

A study on the fabrication of metal-based CNT nanocomposites for different raw material and various kinds of grinding media via ball milling processes with DEM simulation

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Nowadays, many researchers have explored of metal matrix composite, because it has the highest properties and it has found various application in many areas of manufactory and daily life. Furthermore, it has very important property as light weight, low cost and so on. The present research reports the successful fabrication of composite materials based on metal particles and CNTs using a various ball milling technique with an optimized condition. We investigated changes particle sizes and morphologies of the metal-based nanocomposites using scanning electron microscope (SEM) and field emission scanning electron microscopy (FESEM). After compacting, metal-based nanocomposite sintered in a vacuum tube furnace at optimum sintering conditions, and we rolled all the samples, finally checked hardness and electrical conductivity on the final products.

Keywords: Metal based nanocomposite, Ball mill, Hardness, Electrical conductivity