

## JEAN ST-PIERRE

### PRESENT POSITION

Researcher, HNEI, University of Hawaii - Manoa, 2010-Present

### EDUCATION

Ph.D., Metallurgical Engineering, École Polytechnique, 1989

M.Sc.A., Metallurgical Engineering, École Polytechnique, 1985

B.Eng., Engineering Physics, École Polytechnique, 1983

### EXPERIENCE

2006-2010, Research professor, University of South Carolina, Department of Chemical Engineering

- Contracted to expand fuel cell research and funding, engage industry and continue the creation of an internationally recognized team

1995-2005, Principal research scientist, Ballard Power Systems

- Led and leveraged internal and external resources to demonstrate and develop new technologies with the objective to increase understanding, decrease design cycle time and increase competitiveness of proton exchange membrane fuel cells

1992-1994, Research professor, Institut National de la Recherche Scientifique, INRS-Géosciences

- Contracted to investigate and develop methods to extract low levels of metallic impurities from mine tailings treatment solutions and to integrate results with the overall revalorisation team strategy

### PROFESSIONAL AFFILIATIONS

Co-chair, World Fuel Cell Conference (WFCC 2021, Waterloo, ON, Canada, August 17-20, 2021), 2020

Member, SAE International Fuel Cell Interface Task Force, J3219 technical information report, hydrogen fuel quality screening test of chemicals for fuel cell vehicle, 2020

Guest co-editor, Journal of the Electrochemical Society, Focus issue on proton exchange membrane fuel cell (PEMFC) and proton exchange membrane water electrolyzer (PEMWE) durability, 2020

Member, The Electrochemical Society, Energy Technology division research award committee, 2019

Guest editor, *Molecules*, special issue on proton exchange membrane fuel cells (PEMFCs), since 2019-2020

Advisory board member, *Sci* (MDPI open access journal), since 2018

Editorial board member, *Molecules* (MDPI open access journal), since 2018

Member, The Electrochemical Society, Free the Science advisory board, 2017

Guest editor, *Journal of the Electrochemical Society*, focus issue on proton exchange membrane fuel cell durability, 2017-2018

Editorial board member, *Electrochem* (MDPI open access journal), since 2017

Member, American Association for the Advancement of Science, since 2015

Chair, The Electrochemical Society, Energy Technology division research award and graduate student award committee, 2014

Member, The Electrochemical Society, Finance committee, 2014-2018

Member, The Electrochemical Society, Honors and Awards committee, since 2012

Member, The Electrochemical Society, Executive committee of the board of directors, 2011-2013

Member, The Electrochemical Society, Symposium subcommittee, 2011-2013

Chair, The Electrochemical Society, Energy Technology division, 2011-2013

Chair, The Electrochemical Society, Society Meeting committee, 2011

Member, The Electrochemical Society, Sponsorship committee, 2011-2013

Scientific committee member, Fundamentals and Developments of Fuel Cells Conference 2011 (FDFC2011, Grenoble, France, January 19-21, 2011)

Chair, The Electrochemical Society, Development committee, 2010

Member, The Electrochemical Society, Society Meeting committee, 2009-2011

Vice-chair, The Electrochemical Society, Energy Technology division, 2009-2011

Scientific committee member, Fundamentals and Developments of Fuel Cell Conference 2008 (FDFC2008, Nancy, France, December 10-12, 2008)

Secretary, The Electrochemical Society, Energy Technology division, 2007-2009

Evaluation committee member, Agence Nationale de la Recherche, Paris, France, 2007

Treasurer, The Electrochemical Society, Energy Technology division, 2005-2007

Member, Association of Professional Engineers and Geoscientists of British Columbia, 2001-2006

Scientific committee member, Journal of New Materials for Electrochemical Systems, since 1997

Committee on scholarships and fellowships member, Natural Sciences and Engineering Research Council, Ottawa, ON, Canada, 1996-2000

Member, Sigma Xi, The Scientific Research Society, since 1986

Member, International Society of Electrochemistry, since 1986

Member, Ordre des Ingénieurs du Québec, 1985-1995, since 1998

Member, The Electrochemical Society, since 1984

Member, National Association of Corrosion Engineers, 1984-1992

## PUBLICATIONS

76. J. St-Pierre, Y. Zhai, 'Impact of the Cathode Pt Loading on PEMFC Contamination by Several Airborne Contaminants', *Molecules*, **25** (2020) article 1060, 15 pages.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (80 %)

75. Y. Zhai, J. St-Pierre, 'Acetonitrile Contamination in the Cathode of Proton Exchange Membrane Fuel Cells and Cell Performance Recovery', *Appl. Energy*, **242** (2019) 239-247.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

74. J. Qi, Y. Zhai; J. St-Pierre, 'Effect of Contaminant Mixtures in Air on Proton Exchange Membrane Fuel Cell Performance', *J. Power Sources*, **413** (2019) 86-97.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

73. J. St-Pierre, D. J. Myers, R. L. Borup, 'Preface – Focus Issue on Proton Exchange Membrane Fuel Cell (PEMFC) Durability', *J. Electrochem. Soc.*, **165** (2018) Y7.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

72. Y. Zhai, J. Ge, J. Qi, J. St-Pierre, 'Effect of Acetonitrile Contamination on Long-Term Degradation of Proton Exchange Membrane Fuel Cells', *J. Electrochem. Soc.*, **165** (2018) F3191-F3199.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

71. S. Higgins, J. Ewan, J. St-Pierre, G. Severa, K. Davies, K. Bethune, A. Goodarzi, R. Rocheleau, 'Environmental Sensor System for Expanded Capability of PEM Fuel Cell Use in High Air Contaminant Conditions', *Int. J. Hydrogen Energy*, **43** (2018) 22584-22594.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

70. J. Qi, J. Ge, M. A. Uddin, Y. Zhai, U. Pasaogullari, J. St-Pierre, 'Evaluation of Cathode Contamination with  $\text{Ca}^{2+}$  in Proton Exchange Membrane Fuel Cells', *Electrochim. Acta*, **259** (2018) 510-516.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

69. Y. Zhai, J. St-Pierre, 'Tolerance and Mitigation Strategies of Proton Exchange Membrane Fuel Cells Subject to Acetylene Contamination', *Int. J. Hydrogen Energy*, **43** (2018) 17475-17479.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

68. T. V. Reshetenko, J. St-Pierre, 'Effects of Propylene, Methyl Methacrylate and Isopropanol Poisoning on Spatial Performance of a Proton Exchange Membrane Fuel Cell', *J. Power Sources*, **378** (2018) 216-224.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

67. Y. Zhai, J. St-Pierre, 'Impact of Operating Conditions on the Acetylene Contamination in the Cathode of Proton Exchange Membrane Fuel cells', *J. Power Sources*, **372** (2017) 134-144.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

66. Y. Zhai, J. St-Pierre, 'Acetylene Contamination Mechanisms in the Cathode of Proton Exchange Membrane Fuel Cells', *ChemElectroChem*, **4** (2017) 655-670.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

65. T. V. Reshetenko, K. Artyushkova, J. St-Pierre, 'Spatial Proton Exchange Membrane Fuel Cell Performance Under Bromomethane Poisoning', *J. Power Sources*, **342** (2017) 135-147.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

64. J. Qi, Y. Zhai, J. St-Pierre, 'Effects of Ethylene Glycol and Caprolactam on the ORR and HOR Performances of Pt/C Catalysts', *J. Electrochem. Soc.*, **163** (2016) F1618-F1626.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

63. T. V. Reshetenko, J. St-Pierre, 'Study of the Aromatic Hydrocarbons Poisoning of Platinum Cathodes on Proton Exchange Membrane Fuel Cell Spatial Performance Using a Segmented Cell System', *J. Power Sources*, **333** (2016) 236-246.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

62. M. A. Rubio, K. Bethune, A. Urquia, J. St-Pierre, 'Proton Exchange Membrane Fuel Cell Failure Mode Early Diagnosis with Wavelet Analysis of Electrochemical Noise', *Int. J. Hydrogen Energy*, **41** (2016) 14991-15001.

Contribution to: Conceptualization (20 %), Analysis (40 %), Writing (40 %)

61. Y. Zhai, O. Baturina, D. Ramaker, E. Farquhar, J. St-Pierre, K. Swider-Lyons, 'Bromomethane Contamination in the Cathode of Proton Exchange Membrane Fuel Cells', *Electrochim. Acta*, **213** (2016) 482-489.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

60. Y. Zhai, J. Ge, J. St-Pierre, 'The Ionic Conductivity and Catalyst Activity Effects of Acetonitrile on Proton Exchange Membrane Fuel Cells', *Electrochem. Commun.*, **66** (2016) 49-52.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

59. J. St-Pierre, Y. Zhai, J. Ge, 'Relationships between PEMFC Cathode Kinetic Losses and Contaminants' Dipole Moment and Adsorption Energy on Pt', *J. Electrochem. Soc.*, **163** (2016) F247-F254.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

58. J. St-Pierre, M. B. V. Virji, 'Cell Performance Distribution in a Proton Exchange Membrane Fuel Cell Stack during Propene Contamination', *J. Appl. Electrochem.*, **46** (2016) 169-181.

Contribution to: Conceptualization (60 %), Analysis (60 %), Writing (80 %)

57. J. Zhu, M. Xiao, K. Li, C. Liu, J. Ge, J. St-Pierre, W. Xing, 'Growth Mechanism and Active Sites Probing of Fe<sub>3</sub>C@N-doped Carbon Nanotubes/C Catalysts: Guidance for Building Highly Efficient Oxygen Reduction Electrocatalysts', *J. Mater. Chem. A*, **3** (2015) 21451-21459.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

56. T. V. Reshchenko, J. St-Pierre, 'Study of the Acetonitrile Poisoning of Platinum Cathodes on Proton Exchange Membrane Fuel Cell Spatial Performance Using a Segmented Cell System', *J. Power Sources*, **293** (2015) 929-940.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

55. Y. Zhai, O. Baturina, D. Ramaker, E. Farquhar, J. St-Pierre, K. Swider-Lyons, 'Chlorobenzene Poisoning and Recovery of Platinum-Based Cathodes in Proton Exchange Membrane Fuel Cells', *J. Phys. Chem. C*, **119** (2015) 20328-20338.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

54. T. V. Reshchenko, J. St-Pierre, 'Study of Acetylene Poisoning of Pt Cathode on Proton Exchange Membrane Fuel Cell Spatial Performance Using a Segmented Cell System', *J. Power Sources*, **287** (2015) 401-415.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

53. Y. Zhai, J. St-Pierre, 'Proton Exchange Membrane Fuel Cell Cathode Contamination - Acetylene', *J. Power Sources*, **279** (2015) 165-171.  
Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)
52. J. Ge, J. St-Pierre, Y. Zhai, 'PEMFC Cathode Catalyst Contamination Evaluation with a RRDE – Methyl Methacrylate', *Int. J. Hydrogen Energy*, **39** (2014) 18351-18361.  
Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)
51. J. Ge, J. St-Pierre, Y. Zhai, 'PEMFC Cathode Catalyst Contamination Evaluation with a RRDE - Propene and Naphthalene', *Electrochim. Acta*, **138** (2014) 437-446.  
Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)
50. T. Reshetenko, J. St-Pierre, 'Separation Method for Oxygen Mass Transport Coefficient in Gas and Ionomer Phases in PEMFC GDE', *J. Electrochem. Soc.*, **161** (2014) F1089-F1100.  
Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)
49. J. St-Pierre, B. Wetton, Y. Zhai, J. Ge, 'Liquid Water Scavenging of PEMFC Contaminants', *J. Electrochem. Soc.*, **161** (2014) E3357-E3364.  
Contribution to: Conceptualization (40 %), Analysis (40 %), Writing (80 %)
48. J. Ge, J. St-Pierre, Y. Zhai, 'PEMFC Cathode Catalyst Contamination Evaluation with a RRDE - Acetonitrile', *Electrochim. Acta*, **134** (2014) 272-280.  
Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)
47. J. Ge, J. St-Pierre, Y. Zhai, 'PEMFC Cathode Catalyst Contamination Evaluation with a RRDE - Acetylene', *Electrochim. Acta*, **133** (2014) 65-72.  
Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)
46. Y. Garsany, J. Ge, J. St-Pierre, R. Rocheleau, K. E. Swider-Lyons, 'Standardizing Thin-Film Rotating Disk Electrode Measurements of the Oxygen Reduction Activity of Pt/C', *J. Electrochem. Soc.*, **161** (2014) F628-F640.  
Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)
45. J. St-Pierre, Y. Zhai, M. S. Angelo, 'Effect of Selected Airborne Contaminants on PEMFC Performance', *J. Electrochem. Soc.*, **161** (2014) F280-F290 and **162** (2015) X7.  
Contribution to: Conceptualization (60 %), Analysis (60 %), Writing (80 %)
44. T. V. Reshetenko, K. Bethune, K. Artyushkova, R. Rocheleau, P. Atanassov, M. Ulsh, G. Bender, J. St-Pierre, 'Multianalytical Study of Gas Diffusion Layer PTFE Content Local Variation', *J. Electrochem. Soc.*, **160** (2013) F1305-F1315.  
Contribution to: Conceptualization (40 %), Analysis (20 %), Writing (20 %)
43. T. V. Reshetenko, J. St-Pierre, R. Rocheleau, 'Effects of Local Gas Diffusion Layer Gas Permeability Variations on Spatial Proton Exchange Membrane Fuel Cells Performance', *J. Power Sources*, **241** (2013) 597-607.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

42. J. St-Pierre, Y. Zhai, M. Angelo, 'Quantitative Ranking Criteria for PEMFC Contaminants', *Int. J. Hydrogen Energy*, **37** (2012) 6784-6789.

Contribution to: Conceptualization (60 %), Analysis (60 %), Writing (80 %)

41. K. Promislow, J. St-Pierre, B. Wetton, 'A Simple, Analytic Model of PEMFC Anode Recirculation at Operating Power Including Nitrogen Crossover', *J. Power Sources*, **196** (2011) 10050-10056.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

40. J. St-Pierre, 'PEMFC Contaminant Tolerance Limit – Foreign Cations in Ionomers', *Int. J. Hydrogen Energy*, **36** (2011) 5527-5535.

39. J. St-Pierre, 'PEMFC Contamination Model: Foreign Cation Exchange with Ionomer Protons', *J. Power Sources*, **196** (2011) 6274-6283.

38. J. St-Pierre, 'Hydrogen Mass Transport in Fuel Cell Gas Diffusion Electrodes', *Fuel Cells*, **11** (2011) 263-273.

37. M. Ohashi, K. D. Beard, S. Ma, D. A. Blom, J. St-Pierre, J. W. Van Zee, J. R. Monnier, 'Electrochemical and Structural Characterization of Carbon-Supported Pt-Pd Bimetallic Electrocatalysts Prepared by Electroless Deposition', *Electrochim. Acta*, **55** (2010) 7376-7384.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

36. J. St-Pierre, 'PEMFC Contaminant Tolerance Limit – CO in H<sub>2</sub>', *Electrochim. Acta*, **55** (2010) 4208-4211.

35. J. St-Pierre, 'Proton Exchange Membrane Fuel Cell Contamination Model: Competitive Adsorption Followed by a Surface Segregated Electrochemical Reaction Leading to an Irreversibly Adsorbed Product', *J. Power Sources*, **195** (2010) 6379-6388.

34. Y. Gu, J. St-Pierre, A. Joly, R. Goeke, A. Datye, P. Atanassov, 'Aging Studies of Pt/Glassy Carbon Model Electrocatalysts', *J. Electrochem. Soc.*, **156** (2009) B485-B492.

Contribution to: Conceptualization (60 %), Analysis (40 %), Writing (80 %)

33. J. St-Pierre, 'PEMFC Contamination Model: Competitive Adsorption Followed by an Electrochemical Reaction', *J. Electrochem. Soc.*, **156** (2009) B291-B300.

32. Y. Gu, J. St-Pierre, H. J. Ploehn, 'Pt/Glassy Carbon Model Catalysts Prepared from PS-*b*-P2VP Micellar Templates', *Langmuir*, **24** (2008) 12680-12689.

Contribution to: Conceptualization (40 %), Analysis (20 %), Writing (20 %)

31. J. St-Pierre, N. Jia, R. Rahmani, 'PEMFC Contamination Model: Competitive Adsorption Demonstrated with NO<sub>2</sub>', *J. Electrochem. Soc.*, **155** (2008) B315-B320.

Contribution to: Conceptualization (80 %), Analysis (60 %), Writing (80 %)

30. J. D. Fairweather, P. Cheung, J. St-Pierre, D. T. Schwartz, 'A Microfluidic Approach for Measuring Capillary Pressure in PEMFC Gas Diffusion Layers', *Electrochem. Commun.*, **9** (2007) 2341-2346.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

29. J. St-Pierre, 'PEMFC In Situ Liquid-Water-Content Monitoring Status', *J. Electrochem. Soc.*, **154** (2007) B724-B731.

28. J. St-Pierre, A. Wong, J. Diep, D. Kiel, 'Demonstration of a Residence Time Distribution Method for Proton Exchange Membrane Fuel Cell Evaluation', *J. Power Sources*, **164** (2007) 196-202.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (80 %)

27. J. Diep, D. Kiel, J. St-Pierre, A. Wong, 'Development of a Residence Time Distribution Method for Proton Exchange Membrane Fuel Cell Evaluation', *Chem. Eng. Sci.*, **62** (2007) 846-857.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (80 %)

26. J. St-Pierre, 'Simple Mathematical Model for Water Diffusion in Nafion Membranes', *J. Electrochem. Soc.*, **154** (2007) B88-B95.

25. J. St-Pierre, B. Wetton, G.-S. Kim, K. Promislow, 'Limiting Current Operation of Proton Exchange Membrane Fuel Cells', *J. Electrochem. Soc.*, **154** (2007) B186-B193.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (80 %)

24. P. A. C. Chang, J. St-Pierre, J. Stumper, B. Wetton, 'Flow Distribution in Proton Exchange Membrane Fuel Cell Stacks', *J. Power Sources*, **162** (2006) 340-355.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

23. P. Berg, A. Çağlar, K. Promislow, J. St-Pierre, B. Wetton, 'Electrical Coupling in Proton Exchange Membrane Fuel Cell Stacks: Mathematical and Computational Modelling', *IMA J. Appl. Math.*, **71** (2006) 241-261.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

22. G.-S. Kim, J. St-Pierre, K. Promislow, B. Wetton, 'Electrical Coupling in Proton Exchange Membrane Fuel Cell Stacks', *J. Power Sources*, **152** (2005) 210-217.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (80 %)

21. J. St-Pierre, J. Roberts, K. Colbow, S. Campbell, A. Nelson, 'PEMFC Operational and Design Strategies for sub Zero Environments', *J. New Mater. Electrochem. Syst.*, **8** (2005) 163-176.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (80 %)



20. P. Berg, K. Promislow, J. St-Pierre, J. Stumper, B. Wetton, 'Water Management in PEM Fuel Cells', *J. Electrochem. Soc.*, **151** (2004) A341-A353.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

19. S. D. Knights, K. M. Colbow, J. St-Pierre, D. P. Wilkinson, 'Aging Mechanisms and Lifetime, PEFC and DMFC', *J. Power Sources*, **127** (2004) 127-134.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

18. D. P. Wilkinson, J. St-Pierre, 'In-plane Gradients in Fuel Cell Structure and Conditions for Higher Performance', *J. Power Sources*, **113** (2003) 101-108.

Contribution to: Conceptualization (20 %), Analysis (40 %), Writing (80 %)

17. J. St-Pierre, N. Jia, 'Successful Demonstration of Ballard PEMFCs for Space Shuttle Applications', *J. New Mater. Electrochem. Syst.*, **5** (2002) 263-271.

Contribution to: Conceptualization (60 %), Analysis (40 %), Writing (80 %)

16. J. St-Pierre, D. P. Wilkinson, 'Fuel Cells: A New, Efficient and Cleaner Power Source', *AIChE J.*, **47** (2001) 1482-1486.

Contribution to: Conceptualization (40 %), Analysis (60 %), Writing (80 %)

15. J. St-Pierre, D. P. Wilkinson, S. Knights, M. L. Bos, 'Relationships between Water Management, Contamination and Lifetime Degradation in PEFC', *J. New Mater. Electrochem. Syst.*, **3** (2000) 99-106.

Contribution to: Conceptualization (20 %), Analysis (40 %), Writing (80 %)

14. T. R. Ralph, G. A. Hards, N. J. Collis, J. E. Keating, S. A. Campbell, D. P. Wilkinson, M. Davis, J. St-Pierre, M. C. Johnson, 'Low Cost Electrodes for Proton Exchange Membrane Fuel Cells. Performance in Single Cells and Ballard Stacks', *J. Electrochem. Soc.*, **144** (1997) 3845-3857.

Contribution to: Conceptualization (20 %), Analysis (20 %), Writing (20 %)

13. J. C. K. Ho, D. L. Piron, J. St-Pierre, 'Cathodic Potential Oscillations of Fe(III) Reduction on Pb and Zn in 1 M NaCl Solution under Galvanostatic Conditions', *J. Electrochem. Soc.*, **144** (1997) 3367-3371.

Contribution to: Conceptualization (20 %), Analysis (40 %), Writing (20 %)

12. J. St-Pierre, N. Massé, É. Fréchette, M. Bergeron, 'Zinc Removal from Dilute Solutions Using a Rotating Cylinder Electrode Reactor', *J. Appl. Electrochem.*, **26** (1996) 369-377.

Contribution to: Conceptualization (40 %), Analysis (40 %), Writing (80 %)

11. J. St-Pierre, N. Massé, M. Bergeron, 'Dissolved Oxygen Concentration in a Divided Rotating Cylinder Electrode Reactor', *Electrochim. Acta*, **40** (1995) 1013-1024.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

10. N. Massé, J. St-Pierre, M. Bergeron, 'Copper Removal from an Aerated Solution Containing Various Metallic Ions Using an Undivided Rotating Cylinder Electrode Reactor', *J. Appl. Electrochem.*, **25** (1995) 340-346.

Contribution to: Conceptualization (40 %), Analysis (40 %), Writing (20 %)

9. J. St-Pierre, N. Massé, M. Bergeron, 'Dissolved Oxygen Concentration in an Undivided Rotating Cylinder Electrode Reactor', *Electrochim. Acta*, **39** (1994) 2705-2713.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

8. J. St-Pierre, A. A. Wragg, 'Properties of the System H<sub>2</sub>O-NaOH-ZnO. Part I: Density, Viscosity and Boiling Point', *Hydrometallurgy*, **35** (1994) 161-177.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

7. J. St-Pierre, A. A. Wragg, 'Behaviour of Electrogenerated Hydrogen and Oxygen Bubbles in Narrow Gap Cells. Part II: Application in Chlorine Production', *Electrochim. Acta*, **38** (1993) 1705-1710.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

6. J. St-Pierre, A. A. Wragg, 'Behaviour of Electrogenerated Hydrogen and Oxygen Bubbles in Narrow Gap Cells. Part I: Experimental', *Electrochim. Acta*, **38** (1993) 1381-1390.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

5. J. St-Pierre, D. L. Piron, 'Ionic Mass Transfer of Zinc in Alkaline Solutions with Simultaneous Hydrogen Evolution', *J. Electrochem. Soc.*, **139** (1992) 105-113.

Contribution to: Conceptualization (60 %), Analysis (80 %), Writing (80 %)

4. J. St-Pierre, D. L. Piron, 'Mechanism of Cathodic Potential Oscillations of the Zinc Electrode in Alkaline Solutions', *J. Electrochem. Soc.*, **137** (1990) 2491-2498.

Contribution to: Conceptualization (60 %), Analysis (60 %), Writing (80 %)

3. J. St-Pierre, D. L. Piron, 'Electrowinning of Zinc from Alkaline Solutions at High Current Densities', *J. Appl. Electrochem.*, **20** (1990) 163-165.

Contribution to: Conceptualization (80 %), Analysis (80 %), Writing (80 %)

2. J. St-Pierre, D. L. Piron, 'A Model for the Potential Oscillations of the Zinc Electrode Polarized Cathodically in an Alkaline Medium', *J. Electrochem. Soc.*, **134** (1987) 1689-1695.

Contribution to: Conceptualization (40 %), Analysis (60 %), Writing (80 %)

1. J. St-Pierre, D. L. Piron, 'Electrowinning of Zinc from Alkaline Solutions', *J. Appl. Electrochem.*, **16** (1986) 447-456.

Contribution to: Conceptualization (40 %), Analysis (60 %), Writing (80 %)