ChE SEMINAR

Protein Analogous Micelles: Versatile, Modular Nanoparticles

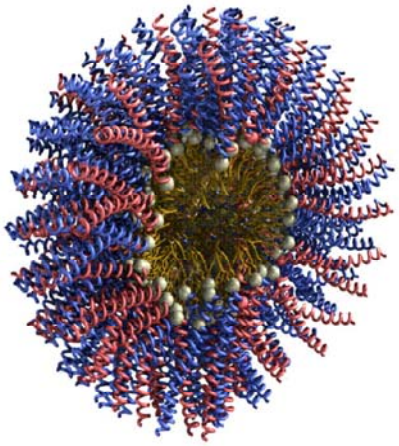
Prof. Matthew Tirrell
Pritzker Director of the Institute for Molecular Engineering
University of Chicago, USA
&
Senior Scientist, Argonne National Laboratory
Chicago, USA

Seminar Room
Dept. of Chemical Engineering
Friday February 22, 2013; 04:30 PM

note time change !!

ABSTRACT

Peptides are functional modules of protein macromolecules that can be displayed apart from the whole protein to create biofunctional surfaces and interfaces, or can be re-assembled in new ways to create synthetic mimics of protein structures. Each of these routes are being employed to gain new insight into protein folding and to develop new, functional, biomolecular materials. Examples of work from our laboratory in this area using peptide-lipid conjugate molecules (peptide amphiphiles) will be discussed relating to multi-functional surfaces, DNA-binding peptide assemblies, and protein analogous micelles for cancer and cardiovascular therapeutics.



ABOUT THE SPEAKER

Matthew Tirrell is the founding Pritzker Director of the Institute for Molecular Engineering at the University of Chicago, and a Senior Scientist at Argonne National Laboratory. He specializes in polymer surface properties, adsorption, adhesion, surface treatment, friction, lubrication, biocompatibility and self-assembly.

In 2009, Prof. Tirrell became the Arnold and Barbara Silverman Professor and Chair of Bioengineering at the University of California, Berkeley, with additional appointments in chemical engineering and materials science and engineering, and as a Faculty Scientist at the Lawrence Berkeley National Laboratory. He served in these capacities until taking his current appointment in 2011.

From 1977 to 1999, Tirrell was a member of the Chemical Engineering and Materials Science faculty at the University of Minnesota, where he served as department head from 1995 to 1999. From 1999 to 2009, Tirrell was Dean of Engineering and Professor of Chemical Engineering and Materials at the University of California, Santa Barbara.

Prof. Tirrell has co-authored approximately 300 papers and one book during his career. He hassupervised approximately 80 Ph.D. students and 40 postdocs. Tirrell's honors include membership in the National Academy of Engineering, the American Academy of Arts & Sciences and the Indian National Academy of Engineering. He also has been a Sloan and a Guggenheim Fellow, a Camille and Henry Dreyfus Teacher-Scholar, and a fellow of the American Institute of Medical and Biological Engineers, of the American Association for the Advancement of Science and of the American Physical Society.

From the American Institute of Chemical Engineers Prof. Tirrell has received the Allan P. Colburn Award, the Charles Stine Award, the William H. Walker Award, and the Professional Progress Awards. He was the Institute Lecturer in 2001. Additionally, Tirrell has served as a member of the Boards of Directors of the Santa Barbara Cottage Hospital System and of the Camille and Henry Dreyfus Foundation.

Prof. Matthew Tirrell received a B.S. in Chemical Engineering at Northwestern University and a Ph.D. in 1977 in Polymer Science from the University of Massachusetts.