

Morphology and magnetic properties of FeCo alloy synthesized through polyol process

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Equiatomic FeCo alloy was synthesized through polyol process and size reduction was attempted using heterogeneous nucleating agents such as Cu and Pt. The average particle size of FeCo reduced from 138 to 17 nm using 5×10^{-6} M of Pt whereas significant size reduction could not be achieved with Cu up to 1×10^{-5} M. The as-prepared FeCo and the particles prepared using Cu as nucleating agent revealed a flower-like morphology whereas the shape crumbled with Pt nuclei. All the FeCo nanoparticles exhibited exchange bias effect due to the oxide layer present as a shell. The exchange bias field and coercivity at 15 K were 185 Oe and 1016 Oe, respectively, for the particles synthesized using Pt as a nucleating agent.

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