

High yield synthesis of carbon nanotubes on carbon nanoplatelets

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To date, high yield carbon nanotubes (CNTs) have been synthesized on the metal oxide supports (Al_2O_3 , MgO etc.) containing transition metal catalysts (Fe, Co, Ni etc.). However, before severe purification of the CNTs, metal oxide supports acted as impurities lowering both purity and characteristics of the CNTs. Thus, replacement of metal oxide supports into carbon materials has advantage of CNT's purity enhancement without a severe purification. Because carbon supports are also electrically/thermally conductive materials, detached carbon supports from the CNTs can be a conducting filler within a polymer matrix. Herein, high yield (~ 1000 %), high purity (~ 96 %) carbon nanotubes were prepared on the carbon nanoplatelet supports via thermal chemical vapor deposition (CVD) process.