Transportation of silver nanopaticles in nanochannels of carbon nanotubes with supercritical Water

麥富德

Jia-Yaw Chang;Fu-Der Mai;Bertrand Lo;Jia-Jiu Chang;Shin-Hwa Tzing;Anil Ghule;Yong-Chien Ling

摘要

Supercritical water (SCW) as a highly destructive environment has been utilized to open multiwall carbon nanotubes (MWNTs) and to break silver aggregates into nanoparticles (diameter 2-20 nm). Water was drawn into open-ended MWNTs by capillary suction, pulling Ag nanoparticles into the MWNTs. The Ag nanoparticles (solid), presumably transported in the nanochannels of MWNTs by the fluidity of SCW, stacked, and fused to form nanorods, suggesting SCW associated with MWNTs (hollow interior) might be exploited as a nanoreactor.