



Practical Distillation Technology

20 July - 22 July 2016

About the workshop

Recognised specialist Henry Kister presents this comprehensive coverage of distillation technology, with particular emphasis on the problems that can occur and how to solve them. This is an excellent opportunity to develop a working knowledge of key techniques that can promote trouble-free operation and reduce distillation cost.

This practical course provides participants with the following learning outcomes:

- Determine what may cause poor performance
- Evaluate existing column performance and develop new designs
- Avoid common causes of capacity bottlenecks, tray damage, downcomer sealing problems, packed tower distributor malfunctions and many other operating difficulties
- De-bottleneck a column to improve capacity and/or separation
- Control and operate a distillation column
- Validate your tower simulation.

Target participants

Engineering and supervisory personnel who are involved in:

- Operating
- Troubleshooting
- De-bottlenecking
- Designing
- Starting up distillation processes.

Programme Outline

Note: this programme outline is provisional and may be subject to change.

Avoiding fractionation pitfalls

Vapour-liquid equilibrium (VLE): key concepts and simulation traps. Should we believe the simulation?

Troubleshooting distillation simulations

Sensitivity analysis and graphics for simulation troubleshooting - useful hints.

Tray Hydraulics and limits

Visualisation of vapour-liquid dispersions on trays, flooding, entrainment, weeping, dumping. Flood mechanisms.

Troubleshooting tray towers

Gamma scans: application for diagnosing flood, missing and damaged trays, foaming, and downcomer flooding. How to combine gamma scans with process checks to get the most out of the scans: the keys to success.

Troubleshooting packed towers

Rules of thumb for flood pressure drop and packing efficiency. Simulation hydraulic calculations: to trust or not to trust? Circumferential surface temperature surveys.

De-bottle necking

State-of-the-art trays and packings: strengths and weaknesses. Factors that favour trays and factors that favour packings. Pitfalls unique to structure packings.

Distillation control

Assembling control loops into an overall scheme: what works, which is better, what causes instability, and what impairs efficiency. Most common causes of control assembly failure.

Avoiding tower malfunctions

The 20 most common causes of distillation malfunctions.

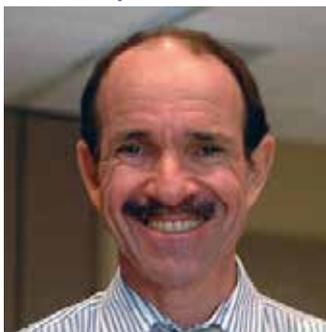
Case studies

Operating experiences will be scattered throughout to illustrate the key principles and to distinguish good from bad practices.

Continuing Professional Development

Participants who complete this course are eligible for CPD points.

Workshop Instructor



Henry is a recognised specialist with a vast background in all phases of distillation, including operation, troubleshooting, design, start-up, and research. At Fluor he designs, revamps and advises on distillation processes, equipment and controls for the chemical, petrochemical and oil industries. He is also extensively involved in field consulting, start-up and troubleshooting assignments and in developing Fluor's in-house distillation technology. He is the author of three textbooks, *Distillation Operation and Distillation Design* (McGraw-Hill Inc, 1990 and 1992), *Distillation Troubleshooting* (Wiley Interscience, 2006), the Distillation Equipment chapter in *Perry's Chemical Engineers' Handbook* (McGraw-Hill Inc, 2008), more than 100 technical articles and has presented this course 450 times across the globe.

Workshop Host



Eric May is the Chevron Professor in Gas Process Engineering at UWA's Centre for Energy. Eric has been conducting research in oil and gas engineering for over a decade, working in the areas of phase behaviour, separations, fluid properties and flow assurance. He is also an educator, who has run courses in thermodynamics and process modeling for six years. He was awarded the 2010 Western Australian Young Scientist of the Year and is a member of the Editorial Advisory Board of the Journal of Chemical & Engineering Data.

Workshop Timetable

Registration, welcome and orientation 8.00-8.10am

Wednesday 20 - Friday 22 July, 2016

PRACTICAL DISTILLATION TECHNOLOGY	DAYS 1 - 3: 20-22 JULY, 2016
8:30am - 10:30am	Session
10.30am - 10.45am	Break
10.45am - 12.30pm	Session
12.30pm - 1.30pm	Lunch
1.30pm - 3.30pm	Session
3.30pm - 3.45pm	Break
3.45pm - 5.30pm	Session
5.30 - 6.30pm	Informal session
DAY 1 SUBJECTS COVERED Avoiding Fractionation Pitfalls Troubleshooting Distillation Simulations Tray Hydraulics & Limits After-hours Informal session	DAY 2 SUBJECTS COVERED Troubleshooting Tray Towers Troubleshooting Packed Towers De-bottlenecking After-hours Informal session
DAY 3 SUBJECTS COVERED Distillation Control Lessons learned after 50 years of Tower Malfunctions Identifying and removing potential Tower Malfunctions Case Studies	

Registration Information:

Register online via our shopping cart facility:
mech.uwa.edu.au/research/ngworkshop

Registration Fees

Introduction to Distillation Technology Course
3 Days: 20 - 22 July 2016
A\$3600 (10% discount for multi-course registration - refer to course website at mech.uwa.edu.au/research/ngworkshop for information relating to other courses)

Registration fee includes: GST, registration, morning and afternoon refreshment breaks, lunch, software download, CD and a hard copy of the course material.

Payment Method: Credit Card:
Mastercard or Visa ONLY. We cannot accept payment by any other card.
Confirmation of registration will be sent via email.

Cancellation policy: refunds will be made only on cancellation due to special circumstances. 50% of the course fee will be refunded only if cancellation notice is given 2 weeks prior to the event.

Location

The workshop will take place at The University of Western Australia, Crawley Campus, Entrance 3 Fairway, CO₂ Research Facility (Building 242).

A campus map and parking information is available at:
uwa.edu.au/contact/map
Due to student holidays, you can also park at no charge in the yellow parking bays.

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