

MAGNETIC CHARACTERISTICS OF MAGNETIC BILAYERS WITH DISORDERED INTERFACES

I. Luźniak and A. Urbaniak-Kucharczyk

Department of Solid State Physics, University of Łódź,
ul. Pomorska 149/153, 90-236 Łódź, Poland

A great number of studies have been performed on the properties of magnetic multilayers exchange coupled via metallic nonmagnetic spacer. Usually the interfaces in such nanostructures have been treated as the perfect ones. In order to describe properties of multilayers in agreement with experimental indications the atomic scale disorder in the region of interface should be taken into account. In presented work the Green function method is applied to study magnetic properties of bilayer system with disorder at interface layers caused by an alloying process. Magnetisation distribution in constituent magnetic layers, the phase transition temperature and the spin wave parameter are obtained as a function of spacer thickness for different parameters describing diffuse and non-diffuse scattering of electrons at interface. The results are compared with those obtained taking into account roughness in interface region. The parameters describing the interlayer exchange coupling between layers with disordered interface are estimated for Fe and Co layers with Au and Cu spacers. The substrate is characterised by parameters corresponding to GaAs.

9.7 cm

13.4 cm

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Corresponding author :

I. Luźniak

Address for correspondence :

Department of Solid State Physics, University of Łódź,
ul. Pomorska 149/153, 90-236 Łódź, Poland

Email address :

staniuch@uni.lodz.pl