

Abstract Submitted
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Phase Transitions in Nanoscale SrTiO₃ TIAN YU, HAN ZHANG, New Jersey Institute of Technology, MARK CROFT, Rutgers University, MEGAN SCOFIELD, DARA BOBB-SEMPLE, State University of New York at Stony Brook, JING TAO, Brookhaven National Laboratory, CHERNO JAYE, DANIEL FISHER, National Institute of Standards and Technology, STANISLAUS WONG, State University of New York at Stony Brook, TREVOR TYSON, New Jersey Institute of Technology — Free standing SrTiO₃ has recently been shown to be polar for ~10 nm particles (APL 105, 091901 (2014)). We have conducted pressure dependent x-ray diffraction on monodispersed nanoscale samples with varying particle size. Distinctly different behavior is found in the diffraction patterns for sample with reduced size. The nature of the low temperature polar state under pressure will be discussed. The results are compared with reported work on bulk SrTiO₃. This work is supported by DOE Grant DE-FG02-07ER46402.

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