

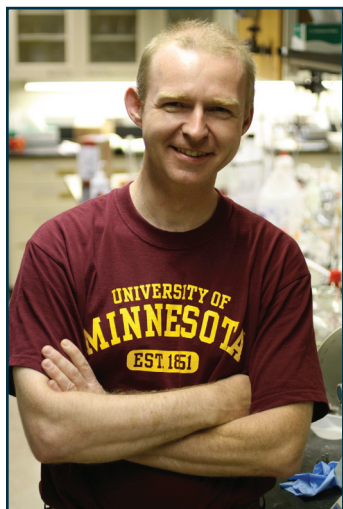


UNIVERSITY OF MINNESOTA
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Department of Chemistry

Seminar

9:45 a.m. Tuesday, September 11, 2012 • 331 Smith Hall



Associate Professor

Philippe Buhlmann

Department of Chemistry
University of Minnesota

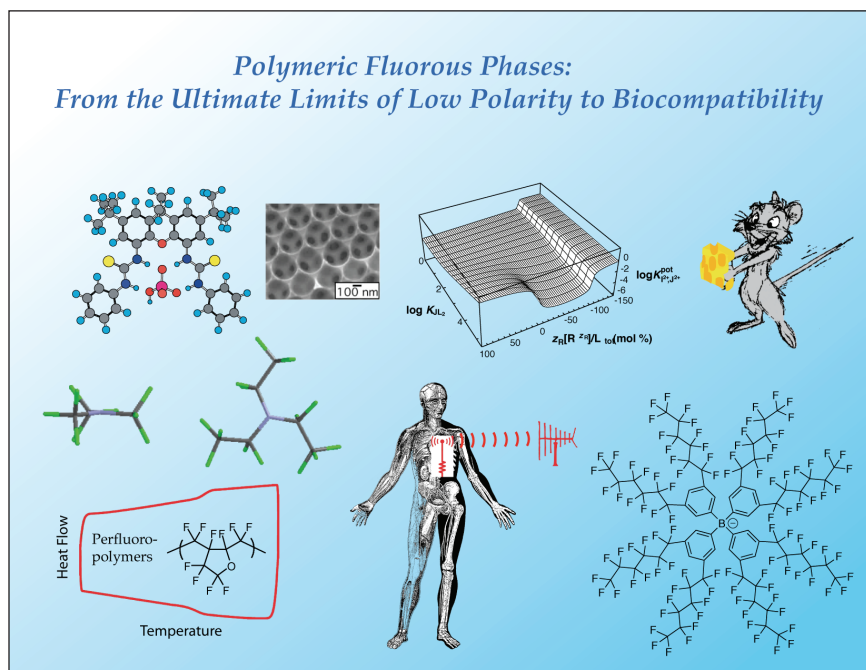
Polymeric Fluorous Phases: From the Ultimate Limits of Low Polarity to Biocompatibility

Research: Our group is interested in the use of molecular recognition for chemical sensing. On one hand, we develop chemical sensors for clinical and environmental applications. Our research focuses on new receptors that bind analytes of interest with high selectivity, novel strategies to obtain very low detection limits, and perfluoropolymers that permit long-term monitoring and eventually the implantation into the human body. On the other hand, we chemically modify metal and carbon nanotube tips, and use them in scanning tunneling microscopy for chemically selective imaging with molecular resolution.

Website: <http://www.chem.umn.edu/directory/faculty.lasso?serial=1216>

Abstract

Chemical sensors are highly sensitive and selective analytical tools that offer a variety of advantages, such as simplicity of measurement, high analysis throughput, rapid detection, and low cost of analysis. While such sensors are used in clinical laboratories for billions of measurements every year, applications in biomedical sciences, the food industry, and environmental monitoring are hindered by biofouling and the frequent need for recalibration. This talk will address the use of fluorous phases for electrochemical sensing. Fluorous phases are the least polar of all condensed liquid phases and offer significant advantages over conventional sensing membrane materials because they are extremely poor solvents for hydrophobic lipids and oils ubiquitous in biological systems. Moreover, the fluorous nature of the sensing membranes provides for extraordinary selectivities and chemical robustness.



Refreshments will be served prior to the seminar.