

Hawaii Natural Energy Institute: Fuel Cell Contaminants Publications

The following publications about the effect of contaminants on fuel cell performance and durability were authored by members of Jean St-Pierre's research group at the Hawaii Natural Energy Institute.

Refereed Journal Articles

1. Yunfeng Zhai and J. St-Pierre, "[Acetylene Contamination Mechanisms in the Cathode of Proton Exchange Membrane Fuel Cells](#)," *ChemElectroChem* (accepted January 2017).
2. Tatyana V. Reshетенko, Kateryna Artyushkova, and Jean St-Pierre, "[Spatial proton exchange membrane fuel cell performance under bromomethane poisoning](#)," *Journal of Power Sources* 342 (2017): 135.
3. Tatyana V. Reshетенko and Jean St-Pierre, "[Study of the aromatic hydrocarbons poisoning of platinum cathodes on proton exchange membrane fuel cell spatial performance using a segmented cell system](#)," *Journal of Power Sources* 333 (2016): 237.
4. Jing Qi, Yunfeng Zhai, and Jean St-Pierre, "[Effects of Ethylene Glycol and Caprolactam on the ORR and HOR Performances of Pt/C Catalysts](#)," *Journal of the Electrochemical Society* 163 (2016): F1618.
5. Yunfeng Zhai, Olga Baturina, David E. Ramaker, Erik Farquhar, Jean St-Pierre, and Karen E. Swider-Lyons, "[Bromomethane Contamination in the Cathode of Proton Exchange Membrane Fuel Cells](#)," *Electrochimica Acta* 213 (2016): 482.
6. Md Aman Uddin, Jaehyung Park, Leonard Bonville, and Ugur Pasaogullari, "[Effect of hydrophobicity of gas diffusion layer in calcium cation contamination in polymer electrolyte fuel cells](#)," *International Journal of Hydrogen Energy* 41 (2016): 14909.
7. Yunfeng Zhai, Junjie Ge, and J. St-Pierre, "[The ionic conductivity and catalyst activity effects of acetonitrile on proton exchange membrane fuel cells](#)," *Electrochemistry Communications* 66 (2016): 49.
8. Jean St-Pierre and Maheboob B. V. Virji, "[Cell performance distribution in a low-temperature proton exchange membrane fuel cell stack during propene contamination](#)," *Journal of Applied Electrochemistry* 46 (2016): 169.
9. Jean St-Pierre, Yunfeng Zhai, and Junjie Ge, "[Relationships between PEMFC Cathode Kinetic Losses and Contaminants' Dipole Moment and Adsorption Energy on Pt](#)," *Journal of the Electrochemical Society* 163 (2016): F247.
10. Md Aman Uddin, Xiaofeng Wang, Jaehyung Park, Ugur Pasaogullari, and Leonard Bonville, "[Distributed effects of calcium ion contaminant on polymer electrolyte fuel cell performance](#)," *Journal of Power Sources* 296 (2015): 64.

11. Tatyana V. Reshetyenko and Jean St-Pierre, "[Study of the acetonitrile poisoning of platinum cathodes on proton exchange membrane fuel cell spatial performance using a segmented cell system](#)," *Journal of Power Sources* 293 (2015): 929.
12. Tatyana V. Reshetyenko and Jean St-Pierre, "[Study of acetylene poisoning of Pt cathode on proton exchange membrane fuel cell spatial performance using a segmented cell system](#)," *Journal of Power Sources* 287 (2015): 401.
13. Jing Qi, Xiaofeng Wang, M. Ozan Ozdemir, Md. Aman Uddin, Leonard Bonville, Ugur Pasaogullari, and Trent Molter, "[Effect of cationic contaminants on polymer electrolyte fuel cell performance](#)," *Journal of Power Sources* 286 (2015): 18.
14. Y. Zhai and Jean St-Pierre, "[Proton exchange membrane fuel cell cathode contamination – Acetylene](#)," *Journal of Power Sources* 279 (2015): 165.
15. Yunfeng Zhai, Olga Baturina, David Ramaker, Erik Farquhar, Jean St-Pierre, and Karen Swider-Lyons, "[Chlorobenzene Poisoning and Recovery of Platinum-Based Cathodes in Proton Exchange Membrane Fuel Cells](#)," *Journal of Physical Chemistry C* 119 (2015): 20328.
16. Xiaofeng Wang, Jing Qi, Ozan Ozdemir, Aman Uddin, Ugur Pasaogullari, Leonard J. Bonville, and Trent Molter, "[Ca²⁺ as an Air Impurity in Polymer Electrolyte Membrane Fuel Cells](#)," *Journal of the Electrochemical Society* 161 (2014): F1006.
17. Md. Aman Uddin, Xiaofeng Wang, Jing Qi, M. Ozan Ozdemir, Ugur Pasaogullari, Leonard Bonville, and Trent Molter, "[Effect of Chloride on PEFCs in Presence of Various Cations](#)," *Journal of the Electrochemical Society* 162 (2015): F373.
18. Md Aman Uddin, Jing Qi, Xiaofeng Wang, Ugur Pasaogullari, and Leonard Bonville, "[Distributed cation contamination from cathode to anode direction in polymer electrolyte fuel cells](#)," *International Journal of Hydrogen Energy* 40 (2015): 13099.
19. Md. Aman Uddin and Ugur Pasaogullari, "[Computational Modeling of Foreign Cation Contamination in PEFCs](#)," *Journal of the Electrochemical Society* 161 (2014): F1081.
20. Jean St-Pierre, Yunfeng Zhai, and Michael S. Angelo, "[Effect of Selected Airborne Contaminants on PEMFC Performance](#)," *Journal of the Electrochemical Society* 161 (2014): F280 and 162 (2015): X7 (erratum).
21. Jean St-Pierre, Brian Wetton, Yunfeng Zhai, and Junjie Ge, "[Liquid Water Scavenging of PEMFC Contaminants](#)," *Journal of the Electrochemical Society* 161 (2014): E3357.
22. Junjie Ge, Jean St-Pierre, and Yunfeng Zhai, "[PEMFC cathode catalyst contamination evaluation with a RRDE-methyl methacrylate](#)," *International Journal of Hydrogen Energy* 39 (2014): 18351.

23. Junjie Ge, Jean St-Pierre, and Yunfeng Zhai, "[PEMFC Cathode Catalyst Contamination Evaluation with a RRDE- Propene and Naphthalene](#)," *Electrochimica Acta* 138 (2014): 437-446.
24. Junjie Ge, Jean St-Pierre, and Yunfeng Zhai, "[PEMFC cathode catalyst contamination evaluation with a RRDE-Acetonitrile](#)," *Electrochimica Acta* 134 (2014): 272.
25. Junjie Ge, Jean St-Pierre, and Yunfeng Zhai, "[PEMFC Cathode Catalyst Contamination Evaluation with a RRDE- Acetylene](#)," *Electrochimica Acta* 133 (2014): 65.
26. Jing Qi, Xiaofeng Wang, Ugur Pasaogullari, Leonard Bonville, and Trent Molter, "[Effect of Al³⁺ Contaminant on Polymer Electrolyte Fuel Cell Performance](#)," *Journal of the Electrochemical Society* 160 (2013): F916.
27. Jean St-Pierre, Yunfeng Zhai, and Michael Angelo, "[Quantitative ranking criteria for PEMFC contaminants](#)," *International Journal of Hydrogen Energy* 37 (2012): 6784.