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Autore	TRÍAS DE BES, Fernando
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Autore	Verma Ashok Kumar
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Nota di contenuto

Introduction to Process Design -- Process Design Fundamentals -- Design of Heat Exchangers -- Mass Transfer Equipment -- Solid-Liquid and Liquid-Liquid Extraction -- Humidification, Dehumidification and Drying -- Reactor Design.

Sommario/riassunto

This book discusses the design methodology for chemical process equipment carrying out heat and mass transfer operations and various types of reactors. Process design is an important step before achieving a mechanical design of chemical process equipment. It requires comprehensive knowledge of thermodynamics, fluid flow, heat, and mass transfer operations, and chemical reaction engineering, which is covered by the various chapters in this book. It covers process design of (1) heat exchangers, condensers, and reboilers; (2) packed and stage columns for distillation and gas absorption in chapter; (3) liquid-liquid extractor and solid-liquid leaching systems; (4) cooling towers; and (5) four different types of catalytic reactors, packed bed, fluidized bed, slurry bubble column, and mechanically agitated slurry reactor. The book emphasizes using correlations and equations in place of design data available in graphical or tabular forms to make it suitable for solving problems using spreadsheets and other software. It includes new correlations if not available in the literature and references to data available on web resources. The book covers all major topics for the course Chemical Process Engineering for undergraduate students and is also helpful in carrying out process design calculations for undergraduate design projects.