

Samuel Simon Araya
Thermal Engineering
Hydrogen and Electro-fuels



Publications

Degradation and failure modes in proton exchange membrane fuel cells

Simon Araya, S., Li, N. & Liso, V., 2022, *PEM Fuel Cells: Fundamentals, Advanced Technologies, and Practical Application*. Kaur, G. (ed.). Elsevier, p. 199-222 24 p.

Power-to-X: Technology overview, possibilities and challenges

Simon Araya, S., Cui, X., Li, N., Liso, V. & Sahlin, S. L., 2022, AAU. 23 p.

Effects of impurities on pre-doped and post-doped membranes for high temperature PEM fuel cell stacks

Araya, S. S., Thomas, S., Lotrič, A., Sahlin, S. L., Liso, V. & Andreasen, S. J., 1 Jun 2021, In: *Energies*. 14, 11, 2994.

A review of the methanol economy: The fuel cell route

Araya, S. S., Liso, V., Cui, X., Li, N., Zhu, J., Sahlin, S. L., Jensen, S. H., Nielsen, M. P. & Kær, S. K., Jan 2020, In: *Energies*. 13, 3, 596.

Fault Characterization of a Proton Exchange Membrane Fuel Cell Stack

Simon Araya, S., Zhou, F., Sahlin, S. L., Thomas, S., Jeppesen, C. & Kær, S. K., Jan 2019, In: *Energies*. 12, 1, p. 1-17 17 p., en12010152.

A comprehensive review of PBI-based high temperature PEM fuel cells

Simon Araya, S., Zhou, F., Liso, V., Sahlin, S. L., Vang, J. R., Thomas, S., Gao, X., Jeppesen, C. & Kær, S. K., Dec 2016, In: *International Journal of Hydrogen Energy*. 41, 46, p. 21310-21344 35 p.

Parametric Sensitivity Tests—European Polymer Electrolyte Membrane Fuel Cell Stack Test Procedures

Araya, S. S., Andreasen, S. J. & Kær, S. K., Dec 2014, In: *Journal of Fuel Cell Science and Technology*. 11, 6, p. 061007-1 - 061007 -7 7 p., FC-14-1067.

Performance and endurance of a high temperature PEM fuel cell operated on methanol reformat

Araya, S. S., Grigoras, I., Zhou, F., Andreasen, S. J. & Kær, S. K., 31 Oct 2014, In: *International Journal of Hydrogen Energy*. 39, 32, p. 18343–18350 8 p.

Parametric Sensitivity Tests- European PEM Fuel Cell Stack Test Procedures

Araya, S. S., Andreasen, S. J. & Kær, S. K., Jul 2014, *ASME 2014 12th International Conference on Fuel Cell Science, Engineering and Technology collocated with the ASME 2014 8th International Conference on Energy Sustainability: ES/FuelCell 2014*. Boston, USA: The American Society of Mechanical Engineers (ASME), p. V001T06A006 9 p. FuelCell2014-6378

Impedance Analysis of the Conditioning of PBI-Based Electrode Membrane Assemblies for High Temperature PEM Fuel Cells

Araya, S. S., Vang, J. R., Andreasen, S. J. & Kær, S. K., Dec 2013, *Proceedings of EFC2013: Fifth European Fuel Cell Technology & Applications Conference - Piero Lunghi Conference*. Cigolotti, V., Barchiesi, C. & Chianella, M. (eds.). Rome, Italy: Italian National Agency for New Technologies, Energy and Sustainable Economic Development, p. 169-170 2 p. EFC13099

Experimental Characterization of the Poisoning Effects of Methanol-Based Reformate Impurities on a PBI-Based High Temperature PEM Fuel Cell

Araya, S. S., Andreasen, S. J. & Kær, S. K., 24 Oct 2012, In: *Energies*. 5, 11, p. 4251-4267

Vapor Delivery Systems for the Study of the Effects of Reformate Gas Impurities in HT-PEM Fuel Cells

Araya, S. S., Kær, S. K. & Andreasen, S. J., Feb 2012, In: *Journal of Fuel Cell Science and Technology*. 9, 1, 6 p.

High Temperature PEM Fuel Cells - Degradation and Durability

Araya, S. S., 2012, Department of Energy Technology, Aalborg University. 147 p.

Investigating the effects of methanol-water vapor mixture on a PBI-based high temperature PEM fuel cell

Araya, S. S., Andreasen, S. J., Nielsen, H. V. & Kær, S. K., 2012, In: *International Journal of Hydrogen Energy*. 37, 23, p. 18231–18242 11 p.

Vapor Delivery Systems for the Study of the Effects of Reformate Gas Impurities in HT-PEM Fuel Cells

Araya, S. S., Kær, S. K. & Andreasen, S. J., Aug 2011, *Proceedings of ASME 2011 5th International Conference on Energy Sustainability and 9th Fuel Cell Science, Engineering and Technology Conference: ESFuelCell2011*. The American Society of Mechanical Engineers (ASME), 6 p. ESFuelCell2011-54181. (*Journal of Fuel Cell Science and Technology*; No. 1, Vol. 9).

Activities

Preparation of Research Plan for PhDs: PhD Planning

Araya, S. S. (Lecturer)

29 Sept 2014

Combustion Technology and Chemical Reactors: Chemical Reactors

Araya, S. S. (Lecturer)

Sept 2014 → Jan 2015

Future energy systems

Araya, S. S. (Lecturer)

5 Aug 2014

Preparation of Research Plan for PhDs: PhD Planning

Araya, S. S. (Lecturer)

31 Mar 2014

Combustion Technology and Chemical Reactors: Chemical Reactors

Araya, S. S. (Lecturer)

Sept 2013 → Jan 2014

Future energy systems

Araya, S. S. (Lecturer)

Jul 2013

Future energy systems

Araya, S. S. (Lecturer)

Aug 2012

Energy and Environment

Araya, S. S. (Lecturer)

15 Mar 2012

Analysis of CH₃OH, CO, CO₂ and Water Vapor In a H₃PO₄/PBI-based HT-PEMFC by Means of EIS

Araya, S. S. (Speaker)

7 Aug 2011 → 10 Aug 2011