

## Crystal Structural Change of Iron Oxide Nanoparticles during Coprecipitation Reaction

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Recently, magnetic nanoparticles have gained a lot of attention due to their technological and scientific importance. A number of strategies have been developed to prepare magnetic nanoparticles. These include “hot injection” method, “heating-up” method, and “aqueous coprecipitation” method. However, there is little information on the intermediates of iron oxide nanoparticles during “aqueous coprecipitation” method.

In this study, we show that controlling of the reaction speed allows us to ascertain the crystal structures of intermediates during coprecipitation reaction. The morphology, crystal structure and magnetic property were investigated by transmission electron microscopy(TEM), x-ray diffraction(XRD) and vibrating sample magnetometer(VSM).