

UNH Materials Science Seminar

11:10-12:00, Thursday, February 3, 2009

DeMeritt Hall 240

University of New Hampshire

Patterned Electrospun Nanofibers for Tissue Scaffolds

Prof. Julie Chen

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Electrospinning represents a scalable method for the production of continuous micro- and nanofibers from a broad range of polymer solutions. There has been a significant growth of research activity utilizing electrospinning over the past decade. Recently some studies have focused on obtaining organized electrospun structures designed for specific tissue engineering applications. It has been demonstrated that such structures provide sufficient mechanical properties and support of cell growth for tissue engineering. Despite this considerable growth in research activity, many fundamental questions remain about both (1) the desired nanofiber scaffold architecture for encouraging growth of specific tissue structures, and (2) the process-structure-property relationships for these fiber assemblies. In this presentation, results from process control studies and mechanical characterization of the fibers and the fiber mats will be discussed.

Dr. Chen is one of the three co-Directors of the UML Nanomanufacturing Center and is the co-Director of the Advanced Composite Materials and Textile Research Laboratory. She was the Program Director of the Materials Processing and Manufacturing and the Nanomanufacturing Programs in the Division of Design, Manufacture, and Industrial Innovation at the National Science Foundation from 2002-2004. Dr. Chen has been on the faculty at Boston University, a NASA-Langley Summer Faculty Fellow, a visiting researcher at the University of Orleans and Ecole Nationale Supérieure d'Arts & Métiers (ENSAM-Paris), and an invited participant in the National Academy of Engineering, Frontiers of Engineering Program (US, 2001, US-Germany, 2005, and Indo-US, 2006). Dr. Chen has over 20 years of experience in the mechanical behavior and deformation of fiber structures, fiber assemblies, and composite materials, with an emphasis on composites processing and nanomanufacturing.

Host: Professor Brad Kinsey x1811