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Chemical substitution study on magnetism and superconductivity in $Ce_{1-x}Sm_xCoIn_5$.[1] N. POUSE, S. JANG, B. WHITE, S. RAN, M. B. MAPLE, University of California, San Diego, C. C. ALMASAN, Kent State University — We report electrical resistivity, magnetization, and specific heat measurement measurements on the $Ce_{1-x}Sm_xCoIn_5$ system for $0 \leq x \leq 1$. Superconductivity in $CeCoIn_5$ is suppressed with increasing Sm concentrations up to $x = 0.1$, above which there is no evidence for superconductivity from measurements down to 50 mK; antiferromagnetic ordering in $SmCoIn_5$ persists deep into the Ce-rich side, and is not completely suppressed until $x = 0.25$. We have observed the development of a low-temperature upturn in electrical resistivity for $0.70 \leq x \leq 0.85$ which is consistent with behavior for a single-ion impurity Kondo effect and suggests that the substitution of Sm for Ce causes a change of the relative strength of competing Kondo and Ruderman-Kittel-Kasuya-Yosida energy scales.

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