

A COMPARATIVE STUDY ON THE PROPERTIES OF CHROMIUM COATINGS DEPOSITED BY MAGNETRON SPUTTERING WITH HOT AND COOLED CATHODE

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The deposition of chromium thin films on stainless steel substrates was carried out by magnetron sputtering and two different operating conditions of the cathode were used, namely cooled target and hot target, the former being a sputtering process and the latter a combination of sputtering and evaporation processes of the target material. The characteristics of two families of chromium thin films such as thickness, hardness, topography, surface morphology and cross-section microstructure, crystal structure, elemental composition and corrosion resistance were assessed and discussed in relation to the different working conditions of the deposition system.

Keywords: Magnetron sputtering, Hot target, Evaporation, Chromium, High deposition rate.