

Nanowire Synthesis Assisted by Self-Assembled Supramolecules

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Interests in one-dimensional nanostructures from their promising potential as unique types of nanoscale building blocks for larger superstructures that can be applied in many applications. Up to now various methods have been reported to synthesize 1-D structures, such as electrochemistry, template, polymeric systems, laser-assisted catalytic growth, solution, vapor transport, arc discharge, organometallic and coordination chemistry methods. And there are numerous challenges associated with the synthesis of 1D nanostructures with well-controlled size, phase purity, crystallinity and chemical composition. Here we suggest the synthetic method using self-assembled supramolecules. Supramolecules can form structure that is highly oriented by self-assembly of building blocks. Generally Organic supramolecules have various structures such as lamellae, hexagonal, packed cylinder, hexagonal HPL, cubic. In our study we analyze when organic supramolecule and metallic ion form complex. If they form particular structures we can obtain particular metallic materials such as particle, nanowire, etc. We focus on fabricating nanowires by controlling the conditions.