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Effect of Mo addition on the thermal stability, microstructure and magnetic property of FeCoZrBCu alloys

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Abstract

Fe_{80-x}Co_xZr_{10-y}Mo_yB₉Cu₁(x=10, 20, 30; y=0, 2) amorphous alloy ribbons prepared by a single roller melt spinning were annealed at different temperatures. The thermal stability, microstructure and magnetic property of FeCoZr(Mo)BCu alloys were investigated by differential thermal analysis (DTA), X-ray diffraction (XRD), transmission electron microscopy (TEM) and vibrating sample magnetometer (VSM). Mo additions have a large effect on the thermal stability, microstructure and magnetic property of alloys. Mo additions decrease crystallization activation energies of FeCoZrBCu alloys. Mo additions affect the distribution of Co element, simplify the crystallization process and improve the thermal stability of coercivity (H_c).

Keywords: Amorphous; Microstructure; Crystallization process

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