

PVSAT Programme

Wednesday, April 2, 2025

11:00 Welcome

Tasmiat Rahman (Conference Chair), **Helen Griffiths** (Pro-Vice Chancellor for Research and Innovation) and **George Koutsourakis** (Programme Chair)

Session 1 - Advances in Photovoltaics

Chair: Tasmiat Rahman, University of Southampton

11:15 (Invited) Tackling the industrial leap for printed perovskite solar cells

Trystan Watson, Swansea University

11:45 Advances in gallium doping for high-performance silicon photovoltaic cells

John Murphy, University of Warwick

12:00 Surface Strains Dictate Local Photoluminescence Properties in Halide Perovskites as Revealed by 3D Multimodal Imaging

Kieran Orr, Stanford University

12:15 The effects of the dilute-donor strategy the recombination mechanisms and device performance of scalable OPVs for semi-transparent application

Eva Mazzolini, Imperial College London

12:30 Lunch

13:30 **Poster Session A**

Chair: **Sophie Pain**, University of Warwick

Session 2: Characterisation and Testing for Photovoltaics

Chair: George Koutsourakis, National Physical Laboratory

15:00 (Invited) Beyond Efficiency – Scientific and Engineering Requirements to Introduce a New Cell Technology to The Market

Ralph Gottschalg, Fraunhofer Center for Silicon Photovoltaics

15:30 Digital light processing applications for advanced characterization of photovoltaic devices

Daniel Parsons, National Physical Laboratory

15:45 Design and Development of a New Smart Portable I-V Tracer

Navid Tavakoli, Institute for Photovoltaics, University of Stuttgart

16:00 Photoexcited muon spin spectroscopy for studying carrier lifetime in silicon for photovoltaics,

Anup Yadav, University of Warwick

16:15 Tea Break

Session 3: Application Targeted Integrated Photovoltaics

Chair: **Greg Burwell**, University of Swansea

- 16:30 ATiP project: Application Targeted Integrated Photovoltaics
Silvia Villarroya-Lidon, ATIP Project
- 16:40 Identifying Optimal Materials and Architectures for Semi-Transparent Agrivoltaics
Austin Kay, Swansea University
- 16:55 The Influence of Energetics and Morphology on Charge Transfer in Organic Photovoltaics
Jenny Nelson, Imperial College London
- 17:10 Insights into Degradation Pathways of Triple-Cation Perovskite Thin Films under Outdoor and Indoor Conditions: A Comparative Analysis
Muhammad Bilal, Queen Mary University of London
- 17:25 Printed Nanoparticle Interlayers Enable High-Quality Organic Electron Transport Layers in Scalable Perovskite Solar Cells
Charlie Henderson, Imperial College London
- 17:40 Industry Technology Session
- 18:00 Welcome Reception and Light Dinner
- 19:30 Buses Depart

Thursday, April 3, 2025

Session 4: Perovskite and Organic Photovoltaics

Chair: **Elizabeth Gibson**, Newcastle University

- 9:00 (Invited) Sustainable development of deployable perovskite solar cells
Xuan Li, Helmholtz-Zentrum Berlin
- 9:30 Back-contact Perovskite Solar Cell Modules Fabricated via Roll-to-Roll Slot-die Coating: Scale-up Towards Manufacture
Nathan Hill, Power Roll Ltd
- 9:45 From small to large-area PV devices – addressing the scalability challenge associated with organic or perovskite-based solar modules
Dimitar Kutsarov, University of Surrey
- 10:00 Charge Generation in Non-Fullerene Acceptors
Linnea Lind, Imperial College London
- 10:15 3D Printing: Dies for Perovskite, Devices, and De-escalation of Scale Up Costs
Bethan Miles, Swansea University

10:30 Coffee Break

Session 5: PV Sustainability

Chair: **Tasmiat Rahman**, University of Southampton

11:00 Sustainability considerations for manufacturing and deployment of multi-terawatt silicon photovoltaics

Neil Beattie, Northumbria University

11:30 Characterisation of PV Waste: An assessment of the toxicity of antimony embedded in PV glass

Matt Burnell, University of Exeter

11:45 Forecasting UK solar module waste in the United Kingdom

Sophie Pain, University of Warwick

12:00 Whole system efficiency of energy harvesting devices powered by next-generation PV technologies

Zaid Haymoor, Swansea University

12:15 Metal-Organic Nanosheets: Bridging Solar harvesting and Storage

Kezia Sasitharan, Newcastle University

12:30 Lunch

Poster Session B

Chair: **Nigel Mason**, PV Consulting

14:45 Tea Break

Session 6: Application Targeted Integrated Photovoltaics

Chair: Paul Meredith, Swansea University

15:00 Key Molecular Perspectives for High Stability in Organic Photovoltaics

Ji-Seon Kim, Imperial College London

15:30 Enabling Large-Area Organic Photovoltaics with High Performance Metal-Grid Transparent Electrodes

Nicholas Burridge, Swansea University

15:45 Auxetic Rotating Triangle c-Si Solar Modules with Adjustable Light Transmittance

Chen Cao, University of Southampton

16:00 Non-geminate recombination kinetics in organic solar cells optimized for target applications

Dichard Adam Pacalaj, Imperial College London

16:15 Advanced Dielectrics for Solar PV Coatings

Shimra Ahmed, Swansea University

16:30 Comfort Break

16:45 CISM and SPECIFIC tours

19:00 Buses Depart for Brangwyn Hall

19:30 Reception and Conference Dinner (Brangwyn Hall)

Friday, April 4, 2025

Session 7: Technological Advancements from Materials to Systems

Chair: **Stuart Boden**, University of Southampton

9:15 (Invited) Solar PV in real world – what are the challenges?
KT Tan, Viridian Solar

9:45 The significance of measuring the bulk lifetime for high efficiency silicon solar cells
Nicholas Grant, University of Warwick

10:00 Diffuse Irradiance Estimation Using a Dual-Stream Sky Image-Based Computer Vision Approach
David Hamlyn, University of Southampton

10:15 Variation of Cell-Bonded 4-domed Optic Material to Improve Concentration Factor for Concentrator Photovoltaics
William Cameron, University of Exeter

10:30 Low resistivity contacts for high-efficiency next-generation silicon solar cells
Edris Khorani, University of Warwick

10:45 Coffee Break

Session 8: Perovskites and Organic Photovoltaics

Chair: **Aruna Ivaturi**, University of Strathclyde

- 11:00 (Invited) Flexible perovskite solar cells: fabrication and applications
Francesca Brunetti, University of Rome "Tor Vergata"
- 11:30 Investigating the Scalability Potential of an SnO₂ Derived Electron Transport Material Using Established Criteria and Experimental Procedures
Erin Lambert, University of Liverpool
- 11:45 In-Situ Photoluminescence Investigation of Defect Mitigation and Non-Radiative Recombination in Aerosol-Treated Perovskites
Madsar Hameed, Queen Mary University of London
- 12:00 Photocapacitive Behavior of Carbon-Based Triple-Cation Perovskite Solar Cells in a PMMA based Solid-State Electrolyte Framework
Sandeep Pandey, University of Strathclyde
- 12:15 Closing Remarks
- 12:30 Lunch
- 13:30 Close and Depart