

Steady state simulation of a fluid catalytic cracking unit

Abstract

In the present study a steady state simulation for the fluid catalytic cracking was investigated. A mathematical model for the reactor and regenerator was developed and they were coupled using enthalpy balance between the reactor and the regenerator. The reactor was modelled as a plug flow reactor incorporating the 4-lump model for cracking reactions whereas the regenerator was modelled as a fluidised incorporating the coke burning kinetics. For the regenerator, the reaction taking place in the free board was also taken into consideration. The developed model has been validated using the operating data of an industrial FCCU reported in the literature. Some of the model parameters have been estimated. The predicted data coincide reasonably with the experimental data. © 2007 Asian Network for Scientific Information.