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Nota di contenuto	Cover; Contents; Preface; List of Contributors; Chapter 1 Nanostructured Activated Carbons for Supercapacitors; 1.1 Supercapacitors; 1.2 Activated Carbon as Electrode for Supercapacitors; 1.3 Synthesis of ACs; 1.3.1 Precursors; 1.3.2 Activation Method; 1.3.2.1 Physical Activation; 1.3.2.2 Chemical Activation; 1.3.2.3 Electrochemical Activation; 1.4 Various Forms of ACs as Supercapacitor Electrodes; 1.4.1 Activated Carbon Powders; 1.4.2 Activated Carbon Films and Monoliths; 1.4.3 Activated Carbon Fibers; 1.5 Key Factors Determining the Electrochemical Performance of AC-Based Supercapacitors 1.5.1 Pore Size and Pore Size Distribution1.5.2 Pore Alignment; 1.5.3 Surface Functionalization; 1.5.4 Electrical Conductivity of the Electrode; 1.5.5 Electrolyte Selection; 1.5.6 Understandings of Ion Adsorption in Porous Structure; 1.5.7 Quantum Capacitance of Carbon and Doping; 1.6 Self-discharge of ACs-Based Supercapacitors; 1.7 Summary; References; Chapter 2 Nanocarbon Hybrids with Silicon, Sulfur, or

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Sommario/riassunto

This first volume in the series on nanocarbons for advanced applications presents the latest achievements in the design, synthesis, characterization, and applications of these materials for electrochemical energy storage. The highly renowned series and volume editor, Xinliang Feng, has put together an internationally acclaimed expert team who covers nanocarbons such as carbon nanotubes, fullerenes, graphenes, and porous carbons. The first two parts focus on nanocarbon-based anode and cathode materials for lithium ion batteries, while the third part deals with carbon material-based supercapacit