



ATHARVA EDUCATIONAL TRUST'S ATHARVA COLLEGE OF ENGINEERING

(Approved by AICTE, Recognized by Government of
Maharashtra & Affiliated to University of Mumbai - Estd. 1999 -

ACE/SEMINAR/HAS/FR- 32/2025-26

DATE: 17th February 2026

A Seminar on “Role of Chemistry in Semiconductor and Electronics Industry”

Date:	17.02.2026
Time:	11.00 am to 12:00 pm
Venue:	Smart Classroom 2, Phase 1
No. of students attended:	80
Resource Person:	Dr. Hemant Khanolkar (HOD, Department of Humanities Fr. Conceicao Rodrigues College of Engineering, Bandra (W), Mumbai)
Coordinator:	Dr. Shivani Singh, Dr. Sunita Dhawale, Mr. Abhay Bendekar

Objective:

The primary objectives of the lecture were:

- To highlight the importance of chemistry in semiconductor technology.
- To explain chemical processes involved in microchip fabrication.
- To create awareness about career opportunities in the electronics and semiconductor industry.
- To encourage interdisciplinary learning among engineering students.

Outcome:

After attending the seminar, students were able to:

- Understand the interdisciplinary nature of semiconductor technology.
- Recognize the crucial role of chemistry in electronics manufacturing.
- Identify potential career paths in semiconductor and electronics industries.
- Appreciate the importance of research and innovation in materials chemistry.



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3. Overview of the Seminar

Dr. Khanolkar began the session by emphasizing the rapid growth of the global semiconductor industry and India's emerging role in electronics manufacturing. He explained how chemistry forms the backbone of semiconductor processing, from raw material purification to advanced nano-fabrication techniques.

Key Topics Covered:

- **3.1 Fundamentals of Semiconductor Materials**
 - Chemical properties of silicon and compound semiconductors
 - Doping processes and impurity control
 - Crystal growth and wafer preparation
- **3.2 Chemical Processes in Chip Fabrication**
 - Photolithography and photoresists
 - Chemical vapor deposition (CVD)
 - Etching (wet and dry chemical etching)
 - Oxidation and diffusion processes
- **3.3 Role of Chemistry in Electronics Industry**
 - Development of conductive polymers
 - Nano-materials and advanced electronic materials
 - Battery chemistry and energy storage systems
 - Corrosion prevention and material durability

Seminar Photographs:





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Dr. Shivani Singh
Dr. Sunita Dhavale
Co-Coordinator

Dr. Ritu Sharma
HOD-HAS



Dr. Ramesh Kulkarni
Principal