

NT-P006

Fabrication of Single Crystal Poly (3,4-ethylenedioxythiophene) Nanowire Arrays by Vapor Phase Polymerization with Liquid-bridge-mediated Nanotransfer Molding

이기석, 조보람, 성명모

한양대학교 화학과

We have studied a fabrication of Poly (3,4-ethylenedioxythiophene) (PEDOT) wire arrays and structures with various feature sizes from hundreds micrometers to tens nanometers.

PEDOT is well-known as a conducting material, can be grown by a vapor pressure polymerization (VPP) method.

The VPP technique is a bottom-up processing method that utilizes the organic arrangement of macromolecules to easily produce ordered aggregates.

Also, liquid-bridge-mediated nanotransfer molding (LB-nTM), which was reported as a new direct patterning method recently, is based on the direct transfer of various materials from a mould to a substrate through a liquid bridge between them.

The PEDOT nanowires grown by VPP method and transferred on a substrate to use LB-nTM method have been investigated by Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Selected Area Electron Diffraction (SAED), X-Ray Diffraction (XRD), X-ray Photoelectron Spectroscopy (XPS), and electrical properties.

Keywords: PEDOT, nanowire, single crystal, vapor phase polymerization, Liquid-bridge-mediated nanotransfer molding