Title: Structural, electrical and magnetic studies of Co:SnO2 and (Co,Mo):SnO2 films prepared by pulsed laser deposition

Author(s): **Dalui, S.** [1,2,3,4]; Rout, S. [1,2]; **Silvestre, A. J.** [3,4]; Lavareda, G. [5,6]; Pereira, L. C. J. [7,8]; Brogueira, P. [9,10]; Conde, O. [1,2]

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Abstract: Here we report on the structural, optical, electrical and magnetic properties of Co-doped and (Co,Mo)-codoped SnO2 thin films deposited on r-cut sapphire substrates by pulsed laser deposition. Substrate temperature during deposition was kept at 500 degrees C. X-ray diffraction analysis showed that the undoped and doped films are crystalline with predominant orientation along the [1 0 1] direction regardless of the doping concentration and doping element. Optical studies revealed that the presence of Mo reverts the blue shift trend observed for the Co-doped films. For the Co and Mo doping concentrations studied, the incorporation of Mo did not contribute to increase the conductivity of the films or to enhance the ferromagnetic order of the Co-doped films. (C) 2012 Elsevier B.V. All rights reserved.

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Reprint Address: Dalui, S (reprint author) - Univ Lisbon, Dept Phys, P-1749016 Lisbon, Portugal.

Addresses:
[1] Univ Lisbon, Dept Phys, P-1749016 Lisbon, Portugal
[2] ICEMS, P-1749016 Lisbon, Portugal
[3] Inst Super Engn Lisboa, P-1959007 Lisbon, Portugal
[4] ICEMS, P-1959007 Lisbon, Portugal
[5] Univ Nova Lisboa, Mater Sci Dept, P-2829516 Caparica, Portugal
[6] CTS, P-2829516 Caparica, Portugal
[7] ITN, Inst Super Tecn, P-2686953 Sacavem, Portugal
[8] CFMCUL, P-2686953 Sacavem, Portugal
[9] Inst Super Tecn, Dept Phys, P-1049001 Lisbon, Portugal
[10] ICEMS, P-1049001 Lisbon, Portugal

E-mail Addresses: ssdalui@fc.ul.pt

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