A study on the fabrication and the mechanical alloy properties of Cu/CNTs nano composites by dry grinding process using a planetary ball mill (2) – the effect of the change of crystal structure

보르 암가란, 최희규*, Shiori Sakuragi, 최준우, 이재현,
김성수[1], Bayanjargal Ochirkhuyag[2]
창원대학교; [1]HAJI Eng; [2]National University of Mongolia
(hkchoi99@changwon.ac.kr*)

The study of the fabrication and the mechanical alloy properties of Cu/CNTs nano composites for useful application of industrial field have recently gained scientific interest. Interactions between carbon nanotubes (CNTs) and copper powders during the mechanical alloying via planetary ball milling have been investigated. The powder metallurgy by a high speed planetary ball mill has been achieved commercially in many cases. A series of powder metallurgy by mechanical alloying experiments using a high speed planetary ball mill and copper and CNT powders as test samples were carried out to clarify the powder metallurgy mechanism in this study. The effect of the change of crystal structure with various experimental conditions such as rotation speed of the pot, grinding time and ball size were investigated. The results have been monitored by powder morphology from the SEM photography and crystal structure from XRD on a given grinding time. It was observed that Cu/CNTs composites were achieved with the change of crystal structure on this study by mechanical alloy process in