

Process Simulation with Aspen HYSYS and Aspen Plus

Steady-state flowsheets and selected equipment examples

FA-0664 · 2 days

Others

Introduction

An introductory practical course for participants with a chemical-engineering or related background. Use Aspen HYSYS to build and inspect a small steady-state flowsheet, select a suitable fluid-property package and review equipment and reporting results.

The source also includes Aspen Plus solids modelling and exchanger-design interfaces. These are treated as selected demonstrations using the arranged software and licences, rather than implied to be interchangeable HYSYS functions or comprehensive engineering design training.

Learning outcomes

- Navigate a prepared process-simulation project and specify components, units and basic inputs.
- Select and explain a fluid-property package for a prepared example.
- Model selected pumps, compressors and heat exchangers and inspect flowsheet results.
- Compare introductory solids-modelling and exchanger-design workflows in the appropriate Aspen tools.
- Review sensitivities, troubleshoot basic issues and export documented results with their assumptions.

Prerequisites

- Chemical engineering, industrial chemistry or relevant applied-physics/fluid-dynamics background.
- Ability to read technical English and interpret basic process diagrams.

- Access to the arranged compatible HYSYS installation; Aspen Plus and EDR access where included in demonstrations.

Training outline

1. Day 1 — Simulation Fundamentals and a Steady-State Flowsheet

Environment and Inputs

- Navigate the workspace, projects and simulation system.
- Define units, components, streams, material properties and a suitable fluid package.
- Build and inspect a small flowsheet; check specifications, convergence and basic mass/energy consistency.

Equipment Examples

- Selected pump and compressor models.
- A prepared oil-and-gas process example.
- Heat-exchanger inputs and results; explain assumptions and equipment-model limits.

2. Day 2 — Extended Models, Analysis and Reporting

Solids and Exchanger Demonstrations

- Introduce solids-process modelling and troubleshooting in Aspen Plus.
- Demonstrate a supported shell-and-tube exchanger design/rating workflow with the arranged EDR interface.
- Distinguish tool capabilities, model assumptions and licence/version requirements.

Analysis and Refinement

- Piping-system and prepared sensitivity/optimisation examples.
- Identify relevant analysis tools and interpret reported safety-related results without treating a simulation as a complete safety assessment.
- Troubleshoot selected inputs, property-package or convergence issues.

Reporting

- Inspect outputs and export a concise result set.
- Record input data, assumptions, limitations and further validation needed before engineering use.