

Abstract Submitted
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Hydrogen adsorption studies in micro-size cobalt dots¹ A. L. CABRERA, C. P. ROMERO², J. I. AVILA, E. CISTERNAS, G. B. CABRERA³, Departamento de Fisica, P. Universidad Catolica de Chile, K. TEMST, M. J. VAN BAEL, Laboratorium Voor Vaste-Sttofysica en Magnetisme, K.U. Leuven, Belgium — Hydrogen desorption curves were obtained from a sample composed of square arrangement of Co dots with average diameter of 4.4 microns, separated by a distance of 11.6 microns. A macroscopic sample of Co dots grown on a 2.5x2.5 cm Si substrate was made by standard lithographic techniques and used in these experiments. Thermal programmed desorption (TPD) was performed under ultra-high vacuum conditions. Hydrogen TPD curves were obtained from a 1x1 cm sample of Co dots, Co films and Co foils for comparison. The hydrogen TPD curves peaked at 425 K and have decreasing intensity from the Co foils to the Co dots and to the Co films. A desorption energy of 27 Kcal/mol was obtained for the Co dots suggesting that hydrogen is adsorbed on an hcp or fcc hollow site of the Co dot crystalline structure.

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