Structural and magnetic properties of FeNiCu nanostructured produced by mechanical alloying

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Abstract: We investigated the magnetic, morphological, and structural properties of FeNiCu, the powder alloy are elaborated by mechanical alloying process for 10h with varying the Cu content. The aims of this work are to study the effect of Ni/Cu ratio on the magnetic and microstructure properties. 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 density as well as the decrease of the crystallite size.

Keywords: FeNiCu nanostructured, Mechanical Alloying, DRX, VSM.