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of Adsorption; 2.5.4. Evaluation of Integral Molar Quantities of Adsorption; 2.5.4.1. Integral Molar Energy of Adsorption; 2.5.4.2. Integral Molar Entropy of Adsorption; 2.6. Indirect Derivation of the Quantities of Adsorption from of a Series of Experimental Physisorption Isotherms: The Is ...
2.6.1. Differential Quantities of Adsorption2.6.2. Integral Molar Quantities of Adsorption; 2.7. Derivation of the Adsorption Quantities from Calorimetric Data; 2.7.1. Discontinuous Procedure; 2.7.2. Continuous Procedure; 2.8. Other Methods for the Determination of Differential Enthalpies of Adsorption; 2.8.1. Immersion Calorimetry; 2.8.2. The Chromatographic Method; 2.9. State Equations for High Pressure: Single Gases and Mixtures; 2.9.1. Case of Pure Gases; 2.9.1.1. The van der Waals Equation (1890); 2.9.1.2. The Redlich-Kwong-Soave Equation; 2.9.1.3. The Gasem-Peng-Robinson Equation (2001)
2.9.2. Case of Gas MixturesReferences; Chapter 3: Methodology of Gas Adsorption; 3.1. Introduction; 3.2. Determination of the Surface Excess Amount (and Amount Adsorbed); 3.2.1. Gas Adsorption Manometry (Measurement of Pressure Only); 3.2.1.1. Up to Atmospheric Pressure; 3.2.1.1.1. Gas Adsorption Volumetry; 3.2.1.1.2. Simple Gas Adsorption Manometry; 3.2.1.1.3. Gas Adsorption Manometry with Intermediate Gas Storage and Measurement; 3.2.1.1.4. Differential Gas Adsorption Manometry; 3.2.1.2. Above Atmospheric Pressure
3.2.1.3. Setting the Parameters for an Automated Experiment of Gas Adsorption Manometry

Sommario/riassunto

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 zeolit

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