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Maths Physics and Electrical Engineering
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Research interests

Excited state spectroscopy
Organic light-emitting diodes
Proton transfer
Quinine
Thermally-activated delayed fluorescence
Charge-transfer states
Organic photovoltaics

Qualifications

Physics, PhD, University of Cambridge
16 Jul 2016
Award Date: 16 Jul 2016
Physics, BSc (Hons), Durham University
30 Jun 2011
Award Date: 30 Jun 2011
10 Nov 2019 → ... Member of the Royal Society of Chemistry, MRSC
30 Jun 2011 → ... Member of the Institute of Physics, MInstP

Employment

VC Senior Fellow
Maths Physics and Electrical Engineering
Northumbria University
6 Jan 2020 → present

Research outputs

Suppressing Dimer Formation by Increasing Conformational Freedom in Multi-Carbazole Thermally Activated Delayed Fluorescence Emitters

Salah, L., Etherington, M., Shuaib, A., Danos, A., Nazeer, A., Ghazal, B., Prlj, A., Turley, A., Mallick, A., McGonigal, P. R., Curchod, B., Monkman, A. P. & Makhseed, S., 7 Jan 2021, In: Journal of Materials Chemistry C. 9, 1, p. 189-198 10 p.

Thermally Activated Delayed Fluorescence: Beyond the Single Molecule

Etherington, M., 18 Sep 2020, In: Frontiers in Chemistry. 8, 8 p., 716.

Modulation of Charge Transfer by *N*-Alkylation to Control Photoluminescence Energy and Quantum Yield

Turley, A., Danos, A., Prlj, A., Monkman, A. P., Curchod, B., McGonigal, P. R. & Etherington, M., 21 Jul 2020, In: Chemical Science. 11, 27, p. 6990-6995 6 p.

Investigation of Thermally Activated Delayed Fluorescence from a Donor-Acceptor Compound with Time-Resolved Fluorescence and Density Functional Theory Applying an Optimally Tuned Range-Separated Hybrid Functional

Scholz, R., Kleine, P., Lygaitis, R., Popp, L., Lenk, S., Etherington, M. K., Monkman, A. P. & Reineke, S., 27 Feb 2020, In: Journal of Physical Chemistry A. 124, 8, p. 1535-1553 18 p.

Homoconjugation enhances the photophysical and electrochemical properties of a new 3D intramolecular charge transfer iptycene displaying deep blue emission

Montanaro, S., Congrave, D. G., Etherington, M. K. & Wright, I. A., 9 Sep 2019, In: Journal of Materials Chemistry C. 7, 41, p. 12886-12890 5 p.

Revealing resonance effects and intramolecular dipole interactions in the positional isomers of benzonitrile-core thermally activated delayed fluorescence materials

Kukhta, N. A., Higginbotham, H. F., Matulaitis, T., Danos, A., Bismillah, A. N., Haase, N., Etherington, M. K., Yufit, D. S., McGonigal, P. R., Gražulevičius, J. V. & Monkman, A. P., 1 Aug 2019, In: Journal of Materials Chemistry C. 7, 30, p. 9184-9194 11 p.

Intramolecular Dimerization Quenching of Delayed Emission in Asymmetric D-D'-A TADF Emitters

Woon, K. L., Yi, C. L., Pan, K. C., Etherington, M. K., Wu, C. C., Wong, K. T. & Monkman, A. P., 16 May 2019, In: Journal of Physical Chemistry C. 123, 19, p. 12400-12410 11 p.

Persistent Dimer Emission in Thermally Activated Delayed Fluorescence Materials

Etherington, M. K., Kukhta, N. A., Higginbotham, H. F., Danos, A., Bismillah, A. N., Graves, D. R., McGonigal, P. R., Haase, N., Morherr, A., Batsanov, A. S., Pflumm, C., Bhalla, V., Bryce, M. R. & Monkman, A. P., 2 May 2019, In: Journal of Physical Chemistry C. 123, 17, p. 11109-11117 9 p.

Thermally Activated Delayed Fluorescence Mediated through the Upper Triplet State Manifold in Non-Charge-Transfer Star-Shaped Triphenylamine-Carbazole Molecules

Pander, P., Motyka, R., Zassowski, P., Etherington, M. K., Varsano, D., Da Silva, T. J., Caldas, M. J., Data, P. & Monkman, A. P., 25 Oct 2018, In: Journal of Physical Chemistry C. 122, 42, p. 23934-23942 9 p.

Triphenylamine disubstituted naphthalene diimide: elucidation of excited states involved in TADF and application in near-infrared organic light emitting diodes

Higginbotham, H. F., Pander, P., Rybakiewicz, R., Etherington, M. K., Maniam, S., Zagorska, M., Pron, A., Monkman, A. P. & Data, P., 3 Aug 2018, In: Journal of Materials Chemistry C. 6, 30, p. 8219-8225 7 p.

Chemical and conformational control of the energy gaps involved in the thermally activated delayed fluorescence mechanism

Dos Santos, P. L., Etherington, M. K. & Monkman, A. P., 10 May 2018, In: Journal of Materials Chemistry C. 6, 18, p. 4842-4853 12 p.

Excited-State Aromatic Interactions in the Aggregation-Induced Emission of Molecular Rotors

Sturala, J., Etherington, M. K., Bismillah, A. N., Higginbotham, H. F., Trewby, W., Aguilar, J. A., Bromley, E. H. C., Avestro, A.-J., Monkman, A. P. & McGonigal, P. R., 13 Dec 2017, In: Journal of the American Chemical Society. 139, 49, p. 17882-17889 8 p.

Fluorescence and Phosphorescence Anisotropy from Oriented Films of Thermally Activated Delayed Fluorescence Emitters

Higginbotham, H. F., Etherington, M. K. & Monkman, A. P., 6 Jul 2017, In: Journal of Physical Chemistry Letters. 8, 13, p. 2930-2935

The contributions of molecular vibrations and higher triplet levels to the intersystem crossing mechanism in metal-free organic emitters

Huang, R., Avo, J., Northey, T., Channing-Pearce, E., dos Santos, P. L., Ward, J. S., Data, P., Etherington, M. K., Fox, M. A., Penfold, T. J., Berberan-Santos, M. N., Lima, J. C., Bryce, M. R. & Dias, F. B., 29 Jun 2017, In: Journal of Materials Chemistry C. 5, 25, p. 6269-6280

Regio- and conformational isomerization critical to design of efficient thermally-activated delayed fluorescence emitters

Etherington, M. K., Franchello, F., Gibson, J., Northey, T., Santos, J., Ward, J. S., Higginbotham, H. F., Data, P., Kurowska, A., Dos Santos, P. L., Graves, D. R., Batsanov, A. S., Dias, F. B., Bryce, M. R., Penfold, T. J. & Monkman, A. P., 13 Apr 2017, In: Nature Communications. 8, 14987 .

Revealing the spin-vibronic coupling mechanism of thermally activated delayed fluorescence

Etherington, M. K., Gibson, J., Higginbotham, H. F., Penfold, T. J. & Monkman, A. P., 30 Nov 2016, In: Nature Communications. 7, 13680.

Recombination pathways in polymer:fullerene photovoltaics observed through spin polarization measurements

Etherington, M. K., Wang, J., Chow, P. C. Y. & Greenham, N. C., 12 Feb 2014, (E-pub ahead of print) In: Applied Physics Letters. 104, 6, 063304 .

Ultrahigh Efficiency Fluorescent Single and Bi-Layer Organic Light Emitting Diodes: The Key Role of Triplet Fusion

Chiang, C-J., Kimyonok, A., Etherington, M. K., Griffiths, G. C., Jankus, V., Turksoy, F. & Monkman, A. P., 11 Feb 2013, In: Advanced Functional Materials. 23, 6, p. 739-746

Activities

Durham University

Marc Etherington (Visiting researcher)
1 Jan 2020 → 31 Dec 2020

Kuwait University

Marc Etherington (Visiting researcher)
12 Jun 2019 → 20 Jun 2019

Durham University (External organisation)

Marc Etherington (Member)
1 Jan 2019 → 1 Jan 2022

Maximising the rISC

Marc Etherington (Chair)
21 Jun 2018 → 22 Jun 2018

Maximising the rISC

Marc Etherington (Chair)
23 Jun 2016