A. Laboratories

The department has nine major laboratories. All the laboratories are upgraded with new advanced equipments. The details are as below:

Heat Transfer Laboratory

1. Shell and Tube Heat Exchanger
2. Parallel and Counter Flow Double Pipe Heat Exchanger
3. Film wise and Drop wise Condensation Apparatus
4. Lagged Pipe Apparatus
5. Heat Transfer from Pin Fin Apparatus
6. Heat Transfer in Natural Convection Experimental Setup
7. Heat Transfer in Forced Convection Experimental Setup
8. Stefan Boltzmann Apparatus
9. Thermal Conductivity of Metal Rod Experimental Setup
10. Finned Tube Heat Exchanger

Mass Transfer Laboratory

1. Distillation with total Reflux
2. Absorption of CO_2
3. Solid Liquid Extraction
4. Steam Distillation
5. York Scheible Column
6. Wetted Wall Column
7. Ion Exchange
8. Adsorption Column
9. Simple Distillation
10. Humidification and Dehumidification

Chemical Reaction Engineering

1. Continuous Stirred Tank Reactor (CSTI
2. Plug Flow Reactor (PFR).
3. Three CSTR in Series
4. Packed Bed Reactors
5. CSTR-PFR in Series
6. Autoclave
7. Industrial Microwave (for synthesis)

Process Dynamics & Instrumentation Control

1. Pressure Control Trainer
2. Ratio and Cascade Control System Trainer
3. Temperature Controller
4. Bimetallic Thermometer
5. On-Off Controller
6. U-Tube Manometer
7. Thermocouple

Mechanical Operation Laboratory

1. Fluidized Bed
2. Cyclone Separator
3. Jaw Crusher
4. Ball Mill
5. Plate and Frame Filter Press.
6. Stokes Law Apparatus

Software Laboratory

1. ANSYS FLUENT
2. CHEMKIN
3. CHEMCAD
4. MATLAB
5. TK SOLVER
6. AUTOCAD 2002
7. ORIGIN LAB-15

Bioprocess Engineering Laboratory:

1. Autoclave
2. Laminar Air Flow
3. Incubator Shaker
4. Peristaltic Pump
5. Micro Centrifuge
6. Capillary Column

Membrane Separation Laboratory:

1. Porous Membrane Casting Setup
2. Water Permeation Analysis Setup
3. Bubble Point Analysis Setup
4. Membrane Solution Preparation Setup

B. Research and Analytical Facilities

Research Facilities:

The research and analytical facilities available in the department are as follows:

1. Solid Liquid Circulating Fluidized Bed.
2. Ultrasound Processor.
3. Hydrodynamic Cavitation Set-up.
4. Set-up For Phase Equilibrium Studies of Multi-component system
5. Porous Membrane Casting and Water Flux Analysis Unit
6. CO_2 Adsorption Unit.
7. Laminar Air Flow.
8. Industrial Microwave.
9. Autoclave.
10. Bubble Cap Distillation Column.

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Analytical Facilities:

1. Gas chromatography (GC).
2. High performance liquid chromatography (HPLC).
3. Double beam UV- spectrophotometer.
4. Karl-fisher Titrator.
5. Bomb calorimeter.
6. Fire and Flash point measuring instrument.
7. Refractometer.
8. pH and conductivity meter.
9. COD measuring unit.
10. BOD incubator.
11. Bottle Centrifuge
12. Fluoride ion detector
13. High precision balance
14. CO_2 analyzer

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