

Simulation of a Fluid Catalytic Cracking Process

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Abstract : Fluid catalytic cracking (FCC) process is one of the most important process in modern refinery industry. This paper focuses on the fluid catalytic cracking (FCC) process. As the FCC process is difficult to model well, due to its nonlinearities and various interactions between its process variables, rigorous process modeling of whole FCC plant is demanded for control and plant-wide optimization of the plant. In this study, a process design for the FCC plant includes riser reactor, main fractionator, and gas processing unit was developed. A reactor model was described based on four-lumped kinetic scheme. Main fractionator, gas processing unit and other process units are designed to simulate real plant data, using a process flowsheet simulator, Aspen PLUS. The custom reactor model was integrated with the process flowsheet simulator to develop an integrated process model.

Keywords : fluid catalytic cracking, simulation, plant data, process design

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