Biological and Synthetic Macromolecules for Emerging Nanotechnologies-II

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Biological and synthetic macromolecules can exist in a number of different architectures and topologies – familiar examples include linear, cyclic, star, branched, ladder, network, hyperbranched, rotaxane and catenane species. These (bio)macromolecules can adopt a variety of configurations in two- and three-dimensional space that are on a nanometer length scale. Furthermore, they have a number of unique roles that can operate on the nanometer length scale such as self-assembly, templating, scaffolding and catalysis. Nanostructures such as carbon nanotubes and fullerenes can be made functional and soluble using macromolecules. Nature exhibits an abundance of fabulous structures that are highly species specific, hierarchical and generated with precise control. It is becoming clear that the formation of many of these ornate structures *in vivo* is facilitated by biological macromolecules beginning at the nanometer length scale. Nanostructures such as nanoparticles and nanofibers can be formed from (bio)macromolecules *in vitro* and these, in turn, can direct the formation of inorganic materials which leads to new bioinspired organic-inorganic hybrids. It is therefore quite clear that outcomes of the research – both experimental and theoretical – on biological and synthetic macromolecules are uniquely placed to impact a variety of emerging nanotechnologies ranging from nanoscale electronic and optoelectronic devices to nanoscale biomaterials for medical applications. We cordially invite you and your collaborators to join us in Boston for our symposium on this timely and exciting topic. Abstracts / Preprints may be submitted using the ACS site http://oasys.acs.org/ under **POLY** until April 2, 2007.

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