

Malcolm Kadodwala

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➤ Educational Background

1994 PhD Chemistry, University of Nottingham, thesis
Surface Science Studies of Model Adsorbates. Supervisor
Prof Robert Jones.

1990 1st Class B.Sc. (Hons) Chemical Physics,
University of Nottingham

➤ Professional Career

2016-Present Professor of Nanoscience and Nanotechnology, School of Chemistry, Joseph
Black Building, University of Glasgow, Glasgow, G12 8QQ, UK

2013-2016 Reader, School of Chemistry, Joseph Black Building, University of Glasgow,
Glasgow, G12 8QQ, UK

2007-2013 Senior Lecturer, School of Chemistry, Joseph Black Building, University of
Glasgow, Glasgow, G12 8QQ, UK

1996-2007 Lecturer, School of Chemistry, Joseph Black Building, University of Glasgow,
Glasgow, G12 8QQ, UK

1994-1995 Post-doctoral Fellow, FOM Institute

➤ Research Interests

- 1) Nanophotonics for Chemical Applications
- 2) Chirality

➤ Recent Publications

- 1 Jack, C., Karimullah, A. S., Leyman, R., Tullius, R., Rotello, V. M., Cooke, G., Gadegaard, N., Barron, L. D., and Kadodwala, M. (2016) Biomacromolecular stereostructure mediates mode hybridization in chiral plasmonic nanostructures. *Nano Letters*, 16(9), pp. 5806-5814
- 2 Jack, C. et al. (2016) Spatial control of chemical processes on nanostructures through nano-localised water heating. *Nature Communications*, 7, 10946.
- 3 Karimullah, A., Jack, C., Tullius, R., Rotello, V. M., Cooke, G., Gadegaard, N., Barron, L. D., and Kadodwala, M. (2015) Disposable plasmonics: plastic templated plasmonic metamaterials with tunable chirality. *Advanced Materials*, 27(37), pp. 5610-5616.
- 4 Tullius, R., Karimullah, A. S., Rodier, M., Fitzpatrick, B., Gadegaard, N., Barron, L. D., Rotello, V. M., Cooke, G., Laphorn, A., and Kadodwala, M. (2015) "Superchiral" spectroscopy: detection of protein higher order hierarchical structure with chiral plasmonic nanostructures. *Journal of the American Chemical Society (Communication)*, 137(26), pp. 8380-8383.

大阪府立大学 工学域 電子物理工学課程
第91回電子物理工学セミナー

日本学術振興会研究拠点形成事業 (Core-to-Core)
「スピンキラリティを軸にした先端材料コンソーシアム」
R-1, 2, 3 共同セミナー

Date: 21th March 2017

Time: 14:00 – 15:00

Room: West-K301, B4 building, OPU

Chiral Nanophotonics: Applications to Soft Matter and Magnetic Materials

Malcolm Kadodwala

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Chirality, the property of an object to lack mirror symmetry and thus be able to exist in two non-superimposable mirror image forms, is a ubiquitous property in nature. Indeed, the building blocks of life, amino acids and sugars are chiral, and this sense of handedness propagates in to the complex structures of life. In this talk I will discuss how near fields with chiral asymmetries, generated by light scattering from chiral nanostructures, can uniquely characterise soft matter and magnetic materials.

➤ Recent Publications

- 1 Jack, C., Karimullah, A. S., Leyman, R., Tullius, R., Rotello, V. M., Cooke, G., Gadegaard, N., Barron, L. D., and Kadodwala, M. (2016) Biomacromolecular stereostructure mediates mode hybridization in chiral plasmonic nanostructures. *Nano Letters*, 16(9), pp. 5806-5814
- 2 Jack, C. et al. (2016) Spatial control of chemical processes on nanostructures through nano-localised water heating. *Nature Communications*, 7, 10946.
- 3 Karimullah, A., Jack, C., Tullius, R., Rotello, V. M., Cooke, G., Gadegaard, N., Barron, L. D., and Kadodwala, M. (2015) Disposable plasmonics: plastic templated plasmonic metamaterials with tunable chirality. *Advanced Materials*, 27(37), pp. 5610-5616.
- 4 Tullius, R., Karimullah, A. S., Rodier, M., Fitzpatrick, B., Gadegaard, N., Barron, L. D., Rotello, V. M., Cooke, G., Laphorn, A., and Kadodwala, M. (2015) "Superchiral" spectroscopy: detection of protein higher order hierarchical structure with chiral plasmonic nanostructures. *Journal of the American Chemical Society (Communication)*, 137(26), pp. 8380-8383.

電子物理工学課程 主任 石原 一
電子物理工学課程 セミナー担当 戸川 欣彦