DESCRIPTION

An essential resource for scientists designing new energy materials for the vast landscape of solar energy conversion as well as materials processing and characterization

Based on the new and fundamental research on novel energy materials with tailor-made photonic properties, the role of materials engineering has been to provide much needed support in the development of photovoltaic devices. Advanced Energy Materials offers a unique, state-of-the-art look at the new world of novel energy materials science, shedding light on the subject’s vast multi-disciplinary approach

The book focuses particularly on photovoltaics, efficient light sources, fuel cells, energy-saving technologies, energy storage technologies, nanostructured materials as well as innovating materials and techniques for future nanoscale electronics. Pathways to future development are also discussed.

Critical, cutting-edge subjects are addressed, including:

- Non-imaging focusing heliostat; state-of-the-art of nanostructures
- Metal oxide semiconductors and their nanocomposites
- Superionic solids; polymer nanocomposites; solid electrolytes; advanced electronics
- Electronic and optical properties of lead sulfide
• High-electron mobility transistors and light-emitting diodes
• Anti-ferroelectric liquid crystals; PEEK membrane for fuel cells
• Advanced phosphors for energy-efficient lighting
• Molecular computation photovoltaics and photocatalysts
• Photovoltaic device technology and non-conventional energy applications

Readership

The book is written for a large and broad readership including researchers and university graduate students from diverse backgrounds such as chemistry, materials science, physics, and engineering working in the fields of nanotechnology, photovoltaic device technology, and non-conventional energy.

ABOUT THE AUTHOR

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