

1. Record Nr.	UNINA9910800049303321
Titolo	Handbook of nanophysics Functional nanomaterials // editor, Klaus D. Sattler
Pubbl/distr/stampa	Boca Raton : , : Taylor & Francis, , 2010
ISBN	0-429-19319-X 1-138-11193-7 1-4200-7553-5
Descrizione fisica	1 online resource (790 p.)
Collana	Handbook of Nanophysics
Altri autori (Persone)	SattlerKlaus D
Disciplina	620.1/1 620.11 620.5
Soggetti	Nanotechnology Nanostructures Nanostructured materials Nanoelectromechanical systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	A CRC title.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front cover; Contents; Preface; Acknowledgments; Editor; Contributors; Part I: Nanocomposites; Chapter 1. Carbon Nanotube/Polymer Composites; Chapter 2. Printable Metal Nanoparticles Inks; Chapter 3. Polymer-Clay Nanocomposites; Chapter 4. Biofunctionalized TiO ₂ -Based Nanocomposites; Chapter 5. Nanocolorants; Chapter 6. Magnetoelectric Interactions in Multiferroic Nanocomposites; Chapter 7. Strain-Induced Disorder in Ferroic Nanocomposites; Chapter 8. Smart Composite Systems with Nanopositioning; Part II: Nanoporous and Nanocage Materials; Chapter 9. Nanoporous Materials Chapter 10. Ordered Nanoporous StructureChapter 11. Giant Nanomembrane; Chapter 12. Graphitic Foams; Chapter 13. Arrayed Nanoporous Silicon Pillars; Chapter 14. Nanoporous Anodic Oxides; Chapter 15. Metal Oxide Nanohole Array; Chapter 16. From Silicon to Carbon Clathrates: Nanocage Materials; Part III: Nanolayers; Chapter 17. Self-Assembled Monolayers; Chapter 18. Graphene and Boron Nitride Single Layers; Chapter 19. Epitaxial Graphene; Chapter 20. Electronic

Structure of Graphene Nanoribbons; Chapter 21. Transport in Graphene Nanostructures; Chapter 22. Magnetic Graphene Nanostructures Chapter 23. Graphene Quantum DotsChapter 24. Gas Molecules on Graphene; Chapter 25. Graphene Cones; Part IV: Indentation and Patterning; Chapter 26. Theory of Nanoindentation; Chapter 27. Nanoindentation on Silicon; Chapter 28. Nanohole Arrays on Silicon; Chapter 29. Nanoindentation of Biomaterials; Chapter 30. Writing with Nanoparticles; Chapter 31. Substrate Self-Patterning; Part V: Nanosensors; Chapter 32. Nanoscale Characterization with Fluorescent Nanoparticles; Chapter 33. Optochemical Nanosensors; Chapter 34. Quantum Dot Infrared Photodetectors and Focal Plane Arrays Part VI: Nano-OscillatorsChapter 35. Nanomechanical Resonators; Chapter 36. Mechanics of Nanoscaled Oscillators; Chapter 37. Nanoelectromechanical Resonators; Chapter 38. Spin-Transfer Nano-Oscillators; Part VII: Hydrogen Storage; Chapter 39. Endohedrally Hydrogen-Doped Fullerenes; Chapter 40. Molecular Hydrogen in Carbon Nanostructures; Chapter 41. Hydrogen Storage in Nanoporous Carbon; Chapter 42. Hydrogen Adsorption in Nanoporous Materials; Index; Back cover

Sommario/riassunto

Handbook of Nanophysics: Functional Nanomaterials illustrates the importance of tailoring nanomaterials to achieve desired functions in applications. Each peer-reviewed chapter contains a broad-based introduction and enhances understanding of the state-of-the-art scientific content through fundamental equations and illustrations, some in color. This volume covers various composites, including carbon nanotube/polymer composites, printable metal nanoparticle inks, polymer--clay nanocomposites, biofunctionalized titanium dioxide-based nanocomposites, nanocolorants, ferroic nanocomposites, and sma
