

Title: CVD of CrO(2): Towards a lower temperature deposition process

Author(s): Sousa, Pedro M.; Dias, Sonia A.; **Silvestre, Antonio J.**; Conde, Olinda; Morris, Benjamin; Yates, Karen A.; Branford, William R.; Cohen, Lesley F.

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Abstract: Communication: The deposition of highly oriented a-axis CrO(2) films onto Al(2)O(3)(0001) by atmospheric pressure (AP)CVD at temperatures as low as 330 C is reported. Deposition rates strongly depend on the substrate temperature, whereas for film surface microstructures the dependence is mainly on film thickness. For the experimental conditions used in this work, CrO(2) growth kinetics are dominated by a surface reaction mechanism with an apparent activation energy of (121.0 +/- 4.3) kJ mol(-1). The magnitude and temperature dependence of the saturation magnetization, up to room temperature, is consistent with bulk measurements.

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Reprint Address: Sousa, PM (reprint author), Univ Lisbon, Dept Phys, Fac Sci, Campo Grande,Ed C8, P-1749016 Lisbon, Portugal.

Addresses:

1. Univ Lisbon, Dept Phys, Fac Sci, P-1749016 Lisbon, Portugal
2. Univ Lisbon, ICEMS, Fac Sci, P-1749016 Lisbon, Portugal
- 3. Inst Super Engn Lisboa, P-1959007 Lisbon, Portugal**
4. ICEMS, P-1959007 Lisbon, Portugal
5. Univ London Imperial Coll Sci Technol & Med, Blackett Lab, London SW7 2AZ, England
6. UCL, Dept Chem, London WC1H OAJ, England

E-mail Address: oconde@fc.ul.pt

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