SYNTHESIS AND CHARACTERIZATION OF AMORPHOUS ALLOY $Co_{69}Nb_{25}B_6$

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Abstract. Amorphous alloy are materials have been around for some time and their applications can be found in many types of industrial products. Currently, the production of the amorphous alloy $Co_{69}Nb_{25}B_6$ was obtained by high-energy ball milling which allows the formation of phases through solid state reaction through consolidation process. 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 $Co_{69}Nb_{25}B_6$ alloy was investigated by X-ray diffraction, scanning electron microscopy and by a vibrating sample magnetometer.

Keywords: amorphous alloy $Co_{69}Nb_{25}B_6$, high-energy ball milling, ferromagnetic phases, characterization.