Hydrophobic attraction driven-hierarchical helical assemblies of CdS Nanorods

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Ordering of one-dimensional nanostructure into assembled structure remains a challenge. Here, we study about self-assembly of CdS nanorods (NRs) was driven by facile co-solvent system without surfactants or equipment. The nanoscale interaction of CdS NRs is tailored by hydrophobic attraction using the solvent polarity control. We observed the vortex, disclinated and hexagonal closed packed structure from the various kinds of assembled structure from co-solvent mixtures. This difference of assembled structures are caused by inter-particle spacing change, which was determined by small-angle X-ray scattering (SAXS).