

SHORT COURSE (N. 4) / 21 June, 2008

'Nanocomposites of Polymers: Processing, Evaluation, Modeling and Applications'

ACE-X 2009 / Rome, Italy / from 22-23 June, 2009



3rd International Conference on
Advanced Computational Engineering and Experimenting

SHORT COURSE (N.4): 'Nanocomposites of Polymers: Processing, Evaluation, Modeling and Applications'

Professor Erol Sancaktar h (Lecturer)

Announcement:

Date: 21 June, 2009 / Time: 17:45 - 20:45

Scope:

Nanoscale reinforcement of polymers by nanoparticles, nanofibers and nanotubes have been shown to improve many important engineering properties, such as mechanical properties, impermeability, electrical/heat conduction, flammability, adhesion etc. For example, electrospun fibers in the non-woven mat form make them distinguishable from traditional fibers and/or bulk materials in terms of fiber aspect ratio, interconnecting network, and specific surface area. Combining with those unique characteristics of electrospun fibers, properties of conductive materials such as electrical, mechanical, and thermal properties may be effectively enhanced which affect their uses in the specific fields. This short course will cover the following aspects of processing, evaluation, modeling and applications of polymer based nanocomposites:

- Preparation of various kinds of conducting fiber materials using the electrospinning method, and characterization by SEM, Raman spectroscopy, FT-IR, TGA, WAXD, DMA, etc. The enhancement of electrical properties of conducting nanofibers by reducing fiber diameters and bead-like fibers, metal coating, and in-situ conductive filler-fiber preparation.
- Epoxy-clay nanocomposites: Characterization by wide-angle x-ray diffraction (WAXD) to detect inter-laminar distances of clay layers and to determine if the mixing procedures had indeed disperse and exfoliate the clay layers sufficiently; Mechanical properties; Moisture diffusion through the epoxy-clay systems.
- The use of Excimer Laser in evaluation of nanoparticle exfoliation in polymers;
- The effect of nanoreinforcement on polymer adhesion.
- Multiscale modeling of nanocomposites.
- Applications of polymer-based nanocomposites, including sensor applications.

A CD with slides and certificate of attendance will be given to all participants!

Registration for this course can be done under: <http://www.ace-x2009.com/register.html>

More information is available through:

The web page of the conference www.ace-x2009.com

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IMPORTANT DATES:

- ✓ Abstract Submission Deadline 27 March
- ✓ Notification of Acceptance 03 April
- ✓ Early Bird Registration 17 April
- ✓ Accommodation Reservation 20 April
- ✓ **Short course 21 June**
- ✓ ACE-X 2009 22-23 Jun 2009