

Draft Programme

Short Course / Summer School on NANOBIOSENSORS Jointly organised by University of Glasgow, the Institute of Nanotechnology and Cranfield University.

25 May 2010

Wolfson Medical School, University of Glasgow

09.00 – 09.15 **Welcome and introductions**

09.15 – 10.15 Introduction to Nanobiosensors

Prof Jon Cooper, University of Glasgow, UK

- So what is a nanobiosensor?
- Properties of nanomaterials
- Detection strategies
- Device engineering
- Applications of nanobiosensors

10.15 – 11.15 Nanomaterials for Biosensors

Prof. Arben Merkoci, Catalan Institute of Nanotechnology, CIN2 (ICN-CSIC), Spain

- Carbon nanotubes, nanowires, nanochannels
- Nanoparticles, nanocrystals and quantum dots
- Integration and detection methodologies

11.15 – 12.15 Nanosystems

tbc

- Nanosensor arrays
- Microfluidic and/ nanofluidic systems
- Lab-on-a-chip

12.15 – 14.00 **Lunch**

Discussion Session: Public acceptability, regulation and ethics

Introduced and chaired by Dr Richard Moore, Institute of Nanotechnology

14.00 – 15.00 Stimulus Responsive Molecules and Switchable Materials

Prof Dermot Diamond, Dublin City University, Ireland

- Definition and examples of molecular switches
- Photo- & electro-polymer actuators
- Controlling physical and chemical behaviour using external stimuli
- Examples of applications

15.00 – 16.00 Applications of Nanobiosensors

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- Demands in the “real world”
- Designing a practical system
- Examples where nanobiosensors can make a difference

16.00 – 17.00 The Path to Commercialisation

Prof Anthony Turner, Cranfield University

- From science fiction to successful product
- Trends in the Nanotechnology market
- Developing a business case to generate income
- Financing
- Patents and Regulatory Affairs
- Future outlook for Nanobiosensors

Optional Tour: Department of Electronics at the University of Glasgow to see research demonstrating the analytical advantages of studying biology at the micro- and nanoscale using micro- and nanofabrication, soft & hard lithography, microscopy, optics and photonics, cell culture, immobilisation, biosensor technology, analytical biotechnology and modelling.