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DC transport properties of Fe(Se,Te) crystals: Effects of Se substitution into Te site SEIKI KOMIYA, MASAFUMI HANAWA, ICHIRO TSUKADA, Central Research Institute of Electric Power Industry, JST-TRiP, ATSUTAKA MAEDA, University of Tokyo, JST-TRiP — FeTe is an antiferromagnetic semimetal and superconductivity shows up when Te is substituted with Se, but effects of Se substitution are still unclear. To elucidate this issue, we study the behavior of Hall resistance in detail using single crystalline $FeSe_xTe_{1-x}$ with $x = 0$ to 0.4. Single crystals are grown by Bridgman method, and Hall resistance is analyzed within the standard 2-carrier model. We find that the electron density n_e is larger than the hole density n_h for $x \leq 0.3$ samples, but n_h becomes greater than n_e for $x = 0.4$ crystal. We also find that electron mobility enhances especially at low temperatures with Se substitution.

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