عنوان مقاله:

DC Electrodeposition of Cu Nanowire in AAO template without Sputtering

محل انتشار:

دومین کنگره بین المللی علوم و فناوری نانو (سال: 1387)

تعداد صفحات اصل مقاله: 2

نویسندگان:

M Alinejad - *Department of Physical Chemistry, Faculty of Chemistry, University of Science and Technology, Tehran*

M Safarpour

خلاصه مقاله:

The template method has been widely used for preparing one-dimensional nanostructures such as metal and semiconductor nanowires. Anodic aluminum oxide (AAO) template is especially interesting because it possesses self-organized cylindrical and monodispersed pores with high densities (up to 1011 pores/cm2, much higher than the 108 pores/cm2 in polycarbonate membranes), high aspect ratios (up to 103), and controllable pore sizes (ranging from 10 to 250 nm). Highly ordered pore arrays can be prepared by a two-step anodisation process, in which the degree of ordering is controlled by the first anodisation time. [1]The electrochemical deposition method is one of the important processes for manufacturing nanowire via an AAO template. Compared to the traditional chemical vapor deposition (CVD) or other growth techniques for nanostructures, electrodeposition has lots of advantages, such as low cost, easy implementation, and absence of high vacuum. Both AC and DC electrodeposition are used for filling the pores. In the electrochemical methods, it is necessary a thin conducting metal film is first coated on one side of the porous membrane to serve as the cathode for electroplating, which, obviously, is a complex process

کلمات کلیدی: