



CHEMICAL ENGINEERING DEPARTMENT

**A Report of Refresher Course
On
"The Operating Principles for Common Unit Operations"**

The Department of Chemical Engineering organized a one-day refresher course on "**The operating principles for common unit operations**" on 17th February 2023. More than 85 students from Chemical Engineering Department, Valia Polytechnic College, Ankleshwar, have participated. There were three sessions conducted: In the first session, **Dr. Chandrabhushan T. Pal** elaborated on how chemical engineering differs from other branches of science and engineering & basic concepts of Mass Transfer Operation. Chemical engineering is more multidisciplinary and practical, applying engineering science to problems relating to heat transfer, fluid dynamics, equipment design, etc. Engineering science is different from natural science as it studies human artifacts rather than nature. Mass transfer is the net movement of mass from one location (usually meaning stream, phase, fraction, or component) to another. Mass transfer occurs in many processes, such as absorption, evaporation, drying, precipitation, membrane filtration, and distillation.





CHEMICAL ENGINEERING DEPARTMENT

In the second session, **Dr. Nilesh S. Dumore** explained the Basics of Heat Transfer Operation. Heat transfer can occur in three modes like conduction, convection, and radiation and basic laws related to conduction, convection and radiation modes. The first is **Conduction** is the transfer of heat from one part of a substance to another part of the same substance or from one substance to another in physical contact with it. Without appreciable displacement of molecules forming the substance. Second **Convection** is the transfer of heat within a fluid by mixing of one portion of fluid with another. Convection is possible only in a fluid medium and is directly linked with the transport of medium itself. Third **Radiation** is the transfer of heat through space or matter by means other than conduction or convection. Radiant energy (being electromagnetic radiation) requires no medium for propagation and will pass through a vacuum.



In the last session, students visited departmental laboratories like the Heat Transfer lab, Mass transfer lab, Mechanical lab, Chemical reaction engineering lab, Petro-refining and petrochemicals lab, Instrumentation process control lab, Environment audit cell, etc. During the departmental visit, Dr. Chandrabhushan T. Pal conveys the details of department placements,



SITARAMBHAI NARANJI PATEL
INSTITUTE OF TECHNOLOGY AND RESEARCH CENTRE, UMRRAKH

A Vidyabharti Trust Institution
Vidyabharti Campus, At. Ta. Bardoli, Dist. Surat-394345
Ph.02622-224581, 220581 Fax : 02622-227481,225458
Email : admin@snpitrc.ac.in, vbtdegree_umrakh@yahoo.co.in
Visit us on : www.snpitrc.ac.in

CHEMICAL ENGINEERING DEPARTMENT

internships, Industrial visits, Faculties achievements, Institute, department GTU results data, scholarships, etc., to the students.

