



**Wolfson Department of Chemical Engineering Seminar  
Lecture Hall 6, Wolfson Department of Chemical Engineering,  
Wednesday October 30, 2019 at 14:00**

**Towards high-performance composites based on  
carbon/carbides nanomaterials**

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Single-walled carbon nanotubes are promising material for high-performance structural applications because of its outstanding mechanical properties, electrical and thermal conductivities. However, the ability to disperse nanotubes into polymer is a major problem for controlling the properties. Nanotubes that are in clumps or agglomerated with other carbonaceous materials create defects and initiate failure. In addition, they limit the efficiency with which nanotubes carry load. In this talk, I will review two different kinds of nanostructures i.e. carbon nanotubes grown directly on the surface of carbon fiber by CVD and transition metal carbides nanoparticles by precursor derived wet chemical method. In the first part, synthesis of carbon nanotube on the surface of carbon fiber by chemical vapor deposition, preparation of carbon nanotube coated carbon fiber composites and its characterization will be reviewed. In the second part, I will review my investigations on synthesis of transition metal carbides nanoparticles by wet chemical precursor derived method having high yield and excellent infiltration ability in order to prepare metal carbides-carbon fiber composites. Thermal and morphological properties evaluation of this composite will be briefly reviewed.

**Refreshments will be served at 13:15**