

Abstract Submitted
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Van der Waals epitaxial growth and transport properties of Bi₂Se₃ thin films¹ JIAN-HAO CHEN², JACK HELLERSTEDT, WILLIAM CULLEN, MICHAEL FUHRER, Dept. of Physics, Materials Research Science and Engineering Center and Center for Nanophysics and Advanced Materials, Univ. of Maryland, College Park — Thin films of Bi₂Se₃ with high carrier mobility are grown with van der Waals epitaxy method in ultra-high vacuum environment on single crystal Sapphire (0001) and single crystal SrTiO₃ (111) surfaces. *Ex-situ* transport measurement revealed weak-antilocalization-like behavior at small out-of-plane magnetic field (B_o) and non-linear Hall conductance versus B_o . The carrier concentration of the Bi₂Se₃ can be substantially tuned with applied electric field through the SrTiO₃ substrate.

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