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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