University of Victoria
Centre for Advanced Materials & Related Technology

CAMTEC SEMINAR

TITLE: ***Characterization of Single Proteins in Nanopores***

SPEAKER: **Prof. Dr. Michael Mayer**
Adolphe Merkle Institute
University of Fribourg

DATE: Tuesday, October 24, 2017

TIME: 11:00 am

LOCATION: ELL 228

Abstract:

This talk describes the use of electrolyte-filled synthetic nanopores with self-assembled lipid membrane coatings to determine, simultaneously and in real time, the shape, volume, charge, rotational diffusion coefficient, and dipole moment of individual proteins and protein complexes in solution. The talk introduces the main concepts for a quantitative understanding and analysis of modulations in ionic current that arise from rotational dynamics of single proteins as they move through the electric field inside a nanopore. The resulting multi-parametric information raises the possibility to characterize, identify, and count individual proteins and protein complexes in a mixture with implications for protein folding studies, biomarker detection, routine protein analysis, and characterization of protein amyloids that are involved in neurodegenerative diseases such as Alzheimer's disease.

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