III. Device Concepts & Sensor Functionality

(B2) Electrical & Photonic Properties of Coupled Nanostructure-Molecular Complexes

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Self-assembly methods offer great potential for building nanomaterial-based structures and devices, and a key to these structures are the nanostructure-molecule complexes they form. To enable functional devices and systems, a better understanding of the scientific principles relating to the function of mesoscale inorganic, organic, and biological molecules are required. Of particular importance are the role of external fields and interfaces on the resultant function of these systems. Papers in this session will focus on, but not be limited to: The electronic and optical properties and function of nanomaterials coupled by molecules; Spectroscopy related to the complexes formed in nanostructure-molecular systems; Fabrication processes and chemical synthetic techniques that lead to a better understanding of nanoscale complexes and devices; and, Novel approaches that enable emergent behavior and functionality that has relevance to chemical and biological sensors.