Combining PRO/II & gPROMS custom models

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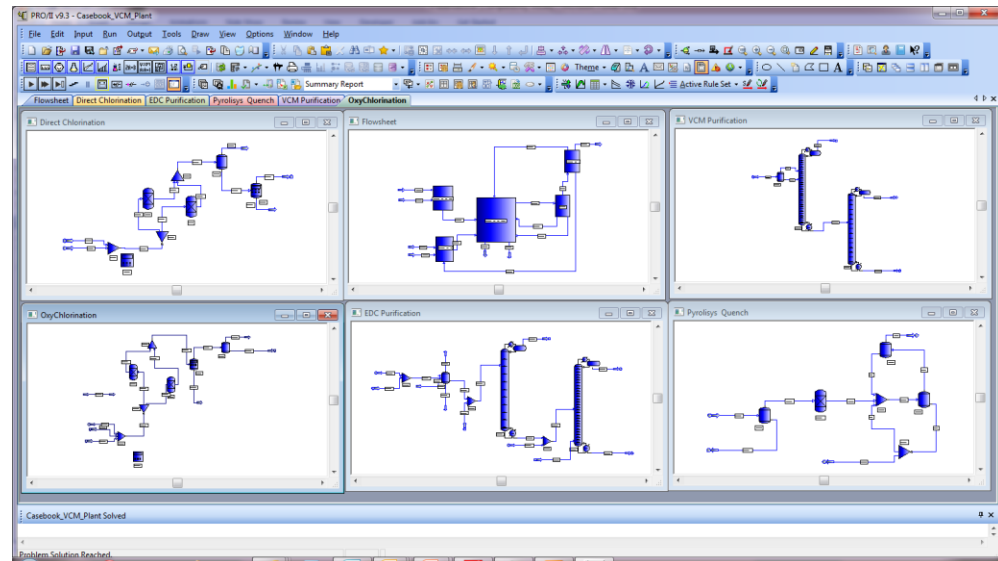
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Advanced Process Modelling Forum 2014

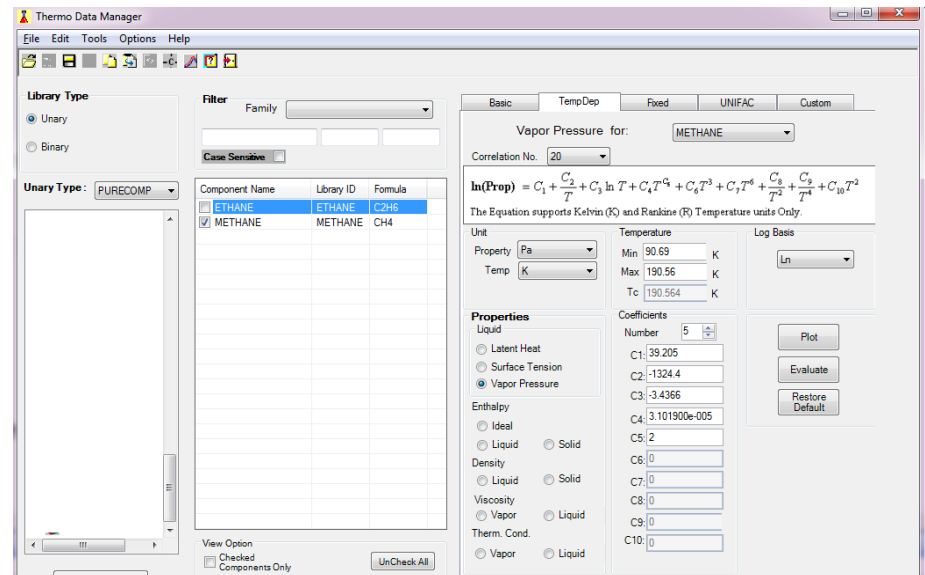London April 2-3

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What is PRO/II

- PRO/II is a simulation tool that offers a comprehensive simulation solution for process design, revamp, and operational analysis.
- PRO/II performs rigorous mass and energy balances to simulate a wide range of processes at steadystate, from refining to chemicals.
- PRO/II provides robust and accurate results based on industry-standard thermodynamic methods and physical property data
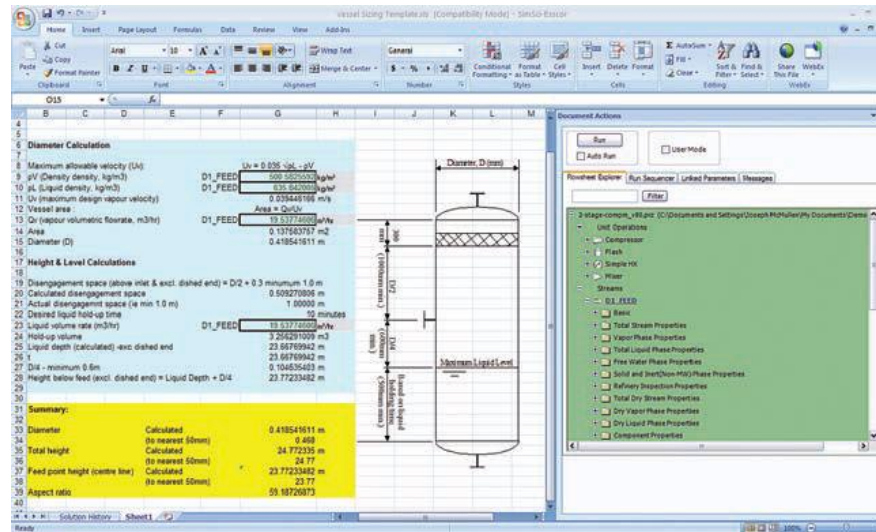
Comprehensive yet customizable

- Comprehensive thermodynamics and physical property data
  - Creation and management of custom component data
  - Custom Thermodynamics through CAPE OPEN
- Comprehensive rigorous unit operation modeling
  - Customizable process modeling
  - Custom Models using CAPE OPEN

Integration to 3rd parties

- Built-in integration with Excel for custom reporting
- SIM4ME Portal integration for simulation control and analysis from Excel
- Integration with industry-standard licensors including HTRI, OLI, & Koch-Glitsch
- Integration with Spiral CrudeSuite for assay information

But when it comes to a sophisticated design model you would not use Excel.

You need the power of
gPROMS ModelBuilder

PRO/II and gPROMS. The best of both

PRO/II

- Corporate standard flowsheeting
- Robust thermodynamics
- Over 30 built in standard unit operations
- Standard Reactors, Distillation, Compressors
- Flexible reporting capabilities
- Heat and Material balance

gPROMS ModelBuilder

- Design-level reactor models
- Fit experimental data → accurate kinetics
- Characterise catalyst
- Analyse startup and grade change
- Optimise operating conditions for max catalyst life

What is CAPE-OPEN?

- An industry standard for interoperability- interfaces between software components

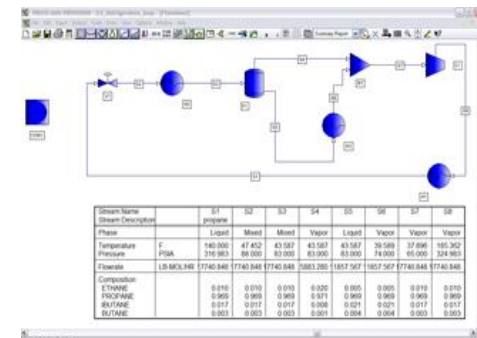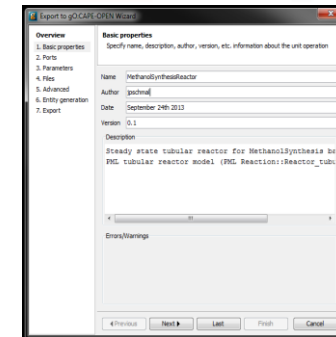   *"THE non-proprietary interface standard in process simulation"*

CAPE = Computer Aided Process Engineering

- A successful collaboration between software vendors, end-users and academics

- A proven IT technology implemented in most process simulation tools

- Maintained through CAPE-OPEN Laboratories Network (CO-LaN)

What are the steps to use a gPROMS model in PRO/II ?

1. Build your gPROMS model (client)

2. Export it using a GUI

3. Import it into PRO/II (host)

4. Run your simulation

Features of CAPE-OPEN

Features of CAPE-OPEN:

- Information flow is well-defined

- Physical property package of host (PRO/II) is automatically used to ensure full consistency in the flowsheet

- Access to settings of custom model through standard interface

- Solution engine of client (gPROMS) is used to solve the model

DEMO

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End result

- High-fidelity models available in your favorite flow sheeting tool: PRO/II
  - Any type of model
  - Virtually any size/level of detail

- Better predictability due to parameter estimation capability results in
  - Safer operation
  - More efficient and reliable operation
  - More profit