

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

STM investigation of FeSe/STO binding¹ TATIANA A. WEBB, University of British Columbia, Harvard University, DENNIS HUANG, Harvard University, HARRIS PIRIE, JASON HOFFMAN, University of British Columbia, Harvard University, MOHAMMAD H. HAMIDIAN, Harvard University, Cornell University, CAN-LI SONG, Tsinghua University, CUI-ZU CHANG, JAGADEESH S. MOODERA, Massachusetts Institute of Technology, JENNIFER E. HOFFMAN, University of British Columbia, Harvard University — The electronic properties of monolayer FeSe grown on a SrTiO₃ (STO) substrate differ dramatically from bulk FeSe, with the superconducting transition temperature (T_c) enhanced by an order of magnitude. This change in T_c is accompanied by suppressed nematicity, electron doping, and possible coupling to substrate phonons. The first monolayer on the STO surface appears to be unique, and its electronic structure is tunable via sample preparation. We investigate the FeSe/STO binding and growth mechanism via scanning tunneling microscopy and spectroscopy, in order to understand the crucial role of the STO surface in modifying the electronic structure of FeSe.

¹Work supported by the National Science Foundation DMR-1231319 (STC CIQM), and the Gordon & Betty Moore Foundation EPIQS GBMF4536.

Tatiana A. Webb
University of British Columbia, Harvard University

Date submitted: 05 Nov 2015

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