NM6616 Nano-Electronics

Low dimensional structures: quantum wells, quantum wires and quantum dots. Electronic, optical, transport porperties of nanostructures. Quantum semiconductor devices. Fabrication and characterization techniques of nanotechnology. Applications of nanostructures, nanodevices and nanosytems. The bottom-up approach to nanotechnology: introduction to molecular electronics and optoelectronics. Organic materials for electronics: self-assembled monolayers; conducting polymers; carbon nanotubes. Circuit implementations and architectures for nanostructures: quantum cellular automata and cellular non linear networks. Introduction to quantum computing.