MAGNETIZATION and X-RAY PHOTOEMISSION SPECTRA OF UFe_5Sn SINGLE CRYSTAL

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9.7 cm

Recently a new compound of the composition UFe_5Sn has been synthesised and its crystal structure recognized [1]. It crystallizes in the orthorhombic $CeCu_5Au-$ type structure. UFe_5Sn is a ferromagnet with $T_C = 248K$ [1]. Here we present for this compound the magnetic properties determined on a single crystal and the electronic structure studied by X-ray photoemission spectroscopy (XPS). A complex magnetization behaviour has been found depending on the crystal orientation. It appears that the VB spectrum of the XPS can be mainly determined by the Fe(3d) and U(5f) bands. The position of the maximum in the VB spectrum of UFe_5Sn is shifted by 1.0 eV in the binding energy as compared to the VB of pure U.

[1] A.P.Goncalves et al. J.Solid State Chem. 154 (2000) 551.

13.4 cm

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