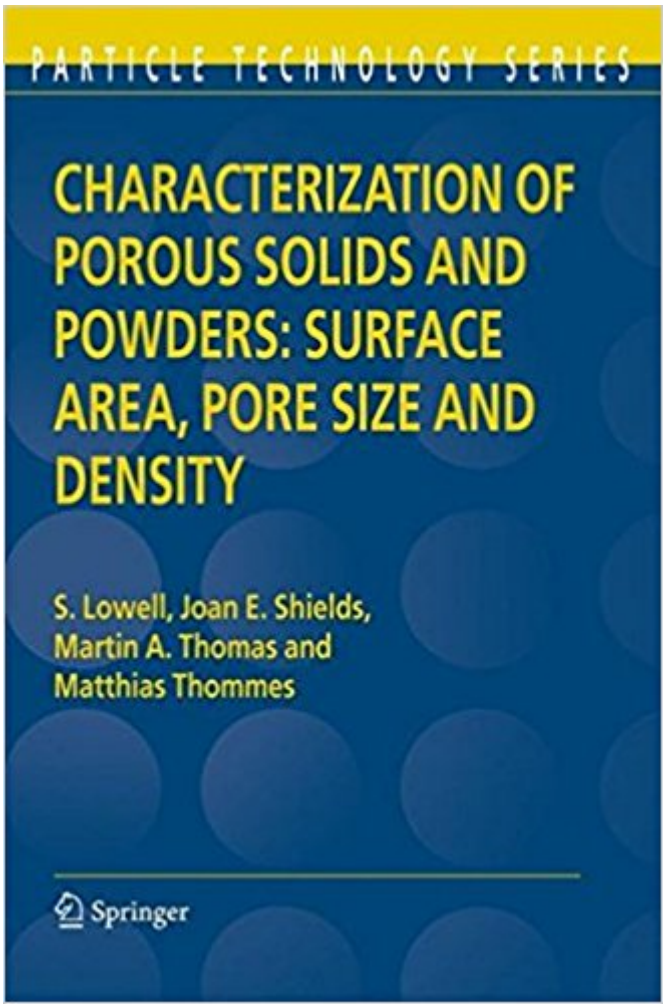
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Characterization Of Porous Solids And Powders: Surface Area, Pore Size And Density (Particle Technology Series)



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Synopsis

The growth of interest in newly developed porous materials has prompted the writing of this book for those who have the need to make meaningful measurements without the benefit of years of experience. One might consider this new book as the 4th edition of "Powder Surface Area and Porosity" (Lowell & Shields), but for this new edition we set out to incorporate recent developments in the understanding of fluids in many types of porous materials, not just powders. Based on this, we felt that it would be prudent to change the title to "Characterization of Porous Solids and Powders: Surface Area, Porosity and Density". This book gives a unique overview of principles associated with the characterization of solids with regard to their surface area, pore size, pore volume and density. It covers methods based on gas adsorption (both physiÃ Â- and chemisorption), mercury porosimetry and pycnometry. Not only are the theoretical and experimental basics of these techniques presented in detail but also, in light of the tremendous progress made in recent years in materials science and nanotechnology, the most recent developments are described. In particular, the application of classical theories and methods for pore size analysis are contrasted with the most advanced microscopic theories based on statistical mechanics (e.g. Density Functional Theory and Molecular Simulation). The characterization of heterogeneous catalysts is more prominent than in earlier editions; the sections on mercury porosimetry and particularly chemisorption have been updated and greatly expanded.

Book Information

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Customer Reviews

An updated version of the classical textbookÃ Â (Powder Surface Area and Porosity, 3rd ed., 1991) by the first two authors "the book now includes recent developments in the areas of density functional theory, molecular simulations, pore network theories, and it has an expanded section on heterogeneous catalystsÃ¢â ¬Â¦. An interesting aspect is the bookÃ¢â ¬â„¢s clear division between theoretical aspects (Part 1) and experimental aspects (Part 2) of the various techniquesÃ¢â ¬Â¦. The book also demonstrates a good balance between how deep a theoretical concept is being discussed and how many real-world examples are presented. Summing up: Recommended. Lower-division undergraduates through professionals; two-year technical program students." H. Giesche, Alfred University, in CHOICE, May 2005, Vol. 42 No.09

I bought this book to quickly get an overview over the BET method and theory, pore size determination and adsorption isotherms. And the book delivered exactly that. It does not go into much detail but is thorough nevertheless. For every chapter there are many references that help to dig deeper into a particular subject. So this is an ideal entry point if you are (like me) new to the subject matter.

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