



Advanced catalysts and nanostructured materials [modern synthetic methods /

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Monografía

The time has come for an assessment of the most important techniques for the fabrication of advanced catalysts. Catalyst production alone is more than a billion dollar business each year, and the product value of chemical processes using advanced catalysts is a few trillion dollars annually. This book seeks to provide a modern, materials science account of the best and most current techniques for the synthesis of advanced catalytic materials. Until now, there has been no single book which contains a definitive and comprehensive description of the important technologies for catalyst synthesis within the context of modern materials science. Academic researchers both in the catalytic sciences and materials sciences must have the best synthesis technologies available to accomplish the preparation of solid-state materials of specific structure and morphology. Although the emphasis is on new synthetic techniques for catalytic applications, the book presents all of the important technologies for the fabrication of electronic and structural ceramics, and superconductors. Key Features * Novel Techniques for Advanced Materials * Nanostructured Materials Synthesis * Mesoporous Molecular Sieves * Pillared Clays * Heteropoly Acids * Nanostructured Supported Metal Catalysts * Nanostructured Metal Oxide Catalysts and Materials * Nanostructured Zeolite Materials * Vapor Phase Materials Synthesis * Sonochemical Materials Synthesis * Aerosol Methods of Catalyst Synthesis * Hydrodynamic Cavitation Techniques for Catalyst and Materials Synthesis * Novel Sol-Gel Methods for Catalyst Synthesis * Supercritical Methods for Materials Synthesis * Liquid Crystal Techniques for Mesoporous Materials * Micelle Techniques for Nanostructured Catalyst Preparation * Fluidized Bed Techniques in Chemical Vapor Deposition * Flame Methods of Advanced Catalyst Synthesis

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