

SYNTHESIS AND CHARACTERIZATION OF AMORPHOUS ALLOY $\text{Co}_{69}\text{Nb}_{25}\text{B}_6$

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Abstract. In this paper, amorphous alloy composition $\text{Co}_{69}\text{Nb}_{25}\text{B}_6$ was prepared by high-energy ball milling which allows the formation of phases through solid state reaction. In addition, the effects of a 21:1 powder to ball mass ratio were used and the milling time during high energy milling was crucial for the formation of the amorphous and ferromagnetic phases. The characterization of the $\text{Co}_{69}\text{Nb}_{25}\text{B}_6$ alloy was investigated by X-ray diffraction, scanning electron microscopy and hysteresis loops of alloy were measured with a VSM, and exhibited the typical soft magnetic character.

Keywords: amorphous alloy, high-energy ball milling, ferromagnetic phase.

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