

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

GHz operation of LaAlO₃/ SrTiO₃-based transistor¹ PATRICK IRVIN, MENGCHEN HUANG, JEREMY LEVY, U. Pittsburgh, CHUNG WUNG BARK, CHAD M. FOLKMAN, CHANG-BEOM EOM, U. Wisconsin-Madison — Local modification of the metal-insulator transition of the LaAlO₃ /SrTiO₃ interface with a conducting-atomic force microscope (c-AFM) has resulted in a variety of electrical² and photonic³ devices. Using a heterodyne measurement technique, we show that a sketch-based, nanoscale transistor (“SketchFET”) can operate at frequencies in excess of 1 GHz. This demonstration of GHz functionality opens the door for new applications for oxide-based, rewritable nanoscale devices.

¹This work was supported by NSF DMR-0704022 (J.L.), DARPA W911NF-09-10258 (J.L.), the Fine Foundation (J.L.), NSF DMR-0906443 (C.-B.E.), and David and Lucile Packard Fellowship (C.-B.E.)

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Date submitted: 19 Nov 2010

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