

**Covalent functionalization of TiO<sub>2</sub> nanoparticles on multi wall carbon nano tubes****Paper ID :** 1037-UFGNSM13-FULL (R1)**Abstract:**

In this work, we investigated CNT–TiO<sub>2</sub> hybrids with different amount of TiO<sub>2</sub> nanoparticles via wet chemical method. The procedure includes of generation of functional groups such as oxygen containing groups and attachment of TiO<sub>2</sub> nanoparticles on the outer surface of MWCNTs. TEM image showed that the outer surface of MWCNTs modified with TiO<sub>2</sub> nanoparticles. XRD result revealed that the crystalline structure of TiO<sub>2</sub> on the surface MWCNTs was rutile. FTIR analysis confirmed the presence TiO<sub>2</sub> nanoparticles on the surface of decorated MWCNTs. Intensity of characteristic peak of TiO<sub>2</sub> showed augmentation with respect to amount of attached TiO<sub>2</sub> nanoparticles on the surface. The results of Raman spectra indicated that the defects in crystal structure of MWCNTs-TiO<sub>2</sub> was increased by increasing amount of TiO<sub>2</sub> nanoparticles

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