

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

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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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