

Klaas Wynne

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Positions

2017-2020	Associate Editor Journal of the American Chemical Society (JACS)
2010-	Chair of chemical physics, University of Glasgow, School of Chemistry
2012-2014	Visiting professor in the Department of Chemical and Process Engineering at Strathclyde
2007-2010	Professor of chemical physics, University of Strathclyde, Department of Physics
2003-2007	Reader, University of Strathclyde, Department of Physics
1999-2003	Senior lecturer, University of Strathclyde, Department of Physics
1996-1999	Lecturer, University of Strathclyde, Department of Physics
1996-2010	Co-director of the femtosecond research centre, Strathclyde, Department of Physics
1991-1996	Postdoc, Dept. of Chemistry, U. of Pennsylvania, USA, with Prof. Robin M. Hochstrasser
1987-1991	Teaching assistant, University of Amsterdam, Laboratory for Physical Chemistry.

Education

1987-1990	PhD chemistry. Awarded by the University of Amsterdam on September 21, 1990 on the thesis entitled ' <i>Time resolved Raman spectroscopy in simple liquids</i> '. Advisors: Joop van Voorst, Douwe Wiersma, and Ad Lagendijk
1982-1987	MSci chemistry. Awarded by the University of Amsterdam on February 18, 1987

Marks of esteem

2019	ERC AdG	Awarded an ERC Advanced grant
2018	Award	Awarded the RSC Chemical Dynamics Award for outstanding contributions to time-resolved spectroscopy.
2018	Blogged	Our paper ' <i>Control over phase separation and nucleation using a laser-tweezing potential</i> ' in Nat. Chem. was discussed by Derek Lowe in his blog <i>In the Pipeline</i> (http://blogs.sciencemag.org/pipeline/archives/2018/03/09/crystals-via-lasers)
2018	Most read / spotlighted	My article in JPC Lett. 'The Mayonnaise Effect' most read article in December 2017. Spotlighted by the journal (doi: 10.1021/acs.jpcllett.7b03289).
2017	JACS	Appointed Associate Editor JACS
2015	FRSE	Elected Fellow of the Royal Society of Edinburgh (FRSE)
2013	Faraday	Elected Member of Faraday Division Council
2012	EAB JPC	Elected member of the editorial advisory board of the Journal of Physical Chemistry B
2012	EPSRC College	Elected a member of the EPSRC college of peer reviewers
2012	Advisory Committee	Elected member of the scientific advisory committee of the annual general meeting of the European Molecular Liquids Group and Japanese Molecular Liquids Group (Lille, France, 2013)
2012	Symposium organiser	Invited with Mischa Bonn (Director MPI for Polymer Research) to organise session on biomolecular terahertz spectroscopy (SPIE Photonics West, BIOS, San Francisco, 2013).
2012	Top 10 most read	PCCP 14 , 6154 (2012) second most read PCCP article in April 2012.
2012	Guest editor PCCP	Guest editor with Neil Hunt for special issue on <i>Ultrafast Chemical Dynamics</i> in PCCP published volume 14 issue 18, 2012 .
2012	News & views	The UCP 2011 meeting was the subject of a 'news & views' article in the March 2012 issue of Nature Chemistry (doi:10.1038/nchem.1282)

2012	Visiting Professor	Appointed visiting professor in the Department of Chemical and Process Engineering, University of Strathclyde
2012	Board of Chemical Physics	Elected member of the board of Chemical Physics (Elsevier)
2011	Faraday Discussion	Invited to organise a Faraday Discussion Meeting on 'Mesosstructure and dynamics in liquids and solutions' to be held in 2013
2010	Top 1%	J. Am. Chem. Soc. 131 , 11140 (2009) was cited 19 times in the first 12 months since publication placing it comfortably in the top 1% of all papers in chemistry (according to Thomson Reuters Science Watch).
2010	JCP Spotlight Collection	JCP 119 , 464 (2003) chosen as highlighted reference in the JCP Spotlight Collection on ionic liquids, March 2010.
2010	Editors' Choice & Most downloaded	JCP 131 , 201101 (2009) 3 rd most downloaded JCP paper in December 2009. Selected JCP editors' choice as one of the most innovative and influential articles in the field of Chemical Physics in 2009.
2010	Teaching excellence	Strathclyde Teaching Excellence Awards 2010, Certificate of Recognition awarded in recognition of outstanding teaching
2009	International organising committee	Elected member of the international organising committee of the conference on Time-Resolved Vibrational Spectroscopy
2008	Editors' Choice & Most downloaded	JCP 128 , 161102 (2008) Editors' Choice in Science 320 , 987 (2008) and the 7th most downloaded JCP paper in May 2008
2006	FRSC	Elected Fellow of the Royal Society of Chemistry
2005	FInstP	Elected Fellow of the Institute of Physics
2001	Editors' Choice	APL 79 , 2130 (2001) Editors' Choice in Science 294 , 267 (2001)
2001	E.C. Stoner Lecturer	University of Leeds
1991	Fellowship	NATO research fellowship with Robin Hochstrasser

Research grants

Period	Grant #	Title	PI (£ FEC)	CI (£ FEC)	Investigators
2023	STFC SM34989	Small angle scattering & Diffraction (9 shifts beamtime on DLS I22)	45k		Wynne
2022	STFC SM31565	Characterisation of amorphous matter (2 shifts beamtime on DLS I22)	15k		Wynne
2021-2025	Gates Foundation	Advancing infrared and AI-based techniques for real time mosquito age-grading and evaluation of malaria vector control interventions in Africa		2824k	Okumu, at UofG: Baldini (.4), Babayan (.3), Wynne (.1), Ferguson (.1), González-Jiménez (.1) \$3,806,071 (\$1,200,000 to UoG)
2021	STFC SM28529	Characterisation of locally favoured structures from the glass into the liquid (2 shifts beamtime on DLS I22)	15k		Wynne, McMillan, Wilding
2020	STFC SM27885	Structure factor TBOS for comparison to MD (rapid access for one sample)	ok		Wynne, McMillan, Wilding
2019-2024	ERC Advanced Grant 832703	Laser control over crystal nucleation – CONTROL	2872k		Wynne
2019-2022	Leverhulme RPG-2018-350	Delocalised phonon-like modes in organic and bio-molecules	341k		Wynne, Laphorn, Senn
2018-2019	STFC SM20351	The liquid-liquid transition in triphenyl phosphite (9 shifts beamtime on DLS B22)	45k		Wynne
2017-2019	MRC MR/P025501/1	Development of a new tool for malaria mosquito surveillance to improve vector control		664k	Ferguson, Wynne, Ranson, Okumu
2016-2019	EPSRC EP/N007417/1	Mapping and controlling nucleation	562k		Wynne, France

2016	STFC SM14699	Frustration of crystallisation by a liquid–crystal-line phase (9 shifts beamtime on DLS I22)	45k		Wynne
2015-2016	EPSRC EP/N508792/1	A Dynamic Perspective on Biomolecular Function and Reactivity	14k		Wynne, Laphorn, Smith, Hunt, Fedorov
2015	STFC SM11285	Liquid crystalline states frustrating crystallisation (2 shifts beamtime on DLS I22)	15k		Wynne
2013-2016	EPSRC EP/K034995/1	Solvation dynamics and structure around proteins and peptides: collective network motions or weak interactions	546k		Wynne, Laphorn, Kelly
2012-2013	UKIERI	Proposal for holding joint Symposia on ‘Structure and Dynamics’ between Indian Institute of Science Education and Research, Pune, India and University of Glasgow, Glasgow, UK	15k	16k	Ganesh, Wynne
2012-2015	EPSRC EP/J00975X/1 EP/J009733/1	The structure and dynamics of water confined in nanoscale pools: the dynamic crossover	523k		Wynne, Hunt
2011-2012	EPSRC	Bridging the Gap-EPSRC: Ultrafast chemical physics equipment sharing	27k		Wynne, Murray, Senn
2012-2015	EPSRC EP/J004790 EP/J004812 EP/J014478	Liquid–liquid transitions in molecular liquids: from supramolecular structure to phase separation	664k		Wynne, Sefcik
2013	RSC	Faraday Discussion Meeting ‘Mesostructure and dynamics in liquids and solutions’			K. Wynne, A. Soper (RAL), A. Angel (Arizona State U.), K. Seddon (Queen’s U.), S. Meech (UEA), H.E. Stanley (Boston U.)
2010	ISIS 1010269	A liquid-liquid transition in supercooled Gallium (3 days on SANDALS)			Wynne, Demmel, Howells, Turton
2008-2013	EPSRC EP/F06926X	Two-dimensional terahertz–IR spectroscopy: a unique probe of ultrafast hydrogen-bond dynamics of liquid water and model systems	691k		Wynne, Karolin, Birch
2007-2012	EPSRC EP/E046541	Terahertz spectroscopy of aqueous ionic solutions to understand the role of hydrogen-bond network breaking and strengthening in the Hofmeister series	562k		Wynne, Hunt
2006-2011	EPSRC EP/D062861	Nanometrology for Molecular Science, Medicine and Manufacture		3118k	Birch, Pickup, Faulds, O’Donnell, Smith, Martin, Wynne, Dawson, Girkin, Graham, Gnudi, Rolinski
2006-2011	SFC	Nanometrology for Molecular Science, Medicine and Manufacture		1150k	Birch, Pickup, Faulds, O’Donnell, Smith, Martin, Wynne, Dawson, Girkin, Graham, Gnudi, Rolinski
2004-2007	EPSRC GR/S95510	A comparison of the THz-frequency vibrational spectra of (chiral) liquids obtained through ultrafast infrared and Raman spectroscopies	252k		Wynne
2004-2005	Wolfson Foundation	Nanometrology of colloidal particles		449k	Birch, Wynne, Smith, Graham
2004-2009	Leverhulme Trust F/00273/E	Surface-enhanced ultrafast Kerr-effect spectroscopy of dynamics in biomolecules	125k		Wynne, Birch
2004-2007	EPSRC GR/S75369	Understanding the structural and dynamic basis of kinetics in biomolecules using novel ultrafast Raman techniques	330k		Wynne, Birch, Smith, Graham, Karolin
2004-2005	SHEFC SRIF	Materials preparation and characterisation equipment, and solid-state ultrafast laser		470k	Several investigators including D.J.S. Birch and K. Wynne

		sources (SHEFC, Science Research Investment Fund)			
2003-2006	EPSRC GR/S48110 & GR/S48127	Single Molecule Sensing in Clinical Medicine (EPSRC Adventure Fund)		528k	Birch, Pickup, Smith, Wynne, Graham, Gnudi, Rolinski
2003-2006	EPSRC GR/R97566	Using electromagnetic pulses emitted by ultrafast molecular currents for studying charge-transfer reactions	21k		Wynne, Jaroszynski
2002-2006	EPSRC GR/R88090	Basic technology: Developing laser-plasma accelerators and coherent radiation sources as tools for time-resolved studies		4270k	Jaroszynski, Burnett, Cairns, Dangor, Gillespie, Wark, Bingham, Poole, Norreys, Wynne, Hooker, Krushelnick, Walmsley
1999-2001	EPSRC GR/M75600	Ultrafast electron-energy loss/gain spectroscopy (fs-EELS/EEGS)	78k		Wynne, Jaroszynski
1999-2002	SHEFC RDG	X-ray to infrared sources for Strathclyde Terahertz to Optical Pulse Source (TOPS)		570k	Jaroszynski, Phelps, Wynne
1999-2003	PRF 34344 - AC6	Chemical reaction control with high-power femtosecond electrical pulses	40k		Wynne
1999-2002	EPSRC GR/M52090	Study of superradiance and short pulse propagation in an underdense plasma		406k	Jaroszynski, Phelps, Wynne
1999-2003	RS A20172	Femtosecond field emitter	10k		Wynne
1999-2002	SHEFC	Strathclyde Synchronised Electron and High Power Ultra-Short Terahertz to Optical Pulse Source (TOPS)		530k	Jaroszynski, Phelps, Wynne
1999-2002	EPSRC GR/M39312	The solvent response to chemical reactions	190k		Wynne
1997-1999	EPSRC GR/L91627	T-Ray near-field imaging	51k		Wynne
1997-1999	EPSRC GR/K88002	Temporal and spectral dynamics of phonons in crystals excited using subpicosecond optical pulses		193k	Han, Wynne
1996-1997	Strathclyde	Ultrafast reaction dynamics in proteins	20k		Wynne
1997-1999	EPSRC GR/K88972	Fluorescence dynamics in confined water: application to the structure of silica hydrogels		198k	Birch, Wynne
			£8244k	£15386k	

Recent professional activities

Editorial

1. Associate editor of the Journal of the American Chemical Society (JACS) (**2017-2020**).
2. Member of the Editorial Board of the Elsevier journal Chemical Physics (**2012-present**).
3. Member of the editorial advisory board of the Journal of Physical Chemistry (**2012-2015**).

Panels, committees

4. Member Swiss National Science Foundation (SNSF) panel for the SNSF Consolidator Grants call (**2022-2024**).
5. Member of the RSE B2 (Earth Sciences and Chemistry) Sectional Committee (**2019-present**).
6. Member of the RSC Faraday Division Awards Selection Committee (**2018-2020**).
7. STFC Central Laser Facility (CLF) Octopus / Ultra access panel (**2016-2019**).
8. Member appointment panel Tenured Lecturer position (Serra Hunter Programme) at the University of Barcelona (**2016**).
9. Member of the Faraday Division council of the RSC (**2013-2016**).

10. Member of the EPSRC college of peers (**2012-present**).
11. Member of the committee of the '*Liquids and Complex Fluids Group*' of the IoP (**2011-2013**).
12. Member of the SUPA Physics and Life Sciences (PaLS) committee (**2006/7**).

Conference organisation

13. Co-chair of the international conference on Time-Resolved Vibrational Spectroscopy (TRVS), **2023**, Amsterdam, Netherlands.
14. Co-organiser of the international conference on Time-Resolved Vibrational Spectroscopy (TRVS), **2017**, Cambridge, UK.
15. Organiser of Faraday Discussion meeting 167 on '*Mesostructure and dynamics in liquids and solutions*' (Bristol, September **2013**).
16. Member of the local organising committee of the SU2P Symposium (Glasgow, April **2013**).
17. Member of the scientific advisory committee of the annual general meeting of the European Molecular Liquids Group (EMLG) and Japanese Molecular Liquids Group (**2012-2015**).
18. Organiser with Mischa Bonn (Director MPI for Polymer Research) of a session on Biomolecular Terahertz Spectroscopy (SPIE Photonics West, BIOS, San Francisco, **2013**).
19. Member of the local organising committee of the '*European Conference of Crystal Growth*' ECCG4, Glasgow, June **2012**.
20. Chair for '*Perspectives in Multidimensional Spectroscopy*' in honour of Prof Robin Hochstrasser, University of Pennsylvania, March **2011**.
21. Co-organiser of the '*International workshop on ultrafast chemical physics 2011*', December **2011** in Glasgow. Organising committee: Neil Hunt (Strathclyde), Klaas Wynne (Glasgow), David Klug (Imperial), Helen Fielding (UCL), Steve Meech (UEA), and Julia Weinstein (Sheffield). The UCP 2011 meeting was the subject of a 'news & views' article in the March 2012 issue of Nature Chemistry ([doi:10.1038/nchem.1282](https://doi.org/10.1038/nchem.1282)).
22. Member of the international organising committee of the international conference on Time-Resolved Vibrational Spectroscopy, TRVS (**2009-present**).
23. Member programme committee for SPIE Photonics West (ultrafast phenomena in semiconductors and nanostructures), San Francisco, USA. (**2009-2015**)
24. Organiser of the '*International Workshop on Ultrafast Chemical Physics 2008*' held 30/31 October **2008** in Glasgow with nearly 100 attendees. Organising committee: Klaas Wynne, Neil Hunt (Strathclyde), Steve Meech (UEA), David Klug (Imperial), and Angus Bain (UCL).

Other

25. Project monitor for 2014 BP Trust Fellow (Royal Society of Edinburgh) Dr Olof Johansson (**2015-2020**).
26. Interviewed on air by Michael de Leonardis of KPFT-FM, Houston radio about the Nature Comm. paper on protein dynamics, 19 June **2014**.
27. Initiated a collaboration between the Indian Institute of Science Education and Research (IISER), Pune, India and the University of Glasgow in the area of *dynamics and structure* leading to a bilateral meeting in December 2012 in Pune attended by 9 academic staff from Glasgow and in June 2013 in Glasgow attended by 9 academic staff from Pune (**2012-2013**).
28. Visiting professor in the Department of Chemical and Process Engineering at Strathclyde (**2012-2014**).
29. Guest editor with Neil Hunt for special issue on '*Ultrafast chemical dynamics*' of PCCP published April **2012**.
30. Assessor of the '*Atomic and Molecular Physics: Technical Innovation*' group in the Department of Physics, University of Reading, **2005**
31. Member ESF network '*Ultrafast Structural Dynamics in Physics, Chemistry, Biology, and Material Science (DYNA)*', **2005-2008**

Learned societies

Royal Society of Edinburgh (FRSE), Royal Society of Chemistry (FRSC), Institute of Physics (IOP), and American Chemical Society.

Awards

1. RSC Chemical Dynamics Award for outstanding contributions to time-resolved spectroscopy, **2018**.

2. Strathclyde Teaching Excellence Awards 2010 Certificate of Recognition awarded in recognition of outstanding teaching, **2010**.

Other activities

- Orienteering, hill/mountain running.
- Committee member CLYDE, 2023-present.
- Administrator "Orienteering Mappers Int." Facebook group.

National orienteering events

- Scottish Championships Individual UKOL (planner with Stephen Wilson), 27 May **2023** at Creag Mhic Chailein.

Local orienteering events

1. The Wyndford urban (mapper/planner/organiser), CLYDE, 31 August **2023**.
2. Mugdock (mapper), CLYDE, 8 June **2023**.
3. Croy Hill (mapper), GOAT/CLYDE, 27 April **2023**.
4. Mugdock South Night O (mapper/planner/organiser), GOAT/CLYDE, 23 March **2023**.
5. Campsies Hill O (mapper/planner), GOAT/CLYDE, 11 March **2023**.
6. Colzium Night O (planner/organiser), FVO, 9 Nov. **2022**.
7. Gilmorehill urban (mapper/organiser), CLYDE joint with GUOC, 13 Oct. **2022**.
8. Garscube (mapper/organiser), CLYDE joint with GUOC, 15 Sept. **2022**.
9. Garnethill M8dness urban (mapper/organiser), CLYDE, 16 June **2022**.

Orienteering courses

- SOA Grade C controllers course, 30 Sept. **2023**.
- SOA Planners Workshop, Oct-Dec. **2022**.
- Introduction to Updating Forest Maps, 1 July **2022**.
- SOA Event Safety Workshop, 12 April **2022**.

Awards

- CLYDE "Most improved" male category for mapping and planning, January **2023**.

Languages

Dutch (superior), English (superior), German (intermediate), French (novice).

Visitors, postdocs, & students

Postdocs

1. Ankita Das, from 12 September 2022.
2. Nikita Tukachev (with Hans Senn), 5 October 2020 to 5 December 2022.
3. Chris Syme, from 2020-2021.
4. Ben Russell, from March 2020.
5. Zhiyu Liao, from December 2019.
6. Judith Reichenbach, June-August 2017.
7. Gopakumar Ramakrishnan, February 2014 – March 2017.
8. Mario González-Jiménez, from December 2013.
9. Chris Symes, October 2012 – June 2016.
10. David A. Turton, August 2004-November 2013.
11. Marco Candelaresi, August 2009 – November 2010.
12. Kitsakorn Locharoenrat, July 2008 – May 2009
13. Neil T. Hunt, November 2004 – October 2006
14. Andrew R. Turner, September 2004 – September 2006
15. John J. Carey, 2001-2006
16. Gerard Giraud, 2002 – 2003

PhD/MRes by research students

1. Laure-Anne Hayes, 2023-present.
2. Laure-Anne Hayes, Carnegie Trust Vacation Scholar, summer 2022.
3. Sarah Huynen, October 2020-April 2022.
4. Mauro Vinicio Pazmino Betancourth, 2019-2022.
5. Nina Kinney, MRes by Research, 2019/20.
6. Josh Mitton, '*Robustness, Scalability, and Interpretability Of Equivariant Neural Networks Across Different Low-Dimensional Geometries*', October 2018-September 2022.
7. John Boling, October 2017-2021.
8. Andrew Farrell, October 2016-present.
9. Finlay Walton, '*Mapping and Controlling Nucleation*', October 2015-2019.
10. Judith Reichenbach, '*Structure and Dynamics in Ionic Liquids and Concentrated Salt Solutions: An Ultrafast Spectroscopy Study*', 2013-2017.
11. Joanna Mosses, '*Phase transitions and mesophases in molecular liquids and solutions: spectroscopic and imaging studies*', 2010-2017.
12. Thomas Harwood (effectively taken over from E. Ellis in 2012, University of Strathclyde), '*The Use of Terahertz Spectroscopy for Biomolecular Analysis*', October 2011-March 2016.
13. Marc A. White, October 2010-October 2011.
14. Scott Campbell, December 2007-December 2011.
15. Johan Lundahl, November 2004 – October 2007.
16. Gregor Welsh, '*Understanding and control of ultrafast currents for terahertz pulse generation*', October 2004 – March 2008.
17. Gerard Giraud, '*The solvent response to chemical reactions*', July 1999 – June 2002.
18. John J. Carey, '*Near-field effects studied with T-Rays*', September 1998 – 2001. Ph.D. December 2002.
19. Justyna Zawadzka, '*Ultrafast Electron-Energy Loss and Gain Spectroscopy (fs-EELS/EEGS)*', September 1998 – 2001. Ph.D. February 2003.

Assistant

1. Kathryn Allan (JACS editorial assistant), 2017-2020.

Senior visitors

1. Dr. Daniel Kuroda, Louisiana State University, Baton Rouge, LA, USA, autumn 2022/spring 2023.
2. Dr Olof Johansson, University of Edinburgh, visiting researcher, 2013.
3. Prof Edward W. Castner Jr., Rutgers University, visiting professor, 2010-2013.
4. Prof Robin M. Hochstrasser, Donner Professor of Physical Sciences, Department of Chemistry, University of Pennsylvania. Visiting professor at Strathclyde January 2006-December 2011.

Current collaborators

1. Dr. **Daniel Kuroda** (Louisiana State) – solvent in salt electrolytes.
2. Dr. **Gabriele Sosso** (Warwick), Prof. **Paul McMillan** and Dr. **Martin Wilding** (UCL), Prof. **Gregor Mali** (National Institute of Chemistry, Ljubljana, Slovenia), Prof. **Motohiro Nakano**, Prof. **Yuji Miyazaki** (Osaka University) – properties and simulations of supercooled and vitrified liquids.
3. Prof. **Heather Ferguson**, Dr **Francesco Baldini**, Dr **Simon Babayan**, and Dr **Lisa Ranford-Cartwright** (Institute of Biodiversity Animal Health and Comparative Medicine, GU), Prof **Richard Hogg** and Dr **David Childs** (School of Engineering, GU), Prof. **Roderick Murray-Smith** (Computing Science, GU), Prof **Hilary Ranson** (Dept. of Vector Biology, U. Liverpool), Dr **Abdoulaye Diabaté** (*Institut de Recherche en Sciences de la Santé*, Burkina Faso), Dr **Fredros O. Okumu** (Ifakara Health Institute, Tanzania) – spectroscopy and machine learning of mosquitoes.
4. Prof. **Neil Hunt** (University of York, Physics), Dr **Glenn Burley** (SU, Chemistry), Dr **Gregory Greetham**, Dr **Paul Donaldson**, **Michael Towrie**, **Anthony Parker** (STFC Central Laser Facility) – DNA dynamics.
5. Dr **Olga Shebanova** (Diamond Light Source) – Microfocus SAXS/WAXS of liquids.
6. Prof **Johannes Kiefer** (Technische Thermodynamik, U. Bremen), Hyung Kim (Dept. Chem., Carnegie Mellon) – ionic liquids.
7. Dr **Elizabeth Ellis** (Strathclyde University), **Adrian Laphorn** (Glasgow), **Sharon Kelly** (Glasgow), and **Hans Senn** (Glasgow) — protein and DNA dynamics.

8. Prof **Richard Buchner** (U. Regensburg, Germany), Prof **Glen Hefter** (Murdoch U., W.A.), Dr **Markus Walther** (U. Freiburg, Germany), Dr **Natalia Plechkova** (Queen's Belfast) — dielectric relaxation experiments, ionic liquids. Six papers published. Visiting PhD students 2011/2012.

Knowledge exchange and impact

- I initiated a collaboration on the study of malaria-carrying mosquitos using infrared spectroscopy and machine learning with Prof. **Heather Ferguson**, Dr **Francesco Baldini**, Dr **Simon Babayan**, and Dr **Lisa Ranford-Cartwright** (Institute of Biodiversity Animal Health and Comparative Medicine, GU), Prof **Richard Hogg** and Dr **David Childs** (School of Engineering, GU), Prof. **Roderick Murray-Smith** (Computing Science, GU), Prof **Hilary Ranson** (Dept. of Vector Biology, U. Liverpool), Dr **Abdoulaye Diabaté** (*Institut de Recherche en Sciences de la Santé*, Burkina Faso), Dr **Fredros O. Okumu** (Ifakara Health Institute, Tanzania). This has led (a) to the funding of a two-year £664k GCRF grant (MRC MR/Po25501/1) to develop the technique and to implement it in Tanzania, (b) which was followed by a £2.8M grant by the Gates Foundation, and (c) effected the start of a policy change where mid-IR spectroscopy is increasingly used for malaria surveillance and control. The technology is now being expanded to include the genetics of aging in fruit flies, and onchocerciasis (river blindness) causing worms funded by the Gates Foundation. The first steps have been made by Ferguson to get our new screening technique accredited by the WHO. This project is still developing but is one of the potential impact case studies of the School of Chemistry for REF.

Administrative responsibilities

1. Class head of CHEM1010 and deputy head of CHEM1001 (**2022-present**).
2. Third-year Physical Chemistry paper setter (**2019-present**)
3. Advisor of Studies (**2018-present**).
4. Principal web publisher of the School of Chemistry (**2011-present**).
5. Deputy head of School of Chemistry (**2016-2017**).
6. Director of Research Chemistry (**2016-2017**).
7. Deputy director WestCHEM (**2016-2017**).
8. Member of the WestCHEM management group (**2012-2017**).
9. Member of the School Management Group (**2011-2017**).
10. Member of the college research & knowledge transfer committee (**2011-2017**).
11. REF champion in the School of Chemistry (**2011-2017**).
12. Member of the Glasgow University Senate (**2011-present**).
13. Member of the college web committee (**2011-2017**).
14. Head of the dynamics & structure section (**2015-2016**).
15. Head of the physical chemistry section (**2012-2014**).
16. Champion dynamics & structure grouping (**2012-2014**).
17. Deputy research convenor in the School of Chemistry (**2011-2016**).
18. Class Head for Chemical Physics (**2012-2016**).
19. Class Head for Chemistry and Mathematics (**2012-2016**).
20. Member of teaching committee (**2012-2016**).

Undergraduate teaching

1. Level 1 - Thermodynamics (**2012-present**).
2. Level 3 – Hot Chemistry (**2017-present**).
3. Level 4 - S6p – ‘Dynamics of molecular clusters and fluids’ (**2011-present**).
4. MSci placement talks (**2011-present**).
5. Class Head for Chemical Physics (**2012-2016**).
6. Class head for Chemistry and Maths (**2012-2016**).
7. 1st year Quant lab (**2011-2019**).
8. 2nd year tutorials (**2011-2019**).
9. 3rd year PChem tutorials (**2011-2019**).

Publications

<http://www.researcherid.com/rid/B-7993-2008>, <http://orcid.org/0000-0002-5305-5940>

Papers in refereed journals

1. E.P. Mwanga, I.S. Mchola, I.H. Mshani, D.J. Siria, S.H. Mwinyi, S. Abbas, G. Selemani, M. González-Jiménez, K. Wynne, M.T. Sikulu-Lord, P. Selvaraj, F.O. Okumu, F. Baldini, S.A. Babayan, 'Rapid assessment of the blood-feeding histories of wild-caught malaria mosquitoes using mid-infrared spectroscopy and machine learning', *Malaria J.* **submitted** (2024).
2. Z. Liao, A. Das, C. Glen Robb, R. Beveridge, and K. Wynne, 'Amorphous aggregates with a very wide size distribution play a central role in crystal nucleation', *Chem. Sci.* **submitted** (2024). (<https://doi.org/10.26434/chemrxiv-2023-18zk5-v3>)
3. B.A. Russell, K. Wynne, 'A method for rheological measurements of air sensitive samples', *Rev. Sci. Instrum.* **In press** (2024). (<https://doi.org/10.26434/chemrxiv-2023-w73hw>)
4. M. González-Jiménez, Z. Liao, E. Lloyd Williams, K. Wynne, 'Lifting Hofmeister's curse: Impact of cations on diffusion, hydrogen bonding and clustering of water', *J. Am. Chem. Soc.* **146**, 368–376 (2024). (<https://doi.org/10.1021/jacs.3c09421>)
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Conference papers

103. J. Mitton, H. Senn, K. Wynne, R. Murray-Smith, 'A Graph VAE and Graph Transformer Approach to Generating Molecular Graphs', ICML 2020 Workshop on Graph Representation Learning and Beyond (GRL+ 2020).
104. K. Wynne and Finlay Walton, 'Control over phase separation and nucleation using an optical-tweezing potential', Proc. SPIE 10723, Optical Trapping and Optical Micromanipulation XV, 107230O (2018). (<http://dx.doi.org/10.1117/12.2324119>)
105. D. Turton, T. Harwood, A. Laphorn, E. Ellis, and K. Wynne, 'Ultrabroadband terahertz spectroscopies of biomolecules and water', Proc. SPIE **8623**, 862303-1-7 (2013). (<http://dx.doi.org/10.1117/12.2003796>)
106. D.A. Turton, J. Hunger, A. Stoppa, G. Hefter, A. Thoman, M. Walther, R. Buchner, and K. Wynne, 'Terahertz Dynamics of Ionic Liquids from a Combined Dielectric Relaxation, Terahertz, and Optical Kerr Effect Study: Evidence for Mesoscopic Aggregation', Proc. SPIE **7601**, 76010H (2010). (<http://dx.doi.org/10.1117/12.840185>)
107. D.A. Turton, J. Hunger, G. Hefter, R. Buchner, K. Wynne, 'Glasslike Behaviour in Aqueous Electrolyte Solutions', in: 'Ultrafast Phenomena XVI', pp. 484-486, Eds. P. Corkum, S. de Silvestri, K.A. Nelson, E. Riedle, R.W. Schoenlein (Springer Verlag, Berlin, 2009).
108. G.H. Welsh, K. Wynne, 'Terahertz-pulse emission through excitation of surface plasmons in metallic nanostructures', Proc. SPIE **6892**, 68921E (2008). (<http://dx.doi.org/10.1117/12.759115>)
109. G.H. Welsh, N.T. Hunt, and K. Wynne, 'Terahertz Emission from Nano-structured Metal Surfaces', in: 'Ultrafast Phenomena XV', pp. 778-780, Eds. P. Corkum, D. Jonas, R.J.D. Miller, A.M. Weiner (Springer Verlag, Berlin, 2007).
110. D.A. Turton, N.T. Hunt, A.R. Turner, G.H. Welsh, and K. Wynne, 'An experimental and numerical study of hydrogen-bonding in aqueous salts and methanol', in: 'Ultrafast Phenomena XV', pp. 427-429, Eds. P. Corkum, D. Jonas, R.J.D. Miller, A.M. Weiner (Springer Verlag, Berlin, 2007).
111. N.T. Hunt, D.A. Turton, and K. Wynne, 'Understanding the Building Blocks of Life – Evidence of Hydrogen-Bonded Aggregation of N-Methylacetamide', in: 'Ultrafast Phenomena XV', pp. 442-444, Eds. P. Corkum, D. Jonas, R.J.D. Miller, A.M. Weiner (Springer Verlag, Berlin, 2007).
112. N.T. Hunt, D.A. Turton, L. Kattner, R.P. Shanks, and K. Wynne, 'Direct observation of the 'lubricant of life' using ultrafast spectroscopies', in: 'Ultrafast Phenomena XV', pp. 504-506, Eds. P. Corkum, D. Jonas, R.J.D. Miller, A.M. Weiner (Springer Verlag, Berlin, 2007).
113. N.T. Hunt, A.R. Turner, K. Wynne, 'Inter- and Intra-Molecular Hydrogen Bonding in Phenol Derivatives: A Model System for Polypeptides', Proceedings of the 12th Conference on Time-Resolved Vibrational Spectroscopy (TRVS), Eds. E.T. Heilweil, T.L. Gustafson (2005).
114. K. Wynne, 'A new ultrafast technique for measuring the terahertz dynamics of chiral molecules: The theory of Optical Heterodyne-Detected Raman-Induced Kerr Optical Activity (OHD-RIKOA)', Proceedings of the 12th Conference on Time-Resolved Vibrational Spectroscopy (TRVS), Eds. E.T. Heilweil, T.L. Gustafson (2005).
115. J.J. Carey, D. Jones, S.P. Jamison, K. Wynne, 'THz Emission from Charge-Transfer Reactions in Molecules Aligned in Solutions and Crystals', in: 'Ultrafast Phenomena XIII', Eds. R.D. Miller, M.M. Murnane, N.F. Scherer, A.M. Weiner (Springer Verlag, Berlin, 2003 pp. 412-414).
116. G. Giraud, C. Gordon, K. Wynne, 'Time-resolved optical Kerr-effect studies of organic solvents and ionic liquids', Proc. Ultrafast Spectroscopy Conference (2002).
117. J.J. Carey, S. Jamison, D. Jones, D.A. Jaroszynski, K. Wynne, 'Nonlinear and Near-Field Propagation Effects of Single-Cycle Terahertz Pulses', IEEE Ann. Meeting Conf. Proc., 13th Ann. LEOS Meeting, 181-182 (2000).
118. J.J. Carey, J. Zawadzka, D.A. Jaroszynski, K. Wynne, 'THz-Pulse Studies of Superluminal Propagation in Frustrated Total Internal Reflection' in: 'Ultrafast Phenomena XII', Eds. T. Elsaesser, S. Mukamel, M.M. Murnane, N.F. Scherer (Springer Verlag, Berlin, 2000, pp. 238-240).

119. J. Zawadzka, D.A. Jaroszynski, J.J. Carey, K. Wynne, 'Evanescent-Wave Acceleration of Ultrashort Electron Pulses,' in: 'Ultrafast Phenomena XII,' Eds. T. Elsaesser, S. Mukamel, M.M. Murnane, N.F. Scherer (Springer Verlag, Berlin, 2000, pp. 308-310).
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121. K. Wynne, J.J. Carey, J. Zawadzka, D.A. Jaroszynski, 'Near-Field Phenomena Observed with Terahertz Pulses,' SPIE Proceedings 3828, 254-262 (1999).
122. K. Wynne, D.A. Jaroszynski, 'T-Rays in the Near-Field,' 23rd International Conference on Infrared and Millimeter Waves, Conference Digest, Eds. T.J. Parker, S.R.P. Smith, University of Essex, Colchester, pp. 386-387, 1998, ISBN 0 9533839 0 3.
123. K. Wynne, 'Ultrafast Terahertz Pulses: A Booming Technology,' 23rd International Conference on Infrared and Millimeter Waves, Conference Digest, Eds. T.J. Parker, S.R.P. Smith, University of Essex, Colchester, pp. 9-12, 1998, ISBN 0 9533839 0 3.
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125. G. Haran, K. Wynne, C.C. Moser, P.L. Dutton, R.M. Hochstrasser, 'Femtosecond Infrared Studies of Photosynthetic Reaction Centers: New Charge Transfer Bands and Ultrafast Energy Redistribution,' in: 'Ultrafast Phenomena X,' Eds. P.F. Barbara, J. Fujimoto, W.H. Knox, W. Zinth (Springer Verlag, Berlin, 1996, p.326).
126. K. Wynne, G. Haran, G.D. Reid, C.C. Moser, G.C. Walker, S. Maiti, P.L. Dutton, R.M. Hochstrasser, 'Femtosecond Infrared Spectroscopy on Reaction Centers of Rb. Sphaeroides,' in: 'Time-Resolved Vibrational Spectroscopy VII,' Eds. R.B. Dyer, M.A.D. Martinez, A. Shreve, W.H. Woodruff (Los Alamos, 1997), p. 191.
127. K. Wynne, G. Haran, G.D. Reid, C.C. Moser, G.C. Walker, S. Maiti, P.L. Dutton, R.M. Hochstrasser, 'Femtosecond Infrared Spectroscopy on Reaction Centers of Rb. Sphaeroides,' in: 'The Reaction Center of Photosynthetic Bacteria: Structure and Dynamics,' Ed.: M.-E. Michel-Beyerle (p. 281-286, Springer Verlag, Berlin, 1996).
128. G.C. Walker, S. Maiti, K. Wynne, G.D. Reid, C.C. Moser, R.S. Pippenger, B.R. Cowen, P.L. Dutton, R.M. Hochstrasser, 'Femtosecond Infrared Spectroscopy of the Photosynthetic Reaction Center,' in 'Ultrafast Phenomena IX,' Eds. P.F. Barbara, W.H. Knox, G.A. Mourou, A.H. Zewail (Springer Verlag, Berlin, 1994, p. 439).
129. R.M. Hochstrasser, B.R. Cowen, P.L. Dutton, C. Galli, S. LeCours, S. Maiti, C.C. Moser, D. Raftery, M. Therien, G. Walker, K. Wynne, 'Vibrational Dynamics in Condensed Phases and Proteins,' in: 'Time-Resolved Vibrational Spectroscopy VI' (Springer Verlag, Berlin, 1994, p. 191).
130. K. Wynne, C. Galli, P.J.F. De Rege, M.J. Therien, R.M. Hochstrasser, 'Vibrational Coherence in Charge Transfer,' in 'Ultrafast Phenomena VIII,' Eds. J.-L. Martin, A. Migus, G.A. Mourou, A.H. Zewail (Springer Verlag, Berlin, 1993, p. 71).
131. K. Wynne, M. Müller, J.D.W. Van Voorst, 'High Time Resolution with Incoherent Light in the Raman Fringe Decay,' in 'Ultrafast Phenomena in Spectroscopy,' Eds. E. Klose, B. Wilhelmi (Springer Verlag, Berlin, 1990).
132. M. Müller, K. Wynne, J.D.W. Van Voorst, 'High Time Resolution and Coherence Effects with Incoherent Light in the Raman Fringe Decay,' in 'Ultrafast Phenomena VII,' Eds. C.B. Harris, E.P. Ippen, G.A. Mourou, A.H. Zewail (Springer Verlag, Berlin, 1990).

Oral presentations

Conferences

1. International Symposium on Industrial Crystallization (joint with Annual Meeting of the British Association of Crystal Growth), September 2023, Glasgow, UK (**plenary**).
2. 9th International Discussion Meeting on Relaxations in Complex Systems (9IDMRCS), August **2023**, Chiba, Japan (**invited**).
3. Chemistry and Physics of Liquids Gordon Research Conference, August **2023**, Holderness, NH, USA (**invited**).
4. Telluride workshop on Vibrational Dynamics, July **2023**, Telluride, Colorado, USA (**invited**).
5. 27th International Conference on Raman Spectroscopy (ICORS), August **2022**, Long Beach, CA, USA.
6. 16th International Conference on the Physics of Non-Crystalline Solids, July **2022**, Canterbury, UK.
7. Paul F. McMillan Symposium, UCL, June **2022**, London, UK (**invited**).

8. Telluride workshop on Vibrational Dynamics, July **2021**, Telluride, Colorado, USA (**invited**).
9. Telluride workshop on Water Structure, Dynamics, and Thermodynamics in Biology, June **2021**, Telluride, Colorado, USA (**invited**).
10. BCA and BACG Joint Online Meeting 2021, March/April 2021 (**invited keynote**).
11. Annual meeting of the British Association for Crystal Growth, Glasgow, UK, **2020**, cancelled (**invited**).
12. Telluride workshop on Vibrational Dynamics, July **2019**, Telluride, Colorado, USA (**invited**).
13. SolvATE workshop, Feb. **2019**, Lyon, France (**invited**).
14. RSC Spectroscopy and Dynamics Group meeting, January **2019**, Nottingham (**invited**).
15. 26th International Conference on Raman Spectroscopy, August **2018**, Jeju, Korea (**keynote**).
16. SPIE Optics + Photonics, August **2018**, San Diego, USA (**invited**).
17. 1st Ultrafast Chemical Physics in Scotland meeting, March **2018**, Edinburgh (**invited**).
18. 2nd Southampton Symposium on Water, February **2018** (**invited**).
19. 1st Samsung Global Research Symposium on Structure, Dynamics, and Thermodynamics of Biomolecular Networks, November **2017**, Seoul, Korea (**invited**).
20. 8th International Discussion Meeting on Relaxations in Complex Systems, July **2017**, Poland (**invited**).
21. International Conf. on Time Resolved Vibrational Spectroscopy (TRVS), July **2017**, Cambridge, UK.
22. WaterSpain 2017, July **2017**, Zaragoza, Spain.
23. 253rd ACS National Meeting, April **2017**, San Francisco, USA (**invited**).
24. EMLG/JMLG annual meeting, September **2016**, Crete, Greece (**invited**).
25. Gordon Research Conference on Water & Aqueous Solutions, August **2016**, Holderness NH, USA, discussion leader and introduction (**invited**).
26. Optics within Life Sciences (OWLS 2016), March **2016**, Mumbai, India (**invited**).
27. EMLG/JMLG annual meeting, September **2015**, Rostock, Germany.
28. EMLG/JMLG annual meeting, September **2013**, University of Lille 1, France.
29. International Conference on Time Resolved Vibrational Spectroscopy, May **2013**, Beppu, Japan.
30. SPIE Photonics West, February **2013**, San Francisco, USA (**invited**).
31. Advanced Photonics Techniques in Soft Matter and Biology, January **2013**, London (**invited**).
32. Symposium on Structure and Dynamics, December **2012**, IISER Pune, India (**invited**).
33. 23rd International Conference on Raman Spectroscopy, August 2012, Bangalore, India (**invited**).
34. Ultrafast Chemical Physics 2011, December **2011**, Glasgow, UK (**invited**).
35. EMLG/JMLG meeting, September **2011**, Warsaw, Poland (**invited plenary lecture**).
36. Mini-conference on liquid-liquid transitions in water, Boston University, July **2011**, USA (**invited**).
37. International Conference on Time Resolved Vibrational Dynamics, June **2011**, Switzerland.
38. 6th WestCHEM Research Day, June **2011**, Glasgow (**invited**).
39. Faraday Discussion 150: Frontiers in Spectroscopy, April **2011**, Basel, Switzerland.
40. Gordon Research Conference on Vibrational Spectroscopy, Aug. **2010**, Biddeford, ME, USA (**invited**).
41. SPIE Photonics West, San Francisco, California, USA, January **2010**.
42. UK Workshop on Ultrafast Dynamics, Belfast, January **2010** (**invited**).
43. EMLG-JMLG Meeting 2009, September **2009**, Salzburg, Austria (**invited**).
44. 14th International Conf. on Time-Resolved Vibrational Spectroscopy, May **2009**, Meredith, NH, USA.
45. 16th International Conference on Ultrafast Phenomena, June **2008**, Stresa, Italy.
46. SPIE Photonics West, 19-24 January **2008**, San Jose, CA, USA (**invited**).
47. Quantum, Atomic, Molecular, and Plasma Physics Conference, September **2007**, UCL (**invited**).
48. Femtochemistry and Femtobiology 8, July **2007**, Magdalen College, Oxford (**invited**).
49. 13th Internat. Conf. on Time-Resolved Vibrational Spectrosc., May **2007**, Freising, Germany (**invited**).
50. Telluride Science Workshop on 'Nonlinear ultrafast spectroscopy in fluids', June **2005**, USA (**invited**).
51. 11th Internat. Conf. on Time-Resolved Vibrational Spectrosc., May **2003**, Italy (**invited**).
52. LEOS Scottish Chapter meeting, Heriot-Watt University, May **2002**, Edinburgh (**invited**).
53. 13th Annual LEOS Meeting, November **2000**, Puerto Rico, USA (**invited**).
54. Gordon Conf. on Vibrational Spectroscopy and Molecular Dynamics, August **2000**, USA (**invited**).
55. SPIE symposium on Terahertz Spectroscopy and Applications, June **1999**, Germany (**invited**).
56. 9th Int. Conf. on Time-Resolved Vibrational Spectrosc., May **1999**, USA (**invited**).
57. 23rd Int. Conf. on Infrared and Millimeter Waves, September **1998**, UK (**invited**).
58. March Meeting of the American Physical Society, Los Angeles, CA, USA, March **1998** (**invited**).
59. 61st Okazaki Conf. on Liq. Dyn. Studied by TR Vib. Spectrosc., Japan, January **1998** (**invited**).

60. 1996 Annual Meeting of the SNF-Center, Århus, Denmark, November **1996 (invited)**.

Departmental

1. Dept. of Physics, Stockholm University, April **2022**.
2. Max Planck Institute for Polymer Research, Mainz, June **2020**.
3. School of Natural and Environmental Sciences, Newcastle University, 14 May **2019**.
4. Dept. of Chemistry, University of York, 3 April **2019**.
5. Dept. of Chemistry, University of Oxford, 25 Feb. **2019**.
6. School of Chemistry, University of East Anglia, 5 Dec. **2018**.
7. Zernike Institute for Advanced Materials, University of Groningen, 26 Oct. **2018**.
8. Dept. of Materials Science and Engineering, University of Sheffield, 7 March **2018**.
9. Materials and Engineering Research Institute, Sheffield Hallam University, November **2015**.
10. School of Chemistry, University of Edinburgh, October **2015**.
11. Max Born Institute, Berlin, 30 April **2014**.
12. Dept. of Chemistry, Ludwig-Maximilians-Universität München, 11 April **2014**.
13. Debye Institute, University of Utrecht, 12 December **2013**.
14. Dept. of Chemistry, École Normale Supérieure, Paris, 31 May **2013**.
15. Dept. of Physical Chemistry, Fritz Haber Institute of the Max Planck Society, Berlin, 13 May **2013**.
16. School of Engineering, Physics, and Mathematics, University of Dundee, 5 April **2013**.
17. Department of Chemistry, University of Amsterdam, 29 November **2012**.
18. Leiden Institute of Chemistry, University of Leiden, 25 October **2011**.
19. Department of Chemistry, University of Leicester, 5 October **2011**.
20. School of Chemistry, University of Nottingham, 16 March **2011**.
21. School of Chemistry, St Andrews University, 16 February **2011**.
22. School of Chemistry and the Photon Sciences Institute, University of Manchester, 6 October **2010**.
23. Department of Chemistry, University of Glasgow, April **2010**.
24. Chemistry Department, Yale University, January **2008**.
25. Advanced Technology Institute, University of Sussex, February **2005**.
26. Department of Physics and Astronomy, University College London, December **2004**.
27. Department of Chemistry, University of Glasgow, November **2004**.
28. Institut de Chimie Moléculaire et Biologique, L'Ecole Polytechnique Fédérale de Lausanne, June **2004**.
29. Department of Physics, Open University, Milton-Keynes, February **2004**.
30. E.C. Stoner Colloquium, Department of Physics & Astronomy, University of Leeds, March **2001**.
31. Department of Chemistry, University of Nottingham, May **2000**.
32. Max Born Institute, Berlin, Germany, March **1999**.
33. IEEE Lecture at the City University, London, UK, September **1998**.
34. National Physics Laboratory, Teddington, UK, May **1998**.
35. School of Physics and Astronomy, University of St. Andrews, St. Andrews, UK, February **1998**.
36. Department of Chemistry, Emory University, Atlanta GA, USA, May **1997**.
37. Department of Physics, University of Strathclyde, April **1997**.
38. Department of Chemistry, University of Leeds, January, **1997**.
39. Max Planck Institut für Biophysikalische Chemie, Göttingen, Germany, December **1996**.
40. University of Pittsburgh, Department of Chemistry Colloquium, June **1996**.