

RESEARCH NOTES

Electrodeposition of copper on carbon nanotubes

Y. Zhang, H. Zhang, H. Zhang, H. Zhang, H. Zhang

Abstract A copper electrodeposition method was developed to coat carbon nanotubes with a layer of copper. Due to the hydrophobic nature, large surface curvature, small diameter and large aspect ratio, it is difficult to grow continuous electrodeposition plating layer on the surface of carbon nanotubes. In this paper, a series of methods (modification, sonication and activation) are used to add active sites before electrodeposition, and the adjustment of the traditional composition of copper electrodeposition plating bath and operating conditions can overcome electrodeposition plating. The samples before and after coating were analyzed using transmission electron microscopy and energy-dispersive X-ray spectroscopy. The results showed that the surface of carbon nanotubes was successfully coated with continuous layer of copper, which lays a good foundation for applying carbon nanotubes in composite.

Keywords Carbon nanotubes; Electrodeposition; Copper

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