



**Wolfson Department of Chemical Engineering Seminar
Lecture Hall 6, Wolfson Department of Chemical Engineering,
Wednesday January 17 at 1:30pm**

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Structure and characteristics of epoxy/CNT Mats and Fibers

The presented work deals with the investigation of a material based on either a fiber like material comprised entirely of Carbon Nano Tubes (CNT) or a closely packed network of CNT structured as a nonwoven mat and their interaction with an epoxy matrix. The CNT Fiber (CNTF) and CNT Mat (CNTM) are produced via a unique process based on the work of A. H. Windle et al. (science 2004). CNTF and CNTM are novel materials, both comprised entirely of CNT, with relatively little information on their mechanical properties and the relations of their performance to structure. Their production process and mechanical properties will be discussed briefly.

Composite materials in general usually gain their advantage over bulk materials in their ability to transfer stress between the 'weak' matrix and the 'strong' filler. There are a few parameters which affect the quality of stress transfer, among them the filler's contact area with the matrix is considered to be of great importance.

The introduction of the epoxy matrix into voids within the CNTF/CNTM material will be explored.

An emphasis will be placed on mechanical manipulation to the composite material which occurs during mechanical manipulation; tensile test and ultramicrotomy process for thin film preparation and TEM imaging of these samples.

Refreshments will be served at 1:15pm