LOW TEMPERATURE TRANSPORT AND MAGNETIC PROPERTIES OF INTERMEDIATE VALENT SmB_6

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9.7 cm

We present results of transport and magnetic properties of three single-crystalline samples of the intermediate valent small-gap semiconductor SmB_6 at low temperatures. The received resistivity dependences of all samples below 0.5 K exhibit an activated behavior with an energy gap of a few mK. The temperature dependences of magnetic susceptibility show an increase below 15 K which can be accounted for by impurities, bare Sm^{3+} ions or by a small amount of magnetic $4f^5 5d^1$ in-gap configurations of Sm-ions.

13.4 cm

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