

Synthesis of shape-controlled nickel hourglass nanoparticles with unconventional structure

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Shape-control of nanoparticles(NPs) has been intensively studied in case of novel metals like Pt, Pd, Au and Ag. thus there are various proposed growth mechanisms about these metals. But most of these mechanisms about shaped metallic nanoparticles cannot be successfully accepted into other 3d transition metal species like Fe, Cu, Ni, etc. Because these transition metals usually have poor stability for oxidation so they were usually shape-controlled as metal oxides. One of these transition metals, nickel has potential to be applied to various applications like catalyst, drug delivery system and secondary cell, etc. but it also has poor stability for oxidation. In this study, we successfully synthesized shape-controlled metallic nickel nanoparticles which have distinct shape and atomic structure.