

Electrical and mechanical properties of composite materials based on Carbon Nanotubes for aerospace applications

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ABSTRACT

We consider electrical and mechanical properties of composite materials based on Carbon Nanotubes for aerospace applications. Carbon Nanotubes gained great importance in the past decade, owing to their wide ranging potential applications in many areas, e.g. mechanical, structural, sensor, biomedical, electronics. They can be used as a main constituent of composite materials very suitable for aerospace applications, also due to their light weight, mechanical strength and flexibility. We present results obtained recently in our laboratories concerning the electrical and mechanical properties of Carbon Nanotubes we synthesized by arc discharge and other techniques, embedded in a polymeric matrix. Such results may help in determining the ideal composition and ratio of the composite material for use in shielding of electrical circuits of space vehicles from radiations of the outer space.

Keywords: Carbon Nanotubes, Composite materials, Mechanical properties, Electrical properties, Aerospace structures