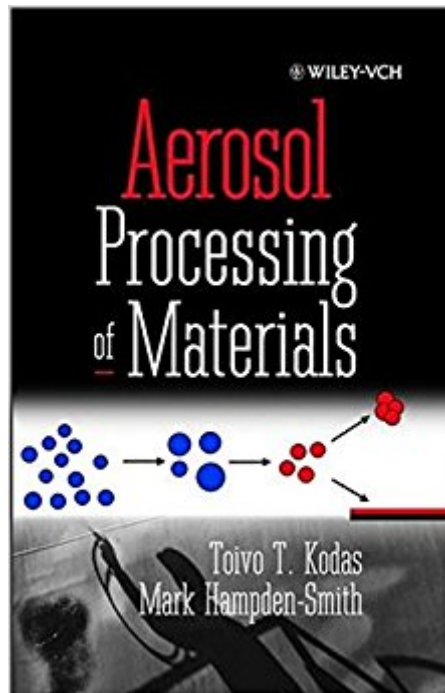




Ebook Directory
the best source of ebook

The book was found

Aerosol Processing Of Materials



Synopsis

Unifying a wide range of materials synthesis techniques, 'Aerosol Processing of Materials' provides a detailed overview of the production of materials by the use of gas phase processes. Aerosol processes are responsible for the production of many of today's most advanced materials, especially in the semiconductor, optical waveguide, and thin film industries. Many of the unique properties of nanophase materials and composites are only possible through the application of aerosol in materials processing. This book describes various types of aerosol processes and the role of aerosols in materials processing. The work presents the advantages and disadvantages of each process in terms of cost, complexity, purity, and materials properties; and compares these factors to alternative methods of powder and film formation. The title provides the theory needed to understand and advance the fundamentals of this rapidly expanding material manufacturing processes. Written by well-respected leaders in the field, the book illuminates the roles of particle size characterization and size distributions; heat, mass, and momentum transfer; particle transport; condensation and evaporation; and coagulation and coalescence. 'Aerosol Processing of Materials' provides the most up-to-date and comprehensive single source of information available on gas-to-particle powder formation; liquid/solid-to-solid powder formation; film formation; reactor design; and particle/film characterization.

Book Information

Hardcover: 712 pages

Publisher: Wiley-VCH; 1 edition (December 14, 1998)

Language: English

ISBN-10: 0471246697

ISBN-13: 978-0471246695

Product Dimensions: 6.5 x 1.5 x 9.6 inches

Shipping Weight: 2.5 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #1,254,035 in Books (See Top 100 in Books) #98 in Books > Engineering & Transportation > Engineering > Materials & Material Science > Extraction & Processing #331 in Books > Engineering & Transportation > Engineering > Materials & Material Science > Polymers & Textiles #472 in Books > Science & Math > Chemistry > Industrial & Technical

Customer Reviews

An authoritative guide to the science, engineering, and technology of aerosol processing. Aerosol

Processing of Materials offers a comprehensive look at advanced materials processing by aerosol methods. This self-contained volume examines in-depth what it takes to generate powders and films with specialized characteristics using gas-phase processes. In three main parts, it addresses particle formation by intraparticle reaction, particle formation by gas-to-particle conversion, and film formation. All aspects of these subjects are considered, from the basic principles and chemistry of aerosols to processing methods and the characterization of materials. The text incorporates an impressive array of examples involving materials such as metals, metal oxides, and metal sulfides for application in pigments, ceramics superconductors, electronics, sensors, glass coatings, semiconductors, optical materials, and thick films. Fully referenced, generously illustrated, and lucidly written by two of the foremost authorities on aerosol processing of materials, this landmark work emphasizes cutting-edge technologies, industrial applications, and the need to put existing research to practical use. **Aerosol Processing of Materials:** * Provides a basic and practical understanding of the relationships between reagents and processes used to generate a variety of materials in powder and film form * Reviews the state-of-the-art of gas-phase nanoparticle technology, including synthesis of nanostructured materials and their properties * Gives simple explanations of the aerosol dynamics in various systems for particle and film formation and the advantages and disadvantages of different systems for particle formation * Features master tables listing all aerosol processing examples presented in the book * Provides problem-solving strategies to avoid degradation or defects in materials produced by aerosol methods. **Aerosol Processing of Materials** offers tremendous insight into current practices, research opportunities, and future trends in this evolving field. It is an invaluable resource for chemists and chemical and materials engineers in the fiber optics, electronics, semiconductor, thick film, wear resistance, refractory, automotive, paint and dye, plastics, ceramics, and sensor industries.

TOIVO T. KODAS and MARK HAMPDEN-SMITH are full professors in the Departments of Chemical Engineering and Chemistry, respectively, at the University of New Mexico in Albuquerque. They are also the founders of the companies Nanochem Research, Inc./ Superior MicroPowders, LLC that are currently commercializing several of the processes discussed in the book. Kodas and Hampden-Smith have previously collaborated to author and coedit *Chemistry of Metals CVD*, published by Wiley-VCH in 1994. Professor Hampden-Smith has coedited *Chemistry of Advanced Materials: An Overview*, a 1998 Wiley-VCH publication.

[Download to continue reading...](#)

Aerosol Processing of Materials Materials Processing: A Unified Approach to Processing of Metals,

Ceramics and Polymers The Art of Spray Paint: Inspirations and Techniques from Masters of Aerosol Aerosol Technology: Properties, Behavior, and Measurement of Airborne Particles Aerosol Science: Theory and Practice Transport Phenomena in Materials Processing (The Minerals, Metals & Materials Series) Materials: Engineering, Science, Processing and Design (Materials 3e North American Edition w/Online Testing) Engineering Materials 2, Fourth Edition: An Introduction to Microstructures and Processing (International Series on Materials Science and Technology) Engineering Materials 2: An Introduction to Microstructures, Processing and Design (International Series on Materials Science and Technology) (v. 2) Materials North American Edition w/Online Testing: Materials - North American Edition, Second Edition: engineering, science, processing and design Materials: Engineering, Science, Processing and Design (Materials 3e with Online Testing) Energetic Materials: Advanced Processing Technologies for Next-Generation Materials Processing Techniques and Tribological Behavior of Composite Materials (Advances in Chemical and Materials Engineering) Biomimetic Materials And Design: Biointerfacial Strategies, Tissue Engineering And Targeted Drug Delivery (Manufacturing Engineering & Materials Processing) Discrete-Time Signal Processing (3rd Edition) (Prentice-Hall Signal Processing Series) Multidimensional Digital Signal Processing (Prentice-Hall Signal Processing Series) Discrete-Time Signal Processing (2nd Edition) (Prentice-Hall Signal Processing Series) Engineering Materials 3: Materials Failure Analysis: Case Studies and Design Implications (International Series on Materials Science and Technology) (v. 3) Modern Ceramic Engineering: Properties, Processing, and Use in Design, 3rd Edition (Materials Engineering) Modern Ceramic Engineering: Properties, Processing, and Use in Design, 2nd Edition (Engineered Materials)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)