

Grinding behaviour on aluminium-CNT powders: traditional ball mill and planetary ball mill

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A grinding behaviour for aluminium and carbon nanotubes (CNTs) powder during traditional and planetary ball milling have been investigated from the viewpoint of particle behaviour with the aim at developing CNT-dispersed samples ground based on powder metallurgy routes. In this work, a comparison between the pure aluminium and CNT input aluminium grinding was carried out to determine grinding time effect on size reduction. We observed that the use of the curly small-diameter multi-walled carbon nanotubes (MWCNTs) attributed to the beneficial role of the MWCNTs as grinding aids. It is suggested that careful choices of the sizes of CNTs and Al powders would allow fine-grinding of composite particles with uniformly distributed CNT reinforcements thereby ensuring improved properties of the final composites produced by low-temperature compacting.