Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

High Pressure study of $Ba_{1-x}Na_xTi_2Sb_2O$ with x = 0, 0.10, and 0.15 MELISSA GOOCH, Texas Center for Superconductivity at the University of Houston, PHUONG DOAN, ZHONGJIA TANG, Department of Chemistry and TcSUH, BERND LORENZ, Department of Physics and TcSUH, ARNOLD GULOY, Department of Chemistry and TcSUH, CHING WU PAUL CHU, Department of Physics, TcSUH, and Lawrence Berkeley National Laboratory — Here we report a systematic study of the effects of pressure on the resistivity for the superconducting and spin/charge density wave (SDW/CDW) transitions of $Ba_{1-x}Na_xTi_2Sb_2O$ (x = 0, 0.10, and 0.15). With increasing pressure no measurable change is observed for the SDW/CDW transition temperature (T_S) for x = 0.15; however, for x = 0 and 0.10 a decrease of the SDW/CDW transition temperature T_S is observed. With respect to the superconducting transition temperature T_c, the effects of pressure effect on the three samples are different. The T_c of $BaTi_2Sb_2O$ increases linearly from 1.2 K to 2.9 K at 16.1 kbars. In contrast, T_c of $Ba_{0.90}Na_{0.10}Ti_2Sb_2O$ only initially increases to 4.2 K and then saturates at higher pressure values. For $Ba_{0.85}Na_{0.15}Ti_2Sb_2O$, T_c continuously decreases with increasing pressure.

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Date submitted: 14 Nov 2013 Electronic form version 1.4