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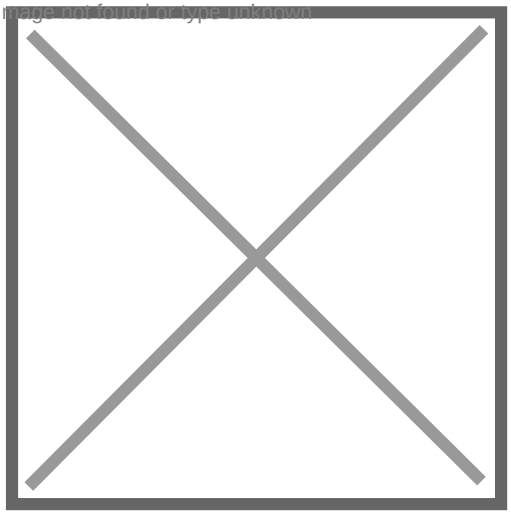

SPIRE-05-2015

ROMEO

Full Title: Reactor Optimisation by Membrane enhanced Operation

Aim:

Industry and academia have teamed up around a new reactor concept using membranes to carry out chemical synthesis and downstream processing in a single step. A new level of process intensification for catalytic driven and eco-friendly reaction systems is at hand: ROMEO's aim is to reduce energy consumption by up to 80% and emissions by up to 90% in industrial catalytic gas-phase reactions.

Concept:
The new technology concept will be proven by two prominent large volume reactions: a demo plant for hydroformylation will be built while another demo will show the feasibility of the concept for the water-gas shift reaction, in which carbon monoxide and water react to form hydrogen. These processes for bulk chemicals and bio-energy applications have been chosen to demonstrate the high impact of the ROMEO technology in a near industrial environment.

Start date:
14/09/2015

End date:
13/09/2019