

Abstract Submitted  
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**Metal to insulator transition in ultrathin SrIrO<sub>3</sub> films**<sup>1</sup> WEI GUO, DIANXIANG JI, ZHANGWEN MAO, ZHENGBIN GU, YUEFENG NIE\*, XIAOQING PAN, National Laboratory of Solid State Microstructures, College of Engineering and Applied Sciences, Nanjing University, Nanjing 210093, China — The 5*d* iridates host a variety of intriguing novel phenomena, such as the spin-orbit Mott insulating state in Sr<sub>2</sub>IrO<sub>4</sub>, the potential superconductivity in doped Sr<sub>2</sub>IrO<sub>4</sub>, and the semi-metallic ground state in SrIrO<sub>3</sub>. Here, using a combination of reactive molecular beam epitaxy and *in situ* transport measurements, we grew a series ultrathin films of SrIrO<sub>3</sub> and observed a metal to insulator transition when the film thickness is below a critical value.

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