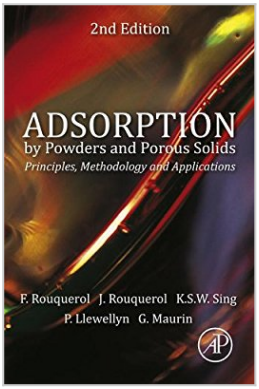

Adsorption by Powders and Porous Solids: Principles, Methodology and Applications

By Jean Rouquerol, Françoise Rouquerol, Philip Llewellyn, Guillaume Maurin, Kenneth S. W. Sing

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The declared objective of this book is to provide an introductory review of the various theoretical and practical aspects of adsorption by powders and porous solids with particular reference to materials of technological importance. The primary aim is to meet the needs of students and non-specialists who are new to surface science or who wish to use the advanced techniques now available for the determination of surface area, pore size and surface characterization. In addition, a critical account is given of recent work on the adsorptive properties of activated carbons, oxides, clays and zeolites.

- Provides a comprehensive treatment of adsorption at both the gas/solid interface and the liquid/solid interface
- Includes chapters dealing with experimental methodology and the interpretation of adsorption data obtained with porous oxides, carbons and zeolites
- Techniques capture the importance of heterogeneous catalysis, chemical engineering and the production of pigments, cements, agrochemicals, and pharmaceuticals

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Editorial Review

Review

"An introductory chapter summarizes relevance, history, and terminology of adsorption, including chemisorption vs. physisorption, and discusses energetics, molecular modeling, and diffusion. The following chapters treat thermodynamics at a gas/solid and solid/liquid interfaces, measurement and monitoring technique, isotherm theory and interpretation, mathematical modeling of adsorption processes, and use of adsorption to measure surface area and porosity of materials." --**ProtoView.com, January 2014**

Review of first edition: "A long-awaited but worthy successor to the book considered by many to be the bible of porous materials characterization: ‘Gregg & Sing’ (2nd Edition, 1982). This collaboration between the Rouquerols and Ken Sing has created a detailed handbook covering not only important theoretical aspects, but copious experimental and application information too. Adsorption calorimetry gets more attention than before (not surprising given the Rouquerols' affiliation), as do ‘new’ materials such as MCM's and ‘new’ calculation models like DFT (Density Functional Theory) and Monte Carlo simulation. Importantly, there is a great deal of coverage given to adsorptives other than nitrogen (the most common but not necessarily the most appropriate in all cases). Hundreds of references are given for follow-up reading in areas of special interest. Anyone seeking a reliable, broad, yet highly informative coverage of adsorption methodology for porous materials characterization should invest in this title." --**Worthy Successor by "thomasetc" (USA), June 2000, Amazon.com**

From the Back Cover

Adsorption phenomena play a vital role in heterogenous catalysis and in many solid state reactions. Porous adsorbents are widely employed for inter alia gas separation, water treatment and respiratory protection. The laboratory use of adsorption measurements is becoming increasingly important for the characterization of finely divided and porous materials.

Adsorption by Powders and Porous Solids<$> provides a unique overview of the theoretical and practical aspects of adsorption, with particular reference to the study of the surface properties of materials of technological importance. The book gives:
*** an introduction to the relevant aspects of adsorption science**
*** a critical appraisal of recent developments**
*** guidance on the determination and interpretation of adsorption data.**

The book will appeal to post-graduate students and others who wish to undertake adsorption measurements. For all readers, the book also provides an up-to-date survey of the adsorptive properties of active carbons, oxides, clays and zeolites and some novel adsorbants.

Francoise Rouquerol leads a research team at the CTM (Centre de Thermodynamique et de Microcalorimetrie) du CNRS (Centre National de Recherche Scientifique) in Marseille, France. She is also a senior professor at University of Provence.

Jean Rouquerol is Director of the CTM, and a leading authority on adsorption thermodynamics and

the methodology of thermal analysis and adsorption calorimetry.

Kenneth Sing is an emeritus professor of Brunel University and visiting professor at Bristol University, both in the UK. He is co-author of the well-known book *Adsorption, Surface Area and Porosity<$> (Gregg and Sing, 1982, Academic Press.*

About the Author
Jean Rouquerol is director of the Centre de Thermodynamique, and a leading authority on adsorption thermodynamics and the methodology of thermal analysis and adsorption calorimetry

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Kenneth Sing is an emeritus professor of Brunel University and visiting professor at Bristol University, both in the UK. He is co-author of the well-known book **Adsorption, Surface Area and Porosity.**

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