

A mathematical modeling and simulation of a fluid catalytic cracking processes

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Fluid catalytic cracking (FCC) is a key process in major refineries. It consists of reaction, separation, and regeneration of used catalysts. Advanced control strategies usually used in the industry depend on linear 'black box' models from step identification tests of the process units. However, strong nonlinear behavior of the FCC process units cause the linear model to be inaccurate. Therefore, in this study, a rigorous model is suggested to be used for further research such as process control and optimization. Suggested model is simulated for various operating conditions and validated with operation data from an real FCC plant.

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