

## **Mechanical and Physical Properties of Aluminum Composite Reinforced with Carbon Nano Tube Dispersion via Ultrasonic and Ball Mill Attrition after Sever Plastic Deformation**

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**Abstract :** In this study, the carbon nanotube (CNT) reinforced Al matrix nanocomposites were fabricated by ECAP. Equal Channel Angular Pressing (ECAP) process is one of the most important methods for powder densification due to the presence of shear strain. This method samples with variety passes (one, two, four and eight passes) in C route were prepared at room temperature. A few study about metal matrix nanocomposite reinforced carbon nanotube done, the reaction intersection of interface and carbon nanotube cause to reduce the efficiency of nanocomposite. In this paper, we checked mechanical and physical properties of aluminum-CNT composite that manufactured by ECAP when the composite is deformed. The non-agglomerated CNTs were distributed homogeneously with 2% consolidation in the Aluminum matrix. The ECAP process was performed on the both monolithic and composite with distributed CNT samples for 8 passes.

**Keywords :** powder metallurgy, ball mill attrition, ultrasonic, consolidation

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