LOW-TEMPERATURE TRANSPORT AND NOISE ANISOTROPY IN SmB_6

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9.7 cm

Low temperature transport (Hall and Seebeck coefficients and resistivity) and noise characteristics have been measured in the model intermediate valence compound SmB_6 along different crystallographic directions. It is shown that low-frequency resistance fluctuations are strongly anisotropic and the normalized electrical resistance noise demonstrates a low-temperature maximum similar to that one observed in the Hall mobility temperature dependence (N.E.Sluchanko et al., Phys.Rev.B 64 (2001), 153103; N.Sluchanko et al., Physica B (2002), in print). The anisotropy induced below 15K in this cubic narrow-gap semiconductor is discussed in terms of many-body states (exciton-polaron complexes) formation resulting from fast charge fluctuations on Sm- sites.

13.4 cm

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