DS 34: Invited Weightman

Time: Thursday 16:15–17:00 Location: H2

Invited Talk DS 34.1 Thu 16:15 H2

Probing the structure and dynamics of biomolecules adsorbed on surfaces. — •Peter Weightman — Physics Department, University of Liverpool, Oxford Street, Liverpool, L69 3BX UK

This talk will begin with a review of the contribution that Reflection Anisotropy Spectroscopy (RAS) [1] can make to the study of molecules adsorbed on surfaces. The technique can be used to determine the three dimensional orientation of a molecule adsorbed at a metal-liquid interface [2], to monitor conformational change in proteins and interactions between adsorbed molecules in real time [3,4] and to probe mechanisms of DNA hybridisation [5].

An account will also be given of the potential of research with free electron lasers and terahertz techniques to provide insight into mechanisms of biological organisation important in photosynthesis.

[1] P. Weightman, D.S. Martin, R.J. Cole and T. Farrell, Rep. Prog. Phys. 68 1251 (2005) [2] P. Weightman, G.J. Dolan, C.I. Smith, M.C. Cuquerella, N.J. Almond, T. Farrell, D.G. Fernig, C. Edwards and D.S. Martin, Phys. Rev. Lett. 96 86102 (2006) [3] H.L. Messiha, C.I. Smith, N.S. Scrutton and P. Weightman, Euro. Phys. Lett. 83 18004 -1 (2008) [4] R.LeParc, C.I. Smith, M.C. Cuquerella, R.L. Williams, D.G. Fernig, C. Edwards, D.S. Martin and P. Weightman, Langmuir 22 3413 (2006) [5] C.I. Smith, A. Bowfield, M.C. Cuquerella, C.P. Mansley, T. Farrell, P. Harrison, D.S. Martin, D.G. Fernig, C. Edwards, J.E. Butler, R.J. Hammers, B. Sun, X. Wang and P. Weightman, Euro. Phys. Lett. 85 18006 (2009)