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Naphtha Catalytic Reform: Modeling and Simulation of Unity

Authors : Leal Leonardo, Pires Carlos Augusto de Moraes, Casiraghi Magela

Abstract : In this work were realized the modeling and simulation of the catalytic reformer process, of ample form, considering all the equipment that influence the operation performance. Considered it a semi-regenerative reformer, with four reactors in series intercalated with four furnaces, two heat exchanges, one product separator and one recycle compressor. A simplified reactional system was considered, involving only ten chemical compounds related through five reactions. The considered process was the applied to aromatics production (benzene, toluene, and xylene). The models developed to diverse equipment were interconnecting in a simulator that consists of a computer program elaborate in FORTRAN 77. The simulation of the global model representative of reformer unity achieved results that are compatibles with the literature ones. It was then possible to study the effects of operational variables in the products concentration and in the performance of the unity equipment.

Keywords : catalytic reforming, modeling, simulation, petrochemical engineering
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