

## **ASSEMBLING NANOMATERIALS**

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### **ABSTRACT**

The past decade has seen explosive growth worldwide in the synthesis and study of a wide range of nanostructured materials, the substance of nanotechnology. A very brief overview of nanoscience and nanotechnology and their relationship to novel functional materials assembled from nanoscale building blocks will be presented within the framework of the U. S. National Nanotechnology Initiative and the National Science Foundation Nanoscale Science and Engineering Centers, including our Center for the Directed Assembly of Nanostructures at Rensselaer. Some examples from our recent research results on nanomaterials and their hierarchical assembly will be presented including investigations of functional nanocomposites that could find use in a variety of structural, electrical, and biomedical applications. Some future opportunities and challenges in this exciting area will be discussed.