CHEMICAL, BIOLOGICAL & MATERIALS ENGINEERING

100 E. Boyd, Sarkeys Energy Center, T-335
405-325-5811
The University of Oklahoma
Norman, Oklahoma

2011 – 2012 Seminar Series

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DR. LEONARD F. PEASE III

DEPARTMENT OF CHEMICAL ENGINEERING
DEPARTMENT OF PHARMACEUTICS AND PHARMACEUTICAL CHEMISTRY
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SALT LAKE CITY, UTAH

Will present a seminar on

"SYNTHESIS AND CHARACTERIZATION OF COMPLEX NANOSTRUCTURED MATERIALS"

Here we describe the use of an emerging tool, electrospray differential mobility analysis (ES-DMA), to fabricate, separate, and characterize nanostructured materials. Complex nanomaterials are at the heart of global biotechnology and nanotechnology initiatives, enabling applications ranging from state-of-the-art biosensors to cancer treatment and gene therapy. Our laboratory has been advancing and refining the use of electrospray-differential mobility analysis (ES-DMA) systems to synthesize novel nanoparticle structures, characterize their multimodal size distributions and aggregation states, and then purifying specific populations. In this technique, particles suspended in aqueous solution are electrosprayed, separated by their charge-to-size ratio in a differential mobility analyzer, and then enumerated with a condensation particle counter or electrostatically deposited onto substrates or into Petri dishes for further analysis. This talk highlights our efforts to determine the length distribution of single walled carbon nanotubes, quantify soft polymeric coatings decorating nanoparticles, manufacture highly uniform recombinant polymer nanoparticles, and generate complex nanoclusters. Our results suggest the potential to use ES-DMA as a high precision nanomanufacturing tool.

THURSDAY, FEBRUARY 2, 2012

COOKIES AND COFFEE -- 2:45 P.M.

SEMINAR -- 3:00 P.M.

SARKEYS ENERGY CENTER, ROOM M-204

THIS IS A REQUIRED SEMINAR FOR CHE 5971

Accommodations on the basis of disability are available by contacting the office before the event.