ELECTRONIC, MAGNETIC AND TRANSPORT PROPERTIES OF YCo_3B_2 COMPOUND

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9.7 cm

We have studied the electronic, magnetic and transport properties of the hexagonal YCo_3B_2 compound. The electronic structure has been studied by X-ray photoemission spectroscopy (XPS) and ab initio self-consistent tight binding linear muffin tin orbital (TB LMTO) method. The XPS spectra are compared with the calculated electronic density of states. Theoretical calculations showed that the YCo_3B_2 is a paramagnet in agreement with experimental results. The main magnetic contribution to the density of states is from Co atoms. Electrical resistivity at low temperatures shows a T^2 dependence, implying that the scattering by spin fluctuations is dominant in this temperature range. The results obtained for YCo_3B_2 are compared with properties of YCo_5 compound.

13.4 cm

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