Department of Chemical and Materials Engineering

COLLEGE OF ENGINEERING

SUMMER RESEARCH OPPORTUNITIES FOR UNDERGRADUATE WOMEN

APLICATION DEADLINE: March 1, 2007

The Department of Chemical and Materials engineering is pleased to offer the following research project for the summer of 2007. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and if possible, develop a timetable for the twelve-week research period.

SPINNING CARBON NANOTUBE THREAD

Professor Mark J. Schulz
University Of Cincinnati
Smart Materials Nanotechnology Lab
598 Rhodes Hall
Cincinnati, OH 45221-0072
Phone: (513) 556-4132
Fax: (513) 556-3390
Email: Mark.J.Schulz@uc.edu
http://www.min.uc.edu/~mschulz/smartlab/smartlab.html

Professor Vesselin Shanov
University of Cincinnati
Department of Chemical and Materials Engineering
Cincinnati, OH 45221-0012
Phone: (513) 556-2461
Fax: (513) 556-3773
E-mail: vesselin.shanov@UC.Edu

Project Description

This project is to build a fixture and try to spin thread using carbon nanotubes. The nanotubes are synthesized at the Univ. of Cincinnati and are up to 1 cm long. Using the long nanotubes, it may be possible to spin thread that is strong, lightweight, and electrically conductive. The project would be performed under the supervision of Mark Schulz and Vesselin Shanov in the NANOWORLD lab, which is a nanotechnology laboratory for research and teaching located in Rhodes 414. The thread would have structural applications in advanced composite materials such as aircraft, spacecraft, sporting equipment, and the ribbon for a possible future space elevator. The thread might also be used to replace copper wire to reduce the weight and improve the performance of electric motors and aircraft.