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Magnetic Properties of the Nanoscale Coral-Shaped Ni-Co Alloy powder with different Co Contents

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Abstract: Nanograined Ni-Co alloys with controlled composition were prepared by co-precipitate assisted hydrogen reducing method, and their crystal structure, morphology and magnetic properties were obtained. Effect of the Co content on magnetic properties of the Ni-Co alloy was discussed. Results show that the saturation magnetization increases with higher Co content, which reaches to 214.70emu/g when the Co content is 90%. The coercivity increases with increasing in the Co content to 70%, and then it decreases as the Co content further increases. The research reveals that the saturation magnetization is affected by the atomic magnetism moment and the magnitude of coercivity is affected by both the Co content and the grain size.

Keywords: Ni-Co alloy; magnetic property; saturation magnetization; coercivity; Co content; grain size

1. Introduction

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