9.7 cm

MAGNETIC AND TRANSPORT PROPERTIES OF THIN FILMS OF $Gd_2Fe_{12}Cr_2B$ PREPARED BY FLASH-EVAPORATION

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$Gd_2Fe_{12}Cr_2B$ alloys are prepared in a shape of thin films by a flesh-evaporation technique. The samples are amorphous if prepared on a cooled glass substrate and crystallize after annealing. Samples obtained on a non-cooled substrate are micro- or nanocrystalline. Magnetic properties are studied by vibrating sample magnetometer and the temperature dependence of resistance is measured in the range 4.2 K÷800 K. The resistance of the amorphous films increases with decreasing the temperature from R.T. down to 4.2 K, while the annealed samples exhibit metallic behavior. The crystallization process was observed by resistance measurements in temperature varied from RT to 823 K at a rate of 10 K/min.

13.4 cm

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