

Medicine, Nursing and Health Sciences

Biomedicine Discovery Seminar

Monash Biomedicine Discovery Institute



Mass spectrometry at the bio-nano interface: nanoparticle coronaform characterization and mass spectrometry imaging



Tuesday 7th February, 2017



11.00 – 12.00



Core Room 204
19 Innovation Walk
Clayton campus



Presenter

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Abstract

Mass spectrometry (MS) has a key role to play in the characterization of the interface between nanostructured surfaces and biological systems. Herein, results will be presented for two applications of MS in this bio-nano space. The first is an MS-centric pipeline for characterization of the protein coat, or "corona", which spontaneously forms on nanoparticles in biological fluids. This combinatorial approach consists of matrix-assisted laser desorption/ionization (MALDI), ion-mobility MS and liquid chromatography coupled to MS (LC-MS) to provide a comprehensive overview of corona composition. The second application presented is the combination of porous nanostructured substrates alongside classical MALDI approaches for mass spectrometry imaging. This will be discussed in the context of applications to fingerprints, murine metabolites and human prostate tumours

About the presenter

Johan Gustafsson is a research associate at the University of South Australia node of the ARC Centre of Excellence in Convergent Bio-Nano Science and Technology (CBNS). He studied at the University of Adelaide, obtaining a Bsc (Hons) in 2006/7 and a PhD in Biochemistry, with a focus on proteomics and mass spectrometry imaging (MSI), in 2012. His current research interests include the novel application of matrix-assisted and surface-assisted laser desorption/ionisation for tissue section and biological fluid analysis as well as characterising the bio-molecules that associate with nanoparticle system



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