



**65th IUVSTA Workshop**  
**“Measuring molecular adsorption at the solid liquid interface”**

**14<sup>th</sup> to 18<sup>th</sup> May 2012 at Peckforton Castle, Cheshire, UK**

**Workshop Programme Schedule**

**Monday 14<sup>th</sup> May 2012**

Time: **1:30 pm to 3:20 pm**

Session Title (MO1): **Fundamentals of Molecular Adsorption**

Invited Talk: Prof. Michael Grunze, Heidelberg University, Germany

“Probing the liquid/solid (bio) interface with neutrons and non-linear optical techniques”

Contributed talk (Each 15min): Dr. Patrizio Ansalone, Istituto Nazionale di Ricerca Metrologica, Italy

(Followed by Discussion) “pH Dependent Conformational Distribution of a Weakly Charged Polyelectrolyte Chain onto Charged Spherical Surface”.

Dr. Dmitri Petrovykh, International Iberian Nanotechnology Laboratory, Portugal

“Quantitative Evaluation of Peptide Adsorption on Gold Surfaces”.

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Time: **3:40 pm to 5:30 pm**

Session Title (MO2): **Immobilisation Methods**

Invited Talk: Professor Sally McArthur, Swinburne University of Technology, Australia

“Surface Immobilisation and Characterisation of Proteins in Microfluidic Devices”.

Contributed Talk (Each 15min): Dr. Wilfried Weigel, SCIENION AG, Berlin, Germany

(Followed by Discussion) “The specifics of array-based biofunctionalization”.

Mr. Baptiste Lamarre, National Physical Laboratory, UK

“Directed bio-molecular immobilisation on surfaces for differential diagnostics”.

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**Tuesday 15<sup>th</sup> May 2012**

Time: **8:30 am to 10:20 am**

Session Title (TU1): **Labelled Molecules**

Invited Talk: Professor Buddy D. Ratner, University of Washington, USA

“Relevance and the Art of Protein Adsorption Measurement”.

Contributed Talk (Each 15min): Dr. Elzbieta Gurdak, National Physical Laboratory, UK

(Followed by Discussion) “Conjugation of fluorescent dyes changes the adsorption behaviour of proteins”.

**Tuesday 15<sup>th</sup> May 2012 (Continued)**

Time: **10:40 am to 12:30 pm**

Session Title (TU2): **Molecular Orientation and Structure**

Invited Talk: Professor David G. Castner, University of Washington, USA

“Strategies for Structural Analysis of Surface Bound Peptides and Proteins”.

Contributed talk (Each 15min): Dr. Giacomo Ceccone, Institute for Health and Consumer Protection, Italy

(Followed by Discussion) “Measuring Protein Structural and Stability Changes upon Protein-Nanoparticle Interactions”.

Mr. Kwasi Kwakwa, National Physical Laboratory, United Kingdom

“Measuring the 3-D orientation of fluorescent molecules embedded in synthetic lipid bilayers”.

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Time: **1:30 pm to 3:20 pm**

Session Title (TU3): **Emerging Methods I**

Invited Talk: Dr. Heike Arnolds, University of Liverpool, UK

“Advances in nonlinear optical spectroscopy of molecules at interfaces: Can anyone do it?”.

Contributed talk (Each 15min): Dr. Matthias Müller, Physikalisch-Technische Bundesanstalt, Germany

(Followed by Discussion) “Investigation of the Adsorption of Self-assembled Monolayers on Germanium Surfaces by Near Edge X-ray Fine Structure Spectrometry”.

Ms. Cara Barnes, University of Utah, USA

“Enhanced Two Photon Processes for Molecule Localization on Plasmonic Nanocrescents”.

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Time: **3:40 pm to 4:30 pm**

Session Title (TU4): **Summary Poster Session to capture discussions.**

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Time: **4:30 pm to 6:30 pm**

Session Title (TU5): **EMRP Kick-Off Meeting**

## Wednesday 16<sup>th</sup> May 2012

Time: **8:30 am to 10:45 am**

Session Title (WE1): **Functional Surfaces**

Invited Talk: Professor Janos Vörös, ETH Zurich, Switzerland

“Ions, molecules, and cells at electrodes”.

Contributed talk (Each 15min): Professor Morgan Alexander, University of Nottingham, UK

(Followed by Discussion) “The Role of Albumin and Fibronectin in the Adhesion of Fibroblasts to Plasma Polymer Surfaces”.

Mr. Oleksii Ivashenko, University of Groningen, The Netherlands

“A spectroelectrochemical study of the redox and photochemical functionality of the spiropyran-merocyanine molecular switch in solution and in self-assembled monolayers”.

Dr. Abbasi Gandhi, Materials and Surface Science Institute, University of Limerick, Ireland

“Selective protein absorption on electrically modified hydroxyapatite: probing with a kelvin force probe and confocal microscope”.

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Time: **11:15 am to 12:30 pm**

Session Title (WE2): **Contributed Poster Session**

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Time: **1:30 pm to 4:30 pm**

**Excursion** to Beeston Castle / Chester City Tour followed by Falconry at the Peckforton Castle.

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Time: **6:30 pm to 7:30 pm**

**Pre-dinner drinks.**

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Time: **7:30 pm onwards**

**Banquet Dinner** at the Great Hall.

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## Thursday 17<sup>th</sup> May 2012

Time: **8:30 am to 10:20 am**

Session Title (TH1): **Emerging Methods II**

Invited Talk: Professor Fredrik Höök, Chalmers University of Technology, Sweden

“Single molecule detection and equilibrium fluctuation analysis using fluorescent lipid vesicles as signal enhancement elements”.

Contributed talk (Each 15min): Dr. Peter Sjövall, SP Technical Research Institute of Sweden, Sweden

(Followed by Discussion) “Multiplexed biomolecule detection using liposome binding and mass spectrometry imaging”.

Dr. Michael Krumrey, PTB, Germany

“Size Determination of Nanoparticles with Synchrotron Radiation-based SAXS”.

**Thursday 17<sup>th</sup> May 2012 (Continued)**

Time: **10:40 am to 12:30 pm**  
Session Title (TH2): **Industrial applications and needs**  
Invited Talk: Dr. Matthew Wagner, The Procter & Gamble Company, USA  
“Industrial Needs and Practical Considerations for the Measurement of Adsorption at Interfaces”.  
Contributed talk (Each 15min): Dr. James Noble, National Physical Laboratory, UK  
(Followed by Discussion) “Characterization of Biomolecule coated nanoparticles for Diagnostic Tests”.  
Dr. Marie-Laure Abel, University of Surrey, UK  
“The Utility of Adsorptions Isotherms in Adhesion Science”.

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Time: **1:30 pm to 3:20 pm**  
Session Title (TH3): **Optical Methods I**  
Invited Talk: Professor Jennifer Shumaker-Parry, University of Utah, USA  
“Plasmonic Architectures for Challenges Related to Adsorption Measurements of Complex Samples and Small Molecules”.  
Contributed talk (Each 15min): Professor Laura M. Lechuga, Research Center on Nanoscience and Nanotechnology, Spain  
(Followed by Discussion) “Surface tailoring of highly specific optical biosensors”.  
Dr. Björn Agnarsson, Chalmers University of Technology, Sweden  
“Evanescent-wave excitation using a planar waveguide”.

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Time: **3:40 pm to 5:30 pm**  
Session Title (TH4): **Optical Methods II**  
Invited Talk: Professor Mathias Schubert, University of Nebraska-Lincoln, USA  
“New chemical, biochemical and biological sensing and separation principles based on highly ordered three-dimensional nanohybrid materials thin films”.  
Contributed talk (Each 15min): Dr. Peter Schierack, Lausitz University of Applied Sciences, Senftenberg, Germany  
(Followed by Discussion) “A Highly Versatile Microscope Imaging Technology Platform for the Multiplex Detection of Biomolecules”.  
Professor André Peremans, Facultés Universitaires Notre-Dame de la Paix, Namur, Belgium  
“Far-field optical vibrational micro-spectroscopy with sub-diffraction resolution”.

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Time: **5:45 pm to 6:30 pm**  
Session Title (TH5): **Summary Poster Session to capture discussions.**

**Friday 18<sup>th</sup> May 2012**

Time: **8:30 am to 10:20 am**

Session Title (**FR1**): **Quantitative Analysis**

Contributed talk (Each 15min): Dr. Alex Shard, National Physical Laboratory, UK

(Followed by Discussion) “XPS analysis of adsorbed proteins”.

Dr. Anouk Galtayries, Laboratoire de Physico-Chimie des Surfaces, ChimieParisTech, France

“Combining quantitative XPS and QCM techniques: elaboration of surface mechanisms in corrosion and protein adsorption”.

Dr. Paul Dietrich, Federal Institute for Materials Research and Testing, Germany

“How successful is surface chemical analysis in the characterization of (model) diagnostic devices exploiting probe-target interaction?”.

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Time: **10:40 am to 12:30 pm**

Session Title (**FR2**): **Summary and Panel Discussion**

Chair: Dr. Alex Shard, National Physical Laboratory, UK

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