Curriculum Vitae

#### Jeff Gostick

Last Updated: October 17, 2017

[1. Resume 2](#_Toc443482914)

[2. Research Dossier 4](#_Toc443482915)

[2.1. Scientific Contributions 6](#_Toc443482916)

[2.2. Refereed Journal Publications 6](#_Toc443482917)

[2.2.1. Under Review 6](#_Toc443482918)

[2.2.2. In-Press 6](#_Toc443482919)

[2.2.3. Published 6](#_Toc443482920)

[2.3. Non-refereed Articles 8](#_Toc443482921)

[2.4. Book Chapters 8](#_Toc443482922)

[2.5. Book Reviews 9](#_Toc443482923)

[2.6. Conference Proceedings 9](#_Toc443482924)

[2.7. Presentations in Conferences, Workshops and Colloquia 9](#_Toc443482925)

[2.8. Invited and Plenary Talks 11](#_Toc443482926)

[3. Teaching Portfolio 14](#_Toc443482927)

[3.1. Teaching Philosophy and Approach 14](#_Toc443482928)

[3.2. Teaching Responsibilities 15](#_Toc443482929)

[3.2.1. Courses Taught 15](#_Toc443482930)

[3.2.2. Supervision of Graduate Students 15](#_Toc443482931)

[3.2.3. Supervision of Undergraduate Students 18](#_Toc443482932)

[3.2.4. ChemE Car Supervisor 19](#_Toc443482933)

[3.2.5. Participation in Teaching Workshops 20](#_Toc443482934)

[4. Contributions to the University and Community 20](#_Toc443482935)

[4.1. Membership on Departmental Committees 20](#_Toc443482936)

[4.2. Membership on Faculty Committees 21](#_Toc443482937)

[4.3. Membership on University Committees 21](#_Toc443482938)

[4.4. Other Services to the Department and Faculty 21](#_Toc443482939)

[4.5. Thesis Defenses 22](#_Toc443482940)

[4.5.1. PhD Defense Committees 22](#_Toc443482941)

[4.5.2. PhD Proposal Committees 22](#_Toc443482942)

[4.5.3. MEng Thesis Reviews 23](#_Toc443482943)

[4.5.4. Pro-Dean 23](#_Toc443482944)

[4.5.5. Deputy Chair 23](#_Toc443482945)

[4.6. Conference and Workshop Involvement 23](#_Toc443482946)

[4.6.1. Session Organization 23](#_Toc443482947)

[4.6.2. Session Chairs 23](#_Toc443482948)

[4.7. Reviewer for Scholarly Journal Articles 23](#_Toc443482949)

[4.8. Reviewer of Scientific Proposals 24](#_Toc443482950)

# Resume

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| --- | --- |
| **Jeff Gostick, P.Eng.**  Department of Chemical Engineering  University of Waterloo | |
| Engineering 6-5010  200 University Ave N  Waterloo, ON N2L 3G1 | Tel: 519-888-4567  email: jgostick@uwaterloo.ca  url: pmeal.com |

Education

|  |  |
| --- | --- |
| University of Waterloo  (2004-2008) | Ph.D., Chemical Engineering  Dissertation: “Multiphase Mass Transfer and Capillary Properties of Gas Diffusion Layers for Polymer Electrolyte Membrane Fuel Cells”  Supervisor: Professor Michael Fowler |
| University of Waterloo  (2000-2002) | M.A.Sc., Chemical Engineering  Thesis: “Measurement of Local Mass Transfer Coefficients in a Packed Bed of Pall Rings using an Electrochemical Technique”  Supervisor: Professor Mark Pritzker |
| Ryerson University  (1995-2000) | B.Eng., Chemical Engineering |

Professional and Academic Experience

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| --- | --- |
| University of Waterloo  (2017-Present) | Associate Professor  Department of Chemical Engineering |
| McGill University  (2016) | Associate Professor  Department of Chemical Engineering |
| McGill University  (2010-2016) | Assistant Professor  Department of Chemical Engineering |
| Lawrence Berkeley National Lab  (2009-2010) | Postdoctoral Research Associate  Environmental and Energy Technology Division  Supervisor: Adam Weber |
| Tokyo Institute of Technology  (2007) | Visiting Scholar  Department of Mechanical Engineering  Supervisor: Shoji Tsushima |
| TeckCominco (now Teck)  (2002-2004) | Research Engineer  Product Technology Center, Mississauga ON |
| Assinck Bros  (1997) | Drafter  Manufacturing Facility, Markham ON |
| Sterling Pulp Chemicals  (1996) | Research Assistant  R&D Center, Etobicoke ON |
| McAsphalt  (1996) | Quality Assurance Technician  Scarborough, ON |

Affiliations

#### Academic Centers

Trottier Institute for Sustainability in Engineering and Design (2014-2016)

McGIll Institute for Advanced Materials (2012-2016)

McGill Association of University Teachers (2010-2016)

#### Professional Societies

Professional Engineers of Ontario (fully licensed member since 2010, #100138143)

Electrochemical Society (2006-present)

International Society of Porous Materials (Interpore) (2013-present)

American Institute of Chemical Engineers (AIChE) (2010-present)

Honors and Awards

|  |  |
| --- | --- |
| 2015 | Dean’s Scholarship for Active Learning Development |
| 2010 | NSERC Postdoctoral Fellowship (declined) |
| 2008 | Park M Reilly Medal for Best PhD Thesis in the Department, University of Waterloo |
| 2007 | Japan Society for the Promotion of Science Visiting Scholarship |
| 2006 | NSERC PGS-D2 Graduate Fellowship |
| 2006 | President’s Scholarship, University of Waterloo |
| 2005 | Graduate Award, University of Waterloo |
| 2001 | Graduate Award, University of Waterloo |
| 1997 | NSERC Undergrad Student Research Assistantship |

# Research Dossier

Table 1: List of secured research grants

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| --- | --- |
| 2017-2020 | **CANARIE Software Reuse**: *OpenPNM GUI and HPC*. J. Gostick (Principal)  Type: Operating  Amount: $295,000 |
| 2017-2021 | **NSERC-Strategic Project**: Grid-scale energy storage using zinc-air fuel cells with nanostructured electrode. J. Gostick (PI), E. Roberts, V. Birss, E. Kjeang.  Type: Operating  Amount: $584,000 |
| 2017-2022 | **NSERC-CREATE**: Materials for Electrochemical Energy Solutions, E. Roberts (PI), J. Gostick, V. Birss, K. Karan, M. Secannel, V. Thangadurai, M. Trifkovic, A. Whaley.  Type: Operating  Amount: $1,590,000 |
| 2017 | **NSERC Engage**: Developing Simple and Non-Destructive Tools to Perform Quality Control Tests on Gas Diffusion Layers for Fuel Cell Electrodes. J. Gostick  Type: Operating  Amount: $25,000 |
| 2016 | **CFI-JELF:** *Engineered Electrode Materials for Electrochemical Energy Storage.*  Type of Grant: Infrastructure  Amount: $265,000 |
| 2016-2017 | **Argonne Advanced Photon Source**: *The Nature of Coupled Heat and Mass Transport in Porous Carbon Electrodes*. I. Zenyuk (PI), J. Gostick, O. Burnheim.  Type of Grant: User Access  Amount: N/A |
| 2015-2018 | **NSERC-Collaborative R&D**: *Characterization of Nanoporous Catalyst Layers for Polymer Electrolyte Membrane Fuel Cells*. J. Gostick (Principal)  Type of Grant: Operating  Amount: $216,000 |
| 2015-2018 | **NSERC-Strategic**: *Readily scalable and efficient iron-based PEM fuel cell electrocatalysts from low cost metal organic framework precursors*. T. Friščić (principal), J. Gostick, F. Vidal (INRS) and S. Sun (INRS)  Type of Grant: Operating  Amount (Proportion): $560,248 (25%) |
| 2015-2018 | **NSERC-Strategic**: *Nanoparticles to superparticles:* *New materials for clean energy*. J. Barralet (principal), J. Gostick.  Type of Grant: Operating  Amount (Proportion): $501,404 (33%) |
| 2013-2015 | **FQRNT-Industrial Innovation Scholarship**: *Modeling cold-start of hydrogen fuel cell using pore networks.* J. Gostick (Principal)  Type of Grant: Student Stipend (for Harold Day)  Amount: $42,000 |
| 2013-2014 | **US Department of Energy, Fuel Cell Technologies Office**: *Understanding Water Infiltration Using Analogues*. J. Gostick (Principal)  Type of Grant: Operating  Amount: $30,000 |
| 2012-2017 | **NSERC-Discovery**: *Characterization and transport modeling of atypical porous materials*. J. Gostick (Principal)  Type of Grant: Operating  Amount: $145,000 |
| 2012-2017 | **CFI-Leaders Opportunity Fund**: *Electrochemical energy storage and conversion*. J. Gostick (Principal)  Type of Grant: Infrastructure  Amount: $222,847 |
| 2011-2014 | **NSERC-Collaborative R&D**: *Water Management Characterization of Gas Diffusion Layers for Polymer Electrolyte Membrane Fuel Cells*. J. Gostick (Principal)  Type of Grant: Operating  Amount: $259,400 |
| 2010 | **NSERC-Research Tools and Instrumentation**:*Imaging workstation for dynamic material studies.*A. Kietzig (principal), J. Gostick, N. Tufenkji and M. Cerruti.  Type of Grant: Equipment  Amount (Proportion): 93,022 (25%) |

## Scientific Contributions

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| Table 3: Overview of publications by year and journal |

## Refereed Journal Publications

Statistics from Google Scholar: h-index = 17, i10 = 29, Citations > 2700

(Students in **bold**, \* indicates corresponding author)

### Under Review

|  |  |
| --- | --- |
| 43. | **Sadeghi, A.**, Barralet, J. E. & Gostick, JT\* *The interplay between microstructure, transport properties, and kinetics in flow batteryelectrodes: a pore network modeling study.* Electrochimica Acta. |
| 42. | **Kok, MDR**, **T Tranter**, **MR Lam**, and JT Gostick\*, *PoreSpy: An image analysis toolkit for voxel images of porous materials.* Journal of Open Source Software. |
| 41. | **Kok, MDR.**, R. Jervis, D. Brett, P. Shearing, and JT Gostick\*, *Pore network modeling of capillary hysteresis in neutrally wettable fibrous media.* Small. |

### In-Press

|  |  |
| --- | --- |
| 40. | **Tranter, T.**, A. Burns, and W. Gale, J. Gostick\*, *Pore network modeling of capillary hysteresis in neutrally wettable fibrous media.* Transport in Porous Media. |
| 39. | Moosavi, SM, M Niffeler, J Gostick, S Haussener,, *Transport characteristics of saturated gas diffusion layers treated with hydrophobic coatings.* Chemical Engineering Science. |
| 38. | **Aghighi, M.**, J. Gostick\*, *Pore network modeling of phase change in PEM fuel cell fibrous cathode.* Journal of Applied Electrochemistry. |

### Published

|  |  |
| --- | --- |
| 37. | **Sadeghi, M. A.**, **Aghighi, M.**, Barralet, J. & Gostick, J. T.\*, Pore network modeling of reaction-diffusion in hierarchical porous particles: The effects of microstructure. Chemical Engineering Journal 330, 1002–1011 (2017). |
| 36. | **Liu, S**, **MDR Kok**, **YW Kim**, JL Baron, FR Brushett, JT Gostick\*, Evaluation of Electrospun Fibrous Mats Targeted for Use as Flow Battery Electrodes. J. Electrochem. Soc. 164, A2038–A2048 (2017). |
| 35. | Gostick, J. T. Versatile and efficient pore network extraction method using marker-based watershed segmentation. Phys. Rev. E 96, 023307 (2017). |
| 34. | Hinebaugh, J., Gostick, J. & Bazylak, A. Stochastic modeling of polymer electrolyte membrane fuel cell gas diffusion layers – Part 2: A comprehensive substrate model with pore size distribution and heterogeneity effects. International Journal of Hydrogen Energy 42, 15872–15886 (2017). |
| 33. | **Tranter, T.G., P. Stogornyuk**, J.T. Gostick, A.D. Burns, W.F. Gale, *A method for measuring relative in-plane diffusivity of thin and partially saturated porous media: An application to fuel cell gas diffusion layers*.  International Journal of Heat and Mass Transfer. Volume 110(July), 132–141. |
| 32. | Lopes, J., F.-X. Colson, S. Ye, J.T. Gostick, J.E. Barralet, G. Merle, *Graphene modified nanosized Ag electrocomposites*.  Materials Research Bulletin. 89(May), 42–50. |
| 31. | **Rashapov, R.**, and J. Gostick\*, *In-plane effective diffusivity in PEMFC gas diffusion layers.* Transport in Porous Media, 2016. 115(3), 411-433. |
| 30. | Zhang Z., J.H. Lopes, S. Ye, J. Gostick, J.E. Barralet, and G. Merle, Electrically Bloomed Platinum Nanoflowers on Exfoliated Graphene: An Efficient Alcohol Oxidation Catalyst. Journal of the Electrochemical Society, 2016. 163(10), D615-D621. |
| 29. | **Tranter, T.**, J. Gostick, A. Burns, and W. Gale. Pore Network Modeling of Compressed Fuel Cell Components with OpenPNM, Fuel Cells, 2016. 16(4), p504–515. |
| 28. | Gostick, J.\*, **M. Aghighi**, J. Hinebaugh, **T. Tranter, M.A. Hoeh, H. Day, B. Spellacy**, M. Sharqawy, A. Bazylak, A. Burns, W. Lehnert and A. Putz. OpenPNM: A Pore Network Modeling Package. Computing in Science & Engineering 2016. 18(4), p60-74. |
| 27. | **Kok, M.**, **A. Khalifa** and J. Gostick\*. *Multiphysics Simulation of the Flow Battery* |
| 26. | **Aghighi M.A.**, M.A. Hoeh, W. Lehnert, G. Merle, and J. Gostick\*, *Simulation of a Full Fuel Cell Membrane Electrode Assembly Using Pore Network Modeling*. Journal of the Electrochemical Society, 2016. 163(4), p.F384-392. |
| 25. | Schalenbach, M., M.A. Hoeh, J. Gostick, W. Lueke and D. Stolten. *Gas Permeation through Nafion®. Part 2: Resistor Network Model*. Journal of Physical Chemistry C, 2015. 119(45), p.25156–25169. |
| 24. | Quesnel C., **R. Cao**, J. Lehr, A. Kietzig, A. Weber and J Gostick\*. *Dynamic Percolation Behavior in Double Layered Porous Materials*. Journal of Physical Chemistry C, 2015. 119(40), p.22934–22944. |
| 23. | Gostick, J. and A. Weber, *Resistor-Network Modeling of Ionic Conduction in Polymer Electrolytes*. Electrochimica Acta, 2015. 179(October), p.137-145. |
| 22. | Lopez, J., G. Merle, S. Ye , J. Gostick, J. Barralet, *Nanoparticle decoration of defect-free electrochemically exfoliated graphene.* Langmuir, 2015. 31(35), p.9718-9727. |
| 21. | **García-Salaberri, P.A.**, J. Gostick, G. Hwang, A.Z. Weber and M. Vera. *Effective diffusivity in partially-saturated carbon-fiber gas diffusion layers: Effect of local saturation and application to macroscopic continuum models*. Journal of Power Sources, 2015. 296: p. 440–453. |
| 20. | **García-Salaberri, P.A.**, G. Hwang, M. Vera, A.Z. Weber and J. Gostick\*. *Effective diffusivity in partially-saturated carbon-fiber gas diffusion layers: Effect of through-plane saturation distribution*. International Journal of Heat and Mass Transfer, 2015. 86: p. 319–333. |
| 19. | **Rashapov, R., J. Unno** and J. Gostick\*, *Characterization of PEMFC gas diffusion layer porosity*. Journal of the Electrochemical Society, 2015. 162(1): p. F603-F612. |
| 18. | **Rashapov, R., F. Imami** and J. Gostick\*, *Experimental method of in-plane effective diffusion coefficient measurements of porous media.* International Journal of Heat and Mass Transfer, 2015. 85: p. 367-374. |
| 17. | **Kok, M.R.D.**, J. Gostick\*, *Transport properties of electrospun fibrous membranes with controlled anisotropy*. Journal of Membrane Science, 2015. 1(473): p. 237-244. |
| 16. | **Morris, D., S. Liu, D. Villegas** and J. Gostick\*, *Electrical conductivity of fuel cell catalyst layers under controlled relative humidity*. ACS Applied Materials & Interfaces, 2014. 6(21): p. 18609–18618. |
| 15. | Gostick, J.\*, *Random pore network modeling of fibrous PEMFC gas diffusion media using Voronoi and Delaunay tessellations.* Journal of the Electrochemical Society, 2013. 160(8): p. F731-F743. |
| 14. | **Morris, D** and J. Gostick\*, *Determination of the in-plane components of the electrical conductivity tensor in PEM fuel cell gas diffusion layers.* Electrochimica Acta, 2012. 85(1): p. 665-673. |
| 13. | Weber, A.Z., M.M. Mench, J.P. Meyers, P.N. Ross, J. Gostick, and Q. Liu, *Redox flow batteries, a review.* Journal of Applied Electrochemistry, 2011. 41(10): p. 1137-1164. |
| 12. | Gostick, J.\* and M.A. Ioannidis, *Comment on "Effect of gas diffusion layer properties on the time of breakthrough" by Shahraeeni and Hoorfar.* Journal of Power Sources, 2011. 196(22): p. 9844. |
| 11. | Hwang, G.S., M. Kaviany, J. Gostick, B. Kientiz, A.Z. Weber, and M.H. Kim, *Role of water states on water uptake and proton transport in Nafion using molecular simulations and bimodal network.* Polymer, 2011. **52**(12): p. 2584-2593. |
| 10. | Bunmark, N., S. Limtrakul, M.W. Fowler, T. Vatanatham, and J. Gostick, *Assisted water management in a PEMFC with a modified flow field and its effect on performance.* International Journal of Hydrogen Energy, 2010. 35(13): p. 6887-6896. |
| 9. | Gostick, J., M.A. Ioannidis, M.D. Pritzker, and M.W. Fowler, *Impact of liquid water on reactant mass transfer in PEM fuel cell electrodes.* Journal of the Electrochemical Society, 2010. 57(4): p. B563-B571. |
| 8. | Gostick, J., M.A. Ioannidis, M.W. Fowler, and M.D. Pritzker, *Wettability and capillary behavior of fibrous gas diffusion media for polymer electrolyte membrane fuel cells.* Journal of Power Sources, 2009. 194: p. 433-444. |
| 7. | Gostick, J., M.A. Ioannidis, M.W. Fowler, and M.D. Pritzker, *On the role of the microporous layer in PEMFC operation.* Electrochemistry Communications, 2009. 11(3): p. 576-579. |
| 6. | Gostick, J., M.A. Ioannidis, M.W. Fowler, and M.D. Pritzker, *Direct measurement of the capillary pressure characteristics of water-air-gas diffusion layer systems for PEM fuel cells.* Electrochemistry Communications, 2008. 10: p. 1520-1523. |
| 5. | Gostick, J., M.A. Ioannidis, M.W. Fowler, and M.D. Pritzker, *Pore network modeling of fibrous gas diffusion layers for polymer electrolyte membrane fuel cells.* Journal of Power Sources, 2007. 173: p. 277-290. |
| 4. | Gostick, J., M.W. Fowler, M.D. Pritzker, M.A. Ioannidis, and L.M. Behra, *In-Plane and through-plane gas permeability of carbon fiber electrode backing layers.* Journal of Power Sources, 2006. 162 (1): p. 228-238. |
| 3. | Gostick, J., M.W. Fowler, M.A. Ioannidis, M.D. Pritzker, Y.M. Volfkovich, and A. Sakars, *Capillary pressure and hydrophilic porosity in gas diffusion layers for polymer electrolyte fuel cells.* Journal of Power Sources, 2006. 156(2): p. 375-387. |
| 2. | Gostick, J., M. Pritzker, A. Lohi, and H.D. Doan, *Mass transfer variation within a packed bed and its relation to liquid distribution.* Chemical Engineering Journal, 2004. 100(1-3): p. 33-41. |
| 1. | Gostick, J., H.D. Doan, A. Lohi, and M.D. Pritzker, *Investigation of Local Mass Transfer in a Packed Bed of Pall Rings Using a Limiting Current Technique.* Industrial & Engineering Chemistry Research, 2003. 42(15): p. 3626-3634. |

## Non-refereed Articles

1. Aye T, Christensen D, Gostick J, Mogharei A, Olatunde G, Singcuna S, Won W, Aida T. Environmental catalysis: The Canadian Situation. *Canadian Chemical News*, 2000. 52: p. 2526.

## Book Chapters

1. Gostick, J.T., et al., *Porosimetry and Characterization of the Capillary Properties of Gas Diffusion Media*, in *Handbook of PEM Fuel Cell Durability*, H. Wang, X.-Z. Yuan, and H. Li, Editors. 2011, Taylor Francis: Baton Rouge.

1. Gostick, J.T., et al., *Characterization of the Capillary Properties of Gas Diffusion Media*, in *Modern Aspects of Electrochemistry*, C.Y. Wang and U. Pasaogullari, Editors. 2010, Springer: Berlin.

## Book Reviews

1. *Experimental Techniques for Chemical Engineers*, in *Canadian Journal of Chemical Engineering,* 2014. 92: p. 1160-1162*.*

## Conference Proceedings

(Students in bold)

11. **Kok, MDR**, Jervis, R, Shearing, P R & Gostick, JT, Fluid Transport Properties from 3D Tomographic Images of Electrospun Carbon Electrodes for Flow Batteries. ECS Trans. 77, 129–143 (2017).

10. **Liu, SP**, **Kok, MDR** & Gostick, J. T. Fabrication and Characterization of Electrospun Electrodes for Flow Battery Electrodes. ECS Trans. 75, 15–25 (2017).

9. **Kok, MDR** and J Gostick, *Multiphysics Simulation of the Bromine Cathode: Cell Architecture and Electrode Optimization.* ECS Transactions, 2015. 69(1): p. 21-35.

8. **Tranter, TG**, AD Burns and J Gostick, *Multiphysics Pore Network Modeling of Compressed Fuel Cell Components with OpenPNM.* 5th European Fuel Cell and H2 Forum, 2015. Chapter 05 – Sessions A08, 11, 12, 14. p. 138-148 (ISBN: 978-3-905592-19-1).

7. **Aghighi, MA** and J Gostick, *Pore Network Modeling of the Full Membrane Electrode Assembly of a Polymer Electrolyte Membrane Fuel Cell.* ECS Transactions, 2014. 64(3): p. 19-25.

6. Gostick, J *et al.*, *Introducing OpenPNM: An open-source pore network modeling framework*. ECS Transactions, 2013. 58(1): p. 79-86.

5. **Shrestha, K** and J Gostick. *Measurement of capillary pressure curves in GDLs at elevated temperatures*. ECS Transactions, 2012. 50(2): p. 469-476.

4. Gostick, J, *Random pore network modeling of GDLs using Voronoi and Delaunay Tessellations.* ECS Transactions, 2011. 41(1): p. 125-130.

3. Kwong, A, et al., *Water Uptake in PEMFC Catalyst Layers.* ECS Transactions, 2011. 41(1): p. 647-650.

2. Gostick, J, et al., *Tomographic Imaging of Water Injection and Withdrawal in PEMFC Gas Diffusion Layers.* ECS Transactions, 2010. 33(1): p. 1407-1412.

1. Gostick, J, et al. *Effect of hydrophobic polymer treatments on the capillary properties of gas diffusion layers for polymer electrolyte membrane fuel cells*. in *AIChE Annual Meeting*. 2008. Philadelphia, PA: AIChE.

## Presentations in Conferences, Workshops and Colloquia

(Students in **bold**)

35. García-Salaberri, P.A., J. T. Gostick, G. Hwang, M. Vera, I. Zenyuk, A. Z. Weber, *Multiphysics, Multiphase & Multiscale Modeling of PEFCs: With a Focus on the Gas Diffusion Layer*, Annual Fall Meeting of the Electrochemical Society, 2017. Washington, DC.

34. **Kok, MDR,** and J Gostick, *Fluid Transport Properties from 3D Tomographic Images*, Annual Spring Meeting of the Electrochemical Society, 2017. New Orleans, USA.

33. **Liu S,** and J Gostick, *Fabrication and Characterization of Electrospun Electrodes for Flow Battery Applications*, Annual Fall Meeting of the Electrochemical Society, 2016. Honolulu, USA.

32. Gostick J, **T Tranter**, A Burns, *Pore network modeling of capillary hysteresis in neutrally wettable fibrous media*, International Society for Porous Media 8th Annual Conference 2016. Cincinnati, OH.

31. Gostick J, **T Tranter**, **P Stogornyuk**, W Gale, *Measuring relative in-plane diffusivity of thin and partially saturated porous media*, International Society for Porous Media 8th Annual Conference 2016. Cincinnati, OH.

30. **Kok MDR** and J Gostick, *Multiphysics Simulation of the Bromine Cathode: Cell Architecture and Electrode Optimization*, Canadian Society for Chemical Engineering Conference, 2015. Calgary, AB.

29. **Kok MDR** and J Gostick, *Multiphysics Simulation of the Bromine Cathode: Cell Architecture and Electrode Optimization*, Annual Fall Meeting of the Electrochemical Society, 2015. Phoenix, USA.

28. Tranter TG, AD Burn and J Gostick, *Pore network modelling of compressed fuel cell components with OpenPNM*, 5th European PEFC and H2 Forum, 2015. Lucerne, Switzerland.

27. Seyedmohamad M, J Gostick, S Haussener, *Tomography-based characterization of two phase transport in porous media using direct pore-level simulations*. International Society for Porous Media 7th Annual Meeting, 2015. Padova, Italy.

26. Gostick J, **PA García-Salaberri**, G Hwang, M Vera, and AZ Weber, *On the Mass-Transfer Properties of Partially-Saturated Carbon-Paper Gas Diffusion Layers: Global Vs. Local Effective Diffusivity*. Annual Spring Meeting of the Electrochemical Society, 2015. Chicago, USA.

25. Weber AZ, A Kusoglu, J Gostick and A Crothers, *Understanding Transport Phenomena in Perfluorosulfonic-Acid Membranes*. Annual Spring Meeting of the Electrochemical Society, 2015. Chicago, USA.

24. **Aghighi M** and J Gostick, *Incorporation of the Stefan-Maxwell Multicomponent Diffusion Model into a Pore Network Model of the PEMFC Electrode*. Annual Fall Meeting of the Electrochemical Society. 2014. Cancun, Mexico.

23. Gostick J and **M Aghighi**, *Modeling a Full PEMFC Membrane Electrode Assembly Using a Pore Network Model*. Annual Fall Meeting of the Electrochemical Society, Cancun, Mexico, Oct 6th, 2014.

22. **Rashapov R** and J Gostick, *Experimental Method of Diffusion Coefficient Measurements of Porous Media (Poster)*. 4th Electrochemical Society Montreal Student Chapter Symposium. Montreal, QC. June 13th, 2014.

21. **Rashapov R** and J Gostick, *Experimental Method of Diffusion Coefficient Measurements of Porous Media*. International Society for Porous Media 6th Annual Conference. Milwaukee, USA. May 27-30, 2014.

20. **Kok M** and J Gostick, *Transport Properties of Electrospun Fibrous Membranes with Controlled Anisotropy*. International Society for Porous Media 6th Annual Conference. Milwaukee, USA. May 27-30, 2014.

19. **Morris D** and J Gostick, *Structure-Conductivity Relationship of PEMFC Catalyst Layers*. Electrochemical Conference on Energy & the Environment. Shanghai, China. March 13-16, 2014.

18. Gostick J, *Liquid Flow Through MPLs: The impact of holes and cracks on percolation through dual layers*. DoE Fuel Cell Modeling Workshop. Berkeley, CA. February 4th, 2014.

17. **Laskey G** and J Gostick, *Low Pressure Liquid Extrusion Porosimetry for Determination of Pore Size Distribution in Gas Diffusion and Microporous Layers*. Annual Fall Meeting of the Electrochemical Society. 2013. San Francisco, USA.

16. Gostick J, A Putz, A Bazylak, **H Day**, **M Aghighi**, J Hinebaugh. *Introducing OpenPNM: An open-source, pore network modeling software package.* Annual Fall Meeting of the Electrochemical Society. October 13-18, 2013. San Francisco, USA.

15. **García-Salaberri P**, J Gostick, M Vera, A Weber and G Hwang, *Lattice Boltzmann simulations of anisotropic permeabilities in partially-saturated PEM fuel cell gas diffusion layers.* IV Iberian Symposium on Hydrogen, Fuel Cells and Advanced Batteries. June 26-28, 2013. Estoril, Portugal.

14. **Morris DRP**, **S Liu**, **D Villegas** and J Gostick, *Percolation Conductivity of Fuel Cell Catalyst Layers*. 3rd Electrochemical Society Montreal Student Chapter Symposium. June 28th, 2013. Montreal, QC.

13. Gostick J, G Hwang and A Weber. *Using Tomographic Images to Study Invasion Mechanisms in Fibrous GDMs*. Annual Spring Meeting of the Electrochemical Society. 2013. Toronto, ON.

12. **Shrestha K** and J Gostick, *Measurement of Capillary Pressure Curves in GDLs at Elevated Temperatures.* Annual Fall Meeting of the Electrochemical Society. October 2012. Honolulu, HI.

11. **Morris DRP** and J Gostick. Electrical Conductivity of Gas Diffusion Layer Materials. 2nd Electrochemical Society Montreal Student Chapter Symposium. June 22nd, 2012. Montreal, QC.

10. Gostick J, *Random pore network modeling of GDLs using Voronoi and Delaunay Tesselations*. Annual Fall Meeting of the Electrochemical Society. 2011. Boston, MA.

9. Gostick J, B Kienitz, A MacDowell and A Weber. X-Ray tomographic study of liquid water distribution in GDLs under pressure-controlled capillary invasion and withdrawal. ECS Fall Meeting, Las Vegas, NV. October 15 – 20, 2010.

8. Gunterman P, J Gostick, A Weber and J Newman. Measurement of air-water capillary pressure curves of microporous layers in PEMFC electrodes. ECS Fall Meeting, Las Vegas, NV. October 15 – 20, 2010.

7. Kienitz B, J Gostick, A MacDowell and A Weber. Investigation of Nafion water content using x-ray radiography. ECS Fall Meeting, Las Vegas, NV. October 15 – 20, 2010

6. Gostick J, M Ioannidis, M Pritzker and M Fowler, Effect of hydrophobic polymer treatments on the capillary properties of gas diffusion layers. AIChE Annual Meeting, Philadelphia, PA. November 17 – 21, 2008.

5. Shim J, J Gostick, S Tsushima, S Harai. Analysis and verification of MEA degradation mechanism in PEMFC through SEM images and direct gas mass spectroscopy. 4th International Conference on Flow Dynamics, Sendai, Japan. September 26 & 27, 2007.

4. Gostick J, M Ioannidis, M Pritzker and M Fowler, Capillary pressure and permeability of gas diffusion layers: measurement and pore network modeling. 210th Meeting of the Electrochemical Society, Cancun, Mexico. October 29 – November 3, 2006.

3. Gostick J, E Lin, M Ioannidis, M Pritzker and M Fowler, Measurement of hydrophobic pore volume in GDLs at elevated temperatures. 9th Grove Fuel Cell Symposium, London, UK. October 4 – 6, 2005. (Poster)

2. Gostick J, M Ioannidis, M Pritzker and M Fowler, Effectiveness of PTFE coatings on GDLs at elevated temperatures. 1st Symposium on Manufacturing of MEAs for Hydrogen Applications, Dayton, OH. August 9 – 11, 2005.

1. Gostick J, H Doan, M Pritzker and A Lohi, Measurement of local mass transfer coefficients in a packed column of Pall rings using the limiting current technique. 51st Canadian Chemical Engineering Conference, Halifax, NS. October 14 – 17, 2001.

## Invited and Plenary Talks

25. Visiting Speaker: OpenFCST 1st Annual Workshop (Invited by Prof. Marc Secannell)

*OpenPNM: Open Source Pore Network Modelling in Python*. Edmonton, AB. August 22nd, 2016.

25. Visiting Speaker: Henan Normal University 111 Kick-off Meeting (Invited by Prof. Tang)

*OpenPNM: Open Source Pore Network Modelling in Python*. Edmonton, AB. August 22nd, 2016.

25. Visiting Speaker: OpenFCST 1st Annual Workshop (Invited by Prof. Marc Secannell)

*OpenPNM: Open Source Pore Network Modelling in Python*. Edmonton, AB. August 22nd, 2016.

24. Visiting Speaker: SDFC Batteries Meeting (Invited by Prof. Paul Shearing of University College London)

*Modeling Thin Porous Materials: Three Challenges, One Solution*. Abbingdon, UK. July 15th, 2016.

23. Visiting Speaker: University of Leeds (Invited by Prof. Alan Burns)

*Characterization & Modeling Transport in Gas Diffusion Layer*. University of Leeds. July 12th, 2016.

22. Visiting Speaker: Tufts University (Invited by Prof. Iryna Zenyuk)

*Thin Porous Materials: Characterization Challenges & Modeling Opportunities*. Tufts University. March 10th, 2016.

21. Public Talk: Sustainable Engineering at McGill (SEAM)

*Mobile Power: Want vs. Need*. McGill University, Jan 26th, 2016.

20. Public Debate: McGill Engineering TechWeek

*Batteries vs Fuel Cells for Mobile Power.*  Organized by the McGill Engineering Equity Committee. Sept 30th 2015.

19. Workshop Moderator: Universal Design in Learning

*Four Things I Learned This Summer from the NETI-1*. Organized by the McGill Engineering Equity Committee. Sept 30th 2015.

18. Tutorial: CSChE Conference (invited by Prof. Kunal Karan)

*Code like a Pro: An Introduction to Object-Oriented Programming with Python*, given as part of the Student Symposium at the 65th Annual Society Meeting in Calgary. Oct 6th 2015.

17. Tutorial: ECS Spring Meeting (invited by Dr. Adam Weber)

*Measuring and Modeling Transport Processes in Porous Electrodes*, given as part of the “State-of-the-Art Tutorial on Diagnostics in Low-Temperature Fuel Cells” at the Annual Spring Meeting of the Electrochemical Society, Chicago, USA, May 26th, 2015.

16. Public Talk: McGill Engineering TechWeek

*Porous Materials Engineering and Analysis: Measuring, Modeling and Making*, McGill University, Jan 28th, 2015.

15. Public Talk: TISED Annual Symposium (invited by Prof. Francois Bouffard)

*Electrochemical Energy Storage: Make Hay When the Sun Shines*, Trottier Institute of Sustainability in Engineering and Design Symposium on Storage in Sustainable Energy Electric Systems, Montreal, QC, Nov 20th, 2014.

14. Keynote: McGill Chemical Engineering Research Symposium (invited by Prof. Anne Kietzig)

*How to Become a Professor in N Easy Steps (N>>1)*, given as part of the Departmental Semi-Annual Research Day, Nov 19th, 2014.

13. Seminar: CSChE Conference (invited by Prof. Jason Grove)

*How to Become a Professor in N Easy Steps (N>>1)*, given as part of the undergraduate symposium at the 64th Canadian Chemical Engineering Conference, Niagara Fall, ON, Oct 20th, 2014.

12. Plenary Talk: ECS Fall Meeting (invited by Dr. Felix Buchi)

*Modeling a Full PEMFC Membrane Electrode Assembly Using a Pore Network Model*, given during the plenary session of the Annual Fall Meeting of the Electrochemical Society, Cancun, Mexico, Oct 6th, 2014.

11. Workshop: University of Calgary (invited by Prof. Viola Birss)

*Porous Media Research at McGill*. Workshop on Electrochemical Energy Storage. University of Calgary, Calgary, AB. June 9th, 2014.

10. Seminar: US DoE Working Group (invited by Dr. Adam Weber)

*X-ray Tomography & Lattice Boltzmann Simulations*, presented to the DoE Fuel Modelling Working Group, Lawrence Berkeley National Lab, Berkeley, USA. May 22nd, 2014.

9. Visiting Speaker: Juelich Institute (invited by Prof. Werner Lehnert)

*Porous Media Research at McGill*. Juelich Institute, Juelich, Germany. May 16th, 2014.

8. Seminar: Daimler Research Facility (invited by Dr. Jorg Kleeman)

*Fuel Cell Electrode Characterization*, given to research facility members in Naburn, Germany. May 15th, 2014.

7. Visiting Speaker: University of Waterloo (invited by Prof. Michael Fowler)

*How to Become a Professor in N Easy Steps (N>>1)*. University of Waterloo. Waterloo, ON. April 4th, 2014.

6. Workshop: DoE Fuel Cell Modeling Workshop (invited by Dr. Adam Weber)

*Introducing OpenPNM: An open-source, pore network modeling software package,* presented to the DoE Fuel Modelling Working Group, Lawrence Berkeley National Lab, Berkeley, USA. Oct 12th, 2013.

5. Seminar: Automotive Fuel Cell Cooperation

*Random Pore Network Modeling*, given as part of the Lunch & Learn series at AFCC, Burnaby BC. Feb 22nd, 2012.

4. Workshop: DoE Fuel Cell Modeling Workshop (invited by Dr. Adam Weber)

*GDL Transport Properties: Update and Status*, presented to the DoE Fuel Modelling Working Group, Lawrence Berkeley National Lab, Berkeley, USA. Jan 26th, 2012.

3. Seminar: Automotive Fuel Cell Cooperation

*Random Thoughts on Wettability*, given as part of the Lunch & Learn series at AFCC, Burnaby, BC. Feb 24th, 2011.

2. Workshop: DoE Fuel Cell Modeling Workshop (invited by Dr. Adam Weber)

*GDL Transport Properties: Overview and Status,* presented to the DoE Fuel Modelling Working Group, Lawrence Berkeley National Lab, Berkeley, USA. Feb 28th, 2011.

1. Public Talk: McGill Engineering TechWeek

*Energy Storage: Make Hay While the Sun Shines*. Academic Week, McGill University, Feb 7th, 2011.