1. Record Nr. UNINA9911015963503321

| | |
|---|---|
| Autore | Verma Nishith |
| Titolo | Chemical Reaction Engineering / / by Nishith Verma |
| Pubbl/distr/stampa | Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025 |
| ISBN | 3-031-88691-7 |
| Edizione | [1st ed. 2025.] |
| Descrizione fisica | 1 online resource (294 pages) |
| Disciplina | 660 |
| Soggetti | Chemical engineering<br>Chemistry<br>Production engineering<br>Chemical Process Engineering<br>Process Engineering |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Chapter 1. Chemical Processes -- Chapter 2. Chemical Reactions -- Chapter 3. Mechanism (Reaction Kinetics) -- Chapter 4. Constant-Volume Batch Reactor (Isothermal) -- Chapter 5. Batch Kinetics (Cont.) -- Chapter 6. Reactor Design — Introduction (Mixed Flow Reactor) -- Chapter 7. Plug Flow Reactor -- Chapter 8. Plug Flow Reactor (Cont.) -- Chapter 9. Equal Size MFR in Series -- Chapter 10. Recycle-Tubular Reactors -- Chapter 11. Autocatalytic Reactions -- Chapter 12. Multiple Reactions (Parallel) -- Chapter 13. Reactions in Series -- Chapter 14. Non-isothermal Operation -- Chapter 15. Adiabatic Operation -- Chapter 16. Non-ideal Reactors (RTD Study) -- Chapter 17. Fluid-Particles Reactions (Non-Catalytic) -- Chapter 18. Catalysts and Catalytic Reactions -- Chapter 19. Adsorption/Desorption -- Chapter 20. Porous Catalyst (Intraphase Transport + Kinetics). |
| Sommario/riassunto | This book mainly deals with the design of flow reactors for homogeneous reactions. ChE CRE is built upon lecture notes of “Chemical Reaction Engineering (CRE)” that the author has taught at the undergraduate (UG) level. Few chapters are added toward the latter part of the book, dealing with the basics of heterogeneous chemical reaction engineering. ChE CRE is recommended for teaching the upper undergraduate program when the students have been exposed to |

stoichiometry, thermodynamics, fluid dynamics, unit operation, and a few numerical techniques. ChE CRE comes with the audio lectures synchronized with the book chapters and is freely downloadable from the web-link prescribed in the book. .