Abstract Submitted
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Nanoscale rectification at the $LaAlO_3/SrTiO_3$ interface[1] ADAM BURCH, DANIELA F. BOGORIN, CHENG CEN, JEREMY LEVY, University of Pittsburgh, JAE-WAN PARK, CHANG-BEOM EOM, University of Wisconsin-Madison — We report nanoscale electrical rectification in nanowires formed at the interface between $LaAlO_3$ and $SrTiO_3$. Using an AFM writing technique[2,3] it is possible to create conducting nanoregions with a precision that approaches the atomic scale. Here we demonstrate how controlled asymmetries in the in-plane potential profile along a nanowire lead to controlled electrical rectification, similar to that observed in Schottky diodes.

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[2]C. Cen, S. Thiel, K. E. Andersen, C. S. Hellberg, J. Mannhart, and J. Levy, Nature Materials **7**, 2136 (2008).
[3]C. Cen, S. Thiel, J. Mannhart, and J. Levy, Science **323**, 1026 (2009).

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