

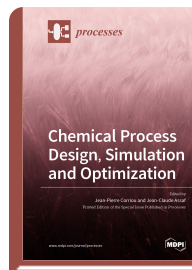
Special Issue Reprint

Chemical Process Design, Simulation and Optimization

www.mdpi.com/books/reprint/3404

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ISBN 978-3-0365-0096-6 (Hardback)
ISBN 978-3-0365-0097-3 (PDF)



The book presents a series of articles devoted to modeling, simulation, and optimization of processes, mainly chemical. General methods for process modeling and numerical simulation are described with flowsheeting. Population balances are addressed in detail with application to crystal production; energy saving is frequently optimized, including exergy analysis. The coupling between process simulation and computational fluid dynamics is studied for air classification and bubble columns. Pressure swing adsorption, reactive distillation, and nanofiltration are explained in general and applied to particular processes. The synthesis of carbon dots is solved by the design of experiments method. A safety study addresses the consequences of gas explosion.

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