

Sustainable Energy

New Solutions from Physics and Engineering

29 October 2008

Institute of Physics, London

Organised by the Applied Physics and Technology Division of the Institute of Physics

Sponsored by the National Physical Laboratory

Co-sponsored by The British Vacuum Council, Institution of Mechanical Engineers, Forum for Applied Mechanics, British Society for Strain Measurement and Royal Society of Chemistry



The British Vacuum Council

RSC Advancing the Chemical Sciences



This meeting aims to highlight new scientific and engineering ventures which are beginning to give some solutions to the provision of new energy sources and reduction in carbon emission.

Sustainable energy is one of the main areas identified by research councils for support and the meeting will give an opportunity for academics and industrialists to seek new collaborations for fundamental and applied research in this area. For this reason, speakers have been asked to give a non-specialist level overview of their work and outline areas where further work is urgently required. A long luncheon break, a poster display and short 5 minute talks, some by representatives from energy-based companies will be included in the day's events.

Energy-related companies are invited to provide a poster display of their products, or, provide leaflets to be included in delegate packs at a small charge.

For registration and further details see website: <http://www.iop.org/Conferences> or contact Lisa Cornwell (lisa.cornwell@iop.org)

For short contributions, posters or commercial displays please contact the programme chair John Colligon (J.Colligon@mmu.ac.uk)

The Applied Physics and Technology Division has an annual prize for any student member of a subject group in the Division. The 2008 prize will be awarded to the best poster presented at this meeting on any relevant APT Division theme and is worth £100. A letter from the supervisor confirming that the student has made a significant contribution to the work is required when submitting the Abstract.

Provisional Programme

09.45 Registration and Coffee

10.15 Introduction

10.20 **Wind turbine blades: design and performance**

Professor Ole Thomsen (Aalborg University, Denmark)

10.45 **Digital displacement hydraulics and its application to wind and wave energy systems**

Dr Jamie Taylor (University of Edinburgh, UK)

11.10 **Energy-efficient glazing design**

Mr John Ridealgh (Pilkington Technical Centre, UK)

11.35 Short Contributions

12.30 **Lunch, networking, posters**

14.00 **Energy-efficient buildings**

Dr Paul Davidson (Building Research Establishment, UK)

14.25 **Proton exchange fuel cells**

Dr Vladimir Vishnyakov (Manchester Metropolitan University, UK)

14.50 **The contribution of low friction coatings to energy efficiency**

Dr Mark Gee (National Physical Laboratory, UK)

15.15 Tea

15.45 **Materials challenges for the next generation of photovoltaic solar energy modules**

Professor Stuart Irvine (OpTIC Technium/NEWI)

16.10 **Materials for solid-oxide fuel cells**

Professor John Kilner (Imperial College, London, UK)

16.35 **Short Contributions**

17.00 **Plenary public lecture (open to all) Fusion power – the era of burning plasmas**

Professor Steven Cowley (Director of Culham Laboratory, UK from September 2008)

18.00 Close of meeting

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