1. Record Nr. UNINA9910760301103321 Autore Hussain Chaudhery Mustansar Titolo Functionalized Nanomaterials Based Supercapacitor [[electronic resource]]: Design, Performance and Industrial Applications // edited by Chaudhery Mustansar Hussain, M. Basheer Ahamed Singapore:,: Springer Nature Singapore:,: Imprint: Springer,, 2024 Pubbl/distr/stampa **ISBN** 981-9930-21-9 Edizione [1st ed. 2024.] Descrizione fisica 1 online resource (690 pages) Collana Materials Horizons: From Nature to Nanomaterials, , 2524-5392 Altri autori (Persone) AhamedM. Basheer 620.115 Disciplina Soggetti Nanotechnology Supercapacitors Materials Nanoelectromechanical systems Electrochemistry Nanochemistry Chemical detectors Nanoengineering Nanoscale Devices Sensors Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia

Livello bibliografico

Nota di contenuto

Chapter 1. Historical perspective of nanotechnology and functionalized nanomaterials -- Chapter 2. An introductory view about supercapacitors -- Chapter 3. Functionalized Nanomaterials, classification, properties and functionalization techniques -- Chapter 4. Functionalized Nanomaterials as supercapacitor devices: Current Trends and Beyond -- Chapter 5. Additive manufacturing for functionalized nanomaterials dedicated for supercapacitors -- Chapter 6. Pre and Post-treatment of functionalized nanomaterials in fabricating supercapacitor electrodes -- Chapter 7. Comparison of different fabrication approaches in functionalized nanomaterials for supercapacitors -- Chapter 8. Functionalization techniques for carbon dedicated for electrochemical use -- Chapter 9. Forms of

## Sommario/riassunto

Functionalized Carbon based nanomaterials, synthesis, classification and electrochemical activity -- Chapter 10. Environmental applications of Carbon based supercapacitors.

This book portrays an extensive outline of "functionalized nanomaterials based supercapacitor", including their fundamental as well as industrial-scale exploratory research. The contributed parts stretch the readers a complete report of the field of functionalized nanomaterials-based supercapacitor appropriate hypothetical standard of their structure to their execution, realization and potential application. It covers the latest system and functionalized nanomaterials for preparation, development, construction, validation and design of supercapacitor for commercial application. To best of our knowledge, there is no book available on the topic. Advanced undergraduate and graduate students can find this book a good source of knowledge and guidelines for their studies. They can find this book highly up to date, easy to use and understandable. This book is able to ease their thirst of learning of new and advanced electrochemical sensors. Moreover, the volume editors anticipate that this book is of significant interest to scientists working on the basic issues surrounding applications of nanotechnology in electrochemical sensors. Because of the multidisciplinary nature of this topic, this book attracts a broad audience including chemists, materials scientists, pharmacist, biologist and chemical engineers, who are involved and interested in the future frontiers of functionalized nanomaterials-based supercapacitor sciences and technology. Overall, this book is planned to be a reference book for researchers and scientists who are searching for new and advancement in supercapacitors sciences and technology.