1. Record Nr. UNINA9910298659803321

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| Titolo | Electrospun Nanofibers for Energy and Environmental Applications / / edited by Bin Ding, Jianyong Yu |
| Pubbl/distr/stampa | Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2014 |
| ISBN | 3-642-54160-7 |
| Edizione | [1st ed. 2014.] |
| Descrizione fisica | 1 online resource (518 p.) |
| Collana | Nanostructure Science and Technology, , 1571-5744 |
| Disciplina | 677.02832 |
| Soggetti | Nanotechnology<br>Energy storage<br>Environmental sciences<br>Electrochemistry<br>Polymers<br>Energy Storage<br>Environmental Science and Engineering<br>Polymer Sciences |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references. |
| Nota di contenuto | Part I Introduction -- Electrospun nanofibers: Solving global issues -- Part II Electrospun nanofibers for energy applications -- Electrospun Nanofibers for Design and Fabrication of Electrocatalysts and Electrolyte Membranes for Fuel cells -- Applications of Electrospinning in Design and Fabrication of Electrodes for Lithium Ion Batteries -- Electrospun Fibrous Membranes as Separators of Lithium-Ion Batteries -- Electrospun oxide nanofibers for dye-sensitized solar cells -- Application of Electrospun Nanofibers in Organic Photovoltaics -- Application of Nanofibers in Super Capacitors -- Applications of Bulk and Nanostructured Polyaniline in Hydrogen Storage -- Electrospinning of Phase Change Materials for Thermal Energy Storage -- Electrospun Nanofibrous Sorbents and Membranes for Carbon Dioxide Capture -- Part III Electrospun nanofibers for environmental applications -- Electrospun Nanofiber-based Sensors -- Electrospun Nanofibers for Air Filtration -- Electrospun Nanofibrous Membranes for Liquid Filtration |

-- Protective Clothing Based on Electrospun Nanofibrous Membranes -- Electrospun Nanofiber-based Photocatalysts -- Multicomponent nanofibers via electrospinning of polymers and colloidal dispersions for environmental and optical applications -- Applications of Electrospun Nanofibers in Oil Spill Clean-Up -- Electrospun Superhydrophobic Self-cleaning Materials -- Adsorbents Based on Electrospun nanofibers -- Application of Electrospun Nanofibers in Electromagnetic Interference Shielding.

Sommario/riassunto

This book offers a comprehensive review of the latest advances in developing functional electrospun nanofibers for energy and environmental applications, which include fuel cells, lithium-ion batteries, solar cells, supercapacitors, energy storage materials, sensors, filtration materials, protective clothing, catalysis, structurally-colored fibers, oil spill cleanup, self-cleaning materials, adsorbents, and electromagnetic shielding. This book is aimed at both newcomers and experienced researchers in the field of nanomaterials, especially those who are interested in addressing energy-related and environmental problems with the help of electrospun nanofibers. Bin Ding, PhD, and Jianyong Yu, PhD, are both Professors at the College of Materials Science and Engineering, Donghua University, China.