

## Surface Energetics of Carbon Fibers in the Presence of Nickel Nanoparticles

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In this work, we studied surface energetics of a single carbon fiber by a two liquid sorption method, and the effects of nickel nanoparticles on surface energetics of carbon fibers were also investigated. Nickel nanoparticles were coated by a well-known electroplating method with plating time. Two liquids were prepared by three typical liquids, such as water, ethylene glycol, and diiodemethane. From the work, we found that surface free energies of the carbon fibers were dramatically increased after metal introduction, and it was also found that metal-plated carbon fibers showed a strong electron-acceptor nature with metal content.