

Abstract Submitted
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Probing Surface Defects and Electronic Reconstruction on Nb-Doped SrTiO₃ Substrates WILL BOWERS, Auburn University, PATRICK GEMPERLINE, Xavier University, MILES BLANCHET, UCHENNA UBEH, JOE BERSSON, TAMARA ISAACS-SMITH, MICHAEL BOZACK, SARIT DHAR, RYAN COMES, Auburn University — Dopants and surface termination quality both perform an incredibly important role in the performance and characteristics of thin films. We have studied the properties of Nb-doped films of SrTiO₃ given different surface and annealing treatments including deionized water and buffered HF etching. As a way to characterize these samples, we have performed atomic force microscopy, Rutherford backscattering spectrometry, X-Ray photoelectron Spectroscopy, electron transport and capacitance-voltage measurements. We found the annealing treatment to have a significant effect on electron transport through the film, and that the chemical termination of the film varied depending on which treatment was applied.

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