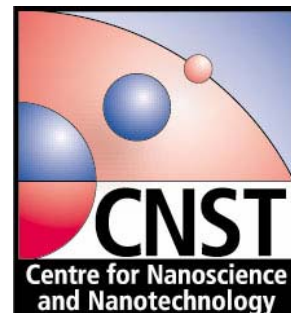




# CENTRE FOR NANOSCIENCE AND NANOTECHNOLOGY SEMINAR SERIES



**TOPIC:**                    **Entrapment of Proteins in Silica Materials for the Development of Bioanalysis Tools**

**SPEAKER:**            Associate Professor John D. Brennan  
Department of Chemistry, McMaster University, Canada

**TIME:**                    6:30pm, Monday 13 February 2006 – FREE ENTRY  
(Complimentary refreshments from 6:00pm)

**VENUE:**                Ground Floor Lecture Theatre,  
Chemical and Biomolecular Engineering Building 1,  
The University of Melbourne

## **ABSTRACT:**

Over the past decade, research in our group has focused on the entrapment of proteins into sol-gel derived materials. During this time, both fundamental aspects of protein behaviour in silica, and the desire to use of entrapped proteins for biosensing and small molecule screening, have led us to develop a new range of “protein friendly” silica materials for various bioanalytical applications. In this presentation, two recent advances in protein-compatible silica materials developed in our group will be described: 1) the preparation of new sugar-modified silica materials that can maintain the activity of entrapped enzymes over periods of months; 2) the development of macroporous silica for the entrapment of enzymes, antibodies and membrane-associated receptors. The use of these materials for the development of multi-component protein microarrays and monolithic bioaffinity columns will be described, with examples showing the application of these devices for nanovolume high-throughput screening of small molecules and affinity-based screening of compound mixtures against immobilized protein targets.

RSVP to Rob Johnson by 9<sup>th</sup> February 2006  
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