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Evolution of superconductivity in $SrFe_2As_2$ with Ni and Pt substitution S.R. SAHA, T. DRYE, K. KIRSHENBAUM, N.P. BUTCH, X. ZHANG, R. GREENE, J. PAGLIONE, Center for Nano Physics and Advanced Materials, Department of Physics, University of Maryland — The superconducting state in the iron pnictide compounds with tetragonal $ThCr_2Si_2$ crystal structure has attracted much interest. Transition metal substitution is known to suppress the antiferromagnetic phase of the parent compounds, yielding superconductivity with maximum T_c values approaching ∼20-25 K when Co, Ni, Ru, Rh, Pd, or Ir are used to replace Fe. However, this trend is known to be broken in the case of $SrFe_{2-x}Ni_xAs_2$ and $SrFe_{2-x}Pd_xAs_2$, which both exhibit reduced maximum T_c values of order 10 K. We will present the effects of Ni and Pt substitution in single crystalline $SrFe_2As_2$ as measured by resistivity, magnetic susceptibility and specific heat, and discuss how our results relate to the isoelectronic case of Pd substitution as well as other neighboring transition metal substitution series.

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