

Abstract Submitted
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Electronic Transport in Ion Gel-Gated Strontium Titanate¹ MEN YOUNG LEE, JAMES R. WILLIAMS, DAVID GOLDHABER-GORDON, Stanford University, SIPEI ZHANG, C. DANIEL FRISBIE, University of Minnesota, BHARAT JALAN, JUNWOO SON, SUSANNE STEMMER, UC Santa Barbara — In recent years much attention has been focused on the structure and properties of two-dimensional electron liquids (2DEL) in complex oxide heterostructures and delta-doped layers. We report on the fabrication and measurements of mesoscopic devices of metal oxides, with focus given to an electric field-induced 2DEL at the surface of undoped strontium titanate (STO). We describe the design and fabrication of field-effect structures, gated with an ionic gel, and show the measurements of induced swings of charge carrier density in STO. Other transport properties of the 2DEL are studied by magneto-transport measurements at low temperature.

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