

Crystal Growth and Physical Properties of EuIr_3Si_7 Single Crystal

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Recently, Eu-based intermetallic compounds have been reported to exhibit complex magnetic textures. In this talk, I will present the crystal structure and physical properties of a new member, the EuIr_3Si_7 single crystal, of the RT_3M_7 (R : rare earth, T = transition metal, M = Si, Ge) family. This family of compounds has already shown interesting magnetic properties such as anomalous metamagnetism in YbRh_3Si_7 , ferromagnetic ordering along the hard axis in YbIr_3Ge_7 , charge neutron fermion in YbIr_3Si_7 . EuIr_3Si_7 crystallizes in the ScRh_3Si_7 structure type with space group $R\bar{3}c$ and found lattice parameters to be $a = 7.6217(2)$ Å and $c = 20.1401(5)$ Å. Furthermore, it exhibits two magnetic phases below $T_{N2} = 15$ K and $T_{N1} = 5$ K. In the presentation, we discuss the detailed crystal growth, crystal structure, and temperature-dependent and magnetic field-dependent magnetic characterization of magnetic phases.