

Fabrication of the vertically aligned carbon nanotubes array showing semiconducting behavior at room temperature

정승호, 이건홍*
포항공과대학교 화학공학과
(ce20047@postech.ac.kr*)

Fabrication of nanotransistor based on vertically aligned carbon nanotubes (CNTs) array synthesized using anodic aluminum oxide (AAO) templates fabricated on bulk aluminum plate is reported. The nanotransistor showed switching operation at 30K, a very low temperature, however, nanodevices based on CNTs have to be operated at room temperature for various applications such as transistor, memory devices, and sensors. So we synthesized CNTs array showing semiconducting behavior at room temperature (300K) using AAO templates fabricated on niobium-sputtered silicon wafer. Moreover, electrical properties of individual CNTs were characterized.