POLYMERUPDATE ACADEMY
EDUCATIONEM RESPONSUM EST

MASS TRANSFER OPERATIONS

DR. ANANT SARABHAI JHAVERI
Bachelor of Chemical Engineering (B. Chem. Engg.),
Ph.D (Tech.) Chemical Engg

Faculty
Polymerupdate Academy

Address:

1001/1002, Lodha Supremus,
Opp 'The World Towers' Senapati Bapat Marg,
Lower Parel (West), Mumbai – 400013,
Tel: (91-22) 61772000 (25 Lines)

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SUMMARY

We know that product available from reactor is impure due to multiple factors. No raw material is 100% pure. Hence, impurities in raw material will become part of product. However, the market requires high purity product. Hence, we must have a separation method.
The separation method is our choice. We try to select the most appropriate technique which gives best technical results in the most economic manner. The selected technique should be technically viable and economically feasible.

Process calculations allow us to decide terminal conditions, i.e., input/output flow rates, concentrations, etc. We require selection & sizing of appropriate equipment (diameter, height, internal arrangements, pressure drop, etc.) which will perform desired separation work. This task is done by using systematic knowledge of separation techniques.

A group of operations for separating the components of homogeneous mixtures is based on the transfer of material from one homogeneous phase to another phase. These methods utilize differences in properties like vapor pressure, solubility or diffusivity which is the driving force.

These methods are covered by the term Mass Transfer and it includes popular separation Technique-Gas Absorption / Stripping, Humidification /Dehumidification, Drying, Distillation, Liquid-liquid Extraction, Leaching, Crystallization, Adsorption, Membrane Separation.

They are different from mechanical separations like filtration (particle size difference), gravity separation (density difference). In all the mass transfer operations described above, material is transferred from one homogeneous phase to another homogeneous phase.

Predominantly, industrial separations are accomplished by Mass Transfer Operations. Hence, they are given high importance in chemical industry operations

WHAT WILL YOU LEARN:

In depth study of Operation, design & trouble shooting of mass transfer operations.

WHO THIS COURSE IS FOR:

1) Undergraduate degree & diploma students
2) Plant operators
3) Process design engineers, etc.

Dr. Anant Sarabhai Jhaveri

Bachelor of Chemical Engineering (B. Chem. Engg.), Ph.D (Tech.) Chemical Engg

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Dr. Anant Sarabhai Jhaveri has completed his Bachelor of Chemical Engineering (B. Chem. Engg.) and Ph.D. (Tech.) Chemical Engg. And has been teaching of subjects like the Mass Transfer Operations I, Mass Transfer Operations II, Process Calculation, Fluid Mechanics, Heat transfer Operations, Project and Process Engineering, Plant Utilities, Economics of chemical Projects, TQM.

He was a Research Fellow in the Department of Chem, Engg., “University of Salford”, U.K, and a Reader in Chemical Engineering, University Chemical Technology, Mumbai. He has been a Consultant in Savita Chemicals, Bombay, and a Sr. Process Engineer in Humphreys and Glasgoy Consultants Pvt Ltd., Bombay for 5 years.

Dr Jhaveri has been the Chief Executive at Industrial Process (Maharashtra) for 5 years and at Samy Chemicals Pvt. Ltd. Jeevan Jyot for 2 years. He was a Proprietor at the M/s. Fine Chemicals and PRATNER of M/s. Pearl Chemical Industries for around 14 years.

His other experiences include being a Professor & HOD at the Chemical Engineering Department of Thadomal Shahani Engineering College, a Consultant at M/s. Multi organics Pvt, a Process Engineering Consultant at M/s. Chempro Expertise Pvt. Ltd., Mumbai. He was also the Principal of Vidyalankar Institute of technology for 2.5 Years.

Currently, he is the Prof. & HOD-chemical eng. And Chairperson-Technology Management at MPSTME for over 9 years.

ACHIEVEMENT & AWARDS

- Appointed as Chairman on Board of Studies (ad-hoc) in Chemical Engineering for three years in “University of Mumbai” & subsequent to this appointment, member of various committees like Academic Council
- Research Publication : ‘Kinetics of absorption of oxygen in aqueous solution of cuprous chloride’, Jhaveri A.S. & Sharma M. M., Chem. Engg. Science 1967, 22, 1.
- ‘Absorption of oxygen in aqueous alkaline solutions of sodium disulfide’, Jhaveri A.S. Engg. Science, 1968, 23, 699.
- ‘Effective interfacial area in a packed column’, Jhaveri A.S. & Sharma M.M., Chem. Science, 1968, 23, 699.
- ‘Absorption with chemical reaction’, Jhaveri A.S. & Sharma M.M., Chem. Engg. Science, 1969, 24, 189.
- ‘Absorption of a gas into a solution containing two reactants’ Jhaveri A.S. Chem. Engg. Science, 1970.
- ‘Power consumption for mixing of inelastic non-Newtonian fluids by Helical Screw Agitatars’, V.V. Chawan, A.S. Jhaveri & J. Ulbrecht, Frars, Chem. Engg. Science.

RESEARCH PROJECTS COMPLETED

- Commissioning of Ammonia, Urea and off-site plants of Mangalore Chemicals and Fertilizers Limited.
- Methanol Distillation Plant of Cibatul Limited.
- Pesticide graduation plant of Cynamid India Limited.
- Microniser Plant of Indofil Limited.
- Modification of existing Soda Ash Plant of Sahu Chemicals and Fertilizers Limited.
- Off-site Facilities for Indian Farmers Fertilizers Co.
- Design of Chlorine and mono-methyl amines tankers for Union Carbide.
- Project report for Soda Ahs Plant for Kerala Industrial Development Corporation

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THANK YOU

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