Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Growth and Characterization of Bi_2Te_3/Bi_2Se_3 Bilayers RACHEL HENDERSON, SERCAN BABAKIRAY, TRENT JOHNSON, PAVEL BORISOV, DAVID LEDERMAN, West Virginia Univ, WEST VIRGINIA UNIVERSITY TEAM — Bi_2Te_3/Bi_2Se_3 bilayers were grown on Al_2O_3 (0001) substrates using molecular beam epitaxy. Bi_2Te_3 was grown at a stoichiometric ratio (Te/Bi) of 3:2 and Bi_2Se_3 was grown at stoichiometric ratio (Se/Bi) of 15:1. Reflection high energy electron diffraction and x-ray diffraction were used to confirm the epitaxial growth of these films. X-ray reflectivity was used to determine the thickness and roughness of these bilayers. The magnetotransport of these heterostructures was used to determine whether charge compensation can be achieved within the bulk of the material in order to enhance the properties of surface topological states. This work was supported by a Research Challenge Grant from the West Virginia Higher Education Policy Commission (HEPC.dsr.12.29) and the West Virginia University Shared Research Facilities.

Rachel Henderson
West Virginia Univ

Date submitted: 15 Nov 2013 Electronic form version 1.4