Abstract Submitted
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Measurement of the transport spin polarization of disordered metals using point-contact Andreev reflection M. OSOFSKY, Naval Research Laboratory, G. WOODS, J. SANDERS, H. SRIKANTH, University of South Florida, S. KOLESNIK, T. MAXWELL, B. DABROWSKI, Northern Illinois University — Point contact Andreev reflection (PCAR) studies were done on bulk, polycrystalline $SrRu_{1-x}(TM)_xO_3$ (TM = Cr, Mn, Ti) and $SrRu_{0.92}O_3$ with a high degree of disorder. The curves are typical of many other materials studied, except that the conductance is not constant at large voltages as is commonly observed in most metals. This result is most likely due to the effect of disorder on the density of states (DOS) that produces the well known square-root of V anomaly. After the problem of the $V^{1/2}$behavior at large V was eliminated by proper normalization, the PCAR spectra for samples were analyzed using the modified BTK model. Pure SrRuO3 undergoes ferromagnetic ordering at a Curie temperature of $TC \sim 160$ K and has a relatively high spin polarization ($\sim$0.6). Our results indicate that, when the lattice is disordered from either the presence of Ru lattice site defects or the substitution of a transition metal for the Ru, the curie temperature, T_C changes by a factor of two while the spin polarization is almost unchanged.

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