1. Record Nr. UNINA9910298602303321

Autore	Chandrasekhar Prasanna
Titolo	Conducting Polymers, Fundamentals and Applications : Including Carbon Nanotubes and Graphene / / by Prasanna Chandrasekhar
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-69378-6
Edizione	[2nd ed. 2018.]
Descrizione fisica	1 online resource (XXX, 810 p.)
Disciplina	547.70457
Soggetti	Materials science Polymers Microwaves Optical engineering Characterization and Evaluation of Materials Polymer Sciences Microwaves, RF and Optical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I: Carbon Nanotubes (CNTS), Fundamentals -- Introducing Carbon Nanotubes (CNTS) -- Conduction Models and Electronic Structure of CNTS -- Synthesis, Purification and Chemical Modification of CNTS -- Physical, Mechanical and Thermal Properties of CNTS -- Toxicology of CNTS -- Part II: Carbon Nanotubes (CNTS), Applications -- Brief, General Overview of Applications -- CNT Applications in Specialized Materials -- CNT Applications in Batteries and Energy Devices -- CNT Applications in Sensors and Actuators -- CNT Applications in Drug and Biomolecule Delivery -- CNT Applications in Microelectronics, “Nanoelectronics” and “Nano-bioelectronics” -- CNT Applications in Displays and Transparent, Conductive Films/Substrates -- CNT Applications in Electrical Conductors, “Quantum Nanowires”, Potential Superconductors -- CNT Applications in the Environment and in Materials Used in Separation Science -- Miscellaneous CNT Applications -- Part III: Graphene, Fundamentals -- Introducing Graphene -- Electronic Structure and Conduction Models of Graphene -- Synthesis

and Chemical Modification of Graphene -- Part IV: Graphene, Applications -- Brief, General Overview of Applications -- Graphene Applications in Sensors -- Graphene Applications in Batteries and Energy Devices -- Graphene Applications in Electronics, Electrical Conductors, and Related Uses -- Graphene Applications in Displays and Transparent, Conductive Films/Substrates -- Medical and Pharmaceutical Applications of Graphene -- Graphene Applications in Specialized Materials -- Miscellaneous Applications of Graphene -- Part V: Conducting Polymers, Fundamentals -- Introducting Conducting Polymers (CPS) -- Conduction Models and Electronic Structure of CPS -- Basic Electrochromics of CPS -- Basic Electrochemistry of CPS -- Syntheses and Processing of CPS -- Structural Aspects and Morphology of CPS -- Characterization Methods -- Classes of CPS: Part 1 -- Classes of CPS: Part 2 -- Part VI: Conducting Polymers, Applications -- Sensors -- Batteries and Energy Devices -- Electrochromics -- Displays, Including Light Emitting Diodes (LEDS) and Conductive Films -- Microwave- and Conductivity-based Technologies -- Electro-optic and Optical Devices -- Electrochemomechanical, Chemomechanical and Related Devices -- Miscellaneous Applications.

Sommario/riassunto

The second edition of this popular textbook thoroughly covers the practical basics and applications of conducting polymers. It also addresses materials that have gained prominence since the first edition of this book was published, namely carbon nanotubes and graphene. The features of this new edition include: New and updated chapters on novel concepts in conducting polymers Details on interdisciplinary applications of conducting polymers An in depth description of classes of conducting polymers.