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## **Evaluation of Mechanical Properties and Microstructure of a CNT Coated Ceramics Reinforced in an Aluminium Alloy**

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**Abstract** : At the present time the steel and other metals are replaced by composite materials in the field of automobiles due to less weight and less corrosiveness. In this experiment aluminium alloy is used as the matrix element. Ceramics are coated with carbon nanotubes (CNT). The coated ceramics are reinforced in the aluminium alloy. The ceramics are coated for two reasons, abrasiveness of ceramics and due to the poor bonding between the matrix and ceramics. To avoid the abrasiveness of the ceramics it is coated with CNT. Because of coating there is a good interfacial bonding between the matrix and reinforcement. The ceramics are coated by the process called Sonication. The coated ceramics are reinforced in the aluminium alloy by stir casting process. The prepared specimen is subjected to mechanical testing. The mechanical properties of coated ceramics in the aluminium alloy and uncoated ceramics in aluminium alloy. The microstructure of the prepared specimen is analyzed. There is an equal distribution of ceramics on the base alloy. The porosity of coated ceramics in the alloy is avoided and it is verified by Scanning Electron Microscope (SEM).

**Keywords :** Carbon Nano Tubes; Ceramics; Microstructure; Stir casting; Scanning Electron Microscope.

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