

Hydrothermal Synthesis of MoO₃ Nanocrystals systemically varying some Conditions

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The alpha phase molybdenum trioxide (α -MoO₃) has orthorhombic crystalline structure, high refractive index, catalytic activity, and good chemical stability so it can be applicable to effect pigments and anode materials for secondary Li ion batteries. Accordingly, intensive studies have been done to synthesize the shape and facet controlled α -MoO₃ nanocrystals. Recently, one-dimensional α -MoO₃ nanowires and nanobelts with high crystallinity have been synthesized by hydrothermal reaction method because the anisotropic growth is favorable in α -MoO₃ nanocrystals due to its orthorhombic crystalline structure. However, it is still challenging to synthesize α -MoO₃ nanocrystals with more complex nanostructures and controlled morphologies to extend their potential in applications. Hence, we systematically studied to synthesize such α -MoO₃ nanocrystals via hydrothermal reaction.