

**Course Fee: US\$650**

If you have cases that are heat transfer or pressure drop limited, this is the course for you. Learn how to use *Xist* to enhance the performance of shell-and-tube exchangers. Case studies of suitable applications for enhanced geometry and features in *Xist* will be discussed.

**Key Topics**

- Tube inserts
- ID enhanced tubes
- OD enhanced tubes
- Alternative baffles

**Suggested Participants**

Engineers responsible for specifying or improving shell-and-tube exchanger performance

**Course credits:** 6 hours (PDH/CEU)

**Outline**

I. Considerations for Thermal Optimization

- Conditions where optimization can benefit
- Limitations of segmental baffles
  - Bypass flows
  - Window regions
- Shellside flow distribution
- Segmental baffle guidelines

II. Tube Inserts

- Tube insert applications
- Augmentation mechanisms
- Tube insert devices
- Twisted tape

III. Externally Enhanced Tubes

- Extended surfaces and benefits
- External enhancement options in *Xist*
- Potential future technologies

IV. Internally Enhanced Tubes

- Internal enhancement options in *Xist*
- Double enhancement options in *Xist*

V. Alternative Baffles

- Alternative baffle types
- Performance of various baffles
- Workaround to model disc-and-doughnut baffles