1. Record Nr. UNINA9910480035203321

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Titolo	Fluidization engineering / / Daizo Kunii, Octave Levenspiel
Pubbl/distr/stampa	Stoneham, Massachusetts : , : Butterworth-Heinemann, , 1991 ©1991
ISBN	0-409-90233-0 1-322-28409-1 0-08-050664-X
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (520 p.)
Collana	Butterworth-Heinemann Series in Chemical Engineering
Disciplina	660.284292 660/.284292
Soggetti	Fluidization Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Front Cover; Fluidization Engineering; Copyright Page; Table of Contents; PREFACE TO THE SECOND EDITION; PREFACE TO THE FIRST EDITION; NOTATION; Chapter 1. Introduction; Related Readings; Chapter 2. Industrial Applications of Fluidized Beds; Historical Highlights; Physical Operations; Synthesis Reactions; Combustion and Incineration; Carbonization and Gasification; Calcination; Reactions Involving Solids; Biofluidization; References; Chapter 3. Fluidization and Mapping of Regimes; Fixed Beds of Particles; Fluidization without Carryover of Particles; Types of Gas Fluidization without Carryover Fluidization with Carryover of ParticlesThe Mapping of Fluidization Regimes; Problems; References; Chapter 4. The Dense Bed: Distributors, Gas Jets, and Pumping Power; Distributor Types; Gas Entry Region of a Bed; Gas Jets in Fluidized Beds; Pressure Drop Requirements across Distributors; Design of Gas Distributors; Power Consumption; Problems; References; Chapter 5. Bubbles in Dense Beds; Single Rising Bubbles; Coalescence and Splitting of Bubbles; Bubble Formation above a Distributor; Slug Flow; Problems; References; Chapter 6. Bubbling Fluidized Beds; Experimental Findings

Estimation of Bed PropertiesPhysical Models: Scale-up and Scale-down; Flow Models for Bubbling Beds; Problems; References; Chapter 7. Entrainment and Elutriation from Fluidized Beds; Freeboard Behavior; Location of the Gas Outlet of a Vessel; Entrainment from Tall Vessels: Hf>TDH; Entrainment from Short Vessels: Hf<TDH; Problems; References; Chapter 8. High-Velocity Fluidization; Turbulent Fluidized Beds; Fast Fluidization; The Freeboard-Entrainment Model Applied to Fast Fluidization; Pressure Drop in Turbulent and Fast Fluidization; Problems; References
Chapter 9. Solid Movement: Mixing, Segregation,and StagingVertical Movement of Solids; Horizontal Movement of Solids; Segregation of Particles; Large Solids in Beds of Smaller Particles; Staging of Fluidized Beds; Leakage of Solids through Distributor Plates; Problems; References; Chapter 10. Gas Dispersion and Gas Interchange in Bubbling Beds; Dispersion of Gas in Beds; Gas Interchange between Bubble and Emulsion; Estimation of Gas Interchange Coefficients; Problem; References; Chapter 11. Particle-to-Gas Mass and Heat Transfer; Mass Transfer: Experimental
Interpretation of Mass Transfer CoefficientsHeat Transfer: Experimental; Interpretation of Heat Transfer Coefficients; Problems; References; Chapter 12. Conversion of Gas in Catalytic Reactions; Measures of Reaction Rate and Reactor Performance; Reactor Model for Fine Particle Bubbling Beds; Reactor Model for Bubbling Beds of Intermediate-Sized Particles or umf/mf<ub<5umf/mf; Reactor Model for Large Particle Bubbling Beds; Reactor Model for the Freeboard Region above Fluidized Beds; Turbulent Bed Reactors; Fast Fluidized Bed Reactors; Problems; References
Chapter 13. Heat Transfer between Fluidized Beds and Surfaces

Sommario/riassunto

Fluidization Engineering, Second Edition, expands on its original scope to encompass these new areas and introduces reactor models specifically for these contacting regimes. Completely revised and updated, it is essentially a new book. Its aim is to distill from the thousands of studies those particular developments that are pertinent for the engineer concerned with predictive methods, for the designer, and for the user and potential user of fluidized beds.Covers the recent advances in the field of fluidization.Presents the studies of developments necessary to the engineers, designers, and u