminar Hall" are listed. The background is dark blue with orange and white accents, including a stylized cityscape at the bottom.

KC GROUP OF INSTITUTIONS
Pandoga | Una

EXPERT LECTURE On
**SMART
MANUFACTURING
INDUSTRY 4.0**

SPEAKER
Mr Bharat Bhushan
SENIOR MANAGER
NAM:TECH,
IIT, Gandhinagar, Gujarat.

29th Jan 2026. | 11:00 Am | Seminar Hall

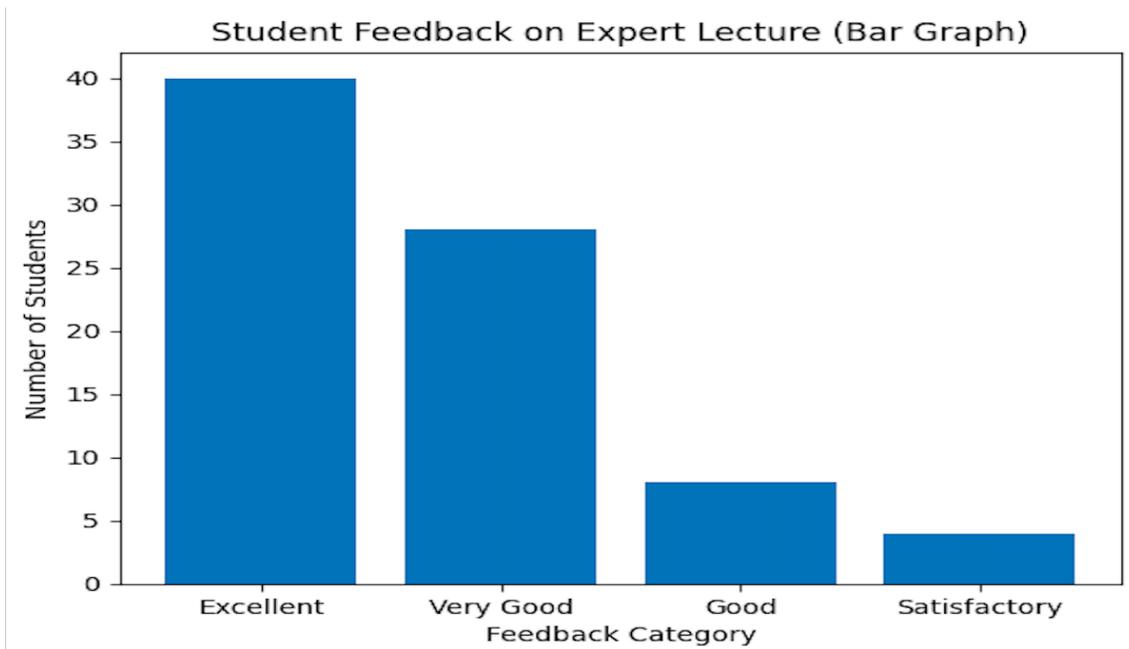




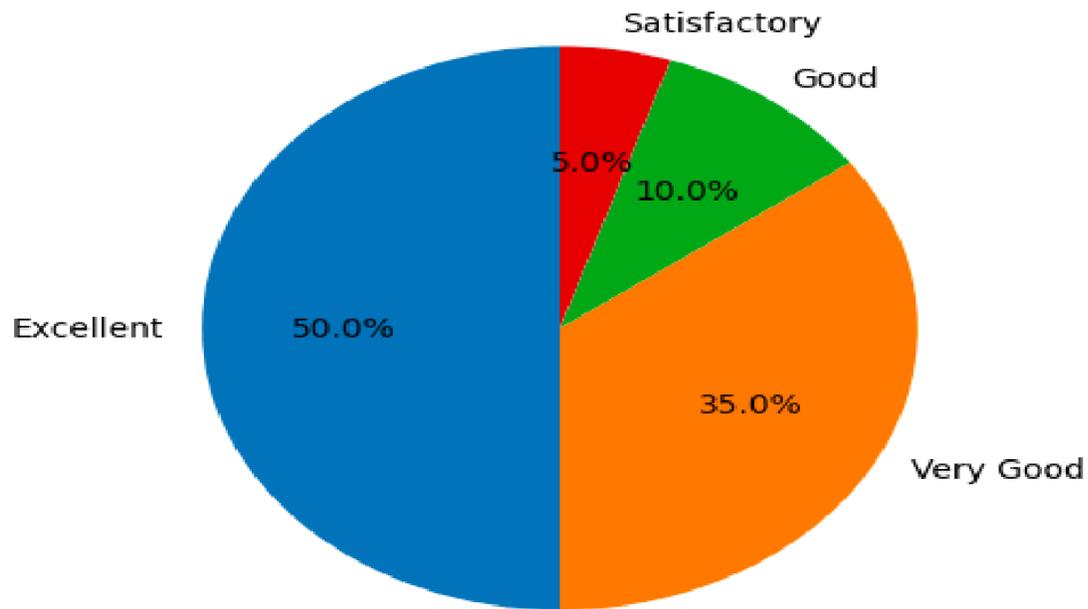
10. Student Feedback

Student Feedback Summary (Total Students: 80)

Feedback Category	No. of Students	Percentage
Excellent	40	50%
Very Good	28	35%
Good	8	10%
Satisfactory	4	5%



Student Feedback on Expert Lecture (Pie Chart)



Prepared by:

Dr. Sikander Hans

(Principal)

KC Group of Research & Professional Institutes Pandoga Himachal Pradesh