

Resistivity measurements on Mg-thin films under a constant change in hydrogen pressure

Árni Sigurður Ingason¹, Sveinn Ólafsson¹

¹Science Institute, University of Iceland,
Dunhaga 3, IS-107 Reykjavík, Iceland

Abstract

Due to the growing interest in magnesium based hydrogen storage materials, the use of thin film techniques as a useful tool in screening for such nano structured materials is very much on the increase. Magnetron sputtering is one of these and it has been shown that resistance measurements on sputtered films can give information about their thermodynamic and kinetic properties under hydrogen pressure. Resistance measurements on pure Mg films were performed where the hydrogen pressure was increased and decreased gradually. The measurements indicate that the desorption and adsorption of hydrogen in such films is very dependent on surface kinetics. This indicates different phase transformation behaviour during desorption and absorption.