

OBJECTIVES

To give participants a better understanding of the working and use of the trays and packing installed in many columns for distillation, absorption, stripping, washing, ...

On completion of the course, the participants should know:

- the different types of internals, their advantages and disadvantages
- the main criteria for choice according to their respective operating field
- the basic features for designing
- the operating range of installed equipment and how to troubleshoot it.

COURSE CONTENT

TECHNOLOGY AND FUNCTIONING OF TRAYS

1 day

Basics of mass transfer between liquid and vapor: importance of the interface area, viscosity and relative volatility.

Definition of some working parameters: efficiency, capacity, flexibility, pressure drop, ...

Different types of trays: with or without downcomers.

Different types of contacting system for the active area: bubble caps, fixed or mobile valves.

Hydraulic working and pressure drops.

Troubles as flooding, weeping, fouling, ...

Main parameters to take into account in the design of internals.

Specific features for multi-pass trays.

Equipment for transition zones as flash zone, changing of pass number, ...

Aim of high performance trays and functioning. Advantages and fields of use.

New technology trays and implementation in the next future.

Example:

- simulation of a tray design; representation of trays in operation (video)
- implementation of HP trays and feed back information.

TECHNOLOGY AND FUNCTIONING OF PACKED BEDS

0.75 day

Random packing, structured packing, grids.

Technology of a packed bed in operation.

Operating range and pressure drop.

Recent evolution of packing.

Liquid or vapor distributors, collectors and redistributors.

Impact on the working and performances of packed beds.

Example:

- representation of packing in operation (video); implementation of packing and evaluation of performances
- presentation of tests in the manufacturer workshop.

COMPARISON AND TROUBLESHOOTING OF BEDS AND PACKINGS

0.25 day

Advantages and disadvantages of trays and packed beds, costs.

Respective technical performances: capacity, pressure drops, flexibility, implementation.

Detection of the troubles on the field and analysis of the data.

Potential solutions and efficiency.

Gammametry: method and examples of diagrams.

Example:

- revamping an existing column
- case study of troubled equipment, diagnostic and remedy.

▲ Who should attend?

Engineers and supervisory staff in the refining, petrochemical and chemical industry, involved in the design, selection or operation of the internals in distillation columns or equivalent.

▲ Duration

2 days

▲ Dates & Location

September 16 to 17,
2008

Rueil-Malmaison (Paris)

▲ Tuition Fees

€ 1,020

▲ Course Coordinator Christian Tison

Ref. **PSE / INCOL-E**

The teaching uses softwares for equipment sizing and thus requires an active participation of the trainees.