

In this thesis, we focus on preparation of micro-devices for resistivity measurement of CeCoIn_5 using focused ion beam technique. Single crystal samples of $\sim 50 \mu\text{m}$ length were carved out by focused ion beam and transported on silicon substrates with prepared gold structures for electrical resistivity measurement. The samples were conductively attached to gold contact pads by focused ion beam induced platinum deposition. Several steps and techniques were optimized: electron lithography, golden pads electrical resistivity measurement and platinum structures electrical resistivity measurement and microstructure transport. Electrical resistivity measurement of CeCoIn_5 single crystal showed superconductive transition at $T_c = 2.27 \text{ K}$ and H - T phase diagram was created from measurement in magnetic fields. The result obtained from bulk sample are in agreement with literature. On the other hand measurement of micro-devices showed no superconducting transition, suggesting insufficient quality of samples.