

Conversion of CdTe Nanoparticles into Nanoribbons by Self-Assembly

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The optical and electrical properties of nanoparticles (NPs) and nanowires (NWs) have been extensively studied for use in electronics, sensors, and photonics. Recently, one of the most active areas of research in nanoscience is to develop novel structures of nanomaterials such as nanohelices (NHs), nanosheets (NSs), and hollow nanocrystals, which open up the possibility of a new generation of advanced materials. Given that the properties of materials largely depend on their unique structure, identification of the key factors in synthesis can be helpful in reaching specific desired shapes. Accordingly, attaining both the precise control of the structures and a clear understanding of their optical and electrical properties remains urgent research tasks. In our previous work, we demonstrated the preparation of one-dimensional semiconductor NWs and two-dimensional NSs by spontaneous organization via self-assembly. In this short report, we will evaluate preliminary results on three-dimensional CdTe Nanoribbons (NRIs).