Structure stability of multiferroic compound Bi2NiTiO6 under high pressure and temperature

JINLONG ZHU, Los Alamos National Laboratory, CHANGQING JIN, Institute of Physics, CAS, YANCHUN LI, XIAODONG LI, JING LIU, Institute of High Energy Physics — Structural of multiferroics Bi2NiTiO6 under high pressure was studied in diamond-anvil cell (DAC) combined with synchrotron radiation X-ray diffraction. Crystal structure refinement shows that there are two isostructural phase transitions at \( \sim 2 \) GPa and in the range of \( 15.5 \sim 18.5 \) GPa, respectively. The bulk modulus was derived from Birch-Murnaghan equation of state (EOS). Bi iron discontinuous movement is thought to be the source of all the isostructural phase transitions. Temperature dependence of X-ray diffractions were collected from room temperature up to 550 °C. Structure refinement shows that an isostructural phase transition at temperature higher than 550 °C can be compare with the isostructural phase transition in the range of 15.5~18.5 GPa.

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