

Philip D. Bulsink, BSc., MSc.

CONTACT INFORMATION

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SUMMARY

A proven problem solver with expertise in computational, inorganic, and analytical chemistry. Comfortable with aggressive learning curves and development of novel ideas. Exploring data analysis using Python and R.

EDUCATION

University of Ottawa

Master's Degree

2015

- Thesis: "*Rhenium^I Terdentate Compounds: Theoretical and Experimental Investigations*"
- Seminar: "*Recent Advances in NO_x Abatement from Diesel Engine Emissions*"
- Tasks: Synthesis & characterization of ligands and catalysts with novel photochemical properties. In-depth mechanism studies with various computational packages. Developed software in Python to simplify & accelerate work.
- Supervisors: Dr. Tom Woo and Dr. Darrin Richeson

University of Waterloo

Bachelor of Science, Honour's Chemistry, Co-op, Music Minor

2012

- Honour's Thesis: "*Solid Sample Analysis by Microplasma Optical Emission Spectroscopy*"

PROFESSIONAL EXPERIENCE

Characterization Laboratory, CanmetENERGY, Natural Resources Canada

Ottawa

Fuels Chemist

2014 – Present

Perform method development and routine analysis, including GC-MS, SEM, and ICP-MS, for solid, liquid and gaseous samples. Manage statistical control charts and other documentation for ISO9001 certification. Oversee instrument repair and maintenance. Represent laboratory at internal and external client meetings.

University of Ottawa, University of Waterloo

Ontario

Laboratory Teaching Assistant

September 2011 – May 2014

Teaching assistant for undergraduate labs in general, organic, inorganic, analytical, and physical chemistry. Demonstrated techniques and explained theoretical basis for experiments.

CanmetENERGY, Natural Resources Canada

Ottawa

Research Assistant - DeNO_x Group

May 2010 – August 2011 (12 months total)

Research of homogeneous catalysts for removal of NO and NO₂ from lean burn diesel engine exhaust. Improved catalyst testing procedures. Scaled catalyst synthesis by 3 orders of magnitude. Custom-built instrumentation and software for investigations. Prepared manuscripts for publishing.

Analytical Chemist - Characterization Laboratory

January – April 2009

Performed analysis of solid and liquid fuel samples. Designed and implemented a software based quality control monitoring system to assist ISO 9001:2000 compliance. Repaired analytical instruments.

Kinectrics Inc.

Etobicoke

Analytical Chemist

September – December 2009

Adhered to stringent ISO 17025 and ISO 14000 specifications while performing various chemical analysis. Prepared and tracked round-robin test samples for distribution to other laboratories.

HONOURS AND DISTINCTIONS	Dean's Scholarship, University of Ottawa	2015
	Dean's Honour Roll, University of Waterloo, University of Ottawa	2011 – 2014
	Graduate Student Poster Award, CSC Inorganic Division Poster Symposium, Quebec City	2013
	Recognition of Collaboration Award, CanmetENERGY, Natural Resources Canada	2012
	Aileen Proudfoot Award, CanmetENERGY, Natural Resources Canada	2011
	Outstanding Co-op ranking, University of Waterloo	2009 – 2012
SELECTED PUBLICATIONS	Bulsink, P. "TurboControl v.1.1.0", github.com/pbulsink/turbocontrol	2014.
	Stanciulescu, M., Bulsink, P., Caravaggio, G., Nossova, L., Burich, R. "NH ₃ -TPD-MS study of Ce effect on the surface of Mn- or Fe-exchanged zeolites for selective catalytic reduction of NO _x by ammonia", <i>App. Surface Sci.</i> , 300, pp. 201-207, 2014.	
	Bulsink, P., Korobkov, I., Woo, T., Richeson, D. "Transforming the chemistry of Re ^I to access the Elusive Pincer Geometry", <i>CSC Inorganic Division Poster Symposium</i> , 2013.	
	Stanciulescu, M., Caravaggio, G., Dobri, A., Moir, J., Burich, R., Charland, J.-P., Bulsink, P. "Low-temperature selective catalytic reduction of NO _x with NH ₃ over Mn-containing catalysts", <i>App. Catal. B: Env.</i> , 123-124, pp. 229-240, 2012.	
	Caravaggio, G., Stanciulescu, M., Burich, R., Scheier, B., Bulsink, P. "Novel Catalysts for NO _x Reduction with Reductants Produced In-Situ", <i>DEER Conference</i> , 2010.	
ACTIVITIES	Giving Refugees Hope in Uganda , Ottawa, Ontario, Canada	
	<i>Co-Founder, Vice Chair</i>	January 2013 – Present
	Co-founded charitable organization assisting refugees in Kampala, Uganda. Administer projects, developed website, maintain online & social media presence. Received charitable status from Canadian Revenue Agency in 8 months.	
	ChemCalculator.com	
	<i>Designer & Programmer</i>	January 2013 – Present
	Developed website containing various chemistry calculations not available or not user-friendly elsewhere online. Direct application of self-taught and online course-based knowledge and principles of programming.	
	University of Waterloo , Waterloo, Ontario, Canada	
	<i>Residence Don</i>	May – August 2009
	Responsible for the well-being of 29 first and second year students. Counselling peers through personal and academic concerns. Organized floor and residence outings. Acted as a liaison between students and the Residence Manager.	
	Continuing Education	
AFFILIATIONS	Completed (with verified certificate) portions of the 'Data Science' specialization on Coursera, offered in partnership with John Hopkins University.	
	Chemical Institute of Canada (CIC), member 2011 - Present	