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Interface behavior in $La_{1-x}Sr_xFeO_{3-\delta}$ /Nb:$SrTiO_3$ perovskite oxide heterostructures CAROLINE (LIGE) ZHANG, MARK SCAFETTA, STEVEN MAY, Drexel University — We report the interfacial transport behavior in $La_{1-x}Sr_xFeO_{3-\delta}$ /Nb:$SrTiO_3$ perovskite oxide heterostructures. Strained epitaxial films were deposited on $SrTiO_3$ and Nb:$SrTiO_3$ substrates using oxide molecular beam epitaxy. Oxygen concentration was controlled by heating and re-annealing in a tube furnace with a mixture of O_2 and O_3. Temperature dependent current-voltage (I-V) characteristics were measured from the junctions. From these I-V data, ideality factors for the heterojunctions were obtained. The ideality factors are found to be much larger than 1, indicating transport differs substantially compared to conventional semiconductor heterostructures.

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