

Carbon Nanotube Solar Cell utilizing Semiconducting as an Exciton Generator

박재선, 김우재[†]

가천대학교

(wjkim@gachon.ac.kr[†])

Single-walled carbon nanotubes are attractive material which have superior properties such as electronic, chemical and physical properties. In order to use carbon nanotubes as nanoelectronics and photovoltaic device, semiconducting SWNT should be used because metallic SWNT cause occurring recombination of electron-hole pair and reduce performance of solar cell. So far, ultracentrifugation is commonly used to separate semiconducting SWNT, but it requires considerable times and energies. In this study, we removed metallic SWNT by reacting with diazonium salts without centrifugation to prevent exciton quenching. Also, we tested performance of solar cell and compared with others that was made of highly refined semiconducting nanotubes.