1. Record Nr. UNINA9910437805403321

Titolo	Nanoscale applications for information and energy systems / / Anatoli Korkin, David J. Lockwood, editors
Pubbl/distr/stampa	New York, : Springer Verlag, 2013
ISBN	1-283-74176-8 1-4614-5016-0
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (265 p.)
Collana	Nanostructure science and technology
Altri autori (Persone)	KorkinAnatoli LockwoodDavid J
Disciplina	620.5
Soggetti	Nanotechnology Molecular electronics
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 and index.
Nota di contenuto	Preface -- 1. Plasmonic devices for fast optoelectronics and enhanced Raman sensors -- 2. Recent Advances in Nanoplasmonics and Magnetoplasmonics -- 3. Nanoscale Photovoltaics and the Terawatt Challenge -- 4. Carbon Nanotube Assemblies for Transparent Conducting Electrodes -- 5. 2. Recent Advances in Nanoplasmonics and Magnetoplasmonics -- 3. Nanoscale Photovoltaics and the Terawatt Challenge -- 4. Carbon Nanotube Assemblies for Transparent Conducting Electrodes -- 5. Silicon Electroplating for Low Cost Solar Cells and Thin Film Transistors -- 6. Resistive switching models by ion migration in metal oxides -- 7. Exploring Surfaces of Materials with Atomic Force Microscopy -- Index.
Sommario/riassunto	Nanoscale Applications for Information and Energy Systems presents nanotechnology fundamentals and applications in the key research areas of information technology (electronics and photonics) and alternative (solar) energy: plasmonics, photovoltaics, transparent conducting electrodes, silicon electroplating, and resistive switching. The three major technology areas – electronics, photonics, and solar energy – are linked on the basis of similar applications of nanostructured materials in research and development. By bridging the materials physics and chemistry at the atomic scale with device and

system design, integration, and performance requirements, tutorial chapters from worldwide leaders in the field provide a coherent picture of theoretical and experimental research efforts and technology development in these highly interdisciplinary areas. Provides an authoritative overview of the current status and future trends of nanoelectronics, photonics, and solar energy Presents broad-ranging tutorials on both theoretical and experimental aspects of key topics in nanotechnology Written by recognized international experts in each area Addresses the needs of both graduate students and nanotechnology "gurus".