

Adam M. Tuck

Research Council Officer

National Research Council Institute for Fuel Cell Innovation

Vancouver, B.C.

WORK EXPERIENCE

National Research Council – Institute for Fuel Cell Innovation
Research Council Officer – High Temperature Fuel Cells 2006-Present

- Design and Development of Planar SOFC Stacks, including mechanical design, system analysis & testing, project planning, component analysis and testing.
- Project Leader or Senior Team Member for several internal and external programs including national and international clients in Hydrogen Production, PEM and SOFC programs.
- Heavily involved in IFCI outreach and collaboration efforts including the highly successful SOFC Canada Program.
- Responsible for Project Management, Program Development, Technical Reports, Presentations and Publications.
- Led two successful United Way/GCWCC Campaigns for IFCI

Fuel Cell Technologies Ltd. - Kingston, Ontario
Lead Engineer – Test and Analysis Group & Beta Development 2003-2006

- Responsible for testing and commissioning pre-production SOFC systems
- Complete thermal, fluid and performance analysis of current systems and proposed improvements and alterations.
- Provide hands-on troubleshooting expertise for multi-disciplinary problems.
- Responsible for organizing and scheduling development work for the engineering team.
- Organized and controlled the development process through implementation of weekly meetings, an ECO process and documentation system.

Lead Engineer – Alpha Unit Installation and Commissioning 2003

- Responsible for the completion of SOFC Alpha Unit development in preparation for field trials.
- Co-ordinated a multi-disciplined team to achieve the successful debugging and installation of the 1st generation FCT SOFC units.
- Lead the on-site installation team for a 5kW system for two international customers.
- Provided ongoing customer support during field trials for customers and installation staff.

Completed technical progress reports, operations and installation manuals and other necessary documentation.
Lead Engineer – Diver Heating Program 2001-2004

- Lead the development team in the 3rd phase of the development of an underwater self contained semi-fuel cell heating unit for clearance divers.
- Completed development of an Advanced Development Model for DND Research and Development

Mechanical Designer – Alpha Unit BOP Design 2000-2002

- Involved in the mechanical design of the Alpha Unit Balance of Plant.
- Responsibilities included completing solid models, drafting, process and instrumentation diagrams, tag lists as well as part specification, procurement and testing.

Mechanical Designer – Altex AUV 2000

- Involved in the development of a prototype aluminum-hydrogen peroxide semi-fuel cell.
 - Completed subsystem design and validation testing.
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Atoma Technical Centre (Magna International) – Newmarket, Ontario
16 Month Professional Internship – Machine Design Group

May 1998 – Sept 1999

- Designed and built automated test equipment for automotive parts.
- Involved in customer design reviews and concept proposals
- Responsible for individual programs from \$40,000 - \$250,000
- Involved in ongoing customer support
- Involved in A2LA and ISO 9001 certification process

EDUCATION

B.Sc Applied Science with Professional Internship – Mechanical Engineering
Graduated with Honours

1995 - 2000

- Core courses included systems design, fracture mechanics, project management, mechatronic systems, mechanical behavior of advanced materials.
- Final year thesis completed on a new frame and suspension design for the Queen's Formula SAE team.

Queen's Formula SAE

1996-2000

- Member of a SAE competition team to design, build and race a formula car capable of being produced in a limited production run.
- Involved in the team for 3 years, working as powertrain manager during 1998 and 2000.
- Projects included tubular and composite frame design, suspension design and tuned intake manifold design.

- Varied responsibilities included design, fabrication, management, testing and driving.

SELECTED PUBLICATIONS

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- "Protective Gas for SOFC Systems Based on Water-Alcohol Mixtures", W. Halliop, A. Tuck and W.T. Thompson, SOFC-IX, Quebec City, 2005
 - "Development Status of SOFC Cell and Stack Technology at NRC-IFCI" Adam Tuck, Xinge Zhang, Rob Hui, Wei Qu, Cyrille Deces-Petit, Yongsong Xie, Justin Roller, Kyong-Bok Min, Mark Robertson, Sing Yick, Radenka Maric, Dave Ghosh, SOFC-X , June 3-8 2007
 - "Metal-supported Solid Oxide Fuel Cell Operated at 400~600oC" R. Hui, D. Yang, Z. Wang , S. Yick, C. Decès-Petit, W. Qu, A. Tuck, R. Maric, D. Ghosh, SOFC-X June 3-8 2007
 - "Novel Processing of Low Loading Catalyst Layers", A. Tuck, J Roller, R. Neagu, K Fatih, R. Maric, Hydrogen & Fuel Cells 2007 Conference and Trade Show
 - "An Innovative Hydrogen Generator for Micro Fuel Cells and Backup/Portable Power Applications", D. Ghosh, T. Vanderhoek, A. Tuck, Z. Xie, D. Jang & C. Huang, Hydrogen & Fuel Cells 2007 Conference and Trade Show

 - "Fabrication and Characterization of Cermet Supported Cell with SDC Electrolyte", Xinge Zhang, Mark Robertson, Cyrille Deçes-Petit, Wei Qu, Min Kyong-Bok, Adam Tuck, Yongsong Xie, Rob Hui, Olivera Kesler, Radenka Maric, Dave Ghosh, SOFC-X, June 3-8 2007

SELECTED PRESENTATIONS & CONFERENCES

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- SOFC-IX, The Electrochemical Society: Oral presentation given on "Protective Gas for SOFC Systems Based on Water-Alcohol Mixtures".
 - "Development Status of SOFC Cell and Stack Technology at NRC-IFCI" Adam Tuck, Xinge Zhang, Rob Hui, Wei Qu, Cyrille Deces-Petit, Yongsong Xie, Justin Roller, Kyong-Bok Min, Mark Robertson, Sing Yick, Radenka Maric, Dave Ghosh, SOFC-X , June 3-8 2007
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