

Preparation and Characterization of Vapor-grown Carbon Nanofibers/Polystyrene Composites for Sensing Materials

이은정, 박수진*
한국화학연구원
(psjin@kRICT.re.kr*)

In this work, the amorphous polymer-based composites consisting of polystyrene (PS) and vapor-grown carbon nanofibers (VGCNFs) as candidates for gas sensing materials were prepared by in-situ polymerization of styrene. The electrical properties of VGCNFs/PS composites and their resistant response against organic solvent vapors were investigated. VGCNFs/PS composites had an electrical percolation threshold at 3 wt% VGCNF content and exhibited good electrical sensitivity against non-polar or polar solvents. Consequently, the performance of gas sensing was largely influenced on the electrical conductivity and absorption characteristics of VGCNFs/PS composites that could be tailored by nature properties of both the VGCNFs and the PS in the present composite system.