(MT-606) Nanotechnology

Nanotechnology and Nanoscience: There's Plenty of Room at the Bottom: An Invitation to Enter a New Field of Physics Richard P. Feynman, Rising to the Feynman Challenge, Tyranny at the Top, New Architectures, How Does Nature Do It?

Concept and challenges in Nanoscience and Nanotechnology: Engineering Challenges, Silicon-Based Electrical Devices, Opportunities and Challenges for Molecular devices.

Nanostructured Materials: Preparation of nanostructured materials, structure and properties

Molecular Electronics: Present Microelectronic Technology, Fundamental Physical Limitations of Present Technology,

Fundamental Process of Molecular Electronics: Experimental Techniques for Molecular Junction Transport, Gating and Control of Junctions: Diodes, Molecular Junction Conductance and Nonadiabatic Electron Transfer, Advanced Theoretical Challenges

Modeling Electronics at the Nanoscale: Nanostructure Studies of the Si-SiO2 Interface, Carbon Nanotubes and Nanotechnology, Computational Modeling and Simulation

Nanotubes: Structure and Properties of Nanotubes, Nanotube Growth, Material Development, Application Development

Mechanics of Carbon Nanotubes: Mechanical Properties of Nanotubes, Experimental Techniques, Simulation Methods, Mechanical Applications of Nanotubes