

TUFTS UNIVERSITY
Physics and Astronomy Colloquium

Mohammad F. Islam
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**“Soft Materials Approaches to Carbon
Nanotubes: Gels, Composites and Intra-
Cellular Reorganization”**

“Carbon nanotubes combine low density with exceptional mechanical, electrical and optical properties. Unfortunately, these nanoscale properties have not been retained in bulk structures. I will describe surface modification assisted self-assembly of single wall carbon nanotube into macroscopic nanotube networks - hydrogels and aerogels. The nanotube networks are ultralight-weight, electrically conducting and thermally insulating. The shapes and sizes of these nanotube networks are readily tunable, and can be used as scaffold to enhance elastic modulus of polymers by 36,000%. Also, the nanotube networks can be transformed into superelastic and fatigue resistant materials by coating them with a few layers of graphene. Further, the surface coating allows differential delivery of nanotubes inside cells, and hence intra-cellular organization.”

3:00 pm
Friday, October 19, 2012
Robinson 253
Medford Campus

Refreshments served at 2:30 in The Knipp Library, Room 251

