



Advanced Nanoparticle Assembly

Guest Editor:

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Message from the Guest Editor

The recent advances in nanoscience and nanotechnology have provided the sophisticated tools to fabricate, investigate and characterise new functional elements at low dimensions, such as nanoparticles. Nanoparticles, whose properties can be significantly different from their corresponding bulk counterparts are becoming the major building blocks to develop new materials with unprecedented properties. The wide variety of potential applications of nanoparticles in biomedical, optical and electronic fields, among others, has intensified the research in their efficient formation.

Two distinct fabrication routes have been mainly followed: the top-down approach, where physical processes are exploited for slicing and dicing macroscopic entities down to the nanoscale, and the bottom-up approach, where atomic-scale chemical forces drive the molecular self-assembly. Practically speaking, the top-down route offers unparalleled control and reproducibility down to a few nanometres in feature size but at high cost for large area processing, while the bottom-up approach naturally applies for macroscopic scale nano-patterning albeit without the fine feature and reproducibility control.





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Message from the Editor-in-Chief

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