

## **Optimization of Hydrogenation Reactors with Heterogeneous Catalysis Operated in Trickle Phase**

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### **Abstract**

Catalyst development in the last years has been focused on the optimization on the catalyst properties, such as selectivity and long cycle times. For applications where the catalyst is operated in trickle phase, the performance of the distribution system is also critical for good reaction system operation. Significant improvements on reactor performance can also be achieved by optimizing the hydraulic conditions. A simple model which can be used as a troubleshooting tool has been developed to demonstrate the importance on hydraulic reactor conditions. The model helps to develop an understanding of the importance of catalyst loading properties, the precision needed in liquid distribution, and the consequences of pressure drop during operation.