

# AMCH18 MASS TRANSFER OPERATION-II

## UNIT-1 INTRODUCTION TO MULTICOMPONENT DISTILLATION:

- 1.1 Phase Equilibria In Multicomponent Distillation,
- 1.2 Flash Distillation Of Multicomponent Mixture,
- 1.3 Fractional Of Multicomponent Mixtures,
- 1.4 Azeotropic And Extractive Distillation,
- 1.5 Symbols, Problems.

## UNIT-2 LEACHING AND EXTRACTION

- 2.1 Leaching, Leaching Equipment- Principles Of Continuous,
- 2.2 Countercurrent Leaching, Liquid Extraction, Extraction Equipment- Principles Of Extraction,
- 2.3 Special Extraction Techniques, Supercritical Fluid Extraction, Symbol, Problem.

## UNIT-3 DRYING OF SOLID

- 3.1 Principle Of Drying, Phase Equilibria,
- 3.2 Cross-Circulation Drying,
- 3.3 Through Circulation Drying, Drying Of Suspended Particles, Freeze- Drying,
- 3.4 Drying Of Suspended Particles, Freeze- Drying, Drying Equipment,
- 3.5 Dryers For Solids And Pastes / Dryers For Solutions And Slurries / Selection Of Drying Equipment, Symbols, Problem

## UNIT-4 FIXED-BED SEPARATION:

- 4.1 Adsorption, Adsorption Equipment,
- 4.2 Equilibria, Adsorption Isotherms
- 4.3 Principles Of Adsorption- Basic Equations For Adsorption- Solutions To Mass
- 4.4 Transfer Equations- Adsorber Design- Continuous Operation, Ion Exchange, Equilibra-
- 4.5 Mass- Transfer Rates- Operations Of Ion Exchangers, Chromatography, Symbols, Problem

## UNIT-5 MEMBERS SEPARATION PROCESSES:

- 5.1 Separations Of Gases, Separation Of Liquids, Dialysis-
- 5.2 Membranes For Liquid- Liquid Extraction- Pervaporation
- 5.3 Reverse Osmosis, Symbols, Problems

## UNIT-6 CRYSTALLIZATION

- 6.1 Crystal Geometry, Equilibria And Yields, Nucleation, Crystal Growth,
- 6.2 Crystallization Equipment,
- 6.3 Crystallizer Design : Crystal Size Distribution, MSMR Crystallizer,
- 6.4 Crystallization For Melts, Symbols, Problem

## Reference Book:

1. Mass Transfer Operations (McGraw-Hill Chemical Engineering Series) Hardcover – Import, 16 December 1979 by Robert Treybal (Author)