

Abstract Submitted
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Infrared and magneto-optical studies of topological insulators Bi_2Te_3 , Sb_2Te_3 and Bi_2Se_3 M.S. WOLF, G.M. FOSTER, S.V. DORDEVIC, The University of Akron, N. STOJILOVIC, University of Wisconsin Oshkosh, H. LEI, C. PETROVIC, Brookhaven National Laboratory, L.C. TUNG, NHMFL — Topological insulators are a main focus in condensed matter physics due to their classification as a new state of matter. They have a unique property in which the bulk of the material is insulating, while the surface states have metallic behavior. We have studied 3D topological insulators Bi_2Se_3 , Bi_2Te_3 and Sb_2Te_3 using infrared spectroscopy at vary temperatures to understand their optical properties. Furthermore, we have investigated these materials at vary magnetic fields up to 18 Tesla. Our results reveal strong temperature and magnetic field dependence of optical functions, which indicates unconventional charge dynamics.

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