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Scanning Tunneling Microscopy Studies of the Topological Insulator Candidate YbB_6[1] ZHIHUAI ZHU, Y. HE, Department of Physics, Harvard University, Cambridge, MA 02138, USA, D.-J. KIM, Z. FISK, Department of Physics and Astronomy, University of California, Irvine, California 92697, USA, J. E. HOFFMAN, Department of Physics, Harvard University, Cambridge, MA 02138, USA — We report scanning tunneling microscopy studies of YbB_6, a proposed topological insulator candidate with moderate correlation. The in-situ cleaved sample surface has two dominant morphologies: atomic square lattices and disordered rows, which likely correspond to Yb and B terminations, respectively. Spatially resolved dI/dV maps show enhanced tunneling due to the local perturbation of the tip-induced band bending. The dI/dV spectra reveal a bulk gap with distinct in-gap features near the Fermi level on different terminations. Our study presents nanoscale evidence for the interplay between surface structure, correlation and topological properties.

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Zhihuai Zhu
Harvard University

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