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Spin polarization measurements on $SrRu_{0.92}O_3$ and $SrRu_{0.8}Ti_{0.2}O_3$ using point contact Andreev Reflection J. SANDERS, G. T. WOODS, H. SRIKANTH, Physics Department, University of South Florida, B. DABROWSKI, S. KOLESNIK, Physics Department, Northern Illinois University — Recently, highly spin polarized ferromagnetic materials have been investigated for their potential use in the next generation electronics devices. Point contact Andreev reflection (PCAR) has been a useful tool in the study of ferromagnetic metallic oxides in determining the magnitude of the transport spin polarization P. The ferromagnetic metallic 4d oxide $SrRuO_3$, with Tc $\sim$ 163 K and magnetic moment m $\approx$ 1.6 μ_B/Ru, has been measured by PCAR with a result of P $\sim$ 60 %. This result is particularly interesting due to the fact that the density of states of the majority and minority spins are approximately the same but whose Fermi velocities are dramatically different. We will present our results from a study on the polycrystalline samples $SrRu_{0.92}O_3$ and $SrRu_{0.8}Ti_{0.2}O_3$. Resistive and magnetic results show that the inclusion of Ti substitution and Ru vacancies lowers Tc and renders materials less metallic. Our PCAR results show that for the Ti substitution the value of P compared to the parent compound is not affected, remaining around 60 %, but the sample with Ru vacancies show less coherent Andreev reflection processes rendering a difficult determination of P. * J. Sanders is an NSF IGERT fellow and is supported by NSF-DGE-0221681 ** Work at NIU was supported by the NSF-DMR-0302617

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