1. Record Nr. UNINA9910139248603321

Autore	Soustelle Michel
Titolo	Handbook of heterogeneous kinematics [[electronic resource] /] / Michel Soustelle
Pubbl/distr/stampa	London, : ISTE Hoboken, N.J., : Wiley, 2010
ISBN	1-118-55773-5 1-299-31531-3 1-118-61766-5
Descrizione fisica	1 online resource (961 p.)
Collana	ISTE
Disciplina	541.0421 541/.394
Soggetti	Chemical kinetics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	First published in 4 volumes entitled: Cinetique heterogene, France : Hermes Science/Lavoisier, 2006 and 2007.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Handbook of Heterogenous Kinetics; Title Page; Copyright Page; Table of Contents; Preface; List of Symbols; Chapter 1. Definitions and Experimental Approach; 1.1. Thermal transformations of solids; 1.2. Classification of transformations; 1.2.1. Transformation without formation of a new solid phase; 1.2.2. Transformation with formation of a new solid phase; 1.3. Speed and rate of reaction; 1.3.1. Speed of reaction; 1.3.2. Fractional extent and rate of a reaction; 1.3.3. Volumes of the phases and coefficient of expansion of the reaction; 1.4. Reaction zones of a transformation 1.4.1. Definition1.4.2. Classification; 1.4.3. Sizes of a reaction zone; 1.5. Chemical characterizations; 1.5.1. Analyses of the gas phases; 1.5.2. Elementary analyses of the solids; 1.6. Structural characterizations of the solids; 1.7. Textural characterizations of the solids; 1.7.1. The marker method; 1.7.2. The cavity method; 1.8. Characterization of the evolution of the systems; 1.8.1. Curves of evolution: definitions; 1.8.2. Curves of evolution: experimental obtaining; 1.8.3. Curves of evolution: obtained laws; 1.9. Influence of

Sommario/riassunto

This book presents all the theoretical and practical basements of heterogeneous kinetics and reactivity of solids. It applies the new concepts of reactivity and spatial function, introduced by the author, for both nucleation and growth processes, with a unified presentation of the reactivity of bulk and powder solids, including gas-solid reactions, thermal decompositions, solid-solid reactions, reactions of solid solutions, and coalescence of solid grains. It also contains many exercises and problems with solutions included, allowing readers to understand and use all the concepts and methods d