



छोटुभाई गोपालभाई पटेल प्रौद्योगिकी संस्थान, बारडोली
Chhotubhai Gopalbhai Patel Institute of Technology, Bardoli



Uka Tarsadia University
Chhotubhai Gopalbhai Patel Institute of Technology
Report of Guest Lecture
on
“Process Intensification for Green Energy Transition”

Date: 25/03/2026

Venue: CGPIT Classroom: F-001

Speaker: Dr. Arun M. Patel, Assistant Professor, Govt. Engg. College, Bharuch.

Time: 10:45 AM to 12:45 PM

Total No. of Students: Students of B Tech & Diploma Chemical/Civil/Mechanical Engineering

Session Coordinator: 1 Dr. Susmit Ilame, Group Head, (Chemical/Civil/Env), UTU

2. Mrs. Renuka Modi, Assistant Professor, Chemical Engineering

Program Objective:

To provide students with firsthand exposure to the complete industrial-scale process intensification and its aliened concepts for green energy storage, utilization of green energy for sustainable development, bridging theoretical knowledge of chemical and mechanical engineering principles with process plant operations, automation, and sustainable development.

Program Outline:

1. **Introduction:** Overview of the process intensification and green energy.

2. **Green Energy:**

- Solar Energy – sunlight to electricity (PV cells)

- Wind Energy – turbines generating power
- Hydropower – water flow driving turbines
- Biomass Energy – organic material as fuel
- Geothermal Energy – heat from Earth

3. Global & Local Trends:

- Leading countries in green energy adoption
- Government policies and incentives
- India's renewable energy initiatives
- Role of private sector and startups

Program Outcomes:

Upon completion of the program, students will be able to:

1. Fundamental Knowledge:

- Understand principles of process intensification (PI) and its role in sustainable engineering.
- Explain heat, mass, and momentum transfer improvements in intensified systems.
- Relate PI concepts to renewable and low-carbon energy systems.

2. Design & Analysis Skills

- Analyze conventional vs intensified processes for efficiency improvements.
- Design compact, energy-efficient reactors (e.g., microreactors, membrane reactors)
- Evaluate process performance using simulation and modeling tools.

3. Industry & Practical Exposure

- Understand industrial applications of PI in energy sector
- Analyze real-world case studies
- Interpret pilot-scale and commercial-scale data.

Briefing of the Session:

Mrs. Renuka Modi and Dr. Preeti Jain, Assistant professor from Tech Chemical Engineering welcomes the guest Dr. Arun M. Patel. Dr. Susmit Ilame welcome the Head of Civil Engineering Dr. Manoj Gundalia. Dr. Preeti Jain welcomes the Mr. Sunil Valand. After that, the guest delivers the lecture and give brief knowledge of Process intensification for green energy transition. At the end, Mrs. Renuka Modi give vote of thanks and the Director of institute Prof. B.M. Vadher Sir gives appreciation letter as a token of gesture.

Photos of the Session







“In conclusion, process intensification stands as a transformative approach in accelerating the green energy transition. By integrating innovative design, improving efficiency, and minimizing resource and energy consumption, it offers sustainable solutions to modern energy challenges. As we move forward, continued research, collaboration, and technological advancement will be essential to fully realize its potential. Embracing process intensification is not just an option, but a necessity for building a cleaner, more efficient, and sustainable energy future.”

Report prepared by: Dr. Susmit Ilame, Head-Chemical/Civil Engg. UTU

Date: 27/03/2026

Sign of the Head