
NP-03

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 $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$, $\text{Na}_4\text{P}_2\text{O}_7$, H_2SO_4 , 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 $\sim 100\text{nm}$. 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 $< 70\text{nm}$ and length of $10\ \mu\text{m}$ have been investigated by Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM).