

Abstract Submitted
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Room temperature ferromagnetism in as-deposited and post-annealed Co-doped ZnO films¹ 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_{0.88}Co_{0.12}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 Co²⁺ enters the tetrahedral sites of the wurtzite structure of ZnO host and substitutes for Zn²⁺.

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