

Abstract Submitted  
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**Negative magnetization and exchange bias in  $Y_{1-x}Pr_xCrO_3$  with  $(0 < x < 0.3)$** <sup>1</sup> E. VERDIN, Departamento de Fisica, Universidad de Sonora, A. DURAN, Centro de Nanociencias y Nanotecnologia-UNAM, F. MORALES, E. ESCUDERO, Instituto de Investigaciones en Materiales-UNAM — Rare earth orthochromites compounds with perovskite structure have attracted great interest because its potential applications as data storage and spintronic. We report studies of the crystalline structure, thermal, and magnetic properties performed in the compound  $Y_{1-x}Pr_xCrO_3$  with  $0 < x < 0.3$ . We found changes in the specific heat and in the magnetization when the Pr atoms are substituted in the compound. The antiferromagnetic transition,  $T_N$ , increases when the Pr atoms are added into the compound which is clearly observed by specific heat and magnetization measurements. We also found an exchange bias and magnetization reversal when the magnetization-temperature (M-T) curves were measured in field cooled mode (FC). All those changes are attributed to the influence of the Dzialoshinskii-Moriya indirect interaction that we related to the octahedral distortion, because the Pr substitution affecting the Cr-O bond lengths.

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