

Optimal design of microchannel Fischer–Tropsch reactor and its system dynamics

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Recently, compact Fischer–Tropsch reactor that has various utilization for production ultra-clean, high quality synthetic fuel attracted large attention due to economically effective process as well as more space flexibility. In the phase of reactor design, many design variables should be considered simultaneously because of highly exothermic reaction.

In this study, 3-D reactor model was developed for quick estimation of totally over 10,000 channels and optimal design can be obtained. Reactor dynamics for operation mode change can be drawn as well.