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| Autore | Kar Pradip |
| Titolo | Doping in conjugated polymers [[electronic resource] /] / Pradip Kar |
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| ISBN | 1-118-81661-7<br>1-118-81663-3<br>1-118-81676-5 |
| Descrizione fisica | 1 online resource (176 p.) |
| Collana | Polymer Science and Plastics Engineering |
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| Disciplina | 660/.2977 |
| Soggetti | Conjugated polymers<br>Conducting polymers<br>Semiconductor doping |
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| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Cover; Title page; Copyright Page; Contents; Acknowledgement; Preface; 1 Introduction to Doping in Conjugated Polymer; 1.1 Introduction; 1.2 Molecular Orbital Structure of Conjugated Polymer; 1.3 Possibility of Electronic Conduction in Conjugated Polymer; 1.4 Necessity of Doping in Conjugated Polymer; 1.5 Concept of Doping in Conjugated Polymer; 1.5.1 Concept of Secondary Doping in Doped Conjugated Polymer; 1.5.2 Concept of Co-doping in Conjugated Polymer; 1.6 Doping as Probable Solution; 2 Classification of Dopants for the Conjugated Polymer; 2.1 Introduction<br>2.2 Classification of Dopant According to Electron Transfer2.2.1 p-Type Dopant; 2.2.2 n-Type Dopant; 2.3 Classification of Dopant According to Chemical Nature; 2.3.1 Inorganic Dopant; 2.3.2 Organic Dopant; 2.3.3 Polymeric Dopant; 2.4 Classification of Dopant According to Doping Mechanism; 2.4.1 Ionic Dopant or Redox Dopant; 2.4.2 Non-redox Dopant or Neutral Dopant; 2.4.3 Self-dopant; 2.4.4 Induced Dopant; 3 Doping Techniques for the Conjugated Polymer; 3.1 Introduction; 3.2 Electrochemical Doping; 3.2.1 Electrochemical Doping during Polymerization<br>3.2.2 Electrochemical Doping after Polymerization3.3 Chemical Doping; 3.3.1 Gaseous Doping; 3.3.2 Solution Doping; 3.4 In-situ doping; 3.5 |

Radiation-Induced Doping or Photo Doping; 3.6 Charge Injection Doping; 4 Role of Dopant on the Conduction of Conjugated Polymer; 4.1 Introduction; 4.2 Charge Defects within Doped Conjugated Polymer; 4.2.1 Soliton; 4.2.2 Polaron; 4.2.3 Bipolaron; 4.3 Charge Transport within the Doped Conjugated Polymer; 4.3.1 Electronic Parameter Responsible for Charge Transport; 4.3.2 Charge Transport Mechanism; 4.4 Migration of Dopant Counter Ions
4.4.1 Electrical Potential Difference and Redox-Potential Gradient4.4.2 Dopant Concentration Gradient or Doping Level; 5 Influence of Properties of Conjugated Polymer on Doping; 5.1 Introduction; 5.2 Conducting Property; 5.3 Spectroscopic Property; 5.3.1 UV-VIS Spectroscopy (Optical Property); 5.3.2 FTIR Spectroscopy; 5.3.3 NMR Spectroscopy; 5.3.4 Other Spectroscopy; 5.4 Electrochemical Property; 5.4.1 Cyclic Voltammetry; 5.4.2 Electrochemical Impedance Spectroscopy; 5.5 Thermal Property; 5.6 Structural Property; 5.6.1 Crystal Structure; 5.6.2 Morphological Structure
6 Some Special Classes of Dopants for Conjugated Polymer6.1 Introduction; 6.2 Iodine and Other Halogens; 6.2.1 Principle; 6.2.2 Doping Technique; 6.2.3 Property; 6.3 Halide Doping; 6.3.1 Principle; 6.3.2 Doping Technique; 6.3.3 Property; 6.4 Protonic Acid Doping; 6.4.1 Principle; 6.4.2 Doping Technique; 6.4.3 Property; 6.5 Covalent Doping; 7 Influence of Dopant on the Applications of Conjugated Polymer; 7.1 Introduction; 7.2 Sensors; 7.2.1 Chemical Sensors; 7.2.2 Biosensors; 7.3 Actuators; 7.4 Field Effect Transistor; 7.5 Rechargeable Batteries; 7.6 Electrochromic Devices
7.7 Optoelectronic Devices

Sommario/riassunto

This book responds to the growing interest in conjugated polymer-dopant interaction across disciplines. The first book dedicated to the subject, it offers an A to Z overview, detailing doping interaction, dopant types, doping techniques, influence of dopant on applications, and more. It explains how the performances of these polymers are influenced by the nature of dopants and their level of distribution within the polymer, showing how the electrochemical, mechanical, and optical properties of the doped conjugated polymers can be tailored by various means. Doping at the nano scale is also exam

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| Titolo | Fluorescent Methods for Molecular Motors / / edited by Christopher P. Toseland, Natalia Fili |
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| ISBN | 3-0348-0856-9 |
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| Collana | Experientia Supplementum, , 1664-431X ; ; 105 |
| Disciplina | 574.19245<br>572.64 |
| Soggetti | Proteins<br>Cytology<br>Biophysics<br>Protein Science<br>Cell Biology<br>Biological and Medical Physics, Biophysics |
| 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 at the end of each chapters. |
| Nota di contenuto | Fluorescence and Labelling: How to choose and what to do -- Fluorescent biosensors: design and application to motor proteins -- Rapid Reaction Kinetic Techniques -- Fluorescence to study the ATPase mechanism of Motor Proteins -- Use of pyrene labelled actin to probe actin myosin interactions; kinetic and equilibrium studies -- Fluorescent methods to study transcription initiation and transition into elongation -- Single-molecule and single-particle imaging of molecular motors in vitro and in vivo -- Fluorescence methods in the investigation of the DEAD-box helicase mechanism -- Use of Fluorescent Techniques to Study the In Vitro Movement of Myosins -- Fluorescence Tracking of Motor proteins in vitro -- Measuring Transport of Motor Cargos -- Measuring two at the same time: Combining Magnetic Tweezers with Single-Molecule FRET -- Using fluorescence to study actomyosin in yeasts. |
| Sommario/riassunto | This book focuses on the application of fluorescence to study motor proteins (myosins, kinesins, DNA helicases and RNA polymerases). It is intended for a large community of biochemists, biophysicists and cell |

biologists who study a diverse collection of motor proteins. It can be used by researchers to gain an insight into their first experiments, or by experienced researchers who are looking to expand their research to new areas. Each chapter provides valuable advice for executing the experiments, along with detailed background knowledge in order to develop own experiments.