

SONOCHEMICAL SYNTHESIS OF HEMATITE NANOPARTICLES

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Abstract. Hematite nanoparticles were prepared by a procedure consisting in sonication of μ_3 -oxo trinuclear iron(III) acetate of composition $[\text{Fe}_3\text{O}(\text{OOCCH}_3)_6(\text{H}_2\text{O})_3]\text{NO}_3 \cdot 4\text{H}_2\text{O}$, $\{\text{Fe}_3\text{O}\}\text{NO}_3$ as iron source, in strong basic conditions followed by thermal treatment at 600°C. The formation of the hematite was confirmed by IR spectroscopy, X-ray powder diffraction and Raman spectroscopy while the shape and size of the nanoparticles and their agglomeration were evidenced and estimated on the basis of the images taken with TEM techniques.

Keywords: hematite, nanoparticles, iron oxides, sonochemistry.

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