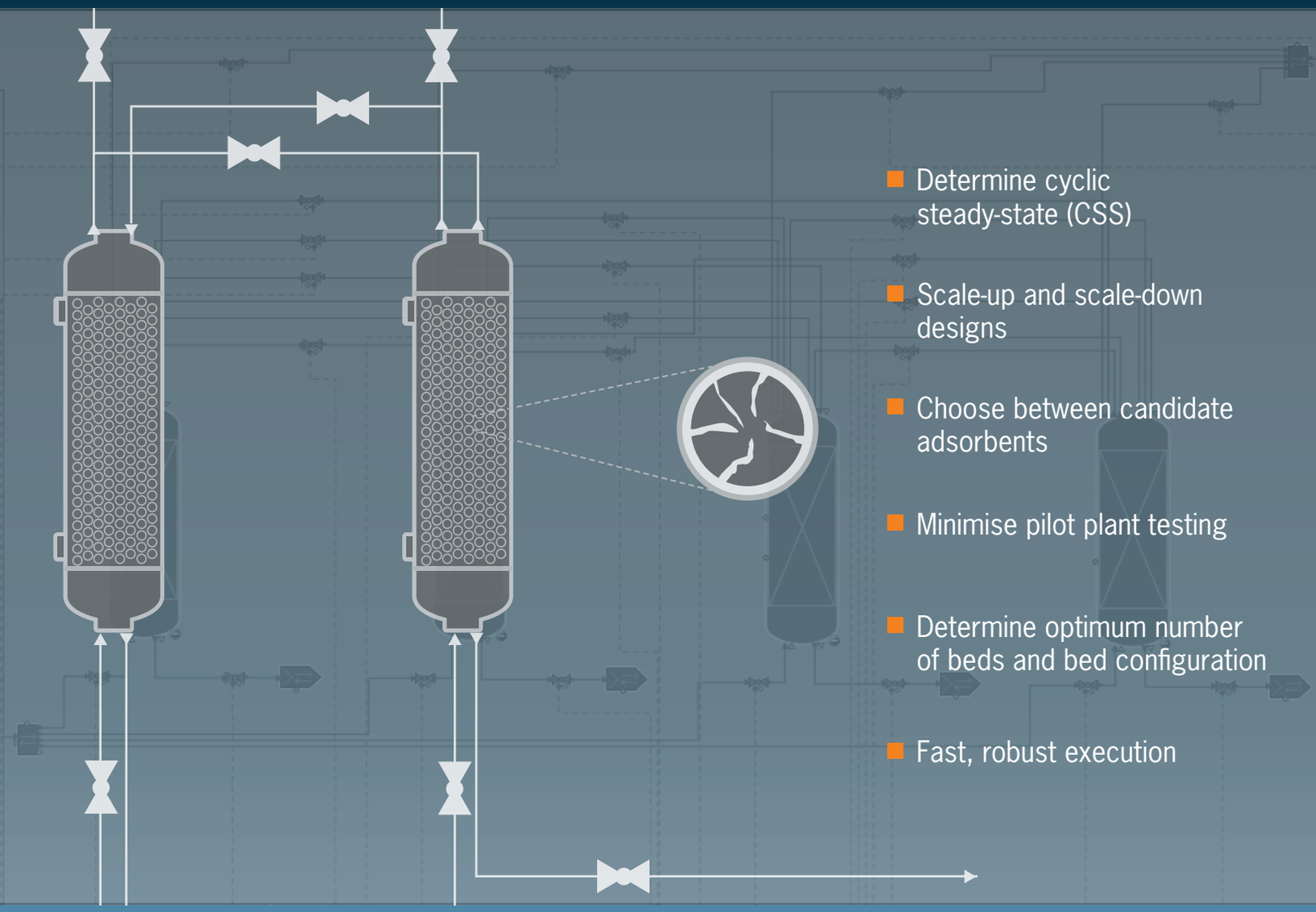
g|PROCESS

DIGITAL DESIGN TOOLS FOR CYCLIC SEPARATION



- Determine cyclic steady-state (CSS)
- Scale-up and scale-down designs
- Choose between candidate adsorbents
- Minimise pilot plant testing
- Determine optimum number of beds and bed configuration
- Fast, robust execution

Cyclic separation processes such as pressure-swing adsorption are fundamental to high-purity gas production.

However because of the cyclic – and thus inherently dynamic – nature of the operations, they are very difficult to design, with the numerical challenges of solving such systems poorly catered for by traditional simulation software.

gPROMS ProcessBuilder provides advanced modelling capabilities that can solve cyclic separation systems rapidly and robustly, allowing engineers to answer design and operational questions based on accurate prediction.

PSE The Advanced Process Modelling Company

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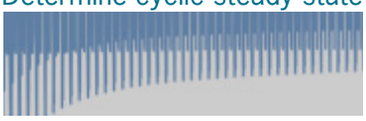
gPROMS ProcessBuilder's state-of-the art adsorption libraries allow easy construction and specification of high-fidelity adsorption flowsheets. With a ProcessBuilder model you can:

Determine cyclic steady state



Calculate the cyclic steady state to determine optimal operating conditions, energy consumption, bed dimensions and cycle times, to speed up design.

Minimise the number of beds

Determine the minimum number of beds required to achieve your separation – minimising capital and operating costs.

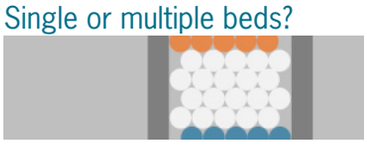
Select and prove new adsorbents

Rank and screen adsorbent candidates for a given separation and configuration, to evaluate performance vs cost and validate vendors' claims.

Test emergency scenarios

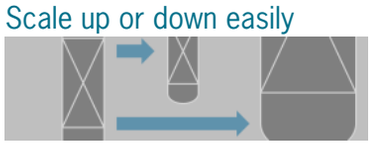
What happens when a valve doesn't close properly? Establish safety, integrity or control procedures on failure.

Single or multiple beds?



Investigate different bed configurations and test different materials, to minimise CAPEX and OPEX or maximise performance.

Scale up or down easily

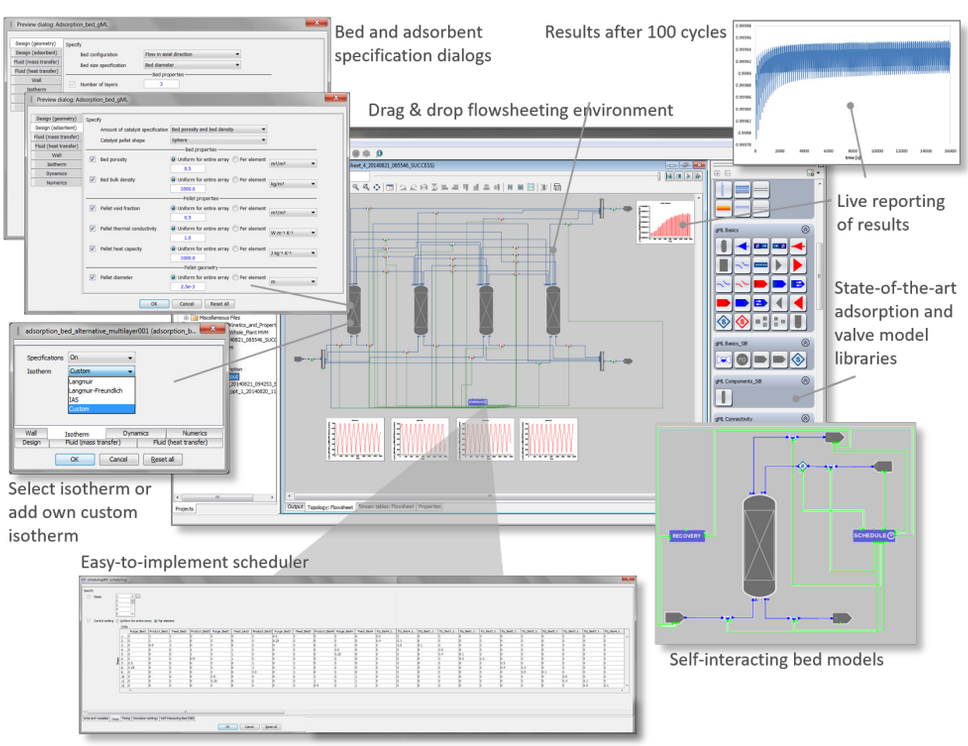


Scale your process up or down in order to purpose-build systems for specific feedstock, purity and flowrate requirements, with the minimum of pilot plant testing.

DID YOU KNOW?

Most PSA research around the world is performed using the gPROMS platform, because of its advanced dynamic simulation capabilities, fast equation-oriented solution and inherent robustness.

Features & capabilities



Supply

gPROMS ProcessBuilder and the gML Separations – Adsorption model library are licensed on an annual lease basis.

To find out more about cyclic separation process design and operational analysis in gPROMS ProcessBuilder, visit

psenterprise.com