



Handbook of organic materials for optical and (Opto) electronic devices : properties and applications /

Ostroverkhova, Oksana

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Monografía

Small molecules and conjugated polymers, the two main types of organic materials used for optoelectronic and photonic devices, can be used in a number of applications. This book provides an overview of the properties of organic optoelectronic and nonlinear optical materials, and how these materials can be used across a range of applications.

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Contenido: Part 1 Materials for organic (opto)electronics and nonlinear optics structure-property relations: Small molecular weight materials for (opto)electronics applications: Overview -- Influence of film morphology on optical and electronic properties of organic materials -- Doping effects on charge transport in organic materials -- Third-order nonlinear optical properties of Pi-conjugated polymers constituted of thiophene units and molecular assembly of the polymers -- Small molecule supramolecular assemblies for third order nonlinear optics -- Molecular crystals and crystalline thin films for photonics. Part 2 (Opto)electronic and nonlinear optical properties of organic materials and their characterization: Charge generation and transport in organic materials -- Optical, photoluminescent, and electroluminescent properties of organic materials -- Nonlinear optical properties of organic materials -- Ultrafast intrachain exciton dynamics in Pi-conjugated polymers -- Ultrafast charge carrier dynamics in organic (opto)electronic materials -- Short-pulse induced photocurrent and photoluminescence in organic materials -- Conductivity measurements of organic materials using field-effect transistors (FETs) and space-charge-limited

current (SCLC) technique -- Charge transport features in disordered organic materials measured by time-of-flight (TOF), xerographic discharge (XTOF) and charge extraction by linearly increasing voltage (CELIV) techniques -- Surface-enhanced Raman scattering (SERS) characterization of metal-organic interactions -- Second harmonic generation as a characterization technique and phenomenological probe for organic materials. Part 3 Applications of (opto)electronic and nonlinear optical organic materials in devices: Organic solar cells -- Organic light-emitting diodes -- Organic spintronics -- Organic semiconductors for electronic chemical sensors -- Organic bioelectronics -- Organic electronic memory devices -- Unconventional molecular scale logic devices -- Photorefractive (PR) polymers and their recent applications -- Organic waveguides, ultra-low loss demultiplexers and electro-optic (EO) polymer devices

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Autores: Ostroverkhova, Oksana

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Baratz Innovación Documental

- Gran Vía, 59 28013 Madrid
- (+34) 91 456 03 60
- informa@baratz.es