THE MAGNETIC PROPERTIES AND THE BARKHAUSEN NOISE OF THE HYDROGENED Fe-V-B AMORPHOUS ALLOY

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In order to get information about the influence of the hydrogenation-dehydrogenation process, the Fe-V-B amorphous alloy was hydrogenated by an electrolytical method. Barkhausen noise parameters and magnetic properties as the total anisotropy, the stress induced anisotropy, the coercive force, the remanent magnetization, the saturation magnetization, the demagnetizing factor were measured before hydrogenation and after it as a function of time at room temperature. Inner stress centres around Bernal's holes ocuppied by hydrogen atoms were responsible for rapid changes of the magnetic properties and the Barkhausen noise parameters. The hydrogenation-dehydrogenation process caused structural relaxation and destroyed as-cast clusters.

9.7 cm

13.4 cm

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