

Electrodeposition of Porous Metallic Thin Films Using Copper Nanonetworks as Cathodes

Gomes Filho, J.F. 1, 3 *; Gündel, A. 1, 2 ; Sommer, R.L. 1;
Simão, R. A. 3 ; Guimarães, A. P. 1; Sampaio, L. 1

1 Centro Brasileiro de Pesquisas Físicas - CBPF, Brazil

2 Universidade Federal de Pelotas/UNIPAMPA-Bagé, Brazil

3 Universidade Federal do Rio de Janeiro - UFRJ, Brazil

•email: gomes@cbpf.br

Abstract

In this work a copper nanonetwork 50 nm thick was evaporated on the opposite face of a commercial porous alumina membrane and its use as cathode for electrodeposition of a thin porous metallic film of $\text{Ni}_x\text{Fe}_{1-x}$ is demonstrated. SEM images show the evolution of the various phases involved in the process. The electrochemical deposition method was galvanostatic. EDS chemical analysis revealed an approximated composition of $\text{Ni}_{74}\text{Fe}_{26}$ for the electrodeposited alloy.