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.

SELECTED RECENT PUBLICATIONS

- O. D. Thomas, K. J. W. Y. Soo, T. J. Peckham, M. P. Kulkarni, S. Holdcroft, A Stable Hydroxide-Conducting Polymer, J. Am. Chem. Soc., 134, (2012) 10753-10756.
- L. Ghassemzadeh, S. Holdcroft, "Quantifying the Structural Changes of PFSA Ionomer upon Reaction with Hydroxyl Radicals", J. Am. Chem. Soc., 135 (2013) 8181-8184.
- S. Holdcroft, "Fuel Cell Catalyst Layers" Chem. Mater., Invited perspective commemorating 25th year of Chemistry of Materials, 2014, 26 (1), 381-39.
- A.G. Wright, S. Holdcroft, Hydroxide-Stable Ionenes, ACS Macro Letters, 3 (5) (2014) 444-447. T. Skalski, B. Britton, T. J. Peckham, S. Holdcroft, "Structurally-Defined, Sulfo-Phenylated, Oligophenylenes and Polyphenylenes", J. Am. Chem. Soc, 137 (2015) 12223-12226.
- A. Wright, T. Weissbach, Steven Holdcroft, "Poly(phenylene) and m-Terphenyl as Powerful Protecting Groups for the Preparation of Stable Organic Hydroxides", Angewandte Chemie, 55 (2016), 4818-4821.
- D. Novitski, A. Kosakian, T. Weissbach, M. Secanell , S. Holdcroft, Electrochemical reduction of dissolved oxygen in alkaline, solid polymer electrolyte films, J. Amer. Chem. Soc. DOI: 10.1021/jacs.6b09217 2016.

Queen's Chemistry

Department of Chemistry
Queen's University

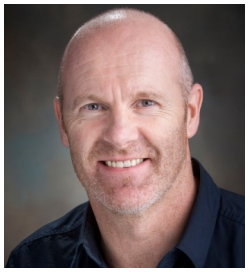
is honoured to host the
2017 Russell Lecturer:

Dr. Steven Holdcroft
Department of Chemistry
Simon Fraser University

"Molecular Design of Solid Polymer Electrolytes: Batteries not Included"

Friday, January 13, 2017
11:30 AM
Room 117, Chernoff Hall

DR. STEVEN HOLDCROFT



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Dr. Steven Holdcroft is a Professor of Chemistry and Departmental Chair at Simon Fraser University (SFU), and a recipient of SFU's Excellence in Teaching Award. He is known for his contributions to the design of ionic polymeric materials and pi-conjugated polymers, and their application to electrochemical energy devices and electronic devices, respectively. He is author/co-author of 240+ peer-reviewed articles and several book chapters and patents. For over a decade, he was seconded to the National Research Council of Canada's Institute for Fuel Cell Innovation to help propel R&D in Canada towards the commercialization of fuel cells. He has served on numerous research advisory boards throughout North America, Europe and Asia and sits on the editorial advisory boards of several, international scientific journals and international grant selection committees. He currently serves on the editorial advisory board of Energy and Environmental Science (RSC), and Chemistry of Materials (ACS). In 2012, he established a Canadian national network "Catalysis Research for Polymer Electrolyte Fuel Cells (CaRPE-FC)" for academic/ industry/government researchers, and is its Technical Director. He was the Technical Program Chair of Pacifichem 2010 and Pacifichem 2015. He has served as Chair of NSERC Discovery Grant and Strategic Project Grant evaluation panels, and he is the current Group Chair of the DG Chemistry Evaluation Group. For services to the community he was awarded the Macromolecular Science and Engineering Division Award of the Chemical Institute of Canada (CIC) and is an elected Fellow of the CIC. He was the recipient of the 2015 RioTinto Alcan Award for contributions to electrochemical research. In his spare time, he plays competitive soccer, and is an avid fan of Manchester United.

SELECTED HONOURS & AWARDS

- University Excellence in Teaching Award
- IFCI-NRC Teamwork Award
- Clarence Karcher Student Lecture Award, Oklahoma Univ.
- Affiliate Professorship, Royal Institute of Stockholm (KTH)
- Macromolecular Science and Engineering Division Award (CIC)
- Visiting Research Fellow, National Sun Yat Sen University, Taiwan
- Pacifichem 2010, Scientific Program Chair
- Distinguished Researcher Award, University of South Australia
- Board of Directors, Canadian Fuel Cells and Hydrogen Association
- Rio Tinto/Alcan Award in Electrochemistry (CSC)
- Editorial Advisory Board Member: Chemistry of Materials; Polymer Chemistry, Energy and Environmental Science
- Fellow, Chemical Institute of Canada
- Member, NSERC Council of Grants and Scholarships,
- Group Chair, NSERC DG EG 1504 (Chemistry)
- Pacifichem 2015, Congress Vice Chair, Scientific Program Chair, 2011-2016
- Principal Applicant and Technical Director of National APC Network on Catalyst Research for Polymer Electrolyte Fuel Cells (CARPE-FC)