

Abstract Submitted
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Spin-Dependent Electronic Transport in Fe/MnAs/Fe Structures

KYUNG-YEON KIM, HYOUNG JOON CHOI, Department of Physics and IPAP, Yonsei University — We have performed first-principles calculations of electronic structures and tunneling magnetoresistance of Fe/MnAs/Fe structures, which are junctions of two semi-infinite metals and a half-metal placed between them. The electronic structures are described by the Kohn-Sham density functional theory, with local spin density approximation, norm-conserving semicore pseudopotentials, and pseudo-atomic orbital basis set. The tunneling magnetoresistance is obtained by using a scattering-state method, considering different configurations of the magnetization. This work was supported by the KRF (KRF-2007-314-C00075) and by the KOSEF Grant No. R01-2007-000-20922-0. Computational resources have been provided by KISTI Supercomputing Center (KSC-2008-S02-0004).

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