

The spin valve device based on asymmetrical ferromagnet-superconductor trilayer in an external magnetic field

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Abstract

© Published under licence by IOP Publishing Ltd. We theoretically explore superconducting proximity effect for The three-layered ferromagnet/superconductor (FS) heterostructures. We consider The boundary value problem for The Usadel-like equations in The case of so-called «dirty» limit. The different mutual orientations of The F layers magnetizations are examined in presence of The external magnetic field. The results of numerical calculations for critical temperature T_c at various parameters of FS structures are presented. The appearance of solitary superconductivity is predicted for The F1F2S system. We also discuss possible spin valve applications for F1F2S trilayers.

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