

⁵⁹Co NMR of cobalt nanocomposites

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Abstract

This paper presents the results of investigation of some cobalt-containing nanocomposites. We have compared ⁵⁹Co nuclear magnetic resonance spectra for a number of composites which were synthesized using different precursors and conditions. Nuclear magnetic resonance was shown to be applicable as a quick method for determination of composition of cobalt-containing nanocomposites, which helps in the search for synthesis conditions leading to formation of composites with desirable properties. Significant transformation of nuclear magnetic resonance spectra for some of the nanocomposites after a long storing period has been observed and it reflected a spontaneous partial transformation of the initial hexagonal close packed structure of cobalt to the face centered cubic one.