DRAFT PROGRAMME

NEXT GENERATION MATERIALS FOR SOLAR PHOTOVOLTAICS

A 1-day Symposium Hosted by The Royal Society of Chemistry Energy Sector

The Chemistry Centre, Burlington House, London

17 January 2018

This meeting covers recent advances in Solar Photovoltaics with a focus on materials for organic, inorganic and hybrid thin film cells. The day will comprise presentations by six guest speakers and six contributing speakers and poster presentations during the lunch and coffee breaks.

ORGANISING COMMITTEE

Dr Nigel B Mason
PV Consulting Ltd & RSC Energy Sector

Professor Jenny Nelson
Imperial College London

Professor Neil Robertson
University of Edinburgh

Dr Trystan Watson
University of Swansea

SPONSORS

This meeting has been underwritten by the RSC Energy Sector interest group.
Our thanks to the Royal Society of Chemistry for financial support.

Sponsors of student discount

Our thanks for advanced purchase of 10 student tickets to

Feedback please to nigel.mason@PVconsulting.co.uk

GUEST SPEAKERS

Prof Lars Samuelson

Growth of III-V Nanowires for Photovoltaic Applications

Lars Samuelson is a senior professor in solid state physics at the University of Lund, Sweden and Director of NanoLund, the primary centre for nanosiences in Sweden. He is a founder and Chief Scientific Officer for SolVoltaics, a company founded to commercialise III-V compound semiconductor nanowires in solar cell application.

Dr Tom Aernouts

Perovskites for photovoltaics: from materials to applications

Tom Aernouts is R&D leader of the Thin Film Photovoltaics group at IMEC, Belgium and Project Manager for Perovskite-based solar research at Solliance that in November 2017 achieved a world record efficiency for large area device using roll-to-roll production process.

Prof Paul Meredith

Transport and Electro-Optical Considerations in Organic Solar Cells

Paul Meredith is the recently appointed Sêr Cymru Chair in Sustainable Advanced Materials at the Department of Physics, Swansea University. Prior to his recent move, Paul was Professor of Materials Physics at the University of Queensland, Australia, an ARC Professorial Fellow and the Director of UQ Solar. He is also the co-founder of several start-up companies in the solar space including XeroCoat and Brisbane Materials Technology.

Prof David Fermin

Probing the origin of Voc deficiency in solution processed kesterite solar cells

David Fermin is Professor of Electrochemistry at the University of Bristol where he leads a group exploring the fabrication of semiconductors for solar applications. David spent 6 years working at EPFL in Switzerland and 4 years at Universität Bern before taking up his present post in Bristol.

Dr Abby Casey

Optoelectronic properties of new conjugated materials

Abby Casey won the RSC Energy Sector Award in 2016 for her PhD Thesis on *Optoelectronic Properties of New Conjugated Materials* with application in photovoltaics. This work was undertaken at Imperial College London under the supervision of Prof Martin Heeney. Abby is currently a Fuels Technologist at Infineum.

Dr Ross Hatton

Metal window electrodes for emerging thin film photovoltaics

Ross Hatton is Associate Professor of Physical Chemistry and EPSRC Early Career Research Fellow at the University of Warwick. His research interests span the development of novel window electrodes and optoelectronic materials for emerging thin film photovoltaics.

POSTER PRESENTATIONS

1 Confinement of singlet fission in a protein environment for solar cell applications

DW Polak, G Sutherland, AJ Musser, CN Hunter and J Clark

2 Modification of compact TiO_2/$MAPbI_3$ interface with KCl, KI, and KBr

Amrita Yasin, James McGettrick, Catherine De Castro and Cécile Charbonneau

3 Design principles for organic chromophores: making acenes with intense solar light absorption

TJH Hele, EG Fuemmeler, SN Sanders, E Kumarasamy, MY Sfeir, LM Campos and N Ananth

4 Highly Luminescent Cubic $CH_3NH_3PbI_3$ Nanocrystals for Efficient Light Emitting Devices

Yasser Hassan

5 Performance and stability of planar perovskite solar cells based on SnO_2 electron transport layer

Joel A Smith, Michael Wong-Stringer, Onkar S Gaame and David G Lidzey

6 Slot-Die Coated Perovskite Solar Cells In N-I-P Structure

Daniel Burkitt

7 Fluorescence and absorbance study of perovskites for solar cell applications

Emmanuel V Péan, Catherine S De Castro and Matthew L Davies

8 Ionic Influences on Recombination in Perovskite Solar Cells

Adam Pockett and Matthew J Carnie

9 Characterisation of PV Thin Films Using Transient Absorption Spectroscopy

Ruth Bowley, Matthew Davies, Stoichko Dimitrov and Catherine de Castro

10 Light harvesting using Langmuir Blodgett films

William H Banks and Lefteris Danos

11 From $1cm^2$ to A4-sized Modules: A Deposition and Interconnection Study for Carbon Perovskite Solar Cell Modules

Simone Meroni, F De Rossi, J Baker, K Hooper, D Williams, D Beynon and TM Watson

12 Novel Hole Transport Materials for Efficient and Stable Perovskite Solar Cells

Ellie Tanaka, Michał Maciejczyk, Aruna Ivaturi, Rosinda Fuentes and Neil Robertson

13 Investigating the stability and performance of methylammonium tribromide perovskites

Tamara D McFarlane, Catherine S De Castro, Ben Smith and Matthew L Davies

14 Nano-structured copper window electrodes for organic photovoltaics

H Jessica Pereira, Joseph Reed and Ross A Hatton

15 New Absorbers for Solid-state Hybrid Solar Cells

Ying Yuan and Neil Robertson

16 Stabilising copper window electrodes towards air oxidation for photovoltaic applications

Philip Bellchambers, Jaemin Lee, Silvia Varagnolo and Ross A Hatton

17 High throughput processing of perovskite solar cells and modules

Katherine Hooper, Jenny Baker, Simone Meroni, Ben Smith and Trystan Watson

18 Shining a Light on the Photophysical Characterisation of Perovskites

Catherine S De Castro, Emmanuel V Péan and Matthew L Davies

19 Timescales for Ion Motion in Perovskite Solar Cells

James M Cave, Nicola E Courtier, Jamie M Foster, Matthew J Wolf, Giles Richardson and Alison Walker

20 A Water Solution for Spray Pyrolysis of CZTSSe

Lewis D Wright, Jamie Lowe, Mustafa Togay, Fabiana Lisco, Sona Ulcina, Andrei Malkov and Jake Bowers

---

Delegates[1]

To be added

[1] Registered by 11 Jan 2018, Some delegates elected not to be included in this list

Delegates cont.

SCHEDULE

10.00	Registration and coffee
10.20	Welcome and opening remarks
10.30	Growth of III-V Nanowires for Photovoltaics Applications Lars Samuelson, University Lund, Sweden
11.00	Transport and Electro-Optical Considerations in Organic Solar Cells Paul Meredith, Swansea University
11.30	Optoelectronic properties of new conjugated materials Abby Casey, Infineum[2]
11.45	Engineering metal oxides for UV-stable perovskite solar cells Bart Roose, University of Cambridge
12.00	Understanding the Stability of Mixed A-Cation Iodide Perovskites Bethan Charles, University of Bath
12.15	Lunch
13.00	Posters – *see pages 4-5*
14.00	Perovskites for photovoltaics: from materials to applications Tom Aernots, IMEC Belgium & Solliance
14.30	Metal window electrodes for emerging thin film photovoltaics Ross Hatton, University of Warwick
15.00	Increasing stack density in type II GaSb/GaAs Quantum Ring Intermediate band solar cells Denise Montesdeceocs, University of Liverpool
15.15	Crystallisation of 2D/3D perovskite for large scale stable, screen printed perovskite modules Jenny Baker, Swansea University
15.30	Coffee & Posters
16.15	Probing the origin of Voc deficiency in solution processed kesterite solar cells David Fermin, University of Bristol
16.45	Growth and Characterisation of Crystalline CZTSSe for Fundamental Studies Theodore Hobson, University of Liverpool
17.00	Utilising thermally activated delayed fluorescence materials to minimise non-radiative losses in organic PV Alexander Gillett, University of Cambridge
17.15	Simulating 3-hexylthiophene oligomer crystal structures: towards predicting crystal structures of organic semiconductors Anne Guilbert, Imperial College London
17.30	Closing remarks

[2] Work undertaken at Imperial College London