

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Optical spectroscopic study on magnetoelectric MnWO_4 WOO SEOK CHOI, Seoul National University, KOUJI TANIGUCHI, Tohoku University, SOON JAE MOON, SUN JUNG KIM, SUNG SEOK A. SEO, Seoul National University, YOON SANG LEE, Soongsil University, TAKA-HISA ARIMA, Tohoku University, TAE WON NOH, Seoul National University — We report optical spectroscopic investigation on a multiferroic oxide compound, MnWO_4 . This compound is known to exhibit ferroelectricity induced by the incommensurate spiral magnetic ordering in a temperature range of 7.6 K and 12.7 K [1]. We grew single crystals of MnWO_4 by using the floating zone method. To examine the optical anisotropy originating from the monoclinic crystal structure, we measured reflectivity spectra of MnWO_4 with light polarizations along three crystallographic axes, and calculated the optical conductivity spectra through the Kramers-Kronig transformation for each axis. We discuss the anisotropic phonon structures and electronic structures with temperature and magnetic field dependence in relation to its multiferroic properties.

[1] K. Taniguchi *et al.*, Phys. Rev. Lett. **97**, 097203 (2006).

Woo Seok Choi
Seoul National University

Date submitted: 28 Nov 2007

Electronic form version 1.4