



## Centre for Doctoral Training in New & Sustainable Photovoltaics Showcase 2019

Thursday 12<sup>th</sup> September 2019, Chancellors' Building, Room L1.12, University of Bath

Welcome to the fifth annual CDT-PV showcase. We hope you find the varied selection of talks today interesting. Please take some time to read posters from all the CDT-PV students during the breaks and in the poster session at the end of the day, during which we hope you will have fruitful discussions.

- 9:00 Arrival, Registration, tea & coffee.
- 9:30 Welcome by *Professor Nick Brook, Dean of the Faculty of Science, University of Bath*
- 9:45 Cohort 5 Presentation
- 10:00 "Does photon recycling influence solar cell efficiency",  
*Alan Bowman, University of Cambridge*
- 10:20 "Tantalum Doping for Enhanced Mobility in Cation Doped SnO<sub>2</sub>",  
*Tom Featherstone, University of Liverpool*
- 10:40 "Incorporation of (NaF) Sodium Fluoride into CdTe solar cells",  
*Tom Shalvey, University of Liverpool*
- 11:00 Invited Talk 1: "Solar PV Industry – My personal journey and the future trends",  
*Dr KT Tan, Viridian Solar*
- 11:30 **Break**
- 11:45 "Triplet Pair States in Singlet Fission Materials",  
*David Bossanyi, University of Sheffield*
- 12:05 "Role of Sb 5s<sup>2</sup> lone pairs in electronic structure of Sb<sub>2</sub>Se<sub>3</sub> solar absorber & other Sb-chalcogenides", *Jack Swallow, University of Liverpool*
- 12:25 Invited Talk 2: "Helium Ion Microscopy of Black Silicon for Photovoltaics",  
*Dr Stuart Boden, University of Southampton*
- 13:00 **Lunch & Poster session**
- 14:00 "Understanding orientation in methylamine-recrystallised MAPbI<sub>3</sub> perovskites",  
*Joel Smith, University of Sheffield*
- 14:20 "Over-egging the pudding: what happens when you hybridise a 2D-3D perovskite system too much?" *Leo Buizza, University of Oxford*
- 14:40 "Quantifying the influence of polaronic behaviour on charge transport in MAPbI<sub>3</sub>",  
*Lewis Irvine, University of Bath*
- 15:00 Invited Talk 3: "Renewable energy and climate politics",  
*Kate Levick, E3G*
- 15:30 Invited Talk 4: "Computationally-enabled routes to new inorganic materials"  
*Professor Matthew Rosseinsky, University of Liverpool*
- 16:00 **Break & Poster session**
- 16:15 Poster Session/Discussion
- 17:00 Prize distribution, *Professor Alison Walker, Academic Director CDT-PV, Closing remarks*
- 18:30 Dinner at the Wessex Restaurant, University of Bath.



## Posters

1. "Solubilization of Single and Multi-Walled Carbon Nanotubes with Ethylene-Vinyl Acetate for Semi-transparent Conductive Films",  
*Bernd Sturdza, University of Oxford*
2. "Optical Simulation of Black Silicon Surfaces using Geometric Randomisation and Unit-cell Based Averaging",  
*Jack Tyson, University of Southampton*
3. "Chemical bath deposition of thin film CdSe layers for use in Se alloyed CdTe solar cells",  
*Kerrie Morris, Loughborough University*
4. "The fabrication and applications of CsPbBr<sub>3</sub> carbon based devices",  
*Kaya Davies-Brenchley, University of Bath*
5. "3D reconstruction of CdTe/CdTeSe cell using automated Xe-Focus Ion Beam (FIB) milling and electron backscatter diffraction (EBSD)",  
*Vladislav Kornienko, Loughborough University*
6. "Effect of Substrate Temperature on Vapour Deposited Hybrid Perovskite Solar Cells",  
*Kilian Lohmann, University of Oxford*
7. "An Infra-red Reflecting Optical Coating for Solar Cover Glass",  
*Adam Law, Loughborough University*
8. "Modelling the Impedance Response of Perovskite Solar Cells",  
*Laurence Bennett, University of Southampton*
9. "Extrinsic Doping of Amine-Thiol Solution Processed CIGS Thin Film Photovoltaics",  
*Lewis Welch, Loughborough University*
10. "Designs and Doping Mechanisms for n-type CdTe Solar Cells",  
*Luke Thomas, University of Liverpool*
11. "GeSe properties for thin film photovoltaics",  
*Matthew Smiles, University of Liverpool*
12. "Understanding the Effect of Additives in Perovskite Solar Cells",  
*Matthew Pilot, University of Bath*
13. "Electronic Trap States and Phase Segregation in Mixed-Halide Perovskites",  
*Alexander Knight, University of Oxford*
14. "Enhancement in p+ silicon growth via Hot Wire CVD for back contact silicon solar cells",  
*Edris Khorani, University of Southampton*
15. "Organic Photovoltaics to Power the Internet of Things",  
*Darcy Unson, University of Cambridge*
16. "Nanostructured composite Hole Transport Layers for Perovskite Solar Cells",  
*Francesco Bastianini, University of Sheffield*
17. "Understanding Film Evolution in Hybrid Perovskites with Green Solvent",  
*Adam Urwick, University of Sheffield*
18. "How do you solve a problem like the Voc-deficit in kesterites?",  
*Lewis Wright, Loughborough University*
19. "Photophysics of TADF Emitters",  
*Daniel Sowood, University of Cambridge*
20. "Studying Defects in Thin Film Solar Cells with DLTS",  
*Jacob Leaver, University of Liverpool*
21. "Optical study of the phase transition and molecular motion in perylene-TBPA co-crystals",  
*Joshua Macdonald, University of Bath*
22. "Integrating perovskite photovoltaics with carbon fibre reinforced polymer composites",  
*Elena Cassella, University of Sheffield*