

【심포지움-나노 10】

Fabrication of Monodisperse Iron Oxide ($\gamma\text{-Fe}_2\text{O}_3$) and Related Nanocrystalline Materials

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The synthesis of highly crystalline and monodisperse $\gamma\text{-Fe}_2\text{O}_3$ nanocrystallites will be presented. High temperature aging of iron-oleic acid metal complex, which was prepared by the thermal decomposition of iron pentacarbonyl in the presence of oleic acid, was found to generate monodisperse iron nanoparticles. The resulting iron nanoparticles were transformed to monodisperse $\gamma\text{-Fe}_2\text{O}_3$ nanocrystallites by controlled oxidation using trimethylamine oxide, as a mild oxidant. Particle size can be varied from 4 nm to 16 nm by controlling the experimental parameters. These nanoparticles are highly crystalline and monodisperse in size.

The synthesis of monodisperse cobalt ferrite and barium ferrite nanocrystallites and their magnetic properties will be discussed. The fabrication of monodisperse zirconia will be presented. The rod-shaped nanoparticles of iron and titania will be discussed.

[참고문헌]

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