



Modeling and Simulation of Fluid Catalytic Cracking (FCC) Riser

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Mass transfer resistance, Coking and Products yield | Fluid Catalytic Cracking (FCC) is known to be one of the most profitable processes in oil refineries. However, during FCC, two inevitable and undesirable phenomena occur: coking (which deactivates the catalyst) and resistance to mass transfer. Computational techniques can be employed to simulate the FCC reactor with a view to predicting the optimum operating conditions of the process. Process operation within the optimum conditions increases profitability. A number of mathematical models have been developed for the FCC riser. However, two major set backs were observed in the models. Some of the previous models were oversimplified as a result of the negligence of mass transfer resistance and the assumption of one dimensional (1D) plug flow. On the other hand, the models were made unwieldy by the use of 3D geometry and the incorporation of large numbers of lumped species. In this book, a 2D model was used to simulate the FCC riser. Mass transfer resistance and coking were considered. This book will be beneficial to oil refineries. It will also make an excellent reference and teaching material for students, lecturers and researchers in Chemical Engineering, Mathematics and...

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