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 EDUCATION

Oct 2006 – Jan 2010PhD Physics, Imperial College London, UK (Supervisor: Prof. Peter Török)
“Informational limits in optical polarimetry and vectorial imaging”

Sep 2002 – Jul 2006MPhys Physics, Trinity College, University of Oxford, UK 1st class

 RESEARCH EXPERIENCE

Mar 2023 – presentAssistant Professor, School of Electrical and Electronic Engineering (EEE) and Institute for Digital Molecular Analytics and Science, Nanyang Technological University, Singapore

Oct 2016 – Mar 2023Royal Society University Research Fellow (Independent Group Leader), Imperial College London, UK “Mesoscopic plasmon speckle: fundamentals and applications”

Jan 2015 – Sep 2016Max Planck Research Fellow, Max Planck Institute for the Science of Light, Germany
“Anisotropic whispering-gallery mode resonators”

Sep 2013 – Jan 2015Alexander von Humboldt Fellow, Max Planck Institute for the Science of Light, Germany
“Hybrid photonic-plasmonic micro-resonators for single molecule sensing”

Oct 2012 – Sep 2013Max Planck Research Fellow, Max Planck Institute for the Science of Light, Germany
“Theory of plasmon enhanced whispering-gallery mode biosensing”

Dec 2011 – Sep 2012KTS Research Fellow, National Physical Laboratory, UK
“Characterisation and calibration of 3D optical tomographic systems for surface metrology”

Nov 2010 – Nov 2011Research Associate, Photonics, Imperial College London, UK
“SUper-Resolution Photonics for Advanced Storage Systems (SURPASS)”

Jul 2010 – Oct 2010Visiting Lecturer – Institute of Biophotonics, National Yang-Ming University, Taiwan

Jan 2010 – Oct 2010EPSRC Research Fellow, Photonics, Imperial College London, UK
“Single molecule studies via polarisation microscopy”

 CITATION STATISTICS (SOURCE: GOOGLE SCHOLAR AS OF SEPTEMBER 8, 2025)

A FULL PUBLICATION LIST CAN BE FOUND BELOW.

Total papers (invited): 55 (5)

Total citations (since 2020): 3323 (1805)

Total books/chapters: 2

h-index (since 2020): 24 (18)

Conference presentations (invited/keynote): 49 (13/1)

i10-index (since 2020): 45 (34)

 PROFESSIONAL ACTIVITIES

EDITORIAL	2023 – present	Topical Editor – Optics Letters, Optica Publishing Group (2022 IF: 3.6)
	2017 – 2023	Associate Editor – Optics Express, Optica Publishing Group (2022 IF: 3.8)
	2023	Guest Editor – Special Issue on “Advanced Sensing and Imaging Technologies” in Sensors, Multidisciplinary Digital Publishing Institute (2022 IF: 3.9)
	2021 – 2024	Section Editor – Sensors, Multidisciplinary Digital Publishing Institute (2022 IF: 3.9)
	2007 – 2010	Senior layout- and copy- editor – Journal of the European Optical Society
COMMITTEE	2024 – present	Associate Director for Student Affairs – IDmXS, Nanyang Technological University, Singapore
	2024 – present	Member – IDmXS Health and Safety Committee, Nanyang Technological University, Singapore
	2017 – 2022	Chair – Physics Fellows’ Forum, Imperial College London, UK
	2017	Round table – Royal Society, Berlin-Brandenburg Akademie der Wissenschaften and Leopoldina

DR. MATTHEW R. FOREMAN: CURRICULUM VITAE CTD.



PROFESSIONAL ACTIVITIES CTD.

PEER REVIEW	2011 – present	Proposal reviewer – National Research Foundation of Korea, National Natural Science Foundation of China (NSCF), Israel Science Foundation (ISF), Romanian National Council for Scientific Research and Georgian Shota Rustaveli National Science Foundation
	2007 – present	Peer reviewer – including Nature Publishing, American Physical Society, Optical Society of America and American Chemical Society. Full WoS record: https://www.webofscience.com/wos/author/record/1203541
OUTREACH	2017	Outreach Volunteer – Imperial Festival, Imperial College London, UK
	2015	Outreach Volunteer – Siegmán International School on Lasers, Max Planck Institute for the Science of Light, Germany
	2013	Outreach Volunteer – Lange Nacht der Wissenschaften (Long Night of Science), Max Planck Institute for the Science of Light, Germany
OTHER	2024 – 2025	Judge – 3-minute thesis, Nanyang Technological University, Singapore
	2018 – present	Mentor – Institute of Physics Membership Accreditation and Recognition Scheme, Imperial College London, UK
	2018	Scientific Consultant – Lightvert Ltd., UK
	2007 – 2010	Administrative assistant – Journal of the European Optical Society: Rapid Publications



GRANTS AND FUNDING OBTAINED

2025 – 2027	Ministry of Education AcRF Tier 1 Grant <i>“Low coherence lens-less imaging for nanoparticle based diagnostics”</i>	PI	~ S\$ 200k
2024 – 2025	Ministry of Education AcRF Tier 1 Seed Grant <i>“Novel surface modes in optically anisotropic whispering gallery resonators”</i>	PI	~ S\$ 100k
2023 – 2025	Ministry of Education AcRF Tier 1 Grant <i>“Random photonic and plasmonic waveguide networks for single molecule sensing: a feasibility study”</i>	PI	~ S\$ 100k
2023 – 2026	NTU Start-up Grant <i>“High-performance computational modelling of electromagnetic sources in random scattering media”</i>	PI	~ S\$ 200k
2021 – 2024	Royal Society Extension Grant <i>“Back-scatter imaging through disordered media”</i>	PI	~ £ 471k
2020 – 2025	Microsoft Research (Cambridge) Scholarship <i>“3D polarisation imaging for optical storage and bioimaging”</i>	co-PI	~ £ 145k
2018 – 2022	Royal Society Starter Grant <i>“Polarisation imaging in random media”</i>	PI	~ £ 84k
2017 – 2021	EPSRC DTA Scholarship <i>“Correlography of randomly scattered surface plasmons for quantitative biology”</i>	PI	~ £ 150k
2016 – 2021	Royal Society University Research Fellowship <i>“Mesoscopic plasmon speckle: fundamentals and applications”</i>	PI	~ £ 515k
2013 – 2015	Alexander von Humboldt Research Fellowship <i>“Hybrid photonic-plasmonic micro-resonators for single molecule sensing”</i>	PI	~ € 100k
2011 – 2012	EPSRC Knowledge Transfer Grant <i>“Characterisation and calibration of 3D optical tomographic systems for surface metrology”</i>	co-I	~ £ 85k
2010 – 2011	EPSRC PhD Plus Fellowship <i>“Single molecule studies via polarisation microscopy”</i>	co-I	~ £ 35k



AWARDS AND HONOURS

2016 – 2021	Royal Society University Research Fellowship – The Royal Society, UK
2015	Outstanding Reviewer – Optics Communications
2013 – 2015	Humboldt Research Fellowship – Alexander von Humboldt Foundation, Germany
2011	Excellence in Teaching Award – Faculty of Natural Sciences, Imperial College London, UK
2010	Springer Outstanding PhD Research Prize – Springer-Verlag
2010	EPSRC PhD Plus Fellowship – Engineering and Physical Sciences Research Council, UK
2007	Springer Presentation Award – EOS Advanced Imaging Topical Meeting
2003 – 2006	Peter Fisher Prize, Finals Prize and Millard Scholarship – Oxford University, UK

DR. MATTHEW R. FOREMAN: CURRICULUM VITAE CTD.



TEACHING / SUPERVISION EXPERIENCE

LECTURING	2025 – present	EE6311 Integrated Nanophotonic Devices (class of ~ 70 Masters and PhD students – course coordinator – 13 hours lectures) School of Electronic and Electrical Engineering – Nanyang Technological University, Singapore
	2017 – 2019	MSE201 Partial Differential Equations (class of ~ 100 2nd year undergraduates – 6 hours) Department of Materials – Imperial College London, UK
	2017 – 2019	MSE201 Maxwell's Equations (class of ~ 100 2nd year undergraduates – 6 hours) Department of Materials – Imperial College London, UK
	2013	Whispering Gallery Mode Resonators (class of ~ 25 PhD students – 8 hours) Friedrich-Alexander Universität Erlangen-Nürnberg - SAOT Winter Academy, Austria
	2010	Polarisation Imaging (class of ~ 20 Masters and PhD students – 18 hours) Institute of Biophotonics, National Yang-Ming University, Taiwan
	2010	Fundamentals of Matlab (class of ~ 30 Masters and PhD students – 20 hours) Institute of Biophotonics, National Yang-Ming University, Taiwan
SUPERVISION	Full supervision list available from www.mrforeman.com/downloads/misc/SupervisionList.pdf	
	PhD	graduated: 3 students as lead supervisor current: 5 + (1) students as lead (co-) supervisor
	PhD intern	2 students – Max Planck Institute for the Science of Light, Germany
	Masters	3 students – Nanyang Technological University, Singapore, UK 13 students – Imperial College London, UK
	UG/Other	See full supervision list for details.
TUTORIALS	2025 – present	IE2107 Engineering Mathematics II – School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
	2025 – present	EE1102 Physics Foundation – School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
	2023 – 2025	EG2810 Engineering Mathematics A – School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
	2017 – 2019	MSE201 PDEs – Department of Materials, Imperial College London, UK
	2017 – 2019	MSE201 Maxwell's equations – Department of Materials, Imperial College London, UK
	2010 – 2011 2007 – 2008	2nd year UG Physics – Department of Physics, Imperial College London, UK 2nd year UG Physics – Department of Physics, Imperial College London, UK
LABS	2023 – 2025	FE1073 An Introduction to Engineering and Practices – Nanyang Technological University, Singapore
	2023 – 2024	EE2110L Signals and systems – School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
	2008 – 2010	MSc Optics and Photonics – Imperial College London, UK
ASSESSMENT	Full assessment list available from www.mrforeman.com/downloads/misc/SupervisionList.pdf	
	PhD Defense	2 students – University College London, UK – Nanyang Technological University, Singapore
	PhD Late Stage	2 students – Imperial College London, UK
	PhD Early Stage	6 students – Nanyang Technological University, Singapore 2 students – Imperial College London, UK
	Masters Project	17 students – Department of Physics, Imperial College London, UK 1 student – Nanyang Technological University, Singapore
	Others	See full supervision list for details.



MEMBERSHIP OF PROFESSIONAL / LEARNED SOCIETIES

- UK Higher Education Authority (Fellow)
- Institute of Physics (Full Member)
- European Optical Society (Full Member)
- LUX Photonics Consortium (Faculty Member)
- The Royal Society (Research Fellow Alumni)
- Humboldt Foundation (Research Fellow Alumni)
- Max Planck Society (Research Fellow Alumni)

DR. MATTHEW R. FOREMAN: PUBLICATION LIST

All publications are available from www.mrforeman.com/publications.php.



PEER-REVIEWED PUBLICATIONS (ITALICS DENOTES INVITED ARTICLE)

- K. Wang, N. Byrnes and **M. R. Foreman**, “Generalized Wigner-Smith theory for perturbations at exceptional and diabolic point degeneracies” arXiv:2508.05039 (2025).
- K. Wang, Q. J. Wang, **M. R. Foreman** and Y. Luo, “Topological Engineering of High-Order Exceptional Points through Transformation Optics” arXiv:2503.12423 (2025).
- N. Byrnes and **M. R. Foreman**, “Generalized Wigner-Smith analysis of resonance perturbations in arbitrary Q non-Hermitian systems” Phys. Rev. Research 7, 013299 (2025).
- N. Byrnes and **M. R. Foreman**, “Perturbing scattering resonances in non-Hermitian systems: a generalized Wigner-Smith operator formulation” Newton, 1, 100194 (2025).
- N. Byrnes, G. R. W. Greaves and **M. R. Foreman**, “Bootstrapping cascaded random matrix models: Correlations in permutations of matrix products” Phys. Rev. E, **110**, 015308 (2024).
- N. Byrnes and **M. R. Foreman**, “Polarised light scattering in disordered media: a random matrix model” Waves Rand. Comp. Media DOI: 10.1080/17455030.2022.2153305 (2022).
- N. Byrnes and **M. R. Foreman**, “Polarisation statistics of vector scattering matrices from the circular orthogonal ensemble” Opt. Commun. **503**, 127462 (2022).
- H. Lee, J. Berk, A. Webster, D. Kim and **M. R. Foreman**, “Label-free detection of single nanoparticles with disordered nanoisland surface plasmon sensor” Nanotechnology, **33**, 165502 (2022).
- J. Berk and **M. R. Foreman**, “Role of Multiple Scattering in Single Particle Perturbations in Absorbing Random Media” Phys. Rev. Research **3**, 033111 (2021).
- J. Berk and **M. R. Foreman**, “Theory of Multiple Scattering Enhanced Single Particle Plasmonic Sensing” ACS Photon. **8**, 2227–2233 (2021).
- F. Azeem, L. S. Trainor, P. A. Devane, D. S. Norman, A. Rueda, N. J. Lambert, M. Kumari, **M. R. Foreman**, H. G. L. Schwefel, “Dielectric perturbations: anomalous resonance frequency shifts in optical resonators” Opt. Lett. **46**, 2477–2480 (2021).
- N. Byrnes and **M. R. Foreman**, “Symmetry constraints for vector scattering and transfer matrices containing evanescent components: energy conservation, reciprocity and time reversal” Phys. Rev. Research **3**, 013129 (2021).
- J. Berk, C. Paterson and **M. R. Foreman**, “Tracking Single Particles using Surface Plasmon Leakage Radiation Speckle” IEEE J. Lightwave Technol. **39**, 3950–3960 (2021).
- K. L. C. Seow, P. Török, **M. R. Foreman**, “Single Pixel Polarimetric Imaging through Scattering Media” Opt. Lett. **45**, 5740–5743 (2020).
- N. Byrnes and **M. R. Foreman**, “Universal bounds for imaging in scattering media” New J. Phys. **22**, 083023 (2020).
- Y. Xiang, **M. R. Foreman** and P. Török, “SNR Enhancement in Brillouin Microspectroscopy using Spectrum Reconstruction” Biomed. Opt. Express **11**, 1020–1031 (2020).
- **M. R. Foreman**, “Field correlations in surface plasmon speckle” Sci. Reps. **9**, 8359 (2019).
- P. Török and **M. R. Foreman**, “Precision and informational limits in inelastic optical spectroscopy” Sci. Reps. **9**, 6140 (2019).
- **M. R. Foreman** and F. Goudail, “On the equivalence of optimisation metrics in Stokes polarimetry” Opt. Eng. **58**, 082410 (2019).
- *N. T. Urban, **M. R. Foreman**, S. W. Hell and Y. Sivan, “Nanoparticle-assisted STED nanoscopy with gold nano-spheres” ACS Photon. **5**, 2574–2583 (2018).*
- **M. R. Foreman**, D. Keng, E. Treasurer, J. Lopez and S. Arnold, “Whispering gallery mode single nano-particle detection and sizing: the validity of the dipole approximation” Opt. Lett. **42**, 963–966 (2017).
- F. Sedlmeir, **M. R. Foreman**, U. Vogl, R. Zeltner, G. Schunk, D. V. Strekalov, C. Marquardt, G. Leuchs and H. G. L. Schwefel “Polarization-selective out-coupling of whispering gallery modes” Phys. Rev. Applied **7**, 024029 (2017).



- **M. R. Foreman**, F. Sedlmeir, H. G. L. Schwefel and G. Leuchs, “Dielectric tuning and coupling of whispering gallery modes using an anisotropic prism” *J. Opt. Soc. Am. B* **33**, 2177–2195 (2016).
- W. T. Chen, P. Török, **M. R. Foreman**, C. Y. Liao, W.-Y. Tsai, P. R. Wu and D. P. Tsai, “Integrated plasmonic metasurfaces for spectropolarimetry” *Nanotechnology* **27**, 224002 (2016).
- **M. R. Foreman**, A. Favaro and A. Aiello “Optimal frames for polarization state reconstruction” *Phys. Rev. Lett.* **115**, 263901 (2015). Featured as cover article for *Phys. Rev. Lett.*
- E. Kim, **M. R. Foreman**, M. D. Baaske and F. Vollmer “Thermal characterisation of (bio)polymers with a temperature-stabilized whispering gallery mode microsensor” *Appl. Phys. Lett.* **106**, 161101 (2015).
- **M. R. Foreman** and F. Vollmer “Tracking anomalous diffusion kinetics in polymer microspheres” *Phys. Rev. Lett.* **114**, 118001 (2015). Featured as “Editor’s Suggestion” in *Phys. Rev. Lett.*
- **M. R. Foreman**, J. D. Swaim and F. Vollmer “Whispering gallery mode sensors” *Adv. Opt. Photon.* **7**, 168–240 (2015).
- M. D. Baaske, **M. R. Foreman** and F. Vollmer “Single molecule nucleic acid interactions monitored on a label-free microcavity biosensor platform” *Nat. Nanotech.* **9**, 933–939 (2014).
- Y. Sonnefraud, H. G. Sinclair, Y. Sivan, **M. R. Foreman**, C. W. Dunsby, M. A. A. Neil, P. M. French and S. A. Maier “Experimental proof of concept of nanoparticle assisted STED” *Nano. Lett.* **14**, 4449–4453 (2014).
- **M. R. Foreman**, S. Avino, R. Zullo, H.-P. Looock, F. Vollmer and G. Gagliardi “Enhanced nanoparticle detection with liquid droplet resonators” *Eur. Phys. J. Spec. Top.* **223**, 1971–1988 (2014).
- C. Macías-Romero, **M. R. Foreman**, P. R. T. Munro and P. Török “Confocal polarization imaging in high numerical aperture space” *Opt. Lett.* **39**, 2322–2325 (2014). Featured in *V. J. Biomed. Opt.*
- N. Mazumder, C.-W. Hu, J. Qiu, **M. R. Foreman**, C. Macías-Romero, P. Török, and F.-J. Kao “Revealing molecular structure and orientation with Stokes vector resolved second harmonic generation microscopy” *Methods* **66**, 237–245 (2014).
- **M. R. Foreman**, W.-L. Jin and F. Vollmer “Optimizing detection limits in whispering gallery mode biosensing” *Opt. Express* **22**, 5491–5511 (2014). Featured in *V. J. Biomed. Opt.*
- G. Antonacci, **M. R. Foreman**, C. Paterson and P. Török “Spectral broadening in Brillouin imaging” *Appl. Phys. Lett.* **103** 221105 (2013).
- **M. R. Foreman** and F. Vollmer “Level repulsion in hybrid photonic-plasmonic microresonators for enhanced biodetection” *Phys. Rev. A* **88**, 023831 (2013).
- **M. R. Foreman** and F. Vollmer “Theory of resonance shifts of whispering gallery modes by arbitrary plasmonic nanoparticles” *New J. Phys.* **15**, 083006 (2013). Featured as a “Highlight of 2013” by *New J. Phys.*
- **M. R. Foreman**, C. L. Giusca, P. Török and R. K. Leach “Phase-retrieved pupil function and coherent transfer function in confocal microscopy” *J. Microsc.* **251**, 99–107 (2013).
- **M. R. Foreman**, C. L. Giusca, J. M. Coupland, P. Török and R. Leach, “Determination of the transfer function for optical surface topography measuring instruments - a review” *Meas. Sci. Technol.* **24**, 052001 (2013).
- N. Mazumder, J. Qiu, **M. R. Foreman**, C. Macías-Romero, P. Török, and F.-J. Kao, “Stokes vector based polarization resolved second harmonic microscopy of starch granules” *Biomed. Opt. Express* **4**, 538–547 (2013).
- **M. R. Foreman**, Y. Sivan, S. A. Maier and P. Török “Independence of plasmonic near-field enhancements to illumination beam profile” *Phys. Rev. B* **86**, 155441 (2012).
- N. Mazumder, J. Qiu, **M. R. Foreman**, C. Macías-Romero, C. Hu, H. Tsai, P. Török, and F. Kao, “Polarization-resolved second harmonic generation microscopy with a four-channel Stokes-polarimeter” *Opt. Express* **20**, 14090–14099 (2012).
- C. Macías-Romero, **M. R. Foreman** and P. Török, “Spatial and temporal variations in vector fields” *Opt. Express* **19**, 25077–25083 (2011).
- **M. R. Foreman** and P. Török, “Fundamental limits in single molecule orientation measurements” *New J. Phys.* **13**, 093013 (2011). Image featured in *New J. Phys* promotional material.

DR. MATTHEW R. FOREMAN: PUBLICATION LIST CTD.



PEER-REVIEWED PUBLICATIONS CTD.

- **M. R. Foreman** and P. Török, “Spin-orbit coupling and conservation of angular momentum flux in non-paraxial imaging of forbidden radiation” *New J. Phys.* **13**, 063041 (2011).
- C. Macías-Romero, R. Lim, **M. R. Foreman** and P. Török, “Synthesis of partially spatially coherent beams” *Opt. Lett.* **36**, 1638–1640 (2011).
- **M. R. Foreman** and P. Török, “Computational methods in vectorial imaging” *J. Mod. Opt.* **58**, 339–364 (2011).
- T. Dellwig, **M. R. Foreman** and F.-J. Kao, “Coherent long-distance signal detection using stimulated emission: a feasibility study” *Chinese J. Phys.* **48**, 873–884 (2010).
- **M. R. Foreman** and P. Török, “Information and resolution in electromagnetic optical systems” *Phys. Rev. A* **82**, 043835 (2010). Image featured in *Phys. Rev. A Kaleidoscope*.
- **M. R. Foreman** and P. Török, “Focusing of inhomogeneous partially coherent, partially polarised electromagnetic fields” *J. Opt. Soc. Am. A* **26**, 2470–2479 (2009).
- **M. R. Foreman**, C. Macías-Romero, and P. Török, “*A priori* information and optimisation in polarimetry” *Opt. Express* **16**, 15212–15227 (2008).
- **M. R. Foreman**, C. Macías-Romero, and P. Török, “Determination of the three dimensional orientation of single molecules” *Opt. Lett.* **33**, 1020–1022 (2008). Featured in *V. J. Biomed. Opt.*
- **M. R. Foreman**, S. S. Sherif, P. R. T. Munro, and P. Török, “Inversion of the Debye-Wolf diffraction integral using an eigenfunction representation of the electric fields in the focal region” *Opt. Express* **16**, 4901–4917 (2008). Featured in *V. J. Biomed. Opt.*
- S. S. Sherif, **M. R. Foreman**, and P. Török “Eigenfunction expansion of the electric fields in the focal region of a high numerical aperture focusing system” *Opt. Express* **16**, 3397–3407 (2008). Featured in *V. J. Biomed. Opt.*
- **M. R. Foreman**, S. S. Sherif, and P. Török, “Photon statistics in single molecule orientational imaging” *Opt. Express* **15**, 13597–13606 (2007). Featured in *V. J. Biomed. Opt.*



BOOKS AND BOOK CHAPTERS

- S. Arnold, D. Keng, E. Treasurer and **M. R. Foreman**, *How latitude location on a micro-world enables real-time nanoparticle sizing*, in “Nano-Optics: Principles Enabling Basic Research and Applications”, B. Di Bartolo, J. Collins, and L. Silvestri, eds., NATO Science for Peace and Security Series B: Physics and Biophysics (Springer Netherlands, 2017).
- **M. R. Foreman**, “Informational limits in optical polarimetry and vectorial imaging” Springer Theses Series (Springer, 2012).



NON PEER-REVIEWED PUBLICATIONS

- **M. R. Foreman**, “Single-particle spectroscopy: Whispers of absorption” *Nat. Photon.* **10**, 755–757 (2016).



CONFERENCE/COLLOQUIA PRESENTATIONS (*italics*/UNDERLINE DENOTES INVITED/KEYNOTE)

- H. N. Kim, X.-L. Chu and **M. R. Foreman**, “Hypothesis based particle counting for digital nanoparticle imaging assays” Focus on Microscopy, Taiwan, Taipei, Apr 2025. (poster)
- G. M. Balasubramaniam, L. T. Mai Anh, S. K. Abhiram, **M. R. Foreman**, “Partial coherence in lens-less imaging” Focus on Microscopy, Taiwan, Taipei, Apr 2025.
- N. Byrnes and **M. R. Foreman** “Polarised light scattering in disordered media: a random matrix model” Focus on Microscopy, Taiwan, Taipei, Apr 2025.
- G. M. Balasubramaniam, S. Arnon and **M. R. Foreman** “*Learned Solutions for Imaging-Based Biomedical Diagnostics*” *Focus on Microscopy, International Conference on Emerging Trends in Optical Technologies, India, Jan 2025.*



SELECTED CONFERENCE/COLLOQUIA PRESENTATIONS CTD.

- **M. R. Foreman** “Digital molecular sensing and analytics” *Conference on Lasers and Electro-Optics (CLEO) Pacific Rim, Incheon, Korea, Aug 2024.*
- N. Byrnes and **M. R. Foreman** “Efficient physics-constrained random matrix modelling of polarized light scattering in disordered media” *Conference on Lasers and Electro-Optics (CLEO) Pacific Rim, Incheon, Korea, Aug 2024.*
- **M. R. Foreman** “Random matrix modelling of polarised light scattering in disordered media” *3rd Joensuu Conference on Coherence and Random Polarization: Current Paths and New Horizons, Joensuu, Finland, Jun 2024.*
- J. Berk, H. Lee, D. Kim and **M. R. Foreman** “Disordered Surface Plasmon Sensor for Scattering Enhanced Single Particle Detection” *International Conference on Optical and Photonic Engineering (icOPEN), Singapore, Nov 2023.*
- J. Berk, C. Paterson and **M. R. Foreman** “Random Plasmonic Interferometric Scattering (π -SCAT) for Single Particle Sensing and Tracking” *International Conference on Imaging, Sensing and Optical Memory (ISOM), Takamatsu, Japan, Nov 2023.*
- **M. R. Foreman** “Nanophotonics for single particle sensing and quantitative analysis” *IDMxS Symposium 2023, Singapore, Jan 2023. (poster)*
- J. Berk, H. Lee, D. Kim and **M. R. Foreman** “Random Plasmon Scattering for Single Particle Sensing” *Photon 22, Nottingham, UK, Aug 2022 (poster).*
- N. Byrnes, **M. R. Foreman**, “Polarised light scattering in disordered media: a random matrix model” *Complex Nanophotonics Science Camp, Windsor, UK, 2022. (poster)*
- J. Berk, H. Lee, D. Kim and **M. R. Foreman** “Random Plasmon Scattering for Single Particle Sensing” *London Plasmonics Forum, London, UK, Jun 2022 (poster).*
- **M. R. Foreman** “Random scattering of surface plasmons for sensing applications” *International Conference on Optics, Electronics and Optoelectronics (ICOEO), Xi'an, China, Apr 2022.*
- J. Berk, H. Lee, D. Kim and **M. R. Foreman** “Disordered Surface Plasmon Sensor for Multiple Scattering Enhanced Single Particle Detection” *Photonics and Electromagnetics Research Symposium (PIERS), Hangzhou, China, Nov 2021.*
- **M. R. Foreman** “Statistics of polarised light in disordered media” *IOP Stochastic Electromagnetics and Coherence, online, Sep 2021.*
- J. Berk, C. Paterson and **M. R. Foreman** “Tracking using Surface Plasmon Leakage Radiation Speckle” *OSA Optical Sensors and Sensing Congress, online, Jul 2021.*
- **M. R. Foreman** “Quantitative sensing with whispering gallery mode resonators” *Workshop on Microcavities and Their Applications (WOMA), Hong Kong, Dec 2019.*
- **M. R. Foreman** “Field Correlations in Surface Plasmon Speckle” *Complex Nanophotonics Science Camp, Windsor, UK, 2019. (poster)*
- F. Sedlmeir, H. G. L. Schwefel and **M. R. Foreman** “Differential tuning and coupling of whispering gallery modes” *Photonics and Electromagnetics Research Symposium (PIERS), Rome, Italy, Jun 2019.*
- **M. R. Foreman** “Field Correlations in Surface Plasmon Speckle” *International Conference on Surface Plasmon Photonics (SPP9), Copenhagen, Denmark, May 2019. (poster)*
- C. Seow, P. Török, **M. R. Foreman** “Single-Pixel Polarimetric Imaging through Scattering Media” *Focus on Microscopy (FOM), London, UK, Apr 2019.*
- **M. R. Foreman**, N. T. Urban, Y. Sivan and S. W. Hell “STED nanoscopy with hybrid nanospheres” *Focus on Microscopy (FOM), Singapore, Mar 2018.*
- Y. Sivan, **M. R. Foreman**, N. T. Urban and S. W. Hell “STED nanoscopy assisted by small metal nanoparticles – new advances” *Nanometa 2017, Tirol, Austria, Jan 2017.*
- **M. R. Foreman**, A. Favaro and A. Aiello “Multipoles, spherical t-designs and polarization state reconstruction” *Particle, Condensed Matter and Quantum Physics: Links Via Maxwell’s Equations Topical Meeting, Chicheley Hall, UK, Nov 2015.*
- **M. R. Foreman**, A. Favaro and A. Aiello “Optimal Frames for Polarisation State Reconstruction” *600. WE Heraeus Workshop, Bad Honnef, Germany, Oct 2015.*



SELECTED CONFERENCE/COLLOQUIA PRESENTATIONS CTD.

- **M. R. Foreman** and F. Vollmer “Nanoparticle based plasmonic enhancement of high Q optical microresonators” International Photonics Conference (IPC), San Diego, USA, Oct 2014.
- **M. R. Foreman**, M. D. Baaske and F. Vollmer “Single molecule detection with a high Q plasmonic-photonic biosensor” Photon 14, London, UK, Sep 2014.
- **M. R. Foreman**, A. Webster, J. Huang and F. Vollmer “Single particle sensing with conically scattered surface plasmons” Photon 14, London, UK, Sep 2014.
- *M. D. Baaske, M. R. Foreman and F. Vollmer, “Single molecule detection with high Q plasmonic photonic biosensors” International Conference on Transparent Optical Networks (ICTON), Graz, Austria, Jul 2014.*
- **M. R. Foreman**, W.-L. Jin and F. Vollmer, “Optimizing detection limits in whispering gallery mode biosensing” 560. WE Heraeus Workshop, Bad Honnef, Germany, Apr 2014.
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