

Supplementary Materials for **Observation of inverse Edelstein effect in Rashba-split 2DEG between SrTiO₃ and LaAlO₃ at room temperature**

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- fig. S1. The electron transport properties of the 2DEG.
- fig. S2. The gate voltage dependence of IEE of the Rashba-split 2DEG between SrTiO₃ and 3-UC LaAlO₃.

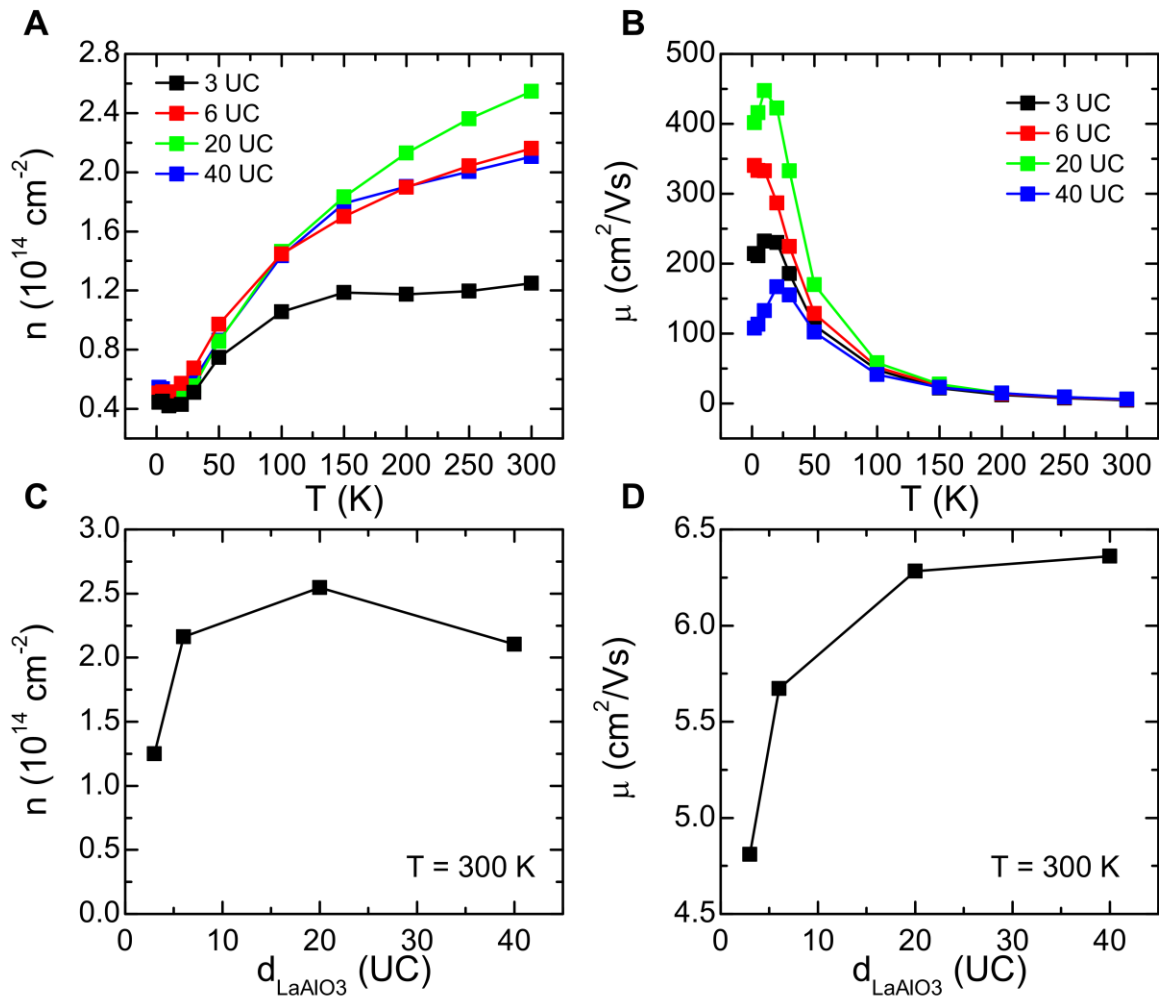


fig. S1. The electron transport properties of the 2DEG. (A–B) The temperature dependence of the mobility and carrier density for the 2DEGs between SrTiO₃ and 3-UC, 6-UC, 20-UC and 40-UC LaAlO₃. **(C–D)** The LaAlO₃ thickness dependence of the mobility and carrier density at room temperature.

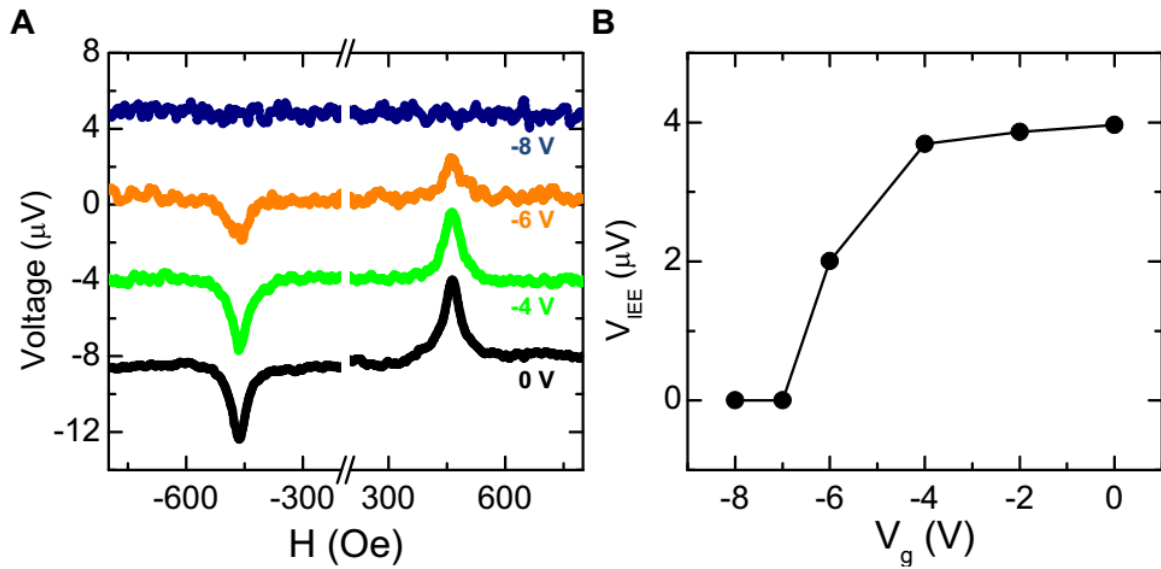


fig. S2. The gate voltage dependence of IEE of the Rashba-split 2DEG between SrTiO₃ and 3-UC LaAlO₃. (A) The measured voltage as a function of the magnetic field at 300 K for $V_g = -8, -6, -4,$ and 0 V. (B) The gate voltage dependence of V_{IEE} .