

INDUCING FERROELECTRIC PHASE IN NH_4CuCl_3 Jared S Kinyon, N.S. Dalal, R.J. Clark, E.S. Choi, H.D. Zhou. Department of Chemistry, Florida State University, 95 Chieftan Way, PO Box 3064390, Tallahassee, FL 32306.

The discovery of molecule based multiferroic materials, compounds with simultaneous magnetic and dielectric long-range order, is currently a topic of considerable interest since they can serve as fundamental blocks of information technology at the molecular level. We have initiated the synthesis and characterization of (by variable temperature x-ray crystallography, magnetization, electron paramagnetic resonance, specific heat and dielectric measurements) NH_4CuCl_3 , a material known for its unusual magnetization behavior. Previous studies have shown that NH_4CuCl_3 has two successive structural phase transitions at 70 and 150 K, which have not been thoroughly examined. Dielectric results show that this compound becomes ferroelectric below 70 K, clarifying an earlier query on the finer details of its low temperature space group. This presentation will provide a succinct description of how various techniques complement each other in characterizing a possibly new multiferroic material.