

Study of carbon nanotubes stability in different types of solvents for electrospray deposition method

Abstract

Electrospray deposition (ESD) required a dispersing agent that could form a stable suspension of solution for carbon nanotubes (CNT) deposition on the carbon fiber (CF). The N-methyl-2-pyrrolodone (NMP), dimethylformamide (DMF) and tetrahydrofuran (THF) solvents were investigated for dispersion of CNT. Based on the optical observation, zeta potential and UV-Vis spectroscopy, all findings indicate that the CNT dispersed in NMP has better dispersion and higher stability. Analysis by extreme high-resolution field emission scanning electron microscope (XHR-FESEM) shows the CNT was homogeneously distributed and covered the entire surface of the CF.

Keywords

Carbon nanotubes; Electrospray deposition; N-methyl-2-pyrrolodone