

9th International Workshop on Electrodeposited Nanostructures

Influence of electrolyte composition and deposition potential on the composition and crystallographic characteristics of Bi₂Te₂ nanowires

O. Picht ¹, S. Mueller ¹, M.E. Toimil-Molares ¹

¹ Materials Research Department, GSI Helmholtz Centre for Heavy Ion Research,
Planckstr. 1, 64291 Darmstadt, Germany

Bismuth telluride nanowires were potentiostatically deposited in the cylindrical channels ($d \sim 25$ nm) of polycarbonate etched ion-track membranes fabricated by heavy ion irradiation and wet chemical etching. The nanowires were characterized by x-ray diffraction, high-resolution scanning electron microscopy, transmission electron microscopy and energy dispersive x-ray analysis. We study the influence of potential and electrolyte composition on the electrochemical growth of the nanowires, as well as on their morphologic, crystallographic and compositional characteristics.