Potential Phase Control of Chromium Oxide Thin Films Prepared by Laser Initiated Organometallic Chemical Vapor Deposition

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Introduction: We have used laser initiated chemical vapor deposition to grow the chromium oxide thin films through the oxidation of $Cr(CO)_6$ in an oxygen environment. While both Cr_2O_3 and CrO_2 are present in the film, the relative weight of each phase depends on the oxygen partial pressure. The Curie temperature of the film increases and approaches the bulk T_C of CrO_2 (397 K) as the partial oxygen pressure is increased.