

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Ferroelectricity in a quantum chain magnet.** S. PARK, Y.J. CHOI, C.L. ZHANG, S-W. CHEONG, Rutgers Center for Emergent Materials and Department of Physics & Astronomy, Rutgers University, Piscataway, New Jersey 08854 — Multiferroics with enhanced cross-coupling effects exhibit magnetic orders with broken centrosymmetry. It turns out that the lattice relaxation through exchange striction associated with the magnetic orders with non-centrosymmetry is the origin of magnetism-induced ferroelectricity. Among the exchange strictions, the Dzyaloshinskii-Moriya type interaction becomes active when ferroelectricity is induced by spiral magnetic orders. Herein, we report our surprising discovery that a quantum chain magnet exhibits ferroelectricity when the spiral magnetic order sets in.

Soonyong Park  
Rutgers University

Date submitted: 02 Dec 2006

Electronic form version 1.4