

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Multiple magnetic transitions in multiferroic BiMnO₃ under high pressure CHIH CHIEH CHOU, SUDIP MUKHERJEE, QUARK YUNG-SUNG CHEN, KUO FENG TSENG, SUBHRANGSU TARAN, JIM LONG HER, CHIA PIN SUN, CHIEN-LUNG HUANG, Department of Physics, Center for Nanoscience and Nanotechnology, National Sun Yat-Sen University, Kaohsiung 804, Taiwan, HIROYA SAKURAI, ALEXEI A. BELIK, EIJI TAKAYAMA-MUROMACHI, International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305, Japan, HUNG-DUEN YANG, Department of Physics, Center for Nanoscience and Nanotechnology, National Sun Yat-Sen University, Kaohsiung 804, Taiwan — Multiple magnetic transitions, named as kinks I, II and III, under hydrostatic pressure on multiferroic BiMnO₃ have been studied by the dc magnetization, magnetic hysteresis, and ac susceptibility. The proposed phase diagrams at ambient pressure, 9.4 and 11.9 kbar show the different magnetic features with various magnetic fields. These findings are believed to result from the variations of crystal structure influenced by the external pressure. These results also indicate the common complicated correlation between the lattice distortion and the spin configuration in multiferroic system.

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Date submitted: 17 Nov 2009

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