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Determination of the surface spin-polarization of perovskite oxides using point-contact Andreev reflection spectroscopy[1] EVERETT GRIMLEY, Centenary College of Louisiana, Shreveport, LA 71104, AMLAN BISWAS, Department of Physics, University of Florida, Gainesville, FL 32611 —
Materials with surface spin-polarization are invaluable for incorporation into devices that utilize spin-polarized currents. Point-contact Andreev reflection spectroscopy is currently one of the few techniques capable of direct measurement of surface spin-polarization. Niobium wire was electrochemically etched in a potassium hydroxide solution to form sharp tips which were used to form point-contacts with perovskite oxides in single crystal and thin film forms. Surface spin-polarization values were determined at 4.2 K for several materials including $La_{0.7}Sr_{0.3}MnO_3$, which is a material with purported 100% spin polarization. The results show that surface spin polarization of perovskites is smaller than theoretically predicted.

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