Controlled Growth of Cu Nanowires by using Electrochemical deposition with a Polycarbonate membranes

황재권, 강문철, 성명모

국민대학교 화학과

Cu nanowires were electrodeposited with a template of a polycarbonate(PC) membrane. The bath consisted of 0.12M CuSO₄·5H₂O, Na₄P₂O₇, H₂SO₄, and DI water. To ensure a good electrical contact, the backside of the PC membrane template was coated with Pt before attaching to the working electrode. The thickness of the sputtered Pt film was ~100nm. A Cu sheet was used as the working electrode and Cu plate was used as a counter electrode. The applied electric voltage was 400mV-800mV and the deposition time was 1h-4h. The Cu nanowires with diameters of <70nm and length of 10 μm have been investigated by Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM).