9.7 cm

Transport properties of lanthanum substituted $CeFe_4Sb_{12}$

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The skutterudite $CeFe_4Sb_{12}$ exhibits a quite large low temperature Sommerfeld coefficient. However, no consistent explanation of the temperature dependences of its magnetic and transport properties has been given so far. To add to the confusion, previous results show spurious anomalies which have been related to foreign phases. We present here new measurements performed on good polycrystals: resistivity of $Ce_{1-z}La_zFe_4Sb_{12}$ alloys and magneto-transport study of $CeFe_4Sb_{12}$. The resistivity of $CeFe_4Sb_{12}$ shows a huge decrease at $T < 150K$ which previous authors have attributed to the onset of the coherent electron scattering from rare-earth sublattice. However, according to magnetic susceptibility results, the crystal field effects could contribute to the splitting of the Ce^{3+} ground state in the resistivity behavior, as usual for a Kondo lattice compound. This idea will be discussed in view of our magnetic and magneto-transport experiments

13.4 cm

Subject category :

1. Correlated Electrons and High Temperature Superconductors

Presentation mode :
poster

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