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Structural and magnetic properties of FeCuNi nanostructured produced by mechanical alloying

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Abstract: We investigated the magnetic, morphological, and structural properties of FeCuNi. The powder alloy iselaborated by mechanical alloying process for 10 h with varying the Cu content. The aims of this workare to study the effect of Ni/Cu ratio on the magnetic and microstructure properties. The crystallite sizedecreases with the increase of Ni. The reduction of crystallite size proceeds slowly until 17 nm for 30% ofNi. Coercivity and saturation magnetization increases from 105.4 Oe, 122.568 emu/g to 156.77 Oe,140.679 emu/g respectively caused by the increase of the concentration of Cu and dislocation densityas well as the decrease of the crystallite size

Keywords : FeCuNi nanostructured, Mechanical Alloying, MEB, DRX, VSM