

Royal Microscopical Society



# UKSPM 2005

**The UK's Annual Scanning Probe Microscopy Meeting**

Monday 21<sup>st</sup> March and Tuesday 22<sup>nd</sup> March 2005

At the Cable and Wireless Training and Conference Centre, Coventry

The organisers thank the following organisations for supporting the meeting and for attending the associated trade exhibition:



WINDSOR SCIENTIFIC LIMITED



Local scientific organisers: Gavin Bell and Julie Macpherson  
RMS organisers: Allison Winton and Clare Oxenbury

# Programme

Monday 21<sup>st</sup> March 2005

11.30- 12.50 Registration (East Wing Atrium)

Exhibition, Tea/Coffee and Buffet Lunch (E103/4)

12.50 - 13.00 Welcome and Introduction (E107)

**Session A1 *Biological Imaging*** (E107)

13.00 - 13.50 **Multifunctional nano-mechanical biosensors for macro bio-systems analysis**

Invited speaker: Martin Hegner, *University of Basel*

13.50 – 14.10 **Force spectroscopy of repetitive peptides derived from the high molecular weight glutenin subunits of wheat**

S. Haward, *University of Bristol*

14.10 – 14.30 **AFM-characterisation of synthetic peptide nanofibrils**

P. Mesquida, *University College London*

14.30 – 14.50 **Allocation of CaCo<sub>3</sub> Polymorphs in biological systems: a confocal Raman-AFM study**

U. Schmidt, *WITec GmbH*

14.50 – 15.10 **Three-dimensional AFM imaging of biological surfaces and molecules with true millisecond resolution**

T. McMaster, *University of Bristol*

Tea/Coffee Break (E103/4 & E204/5)

**Session A2 *Single Crystal Surfaces*** (W101)

13.00 - 13.50 **Atomic roughening of a chiral surface: an STM perspective**

Invited speaker: Stephen Driver, *University of Cambridge*

13.50 – 14.10 **Formation of aperiodic ultrathin films of Cu on quasicrystal surface**

D. Reid, *University of Liverpool*

14.10 – 14.30 **STM study of metal clusters self-assembly on oxide nanotemplates**

N. Berdunov, *Trinity College, Dublin*

14.30 – 14.50 **STM of metal nanocrystals and molecules on strontium titanate surfaces**

M. Castell, *University of Oxford*

14.50 – 15.10 **Thin Films of TiO<sub>x</sub> on Ni(110)**

A. Papageorgiou, *University College, London*

Tea/Coffee Break (E103/4 & E204/5)

**Session B1 *Biological Imaging***

(E107)

- 15.40 – 16.30     **A quantitative study of phase separation in phospholipid bilayers**  
Invited Speaker: Alistair Smith, *University of Leeds*
- 16.30 – 16.50     **Investigation of the suitability of fluorescently labelled chromosomes for imaging using scanning near-field optical microscopy (SNOM)**  
R. Baylis, *University of Wales Swansea*
- 16.50 – 17.10     **Convergent transcription investigated using atomic force microscopy**  
N. Thomson, *University of Leeds*
- 17.10 – 17.30     **Atomic force microscopy studies of type I collagen – an insight to bone nano mechanics**  
L. Bozec, *University College London*
- 17.30 – 17.50     **Biological applications of scanning probe techniques**  
M-A. Schneeweiss, *LOT-Oriel Ltd*

**Session B2 *Theory and Spectroscopy***

(W101)

- 15.40 – 16.30     **Simulation of high-resolution scanning tunnelling microscopy and spectroscopy: present state of the art and comparison with experiments**  
Invited Speaker: Werner Hofer, *University of Liverpool*
- 16.30 – 16.50     **Multiscale modelling of Cu(100) homoepitaxy**  
P. Mulheran, *University of Reading*
- 16.50 – 17.10     **Scanning near-field optical microscopy and spectroscopy measurements of semiconductor devices**  
P. Dunstan, *University of Wales Swansea*
- 17.10 – 17.30     **Scanning probe energy loss spectroscopy**  
A. Pulisciano, *University of Birmingham*
- 17.30 – 17.50     **Spin – Polarised Scanning Tunnelling Microscopy of Thin Film Cr(001)**  
D. Schofield, *University of York*

18.00 -19.30	<b>Poster Session, Exhibition, Wine</b>	(E103/4 & E204/5)
19.30	<b>Conference Dinner</b>	(Dining Room)



**Session D1 *Polymers, Self-assemble Monolayers and Organic Materials*** (E107)

- 11.20 – 12.20 **Single molecule interactions in supra-molecular dimers and polymers by atomic force microscopy based force spectroscopy**  
Invited speaker: G. Vansco, *University of Twente*  
Lecture sponsored by Veeco Instruments
- 12.20 – 13.40 Buffet Lunch and Poster session (E103/4 & E204/5)

**Session D2 *Instrumentation and Probe Development*** (W101)

- 11.20 – 11.40 **Ultimate nanoprobing in UHV: Four independent scanning tunnelling microscopes navigated by high resolution UHV SEM**  
M. Green, *Omicron Nanotechnology Ltd*
- 11.40 – 12.00 **The RHK/Unisoku UHV multi-probe SPM/SEM**  
R. Jones, *Scanwel Ltd*
- 12.00 – 12.20 **Advanced Electrical Characterization using SPM**  
P. De Wolf, *Veeco Instruments, Dourdan, France*
- 12.20 – 13.40 Buffet Lunch and Poster session (E103/4 & E204/5)

**Session E1 *Polymers, Self-assembled Monolayers and Organic Materials*** (E107)

- 13.40 - 14.00 **Near field optical spectroscopy of optically active tri-blend polymer systems**  
A. Cadby, *University of Sheffield*
- 14.00 - 14.20 **The use of scanning thermal microscopy (SThM) to study Joule heating in polymer light emitting diodes**  
D. Lidzey, *University of Sheffield*
- 14.20 – 14.40 **Video rate AFM of polymer processes**  
J. Hobbs, *University of Sheffield*
- 14.40 – 15.00 **Towards a rational design of self-assembled monolayers: An STM study on aromatic thiols**  
M. Buck, *University of St Andrews*
- 15.00 – 15.20 **Deposition of free radical organic molecules for scanning probe microscopy analysis**  
P. Pong, *University of Cambridge*

Tea/Coffee Break (E103/104 & E204/5)

## **Session E2 *Instrumentation and Probe Development***

(W101)

- 13.40 - 14.40      **Accurate scanning thermal microscopy thermometry for semiconductor devices**  
Invited speaker: J. Weaver, *Glasgow University*
- 14.40 - 15.00      **Mesoporous materials imaged by carbon nanotube AFM probes**  
I. Nanhandkumar, *University of Southampton*
- 15.00 - 15.20      **Single-walled carbon nanotube and nanowire atomic force microscopy tips**  
N. Wilson, *University of Warwick*

Tea/Coffee Break

(E103/104 &E204/5)

## **Session F1 *Nanostructured Materials***

(E107)

- 15.40 – 16.00      **Spatially resolved organometallic lithography**  
J. Davis, *University of Oxford*
- 16.00 – 16.20      **Correlating the Structural and Electrical Properties of Nanocrystal Networks**  
M. Blunt, *University of Nottingham*
- 16.20 – 16.40      **Nanoparticle networks on silicon: Self-organised or disorganised?**  
C. Martin, *University of Nottingham*

## **Session F2 *Instrumentation and Probe Development***

(W101)

- 15.40 - 16.00      **AFM multilevers for simultaneous mapping and manipulation of biological systems**  
D. Brayshaw, *University of Bristol*
- 16.00 – 16.20      **A new transverse dynamic force microscopy technique**  
J. Kelly, *University of Bristol*
- 16.20 – 16.40      TBA

**Close of meeting**