

Formation of periodic nano array using self assembly of supramolecular dendrimer with hexagonal cylinder structure

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The self-assembling materials have been recognized as powerful means of nanopatterning surfaces, since they self-assemble into regularly ordered features with nano-sized structures. Most of these applications rely upon the self-organization of amphiphilic molecules to form very thin and highly stable films with known thickness and molecular orientation, ranging from molecular to sub-micron thickness

In this work, the ordered nanopatterns of metal dot arrays available for various applications was successfully fabricated by self-assembly of supramolecule. Supramolecules was used with the characteristic dimension of several nanometer scale. So the nanopatterns fabricated by self-assembly of supramolecules showed the possibility for nanolithography.

The process route consists of only several steps, and is cost-effective by parallel processing, e.g., reactive ion etching (RIE) and electron-beam (E-beam) deposition.