Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Probing Bi2Te3 thin nanoplates by Raman Spectroscopy[1] RUI HE, CONOR DELANEY, BEN BECK, TIM KIDD, CLIFF CHANCEY, Univ of Northern Iowa, ZHENHUA WANG, RICHARD QIU, XUAN GAO, Case Western Reserve Univ — Two infrared (IR)-active vibrational modes centered at 93 and 113 cm^{-1} are observed in Raman spectra from as-grown thin nanoplates (NPs) of topological insulator Bi_2Te_3. The presence of IR modes in Raman scattering reveals a breakdown of inversion symmetry in thin NPs grown on SiO_2. Both Raman and IR modes are preserved after typical device fabrication processes, suggesting the robustness of surface properties. In NPs transferred to another SiO_2 substrate, the IR modes are absent, and the Raman spectra are similar to those from bulk samples. These differences could be attributed to interactions between the SiO_2 substrate and the as-grown NPs.

[1]Supported by NSF and American Chemical Society Petroleum Research Fund

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Date submitted: 08 Nov 2013 Electronic form version 1.4