

### OUR STRENGTHS

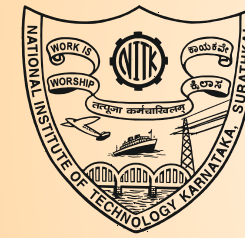
- Highly motivated GATE qualified students with scholarship from MHRD
- Well balanced curriculum with theory and practical components
- Strong industry-institutional collaboration
- Sophisticated lab facilities
- Research projects funded by DST, CSIR, FIST, TEQIP, TIFAC CORE, Ministry of Science and Technology, SERB, SERI, MHRD-NMEICT
- Co- Curricular & Extra –Curricular Activities:
  - Skill development program sponsored by TEQIP and MHRD.
  - TEQIP sponsored workshop on Nano technological basis for advanced sensors.
  - ICACE-2015: International Conference on Advances in Chemical Engineering
  - GIAN course (initiated by MHRD)
  - Fire and Safety training at MRPL
  - Field visit to UPCIL
  - INCIDENT- Intercollegiate cultural fest held annually
  - ENGINEER-Intercollegiate Technical fest held annually

### OUR ALUMNI



### CONTACT INFORMATION:

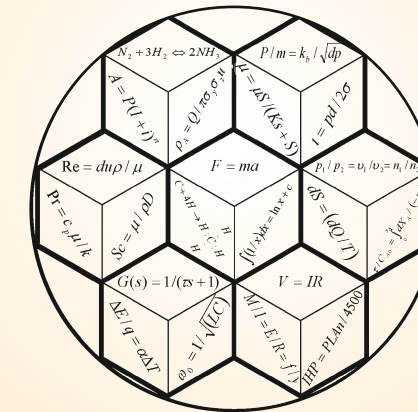
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**NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL**  
 MANGALORE, KARNATAKA, INDIA 575025



# CHEMICAL PLANT DESIGN





## DEPARTMENT OF CHEMICAL ENGINEERING

### ABOUT THE DEPARTMENT

Department of Chemical Engineering was started in the year 1965. It is one of the leading chemical engineering department in the country and is known for its well-balanced curriculum having both theory and practical, good infrastructure and well qualified faculty. In order to keep pace with the changing needs, a lot of infrastructure in terms of additional space and modern instruments have been established utilizing funds available from MHRD, GOI, TEQIP, TIFAC-CORE, DST, DBT, CSIR, MOEF, FIST etc.

The Department offers an Under Graduate program in Chemical Engineering and three Post Graduate programs with specialization in Chemical Plant Design, Industrial Biotechnology and Industrial Pollution Control. In addition M.Tech (Research) and Doctoral programmes are also offered. The Department also offers product testing and industrial consultancy services.

### FACULTY

Dr. B. Ashraf Ali	Dr. Hari Mahalingam	Dr. P. E. Jagadheesh Babu
Dr. C. Sankar Rao	Dr. Hari Prasad Dasari	Dr. Prasanna. B. D
Dr. D. V. R. Murthy	Dr. I. Regupathi	Dr. Raj Mohan. B (H.O.D.)
Dr. G. Srinikethan	Dr. Jagannathan. T. K	Dr. Ruben Sudhakar. D
Dr. Gangamma. S	Dr. Keyur Raval	Mr. S. Jithendra Pal (PhD.)
Dr. Gopal Mugeraya	Dr. M. B. Saidutta	Dr. Vidya Shetty. K

### M.Tech - CHEMICAL PLANT DESIGN

- **Established** : 1972
- **Students intake** : 15

### PROGRAMME OBJECTIVES

1. Advance professionally in the practice of plant design in chemical process industries such as petroleum and petrochemicals, fertilizer, pharmaceutical, polymer, materials, biotechnology, energy and allied fields.
2. Advance professionally in their chosen career path, wherein they apply the communicative, logical, analytical, computational problem solving and research skills to their professional practice encompassing the ethical and social responsibilities.
3. Successfully collaborate and work in multidisciplinary teams to tackle complex multifaceted problems.
4. Pursue research in Chemical Engineering or other engineering fields.
5. Assume leadership roles in industry or business in the context of societal needs.

### CURRENT RESEARCH AREAS

- Aqueous two phase extraction
- Bioprocess development and optimization
- CFD Simulation in micro channels
- Design and development of reactors or specific industry / environmental application
- Design & Simulation of process equipment
- Nanophotocatalysis

### FACILITIES

- Atomic Absorption Spectrophotometer
- Autotitrator
- Cell culture facility
- Deep freezer
- Electro Spinning machine
- Fast Protein Liquid Chromatography
- Fermentors (2L, 3L,14L)
- Gas Chromatography
- Gel documentation system
- High Performance Liquid Chromatography
- High Speed Refrigerated Centrifuges
- Inductively Coupled Plasma – Optical Emission Spectrophotometer
- Ion Chromatography
- Liquid Chromatography – Mass Spectrophotometer
- Lyophilizer
- Nanodrop Spectrophotometer
- Particle Size and Zeta Potential Analyser
- Real time PCR
- Thermo-cycler
- UV Spectrophotometer



### Conventional laboratories

- Chemical Reaction Engineering
- Heat Transfer
- Mass Transfer
- Mechanical Operations
- Momentum Transfer
- Process Control and Simulation

### Specialised laboratories

- Advanced Instrumentation
- Bio-aerosol laboratory
- Environmental immunology
- Fermentation laboratory
- Industrial Biotechnology
- Quality testing laboratory

### Computational Facilities

MATLAB, CHEMCAD, PHAST MICRO, CHARMS, UNISIM, ANSYS, AERMOD View.

### CURRICULUM

#### Core Courses

- Applied Statistics and Numerical Analysis
- Chemical Reactor Design
- Process Equipment Design
- Process Dynamics and Control
- Process Modeling & Simulation
- Transport Phenomena

#### Electives

- Biochemical Engineering and Bioreactor Design
- Computational Fluid Dynamics
- Selected Separation Processes

### CONSULTANCY ACTIVITIES

Department provides consultancy to MRPL, MCF, Hindustan Lever, and many more in areas of:

- Simulation and Modeling
- Process energy intensification
- Catalyst development
- Development and designing novel contactors
- Technical evaluation of third party design
- Design of process vessel