A. NANOSCALE FABRICATION AND CHARACTERIZATION

1. Nanolithography

A1: Lithography for Semiconductor Technology

A2: An Overview of Ion Beam Lithography for Nanofabrication

A3: Nanofabrication Using Electron Beam and Its Application to Nanometer Devices

A4: Sub-10 nm Imprint Lithography and Applications

2. Self-Assembly and Self-Organization

A5: Fuzzy Nanoassemblies: Toward Layered Polymeric Multicomposites

A6: Nanostructured Thin Films via Self-Assembly of Block Copolymers

A7: A DNA-based Method for Rationally Assembling Nanoparticles into Macroscopic Materials

A8: Organization of Nanocrystal Molecules Using DNA

A9: DNA-Templated Assembly and Electrode Attachment of a Conducting Silver Wire

3. Scanning Probe Microscopy

A10: Scanned Probe Microscopes
**A11: Atomic Force Microscopy**  

**A12: Breaking the Diffraction Barrier: Optical Microscopy on a Nanometer Scale**  

**A13: Field-induced Nanometer to Atomic-Scale Manipulation of Silicon Surfaces with STM**  

**B. NANOMATERIALS AND NANOSTRUCTURES**

**5. Fullerenes**

**B1: Small-Bandgap Endohedral Metallofullerenes in High Yield and Purity**  
Reference: Stevenson, S; Rice, G; Glass, T; Harich, K; Cromer, F; Jordan, MR; Craft, J; Hadju, E; Bible, R; Olmstead, MM; Maltra, K; Fisher, AJ; Balch, AL; Dorn, HC. , Nature, 401, 55-57 (1999).

**6. Carbon Nanotubes**

**B2: Carbon Nanotubes**  

**B3: Nanotubes as Nanoprobes in Scanned Probe Microscopy**  

**B4: A Carbon Nanotube Field-Emission Electron Source**  

**B5: Carbon Nanotubes as Molecular Quantum Wires**  

**B6: Individual Single-Wall Carbon Nanotubes as Quantum Wires**  

**B7: Electronic Structure of Atomically Resolved Carbon Nanotubes**  

**7. Quantum Dots**

**B8: Semiconductor Quantum Dots: Progress in Processing**  
C. NANOSCALE AND MOLECULAR ELECTRONICS

9. Advances in Microelectronics

C1: CMOS Operation

C2: Nanotubes for Electronics

C3: Single- and Multi-Wall Carbon Nanotube Field-Effect Transistors

C4: Carbon Nanotube Inter- and Intramolecular Logic Gates

10. Molecular Electronics

C5: Computing with Molecules

C6: The Electrical Measurement of Molecular Junctions

C7: Conductance of a molecular junction

C8: Large On-Off Ratios and Negative Differential Resistance in a Molecular Electronic Device

11. Single-Electron Devices

C9: Artificial Atoms

C10: Observation of Quantum Effects and Coulomb Blockade in Silicon Quantum Dot Transistors at Temperatures Over 100 K

C11: Room Temperature Operation of a Single Electron Transistor Made by the Scanning Tunneling Microscope Nanooxidation Process for the TiOx/Ti System
C12: A Single-Electron Transistor Made from a Cadmium Selenide Nanocrystal

C13: A Silicon Single-Electron Transistor Memory Operating at Room Temperature

D. NANOTECHNOLOGY IN MAGNETIC SYSTEMS

12. Quantum Computing

D1: Quantum Information and Computation

14. Elements of Magnetic Storage

D2: The Future of Magnetic Data Storage

D3: Large Area High Density Quantized Magnetic Disks Fabricated Using Nanoimprint Lithography

D4: Synthesis of Monodisperse Cobalt Nanocrystals and their Assembly into Magnetic Superlattices

E. NANOTECHNOLOGY IN INTEGRATIVE SYSTEMS

15. Introduction to Integrative Systems

E1: The Broad Sweep of Integrated Microsystems

E2: Surface Micromachining for Microelectromechanical Systems