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Andreev Reflection Spin Polarization Measurements of a Weak Ferromagnet $Pd_{1-x}Ni_x$ PUSHKAL THAPA, RAGHAVA P. PANGULURI, Department of Physics and Astronomy, Wayne State University, Detroit MI 48201, USA, TRUPTI S. KHAIRE, Department of Physics and Astronomy, Michigan State University, East Lansing, MI 48824, USA, BORIS NADGORNY, Department of Physics and Astronomy, Wayne State University, Detroit MI 48201, USA — As the magnetic moment and the spin polarization of a ferromagnetic material have distinct origins, the existence of a relationship between these two different physical quantities has always been the topic of intense debate. We have studied a series of weakly ferromagnetic variable composition $Pd_{1-x}Ni_x$ thin film samples fabricated by sputter deposition. Point Contact Andreev Reflection (PCAR) spectroscopy with electrochemically etched Nb tips was used to measure the spin polarization of these samples. Spin polarization values were obtained by fitting the conductance data with the modified BTK model. Dependence of Curie temperature and magnetization on Ni concentration was observed. Spin polarization of these samples will be compared to their magnetization (measured by a SQUID magnetometer) and the concentration of Ni; and the results will be discussed.

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