Record Nr. UNINA9910145965603321 Carbon materials for catalysis [[electronic resource] /] / edited by **Titolo** Philippe Serp, Jose Luis Figueiredo Pubbl/distr/stampa Hoboken, N.J., : John Wiley & Sons, c2009 **ISBN** 1-282-00187-6 9786612001871 0-470-40370-5 0-470-40369-1 Descrizione fisica 1 online resource (603 p.) 35.17 Classificazione Altri autori (Persone) FigueiredoJose Luis SerpPhilippe Disciplina 660 660.2995 660/.2995 Soggetti Carbon Catalysis Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references and index. Nota di bibliografia CARBON MATERIALS FOR CATALYSIS; Contents; Contributors; Preface; 1 Nota di contenuto Physicochemical Properties of Carbon Materials: A Brief Overview; 1.1. Introduction; 1.2. Formation of Carbons; 1.2.1. Gas Phase; 1.2.2. Liquid Phase; 1.2.3. Solid Phase; 1.3. Structure and Properties of Carbons; 1.3.1. Macrostructure; 1.3.2. Microstructure; 1.3.3. Nanostructure; 1.3.4. Bulk Properties: 1.3.5. Surface Properties: 1.4. Reactions of Carbons; 1.4.1. Gas Phase; 1.4.2. Liquid Phase; 1.4.3. Solid Phase; 1.5. Conclusions; References; 2 Surface Chemistry of Carbon Materials; 2.1. Introduction 2.2. Surface Functionalities2.2.1. Oxygen-Containing Functionalities; 2.2.2. Nitrogen-Containing Functionalities; 2.2.3. Hydrogen-Carbon Species: 2.2.4. Sulfur, Phosphorus, and Halogen Functionalities; 2.3. Surface Modifications; 2.3.1. Oxidation; 2.3.2. Introduction of Nitrogen-Containing Species; 2.3.3. Introduction of Sulfur Functionality; 2.3.4. Halogenization; 2.3.5. Impregnation and Dry Mixing; 2.3.6. Heat Treatment; 2.4. Characterization of Surface

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## Sommario/riassunto

This is the first comprehensive book covering all aspects of the use of carbonaceous materials in heterogeneous catalysis. It covers the preparation and characterization of carbon supports and carbon-supported catalysts; carbon surface chemistry in catalysis; the description of catalytic, photo-catalytic, or electro-catalytic reactions, including the development of new carbon materials such as carbon xerogels, aerogels, or carbon nanotubes; and new carbon-based materials in catalytic or adsorption processes. This is a premier reference for carbon, inorganic, and physical chemists, materials sc