

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

Sorting Category: 14.6 (E)

**Room temperature ferromagnetism in as-deposited and post-annealed Co-doped ZnO films**<sup>1</sup> XIAO-HONG XU, XIAO-LI LI, Shanxi Normal University, China, G.A. GEHRING, University of Sheffield, UK — The Co-doped ZnO thin films were prepared on *c*-cut sapphire substrates by magnetron co-sputtering, and then annealed at various temperatures in vacuum. Magnetic measurements indicate that all the films are ferromagnetic at room temperature and the magnetization of the annealed Zn<sub>0.88</sub>Co<sub>0.12</sub>O films is increased about one order of magnitude in comparison with the corresponding as-deposited one. Both X-ray diffraction and TEM results show that there are not any Co and Co oxides secondary phases. Optical spectrometry indicates that Co<sup>2+</sup> enters the tetrahedral sites of the wurtzite structure of ZnO host and substitutes for Zn<sup>2+</sup>.

<sup>1</sup>Supported by grant Nos. 10574085 and 60776008 of NSF of China, NCET-07-0527 of China and the Leverhulme Trust of UK.

Prefer Oral Session  
 Prefer Poster Session

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Date submitted: 03 Dec 2007

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