SCANNING ELECTRON MICROSCOPY STUDIES OF CARBON NANOTUBES PREPARED BY SPRAY PYROLYSIS CHEMICAL VAPOR DEPOSITION METHOD

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ABSTRACT

SCANNING ELECTRON MICROSCOPY STUDIES OF CARBON NANOTUBES PREPARED BY SPRAY PYROLYSIS CHEMICAL VAPOR DEPOSITION METHOD

The carbon nanotubes (CNTs) were grown at 700°C by simple method of spray pyrolysis of Turpentine Oil mixed with catalyst of Ferrocene at different substrates which are silicon substrate and quartrz substrate. Turpentine oil as a precursor was used as a source of carbon and nitrogen as the carrier gas. The ferrocene act as an in situ Ferrocene catalyst precursor and forming the nanosize iron particles for formation of CNTs on Silicon and quartz substrates. Morphological differences between aligned CNTs grown on different substrates are studied and discussed by scanning electron microscope (SEM). From SEM, it showed CNTs is more align on silicon substrate than on quartz substrate. The length of CNTs on Silicon and quartz substrate was 300 and 100 μm, respectively. The catalyst of ferrocene that was used improves the quality, quantity and uniformity of CNTs.