Ben Kenney

Oakville, Ontario, Canada
http://www.benk.ca

WORK EXPERIENCE

2012-Present **Dana Holding Corp, Power Technologies Group** **Oakville, ON**
Research Engineering (thermal products)

- R&D for advanced automotive thermal products

2010-2012 **National Research Council Canada** **Ottawa, ON**
Research Associate (lithium-ion battery R&D)

- Developed mathematical models for lithium-ion batteries intended for state-of-health, service life and thermal/safety monitoring with a focus on electric vehicles and stationary power applications
- Fabricated lab-scale lithium-ion batteries with new material compositions and evaluated lab-scale and commercial lithium-ion batteries using advanced electrochemical techniques
- Helped develop future strategy for the battery modeling group and contributed directly to technical reports and presentations in support for various grants and clients
- Helped establish and write proposals for funding from Federal Government grants (ecoEII and PERD programs)
- Supervised and developed projects for undergraduate co-op students

Winter 2009 **Queen's University** **Kingston, ON**
Lecturer, Chemical Engineering Thermodynamics

- Created and delivered course content, including lectures, tutorials, assignments and exams to a class of 150 students in 2nd year chemical engineering, mining engineering and engineering physics
- Managed three graduate student teaching assistants

2007-2009 **Carbon Planet (Australia)** **Kingston, ON**
GHG Emissions Auditor/Research Consultant

- Responsible for greenhouse gas audits/calculations and related research for Carbon Planet's North American clients
- Had direct contact with customers and helped to reduce their GHG emissions profile

2004-2008 **Queen's University** **Kingston, ON**
Teaching Assistant

- Helped teach course content through tutorials and occasional lectures to undergraduate engineering students
- Courses taught: Process Dynamics and Numerical Methods, Phase and Reaction Equilibrium, Fuel Cell Technology, Laboratory Projects (various engineering labs)

EDUCATION

2003-2009 **Ph.D. Engineering – Queen's University** **Kingston, ON**

- Ph.D. in Chemical Engineering with a focus on energy technologies/electrochemical engineering
- Conducted work at the Queen's-RMC Fuel Cell Research Center
- 2005 - Promoted to Ph.D. from M.Sc.
- Project: "Cathode development for solid oxide fuel cells"
- Research involved both mathematical modeling and experimental techniques to fabricate and evaluate the electrochemical behavior of ceramic materials at high temperatures
- Research produced 6 publications and numerous conference presentations

1999-2003 **B.Sc.E. – Queen's University** **Kingston, ON**

- Discipline: Engineering Chemistry (through dept. of Chemical Engineering), Faculty of Applied Science and Engineering
- First class honors

1996-1999 **Saint John High School** **Saint John, NB**

- International Baccalaureate Diploma (1999)

ACTIVITIES

2010 **Volunteer for the Ted Hsu election campaign**

- Part of the "Team Ted" campaign to elect Ted Hsu as Federal Member of Parliament for Kingston and the Islands (http://www.tedhsu.ca)
- Helped design website, canvassed and scrutineered for "Team Ted"

2007-Present **Member of SWITCH Kingston**

- A networking organization in Kingston, Ontario with a goal of promoting alternative energy

2008-2009 Organizer - SWITCH Renewable Energy Workshop

- Part of a 5 person team which helped to organize a 4-part renewable energy workshop in Kingston, supported by SWITCH Kingston
- Helped develop and present course content alongside local renewable-energy contractors
- Applied for and received a $22,000 grant from the Ontario Ministry of the Environment

2004-2008 Host: theWatt Podcast

- Created and hosted a podcast (internet radio) about global energy issues, recorded discussions with worldwide leading energy experts in various fields
- Created and built show to a weekly audience of 1500 listeners, contributed articles/commentary to a variety of other energy related communities

2000-2003 Queen's University Engineering Chemistry Student Government

- Throughout undergrad, belonged to a 5 person group of elected students responsible for organizing events, overseeing budget for undergraduate engineering chemistry society and contributing to the department's undergraduate teaching curriculum
- 2002: Elected President of Engineering Chemistry executive
- 2001: Elected Vice-President of Engineering Chemistry executive
- 2000: Elected 2nd year Engineering Chemistry representative

2000-2001 Queen's University Engineering Conference Committee

- Responsible for obtaining sponsorship and organizing travel arrangements to send 56 Chemical Engineering students to Halifax for the 51st Chemical Engineering Conference

SKILLS

Computer skills

- Experienced using all common operating systems (Mac/Linux/Windows) and related software
- Experienced in numerous programming languages, including: C/C++, Fortran, Python, PHP, HTML, Latex and MySQL database integration
- Advanced knowledge of mathematical numerical methods and computational fluid dynamics (CFD) with specialized software tools such as Comsol and OpenFOAM for numerical methods and Matlab/Simulink for general numerics

Electrochemical techniques

- Advanced understanding of all electrochemical techniques for batteries and fuel cells
- Expert in mathematical modeling of electrochemical systems such as batteries and fuel cells
- Experience in fabrication of batteries and fuel cells and "reverse engineering" of commercial batteries

Energy technologies

- A technical understanding of various energy technologies and global energy related issues
- Skilled in data mining of energy related statistics

Languages

- English is my primary language
- Conversational, reading and writing ability in French

Other

- Golf: Regularly shoot mid 80s
- Compete in 10K running races
- Canadian and British dual citizenship

SCIENTIFIC PUBLICATIONS (sample)

1. B. Kenney, M. Valdmanis, C. Baker, J. Pharoah and K. Karan. *Computation of TPB length, surface area and pore size from numerical reconstruction of composite SOFC electrodes.* Journal of Power Sources, 189 (2009) 1051-1059.

2. B. Kenney and K. Karan. *Engineering of microstructure and design of a planar porous composite SOFC cathode: A numerical analysis*. Solid State Ionics, 178 297-306 (2007).

3. B. Kenney and K. Karan. *Impact of non-uniform potential in SOFC composite cathodes on the determination of electrochemical kinetic parameters: A numerical analysis*. Journal of the Electrochemical Society, 153(6) A1172-A1180 (2006).

4. 10+ conference presentations/poster presentations

5. Full list available on benk.ca

RECENT ACADEMIC AWARDS/SCHOLARSHIPS

1. 2010 MITACS Elevate Post-Doctoral Fellowship ($55,000/yr for 2 years) [declined]
2. 2007-2008 Ontario Graduate Scholarship ($15,000/yr)
3. 2006-2007 Ontario Graduate Scholarship in Science and Technology ($15,000/yr)
4. 2005-2007 NRC Graduate Student Scholarship Supplement ($7,500/yr)
5. 2005-2006 R.S. McLaughlin Fellowship ($10,000/yr)
6. 2003-2008 Queen's Graduate Award (~$2,000/yr)