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Nota di contenuto	Intro; Title Page; Table of Contents; List of contributors; Preface; PART 1: Principles of catalytic reaction engineering; PART 2: Two-phase catalytic reactors; PART 3: Three-phase catalytic reactors; PART 4: Structured reactors; PART 5: Essential tools of reactor modeling and design; PART 6: Industrial applications of multiphase reactors; Index; End User License Agreement; CHAPTER 1: Catalytic reactor types and their industrial significance; CHAPTER 2: Microkinetic analysis of heterogeneous catalytic systems; CHAPTER 3: Fixed-bed gas-solid catalytic reactors CHAPTER 4: Fluidized-bed catalytic reactorsCHAPTER 5: Three-phase fixed-bed reactors; CHAPTER 6: Three-phase slurry reactors; CHAPTER 7: Bioreactors; CHAPTER 8: Monolith reactors; CHAPTER 9: Microreactors for catalytic reactions; CHAPTER 10: Experimental methods for the determination of parameters; CHAPTER 11: Numerical solution techniques; CHAPTER 12: Reactor approaches for Fischer-Tropsch synthesis; CHAPTER 13: Hydrotreating of oil fractions;

CHAPTER 14: Catalytic reactors for fuel processing; CHAPTER 15: Modeling of the catalytic deoxygenation of fatty acids in a packed bed reactor
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3.4 Dominant fluid-solid mass transfer3.5 Dominant fluid-solid mass and heat transfer; 3.6 Negligible mass and thermal dispersion; 3.7 Conclusions; Nomenclature; Greek letters; References; 4.1 Introduction; 4.2 Key hydrodynamic features of gas-fluidized beds; 4.3 Key properties affecting reactor performance; 4.4 Reactor modeling; 4.5 Scale-up, pilot testing, and practical issues; 4.6 Concluding remarks; Nomenclature; Greek letters; References; 5.1 Introduction; 5.2 Hydrodynamic aspects of three-phase fixed-bed reactors; 5.3 Mass and heat transfer in three-phase fixed-bed reactors
5.4 Scale-up and scale-down of trickle-bed reactors5.5 Trickle-bed reactor/bioreactor modeling; Nomenclature; Greek letters; Subscripts; Superscripts; References; 6.1 Introduction; 6.2 Reactor design, scale-up methodology, and reactor selection; 6.3 Reactor models for design and scale-up; 6.4 Estimation of transport and hydrodynamic parameters; 6.5 Advanced computational fluid dynamics (CFD)-based models; 6.6 Summary and closing remarks; Acknowledgments; Nomenclature; Greek letters; Subscripts; References; 7.1 Introduction; 7.2 Basic concepts, configurations, and modes of operation
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