

Abstract Submitted
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Optical properties of novel topological insulators¹ ANDREI SUSHKOV, G.S. JENKINS, H.D. DREW, N.P. BUTCH, J. PAGLIONE, University of Maryland at College Park, K.R. CHOI, S.-W. CHEONG, Rutgers University — The recent discovery of topological insulators (TI) with the spin-polarized Dirac-like electrons on their surfaces have attracted a lot of attention and theoretical and experimental research efforts. One of the fascinating properties of TIs is the presence of the linear magneto-electric coupling which is responsible for coupled charge-spin modes in dynamical response. We will report our results on the search for such modes together with the conventional optical properties of materials predicted to be TI such as 5d oxide Na_2IrO_3 , SmB_6 , and Bi_2Se_3 and other materials. Measurement results include optical reflectance and/or transmission in the frequency range 5 - 50,000 cm^{-1} and Faraday or Kerr rotation and circular dichroism at selected THz frequencies.

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Andrei Sushkov
University of Maryland CP

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