

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Structural and Magnetic Study of YCrO_3 Doped with Calcium¹

EDUARDO VERDIN, Departamento de Física, Universidad de Sonora, México, FRANCISCO MORALES, RAUL ESCAMILLA, ROBERTO ESCUDERO, Instituto de Investigaciones en Materiales, UNAM, México, ALEJANDRO DURAN, Centro de Nanociencias y Nanotecnología, UNAM, Ensenada, B. C. México — In recent years there has been much interest in multiferroic materials. The coupling between ferromagnetic and ferroelectricity on the same material is important from both basic science and applications. Here we address the behavior observed in YCrO_3 doped with Ca. The pure material presents a ferroelectric transition at about 473 K, and ferromagnetism at about 140 K. The magnetic transition is due to canted spins, so ferromagnetism and antiferromagnetism coexist. In this presentation we will show the studies on Ca doped YCrO_3 . We show that Ca does not affect the magnetic transition (T_N), but the dielectric behavior is strongly affected by the increase of the electrical conductivity (σ_{ac}) in the range of 35 to 200 °C.

¹Thanks to DGAPA-UNAM through project no. IN112909.

Eduardo Verdin
Departamento de Física, Universidad de Sonora, México

Date submitted: 27 Nov 2010

Electronic form version 1.4