

Characterization of some gold/MWNT nanocomposites prepared by electrostatic interaction

모하메드엠펠라바니, 김정수, 오원태*, 고창현¹
동의대학교 나노공학과; ¹한국에너지기술연구원
(wtoh2005@deu.ac.kr*)

Decoration of CNTs with some nanoparticles expands their applications from CNT-assisted catalytic systems to complex conductor networks in microelectronics. Especially, nanoparticle-deposited CNTs are important due to their potential applications as broad-band optical emitters, electrodes and catalysts. Multi-walled carbon nanotubes (MWNTs) were fabricated by positively-charged gold nanoparticles through electrostatic interaction. Prior to decorate MWNTs with gold nanoparticle, MWNTs were dispersed in water with the assistance of some dispersion agents such as sodium dodecylsulfate (SDS), sodium poly(styrene sulfonate) (PSS) and poly(vinylpyrrolidone) (PVP). UV-Vis spectroscopy, X-ray photoelectron spectroscopy (XPS), and Transmission electron microscopy (TEM) were used to characterize the Au-MWNTs nanocomposites. The effect of dispersion agents on nanohybridization between MWNTs and gold nanoparticles (GNPs) were also investigated.