Ross Warren

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Education

DPhil (PhD) in Physics *2020*
University of Oxford, UK

Masters (MRes) in Plastic Electronics - Distinction *2016*
Imperial College London, UK

MSci (Hons) in Physics - First Class *2013*
Imperial College London, UK

Research Experience and Skills

Postdoctoral Research Assistant in Physics *March 2020 - present*
Jenny Nelson Group, Imperial College London, UK

- Python: Kinetic Monte Carlo and tight-binding simulations using numpy, scipy and cython.
- Writing: journal articles of successful results obtained during my PhD.

Visiting Researcher in Chemical Engineering *Oct. 2019 - Jan 2020*
Hitosugi Group, Tokyo Institute of Technology, Japan

Graduate Researcher in Physics *2016 - 2020*
Advanced Functional Materials and Devices Lab, University of Oxford, UK

- Expertise in: organic semiconductors, doping, transistors, photovoltaics, electrical measurements (IV, mobility, conductivity), spectroscopic techniques (PDS, EPR), structural characterisation (GIWAXS).
- Python: modelling, data analysis, data visualisation and software for experimentation.
- Presentations: to research groups and at large international conferences.
- Teaching: tutor in analogue electronics. Senior demonstrator for the undergraduate electronics lab.
- Mentoring: undergraduate project developing software for performing lab experiments remotely.

Undergraduate Research Assistant in Materials *2011 - 2012*
Ecole Polytechnique Fédérale de Lausanne, Switzerland

Experience in Industry

Marine Field Geophysicist *2013 - 2015*
Schlumberger, Canada and United States

- Data analysis: of large, noisy datasets. Signal processing techniques to improve signal-to-noise ratio.
- Bash: scripting to automate data analysis routines. My code got rolled out across several vessels.
- Team work: within a diverse geophysics group, presenting to and communicating with clients.

Awards

PE-CDT Paper of the Year *2019*
PE-CDT International Exchange Scholarship *2019*
PE-CDT Symposium Poster Award *2018*
Hackathon Win - African Healthcare, Google Campus London *2017*

Membership of Professional Societies

Institute of Physics *2019 - present*

Teaching Experience

Tutor in Analogue Electronics *2017 - 2019*
Keble College and Pembroke College, University of Oxford, UK

Summer Project Supervisor for an undergraduate project *June 2018 - Sept. 2018*
Department of Physics, University of Oxford, UK

Senior Demonstrator in the electronics laboratory *2016 - 2019*
Department of Physics, University of Oxford, UK

Refereed publications in primary journals

Ye H.*, Kesava S. V., Hardigree J. F. M., Brown R. E., Mazzotta G., **Warren R.**, Skabara P. J. and Riede M.* *Efficiency enhancement of small molecule organic solar cells using hexapropyltruxene as an interface layer.* Journal of Materials Chemistry C **8,** 14, 4909-4918 (2020)

Warren R.*, Privitera A., Kaienburg P., Lauritzen A.E., Thimm O., Nelson J. and Riede M.* *Controlling energy levels and Fermi level en route to fully tailored energetics in organic semiconductors* Nature Communications **10,** 5538 (2019)

Warren R.*, Hardigree J.F.M., Lauritzen A.E., Nelson J. and Riede M.* *Tuning the ambipolar behaviour of organic field effect transistors via band engineering.* AIP Advances **9,** 035202 (2019)

Conference contributions (Presenting author only)

Warren, R., Privitera, A., Kaienburg, P., Lauritzen, A. E., Thimm, O., Nelson, J. & Riede, M. *Energy levels in molecular doping of organic semiconductors* Oral presentation. Material Research Meeting, Yokohama, Japan (2019)

Warren, R., Privitera, A., Kaienburg, P., Lauritzen, A. E., Thimm, O., Nelson, J. & Riede, M. *The Effect of Energy Levels on Doping processes in Organic Semiconductors* Poster presentation. 3rd Workshop on Plastic Electronics and Related Science and Technology, Tokyo, Japan (2019)

Warren, R., Hardigree, J. F. M., Lauritzen, A. E., Nelson, J. & Riede, M. *Tuning the ambipolar behaviour of organic field effect transistors via band engineering* Poster presentation. CPE annual conference, Imperial College, UK (2019).

Warren, R., Privitera, A., Kaienburg, P., Lauritzen, A. E., Thimm, O., Nelson, J. & Riede, M. *Controlling molecular energy levels and Fermi level en route to fully-tailored energetics in organic semiconductors* Oral presentation. International Symposium on Functional π-Electron Systems, Berlin, Germany (2019)

Warren, R., Hardigree, J. F. M., Lauritzen, A. E., Nelson, J. & Riede, M. *Tuning the ambipolar behaviour of organic field effect transistors via band engineering* Oral presentation. CPE annual conference, Imperial College, UK (2018).

Warren, R., Hardigree, J.F.M., Nelson, J. & Riede, M. *Tuning the ambipolar behaviour of organic field effect transistors* Poster presentation. International Conference on Organic Electronics, University of Bordeaux, France (2018).

Warren, R., Ramirez, I., Rice, B., Nelson, J. & Riede, M. *Doping of organic semiconductors: the effect of transfer level offset* Poster presentation. Centre of Plastic Electronics (CPE) annual conference, Imperial College, UK (2017).