

Abstract Submitted  
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**Two Dimensional Electron Gas Formed at Inverted SrTiO<sub>3</sub>-LaAlO<sub>3</sub> Interface**<sup>1</sup> MAO ZHENG, BRIAN MULCAHY, XIAOFANG ZHAI, JAMES ECKSTEIN, Univ of Illinois, Urbana-Champaign — We have grown and tested inverted 2DEG structures consisting of SrTiO<sub>3</sub> layers grown on top of thick LaAlO<sub>3</sub> films. By engineering the layering, the interface can be made n-type. Contact to the 2DEG is relatively easy in this geometry since the current does not have to pass through the high band gap LAO layer. We have obtained a 2-D carrier density of  $2 \times 10^{14}$  electrons/cm<sup>2</sup> at room temperature along with a mobility of 10 cm<sup>2</sup>/Vs.

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