

Abstract Submitted
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Investigating consistency and physical properties of ambient Cr thin-films on different substrate support DANIEL TURNER, INDRAJITH SENEVIRATHNE, Lock Haven Univ, DEPARTMENT OF BIOLOGICAL SCIENCES COLLABORATION¹, DEPARTMENT OF GEOLOGY AND PHYSICS COLLABORATION² — Study of adhesion, consistency and structure of multi-layer, noble/wider-refractory metallic films are increasingly important industry and surface engineering/physics. In this study Cr/substrate thin-films are studied for their consistency and structure. Soda lime glass and polycrystalline quartz were used for substrate support. Substrates were removed of organic impurities. Typical Cr depositions on substrates above shown to give rise to Stranski - Krastanov (SK) like growth. Cr was thermally evaporated with varying thicknesses of 85nm - 145nm. These systems were investigated without annealing via Scanning Electron Microscopy (SEM) to examine the surface consistency and possible oxidization. Further, the ambient contamination, elemental composition and thermal diffusion were investigated via Energy Dispersive X-ray spectroscopy (EDX). Cr film has a high affinity to ambient Oxygen and shown to form jagged distributed surface irregularities. These were observed to be dependent on substrate consistency/uniformity and the degree of initial contamination.

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