Dr. Garry Rumbles

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National Renewable Energy Laboratory
Chemistry and Nanoscience Center
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Golden, CO 80401 USA

Current Appointments

Senior Research Fellow — Golden, CO
Chemistry and Nanoscience Center
National Renewable Energy Laboratory — 2008 – present

Professor Adjoint — Boulder, CO
Department of Chemistry — 2009 – present
University of Colorado

Visiting Professor — London, UK
Department of Chemistry — 2001 – present
Imperial College

Education

Ph.D. University of London — London, UK
Davy-Faraday Research Laboratory — 1984
The Royal Institution

B.Sc. (Hons) Chemistry with Electronics — Southampton, UK
University of Southampton — 1980

Previous Positions

Principle Investigator DOE/SC Solar Photochemistry Program
Chemistry and Nanoscience Center, NREL — 2008 – 2024

Co-Principle Investigator BioLEC Energy Frontier Research Center
Chemistry and Nanoscience Center, NREL — 2018 – 2025

Associate Director for Research — Boulder, CO
Renewable and Sustainable Energy Institute (RASEI)
Joint Institute, National Renewable Energy Laboratory and University of Colorado — 2015 – 2021

Principal Research Scientist and Group Manager — Golden, CO
Chemical and Biosciences Center — 2004 – 2008
National Renewable Energy Laboratory

Senior Research Scientist — Golden, CO
Center for Basic Science — 2001 – 2004
National Renewable Energy Laboratory

Sabbatical Research Scientist — Golden, CO
Center for Basic Science — 2000 – 2001
National Renewable Energy Laboratory

Reader — London, UK
Center for Electronic Materials and Devices — 2000 – 2001
Department of Chemistry
Imperial College

Senior Lecturer — London, UK
Department of Chemistry — 1996 – 2000
Imperial College

Lecturer — London, UK
Department of Chemistry — 1989 – 1996
Imperial College

Post Doctoral Research Associate — London, UK
Professor David Phillips — 1987 – 1989
Davy Faraday Research Laboratory
The Royal Institution

Post Doctoral Research Associate — Irvine, CA
Professor Edward K.C. Lee — 1985 – 1987
Department of Chemistry
University of California

Post Doctoral Research Associate — Tucson, AZ
Professor George Atkinson — 1984 – 1985
Department of Chemistry
University of Arizona

Fellowships, Honors, and Memberships

Fellow of the American Association for the Advancement of Science (AAAS)	2023 – present
Fellow Material Sciences and Engineering (MSE) Program, CU Boulder	2013 – present
Grand Conférencier, RQMP, Montreal, Canada	2014
Energizer Lecture in Solar Energy, 69th Frontiers in Chemistry – Case Western Reserve University	2010
Fellow, Renewable and Sustainable Energy Institute	2009 – present
Brookhaven National Laboratory Basic Energy Sciences Distinguished Lecture	2008
Fellow and Chartered Chemist, Royal Society of Chemistry	1997 – present
Member, American Chemical Society	1991 – present
University Award for Teaching Excellence – Imperial College	1996
University Award for Teaching Excellence – Imperial College	1994

Advisory Boards, Editorial Duties, Conference Committees and Service Activities

Editor-in Chief, S*ustainable Energy and Fuels* (RSC)	2021 – present
Editorial Advisory Board, *Chemical Science* (RSC)	2024 – present
Conference Chair, 29th International Conference on Photochemistry	2019
Chair, International Conference on Photochemistry	2019 – 2021
Associate Editor *Sustainable Energy and Fuels* (RSC)	2016 – 2022
Member, RASEI Executive Committee	2011 – 2021
Advisory Board, MIT Energy Frontier Research *Center for Excitonics*	2011 – 2018
Editorial Advisory Board, *Journal of Physical Chemistry* (ACS)	2012 – 2017
Advisory Board, UNC Chapel Hill Energy Frontier Research *Center for Solar Fuels*	2009 – 2013
Editorial Advisory Board, *Applied Materials and Interfaces* (ACS)	2010 – 2014
Advisory Board, USC Energy Frontier Research Center for *Energy Nanoscience*	2009 – 2013
Advisory Board, Bowling Green State University, *Center for Photochemical Sciences*	2012 – 2017
Advisory Board, Imperial College	
Center for Processable Electronics (CPE) and Center for Doctoral Training (CDT)	2009 – 2020
Chair, Advisory Board, Imperial College CPE	2020 – present
Session Organizer, XPV, ACS, MRS, ECS, and SPIE meetings	2001 – present

Ten Selected Career Publications

Google Scholar, h-index = 72; ORCID: 0000-0003-0776-1462

1. J. D. Earley, A. Zieleniewska, H. H. Ripberger, N. Y. Shin, M. S. Lazorski, Z. J. Mast, H. Sayre, J. K. McCusker, G. D. Scholes, R. R. Knowles, O. G. Reid and G. Rumbles, "Ion-pair reorganization regulates reactivity in photoredox catalysts" *Nature Chemistry*, https://doi.org/10.1038/s41557-022-00911-6
2. Carr, Joshua M., Taylor G. Allen, Bryon W. Larson, Iryna G. Davydenko, Raghunath R. Dasari, Stephen Barlow, Seth R. Marder, Obadiah G. Reid, and Garry Rumbles. "Short and Long-Range Electron Transfer Compete to Determine Free-Charge Yield in Organic Semiconductors," *Material Horizons*, 2022, 9, 312-324.
3. Pace, N. A.; Korovina, N. V.; Clikeman, T. T.; Holliday, S.; Granger, D. B.; Carroll, G. M.; Nanayakkara, S. U.; Anthony, J. E.; McCulloch, I.; Strauss, S. H.; Boltalina, O. V.; Johnson, J. C.; Rumbles, G.; Reid, O. G. Slow Charge Transfer from Pentacene Triplet States at the Marcus Optimum. *Nature Chemistry* 2020, 100 (1), 1–8.
4. Reid, O. G.; Moore, D. T.; Li, Z.; Zhao, D.; Yan, Y.; Zhu, K.; Rumbles, G. Quantitative Analysis of Time-Resolved Microwave Conductivity Data. *J. Phys. D: Appl. Phys.* 2017, 50 (49), 493002.
5. Park, J.; Reid, O. G.; Blackburn, J. L.; Rumbles, G. Photoinduced Spontaneous Free-Carrier Generation in Semiconducting Single-Walled Carbon Nanotubes. *Nature Communications* 2015, 6, 8809.
6. Coffey, D. C.; Larson, B. W.; Hains, A. W.; Whitaker, J. B.; Kopidakis, N.; Boltalina, O. V.; Strauss, S. H.; Rumbles, G. An Optimal Driving Force for Converting Excitons into Free Carriers in Excitonic Solar Cells. *Journal Of Physical Chemistry C* 2012, 116, 8916–8923.
7. Scholes, G. D.; Rumbles, G., Excitons in nanoscale systems. Nature Materials 2006, 5, (9), 683-696.
8. Dayal, S.; Kopidakis, N.; Olson, D. C.; Ginley, D. S.; Rumbles, G., Photovoltaic Devices with a Low Band Gap Polymer and CdSe Nanostructures Exceeding 3% Efficiency. *Nano Letters* 2010, 10 (1), 239-242.
9. Rumbles, G.; Clark, J. L., Laser cooling in the condensed phase by frequency up-conversion - Reply. *Physical Review Letters* 1996, 77, (13), 2841-2841.
10. Samuel, I. D. W.; Rumbles, G.; Collison, C. J., Efficient interchain photoluminescence in a high-electron-affinity conjugated polymer. *Physical Review B* 1995, 52, (16), R11573-R11576.

Teaching Experience

Imperial College
Classical and Statistical Thermodynamics; Reaction Kinetics; Group Theory and Symmetry;
Optical Properties of Molecular Materials; Molecular Photochemistry
Year 1 and Year 2 Physical Chemistry laboratory supervisor; Physical Chemistry tutor

University of Colorado Boulder
Chemistry in Solar Energy CHEM 4271/5271; Chemistry for Engineers laboratory class CHEM1221

Training of Postdocs and Students

30 graduate students supervised
16 postdoctoral research fellows mentored
20 undergraduate research students