

Evidence for absence of charge-density-wave formation in $\text{Er}_5\text{Ir}_4\text{Si}_{10}$ single crystal by the measurement of temperature dependence of electrical resistance and magnetic susceptibility

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Recently, the ternary rare-earth metal silicide $\text{R}_5\text{Ir}_4\text{Si}_{10}$ (R = heavy rare-earth metal, Sc and Lu) has been intensively investigated. The attractive phenomena in this compound group are antiferromagnetic phase transition, superconducting phase transition, nuclear magnetism and charge-density-wave formation. In this article, we have only concentrated to charge-density-wave formation in the $\text{Er}_5\text{Ir}_4\text{Si}_{10}$ single crystals whose sample quality has been improved by the solid state electro-transport method (SSE). The measurement of temperature dependence of electrical resistance from 1.5 to 300 K was performed with an ordinary four probe DC method and then the measurement of magnetic susceptibility from 1.8 to 300 K has been carried out with commercial Quantum Design SQUID magnetometer (MPMS). In both measurements, we have never observed the anomaly associated with charge-density-wave (CDW) phase transition.

