

Effect of different property raw material on mechanical properties of carbon nanotube reinforced aluminium nanocomposites by a mechanical alloying process

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In recent year, much research has been focused on the development of carbon nanotube (CNT) reinforced aluminum (Al) matrix composites, because Al matrix composites have wide prospects of application include automobile, aerospace and other industries. The study illustrates the fabrication of Al/CNT nanocomposites on different raw materials which including, un-milled without CNT, un-milled with CNT, milled Al with CNT. Interactions between aluminum particles and CNTs during mechanical alloying process using traditional ball mill (TBM) with an optimized condition have been investigated. The results were systematically analyzed using scanning electron microscopy (SEM), field emission scanning electron microscopy (FESEM). After compacting, Al/CNT nanocomposite sintered in a vacuum tube furnace at optimal sintering conditions, electroconductivity and hardness have been observed.