

Anisotropy of magnetic and transport properties of UAuSb₂ single crystals

R. Troć

Institute of Low Temperature and Structure Research, Polish Academy of Sciences,
P.O. Box 1410, 50-950 Wrocław 2, Poland

The uranium-transition metal ditimonides UTSb₂ (T = transition metal) belong to a numerous family of ternary compounds crystallizing in a tetragonal structure of the HfCuSi₂-type (space group P4/nmm). In the framework of our systematic investigation of this group of ternaries we have recently extended our interest to UAuSb₂. Some preliminary magnetic study of this compound have shown two magnetic transitions, a ferromagnetic one at $T_C = 31$ K and probably an antiferromagnetic one at 43 K. Previously the electronic band structure calculations and photoemission examinations of single crystalline samples UAuSb₂ have been reported [1]. In this paper the results of magnetic susceptibility, magnetization, electrical resistivity and thermopower measured along the main crystallographic directions are reported. The spontaneous magnetization at 1.9 K amounts about $0.8 \mu_B$ for $B \parallel c$ -axis. Electrical resistivity for $J \perp c$ -axis exhibits aT^2 law at low temperatures and a Kondo effect at higher temperatures. The thermopower S for both main crystallographic directions show a maximum at T_C and the lack of any anomaly at T_N .

[1] J. A. Morkowski, A. Szajek, E. Talik, and R. Troć, J. Alloys Compd. 443 (2007) 20

13.4 cm

Subject category :

3. Magnetic Structure and Dynamics

Presentation mode :

oral

Corresponding author :

R. Troć

Address for correspondence :

Institute of Low Temperature and Structure Research, Polish Academy of Sciences,
P.O. Box 1410, 50-950 Wrocław 2, Poland

Email address :

R.Troc@int.pan.wroc.pl

9.7 cm