

THE KENNETH RUSSELL ENDOWED LECTURE

Kenneth Russell came to Queen's in 1954. He had research experience in polymer chemistry at Cambridge and Princeton, in thermodynamics of rocket fuels at Penn State and in kinetics of atom recombination at Manchester. He was known particularly for his polymer research and first year and polymer lectures (dating back to 1956). He retired officially in 1990.

His interest in polymer chemistry arose through wartime work on butyl rubber. This led to a Ph.D. thesis on isobutene polymerization by Friedel Crafts catalysts, including kinetic studies of the effects of various co-initiators. His research at Queen's led to an understanding of the dual role of a wide range of co-initiators.

Free radical studies at Princeton led to determination of transfer constants for transfer agents and retarders (still quoted in the Polymer Handbook).

His other main research areas, inspired in large measure by parallel work at Du Pont, consisted of structural studies of polyethylene and grafting of vinyl monomers to polyethylene. These carried on for 12 years into his retirement and profited from cooperation with many members of staff. A main factor in the incorporation of this lecture series was Dr. Russell's work with Drs. Whitney and Parent.

RECENT PUBLICATIONS

- G. L. Gregory, G. S. Sulley, J. Kimpel, M. Łagodzińska, L. Häfele, L. Peña Carrodegua and C. K. Williams, "[Block Poly\(carbonate-ester\) Ionomers as High-Performance and Recyclable Thermoplastic Elastomers](#)" *Angew. Chem. Int. Ed.*, **2022**, 61, e2022107
- T. M. McGuire, A. C. Deacy, A. Buchard and C. K. Williams, "[Solid-State Chemical Recycling of Polycarbonates to Epoxides and Carbon Dioxide Using a Heterodinuclear Mg\(II\)Co\(II\) Catalyst](#)" *J. Am. Chem. Soc.* **2022**, 144, 40, 18444-18449

PREVIOUS RUSSELL LECTURERS

2022 • K. Wooley

2021 • L. Jiang

2019 • S. Yamaguchi

2018 • M. Winnik

2018 • T. Lodge

2017 • S. Holdcroft

2016 • K. Matyjaszewski



Department of Chemistry Queen's University

is honoured to host the
2023 Kenneth Russell
Lecturer:

Charlotte Williams
Oxford University

"From Carbon Dioxide to
Recyclable Polymers and
Plastics"



Friday, March 10, 2023
11:30 AM
Virtual via Zoom

DR. CHARLOTTE K. WILLIAMS



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Charlotte K. Williams is a professor of Inorganic Chemistry and Associate Head of Department (Research) at Oxford Chemistry. She is an EPSRC Established Career Research Fellow. She heads-up a research group investigating polymerisation catalysis and polymer chemistry with a particular focus on improving polymer sustainability. Her work involves close collaboration with scientists and engineers in both academic and industrial laboratories. From 2003-2016, Charlotte was an academic in the Chemistry department at Imperial College London. Earlier in her career, she was a postdoctoral researcher at Cambridge University (2002-2003), working with Andrew Holmes FRS and Richard Friend FRS (Organometallic polymers for electronics), and at the University of Minnesota (2001-2002) working with Bill Tolman and Marc Hillmyer (zinc catalysts for lactide polymerisation). She obtained her BSc and PhD from Imperial College London, the latter supervised by Vernon Gibson FRS and Nick Long on ethene polymerisation catalysis. In 2011, Prof. Williams founded [Econic Technologies](#) which commercialises catalysts allowing the transformation of carbon dioxide to polymers.

Charlotte's transformative work in polymerization catalysis, mechanisms and sustainable polymer chemistry has been recognized with several high-profile awards, including the 2022 Royal Society Leverhulme Medal. This medal was awarded for the pioneering work of Charlotte and her team in developing and understanding high performance carbon dioxide utilization catalysts and for the chemistry of next-generation plastics. Her team is also active in outreach and public engagement with the goal to educate, inspire and inform future generations.

SELECTED HONOURS & AWARDS

- The Royal Society Leverhulme Medal (2022)
- The RSC Tilden Prize (2021)
- Fellow of the Royal Society (2021)
- Unilever Clean Future Brilliance Award (2021)
- OBE from Queen Elizabeth II for Services to Chemistry (2020)
- Macro Group UK Medal (2019)
- The Otto Roelen Medal (2018)
- The Sir John Meurig Thomas Catalysis Medal (2017)
- The RSC Corday-Morgan Prize (2016)
- Women in Science and Engineering Tech Start Up Award (2015)
- BEPS Outstanding Early Career Academic Award (2011)
- The RSC Energy, Environment and Sustainability Award (2009)
- The Meldola Medal (2005)
- The Young Researcher Award (2001)