

Electrodeposition and Characterization of Nanocrystalline Ni-Fe Alloys

Yasser Reda Abdel H. EL-Ghazouly
Dr. Saad El-Raghy, Dr. Randa Abd El-Karim and Dr. Madiha Ahmed Shouaib

Abstract

Increasing the Ni/Fe ratio, the nickel content in the deposited layers increases, and leads to a decrease in the precipitates particle size which became finer and smaller in size. Nano-crystalline electrodeposited Fe-Ni alloys are composed of two phases. Ni and FeNi₃ phases for a range of Ni/Fe ratio. The intensity of FeNi₃ increases with the increase in the deposition time.

Keywords: Nanotechnology; Electroplating; Corrosion; Electroplating bath; Phases.