Institute for Materials Science

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IMS Rapid Response 2016 * Phase II Recipient Seminar

Professor Andrew P. Shreve
Chemical and Biological Engineering
Center for Biomedical Engineering
University of New Mexico

Spectroscopic Studies of Soft Materials and Biological Systems

Tuesday, August 2, 2016
11:00 a.m. - 12:00 p.m.
Wijiji Conference Rom (TA-03 - Bldg 1420 - Rm 2101)

Abstract: Several studies of soft material and biological systems that involve the use of spectroscopy, optical instrumentation, materials development, and modeling will be presented. Examples include the use of energy transfer in molecular chromophores for energy harvesting applications, the use of DNA as a tool for generating controlled assemblies of nanoparticles with tunable optical responses, development of biosensing strategies for membrane-based components, development of optical instrumentation for high-speed parallel flow cytometry, and the use of optical methods for the study of chemical microenvironments in complex biological systems. Emphasis will be placed on how spectroscopic measurements allow interrogation of local environments, and how the integration of chromophores with soft materials or biological systems leads to tunable optical responses, which in turn enable sensing and other applications.

Bio: Dr. Shreve is a Professor in the Department of Chemical and Biological Engineering and Director of the Center for Biomedical Engineering (CBME) at the University of New Mexico (UNM). Throughout his career, he has applied optical spectroscopy and imaging techniques to study problems at the interface of Chemistry, Biology, Engineering and Materials Science. He received a Ph.D. in Chemistry from Cornell University, was an NIH postdoctoral fellow at the University of California, Berkeley, and then moved to Los Alamos National Laboratory, initially as a J. Robert Oppenheimer Fellow. During nearly two decades at LANL, he had appointments in Chemistry, Biosciences, and Materials Physics and Applications Divisions, and also held leadership positions in the Center for Integrated Nanotechnologies. He moved to UNM in 2012, where in addition to his role as Director of CBME, he is developing research programs that involve the use of spectroscopy and optical sensing methods for the study of soft material and biological systems.

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Hosted by Alexander Balatsky * Director of the Institute for Materials Science

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