

### Direct Deposition of Cobalt onto Platinum Tips of Pt-CdSe@CdS Hybrid Nanorods

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Colloidal hybrid nanomaterials are of great interest due to their synergistic properties from different compositions and self-assembly behavior with various applications such as photocatalysts, bioimaging materials, etc. Here, we report the direct deposition of polymer-coated cobalt onto platinum tips of Pt-CdSe@CdS hybrid nanorods and their self-assembly behavior. Among 5 total synthetic steps, it was found out that platinum tipping chemistry plays an important role on the final morphology of cobalt tipped hybrid nanorods from matchstick to dumbbell dyads. They also show self-assembly behavior due to ferromagnetic inherent dipole of cobalt tips. This second deposition of different metal onto other types of metals at metal-semiconductor hybrid nanomaterials gives opportunities to get hybrid nanorods with multi-functionality by using functional polymeric ligands for the selective growth of metals. By having different polarity within a single nano-object, self-assembly behavior of hybrid nanorods could be obtained.