The influence of the roughness on the Curie temperature and magnetisation in the multilayers

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The system of three magnetic (M) layers divided by nonmagnetic (N) spacer is considered. Existence of roughness in the interfaces described by the model proposed by Bruno and Chappert [1, 2] leads to modification of interlayer exchange coupling (IEC). The Curie temperature and magnetisation have been calculated using Green function formalism [3] for the system of layers with Fe standing for M and Cu or Au standing for N. The parameters characterizing this system are taken into account for the GaAs substrate. The results obtained show decreasing of Curie temperature with increasing of roughness parameter in comparison to Curie temperature of the sample with ideal interface. Also the magnetisation curves are shifted as result of roughness in interface region.

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[2] Y. Wang, P. M. Levy, J. L. Fry, Phys. Rev. Lett. **65** (1990) 2732.
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