Jens Oluf Jensen - DTU Orbit (13/09/2017)

Jensen, Jens Oluf

jojen@dtu.dk

Department of Energy Conversion and Storage - Head of section, professor

Proton conductors

Publications:

Influence of carbon monoxide on the cathode in high-temperature polymer electrolyte membrane fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2017

Long-term durability of HT-PEM fuel cells based on thermally crosslinked polybenzimidazole
Publication: Research - peer-review › Journal article – Annual report year: 2017

Probing phosphoric acid redistribution and anion migration in polybenzimidazole membranes
Becker, H., Cleemann, L. N., Aili, D., Jensen, J. O. & Li, Q. 2017 In : Electrochemistry Communications. 82, p. 21-24
Publication: Research - peer-review › Journal article – Annual report year: 2017

Towards a stable ion-solvating polymer electrolyte for advanced alkaline water electrolysis
Publication: Research - peer-review › Journal article – Annual report year: 2017

Acid-Base Chemistry and Proton Conductivity
Publication: Research - peer-review › Book chapter – Annual report year: 2016

Advanced Materials for High-Temperature PEM Fuel Cells
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Advanced materials for polymer electrolyte membrane fuel cells
Publication: Research - peer-review › Book chapter – Annual report year: 2016

Amino-Functional Polybenzimidazole Blends with Enhanced Phosphoric Acid Mediated Proton Conductivity as Fuel Cell Electrolytes
Aili, D., Javakhishvili, I., Han, J., Jankova Atanasova, K., Pan, C., Hvilsted, S., Jensen, J. O., Bjerrum, N. J. & Li, Q. 2016 In : Macromolecular Chemistry and Physics. 217, 10, p. 1161-1168
Publication: Research - peer-review › Journal article – Annual report year: 2016

A platinum-free oxygen reduction catalyst by a one-step pyrolysis process
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016
Approaches to a platinum free oxygen reduction catalyst for PEM fuel cells
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Can We Replace Platinum Metals in PEM Fuel Cells and Electrolyzers?
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Challenges in Membrane Electrode Assembly Technologies
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Comparative study of PBI Cross Linked Utilizing Agents of Varying Steric Configurations
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2016

Corrosion behavior of construction materials for ionic liquid hydrogen compressor
Publication: Research - peer-review › Journal article – Annual report year: 2016

Durability Issues and Status of PBI-Based Fuel Cells
Publication: Research - peer-review › Book chapter – Annual report year: 2015

Exceptional durability enhancement of PA/PBI based polymer electrolyte membrane fuel cells for high temperature operation at 200°C
Publication: Research - peer-review › Journal article – Annual report year: 2016

Fuel Cells and Electrolyzers. Recent Progress at DTU Energy and the Role in a Sustainable Society
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Graphene layer encapsulated metal nanoparticles as a new type of non-precious metal catalysts for oxygen reduction
Publication: Research - peer-review › Review – Annual report year: 2016

Graphitic Layer Encapsulated Iron Based Non-precious Catalysts for the Oxygen Reduction Reaction
Publication: Research › Ph.D. thesis – Annual report year: 2017

High temperature polymer electrolyte membrane fuel cells: Approaches, status, and perspectives
Publication: Research - peer-review › Book – Annual report year: 2016

Hydrogen Sulfide Tolerance in High Temperature Pemfcs
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2016
Introduction
Publication: Research › Book chapter – Annual report year: 2016

Non-Platinum Oxygen Reduction Catalysts. From Crystalline to Molecular Moieties
Publication: Research › peer-review › Conference abstract for conference – Annual report year: 2016

Optimization of Catalyst Layer Properties for High Temperature Polymer Fuel Cells
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2016

Platinum Iron Intermetallic Nanoparticles Supported on Carbon Formed In Situ by High-Pressure Pyrolysis for Efficient Oxygen Reduction
Publication: Research - peer-review › Journal article – Annual report year: 2016

Polybenzimidazole Membranes by Post Acid Doping
Publication: Research › peer-review › Book chapter – Annual report year: 2016

Polybenzimidazole membranes for zero gap alkaline electrolysis cells
Publication: Research › peer-review › Poster – Annual report year: 2016

Probing the active site structures of iron-based ORR catalysts
Publication: Research › peer-review › Conference abstract in journal – Annual report year: 2016

Systematic Study of Durability of High Temperature PEM Fuel Cells at Selected Temperatures, Flow Rates and Loads
Publication: Research › peer-review › Conference abstract for conference – Annual report year: 2016

Ternary alkaline polybenzimidazole electrolytes
Publication: Research › peer-review › Conference abstract for conference – Annual report year: 2016

Understanding ternary poly(potassium benzimidazolide)-based polymer electrolytes
Publication: Research › peer-review › Journal article – Annual report year: 2016

Zero-Gap Alkaline Water Electrolysis Using Ion-Solvating Polymer Electrolyte Membranes at Reduced KOH Concentrations
Publication: Research › peer-review › Journal article – Annual report year: 2016

Method for producing and controlling the morphology of metal-oxide nanofiber and/or nanotube catalysts.
Publication: Research › Patent – Annual report year: 2016
Acid-base Chemistry and Proton Conductivity of High Temperature Polymer Electrolytes
Li, Q., Aili, D., Cleemann, L. N. & Jensen, J. O. 2015
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Carbon Thin-layer Encapsulated Fe-N-C as Active Catalysts for Oxygen Reduction
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

CaSb2PO4/NdPO4 Composites as Proton Conducting Electrolytes for Intermediate Temperature Fuel Cells
Publication: Research - peer-review › Journal article – Annual report year: 2015

Development of high temperature PEM fuel cells. Simplification and CO tolerance mapping
Publication: Research › Sound/Visual production (digital) – Annual report year: 2016

Fe3C-based oxygen reduction catalysts: synthesis, hollow spherical structures and applications in fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2014

Hydrogen Energy by Means of Proton Conductors
Jensen, J. O. 2015
Publication: Communication › Conference abstract for conference – Annual report year: 2016

Lowering the platinum loading of high temperature polymer electrolyte membrane fuel cells with acid doped polybenzimidazole membranes
Publication: Research - peer-review › Journal article – Annual report year: 2015

Methyl phosphate formation as a major degradation mode of direct methanol fuel cells with phosphoric acid based electrolytes
Publication: Research - peer-review › Journal article – Annual report year: 2015

Non-Noble Oxygen Reduction Catalysts
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Non-Noble Oxygen Reduction Catalysts by Means of Encapsulated Iron Carbide
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Porous poly(perfluorosulfonic acid) membranes for alkaline water electrolysis
Publication: Research - peer-review › Journal article – Annual report year: 2015

Pt-Si Bifunctional Surfaces for CO and Methanol Electro-Oxidation
Publication: Research - peer-review › Journal article – Annual report year: 2015
Tetrazole substituted polymers for high temperature polymer electrolyte fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2015

The effect of hydrogen pressure on the tolerance for co of high temperature PEM fuel cells
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Theoretical understanding about the interaction between iron carbide and graphitic layers towards oxygen reduction
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2016

The stability of poly(2,2’-(m-phenylene)-5,5’-bibenzimidazole) membranes in aqueous potassium hydroxide
Publication: Research - peer-review › Journal article – Annual report year: 2015

Transition metal carbides (WC, Mo2C, TaC, NbC) as potential electrocatalysts for the hydrogen evolution reaction (HER) at medium temperatures
Publication: Research - peer-review › Journal article – Annual report year: 2015

A Stability Study of Alkali Doped PBI Membranes for Alkaline Electrolyzer Cells
Publication: Research - peer-review › Conference article – Annual report year: 2014

Bed geometries, fueling strategies and optimization of heat exchanger designs in metal hydride storage systems for automotive applications: A review
Publication: Research - peer-review › Journal article – Annual report year: 2014

Binderless electrodes for high-temperature polymer electrolyte membrane fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2014

Boron-nitrogen based hydrides and reactive composites for hydrogen storage
Publication: Research - peer-review › Journal article – Annual report year: 2014

Complex hydrides for hydrogen storage - New perspectives
Publication: Research - peer-review › Journal article – Annual report year: 2014

Direct Dimethyl Ether High Temperature Fuel Cells
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Direct Dimethyl Ether High Temperature PEM Fuel Cells
Publication: Research › Sound/Visual production (digital) – Annual report year: 2014
Direct Synthesis of Fe3C-Functionalized Graphene by High Temperature Autoclave Pyrolysis for Oxygen Reduction
Publication: Research - peer-review › Journal article – Annual report year: 2014

Highly active and stable Pt electrocatalysts promoted by antimony-doped SnO2 supports for oxygen reduction reactions
Publication: Research - peer-review › Journal article – Annual report year: 2014

High Molecular Weight Polybenzimidazole Membranes for High Temperature PEMFC
Publication: Research - peer-review › Journal article – Annual report year: 2014

High Surface Area Tungsten Carbides: Synthesis, Characterization and Catalytic Activity towards the Hydrogen Evolution Reaction in Phosphoric Acid at Elevated Temperatures
Publication: Research - peer-review › Journal article – Annual report year: 2014

High Temperature PEM Fuel Cells and Organic Fuels
Publication: Research › Ph.D. thesis – Annual report year: 2014

Hollow Spheres of Iron Carbide Nanoparticles Encased in Graphitic Layers as Oxygen Reduction Catalysts
Publication: Research - peer-review › Journal article – Annual report year: 2014

Hollow Spheres of Iron Carbide Nanoparticles Encased in Graphitic Layers as Oxygen Reduction Catalysts
Publication: Research - peer-review › Journal article – Annual report year: 2014

Hydrogen evolution activity and electrochemical stability of selected transition metal carbides in concentrated phosphoric acid
Publication: Research - peer-review › Journal article – Annual report year: 2014

meta-PBI/methylated PBI-OO blend membranes for acid doped HT PEMFC
Publication: Research - peer-review › Journal article – Annual report year: 2014

Insights to durability and impedance of direct DME HT-PEM FCs
Vassiliev, A., Jensen, J. O. & Li, Q. 2014
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Invited: A Stability Study of Alkali Doped PBI Membranes for Alkaline Electrolyzer Cells
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2014
Metal Phosphates as Proton Conducting Materials for Intermediate Temperature Fuel Cell and Electrolyser Applications
Publication: Research › Ph.D. thesis – Annual report year: 2014

Methods for HT-PEM FC electrodes preparation
Publication: Research - peer-review › Poster – Annual report year: 2014

Novel non-platinum metal catalyst material
Publication: Research › Patent – Annual report year: 2015

Oxygen evolution catalysts on supports with a 3-D ordered array structure and intrinsic proton conductivity for proton exchange membrane steam electrolysis
In : Energy & Environmental Science. 7, 2, p. 820-830
Publication: Research - peer-review › Journal article – Annual report year: 2014

Perovskites As Electrocatalysts for Alkaline Water Electrolysis
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2014

Phosphate-Doped Carbon Black as Pt Catalyst Support: Co-catalytic Functionality for Dimethyl Ether and Methanol Electro-oxidation
Publication: Research - peer-review › Journal article – Annual report year: 2014

Polybenzimidazole and sulfonated polyhedral oligosilsesquioxane composite membranes for high temperature polymer electrolyte membrane fuel cells
In : Electrochimica Acta. 140, p. 182-190
Publication: Research - peer-review › Journal article – Annual report year: 2014

Polymers for Fuel Cells
Publication: Research - Encyclopedia chapter – Annual report year: 2014

The Electrochemical Behavior of Phosphoric-Acid-Doped Poly(perfluorosulfonic Acid) Membranes
In : ChemElectroChem. 1, p. 1471–1475
Publication: Research - peer-review › Journal article – Annual report year: 2014

Thermal Stability and Proton Conductivity of Rare Earth Orthophosphate Hydrates
In : International Journal of Electrochemical Science. 9, p. 2285 - 2300
Publication: Research - peer-review › Journal article – Annual report year: 2014

Activity and Durability Studies of Nanoparticulate, Thin Film and Bulk Electrocatalysts and they Supporting Materials for PEM and DMFCs
Publication: Research › Poster – Annual report year: 2014
Antimony doped tin oxide modified carbon nanotubes as catalyst supports for methanol oxidation and oxygen reduction reactions
Publication: Research - peer-review › Journal article – Annual report year: 2014

Benzimidazole grafted polybenzimidazoles for proton exchange membrane fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2014

Catalyst Degradation in High Temperature Proton Exchange Membrane Fuel Cells Based on Acid Doped Polybenzimidazole Membranes
Publication: Research - peer-review › Journal article – Annual report year: 2013

Corrosion behavior of construction materials for intermediate temperature steam electrolyser
Publication: Research - peer-review › Conference article – Annual report year: 2013

Covalently Cross-Linked Sulfone Polybenzimidazole Membranes with Poly(Vinylbenzyl Chloride) for Fuel Cell Applications
Publication: Research - peer-review › Journal article – Annual report year: 2014

Crosslinked Hexafluoropropylidene Polybenzimidazole Membranes with Chloromethyl Polysulfone for Fuel Cell Applications
Publication: Research - peer-review › Journal article – Annual report year: 2014

Electrocatalysts and their Supporting Materials for Proton Exchange Membrane Fuel Cells: Activity and Durability Studies
Publication: Research › Ph.D. thesis – Annual report year: 2014

Heterogeneous anion conducting membranes based on linear and crosslinked KOH doped polybenzimidazole for alkaline water electrolysis
Publication: Research - peer-review › Journal article – Annual report year: 2013

Indium doped niobium phosphates as intermediate temperature proton conductors
Publication: Research - peer-review › Journal article – Annual report year: 2013

Introduction to Department of Energy Conversion and Storage
Jensen, J. O. 2013
Publication: Communication › Sound/Visual production (digital) – Annual report year: 2013

Oxidative degradation of acid doped polybenzimidazole membranes and fuel cell durability in the presence of ferrous ions
The 3rd CARISMA international conference on medium and high temperature proton exchange membrane fuel cells: Three approaches to better platinum catalysts at biannual conference
Publication: Research - peer-review › Journal article – Annual report year: 2014

Three-dimensional Nanofiber Cathode for Low Temperature and High Temperature Fuel Cells
Publication: Research › Conference abstract for conference – Annual report year: 2014

A Direct DME High Temperature PEM Fuel Cell
Publication: Research - peer-review › Conference article – Annual report year: 2012

Advanced Construction Materials for High Temperature Steam PEM Electrolysers
Publication: Research - peer-review › Book chapter – Annual report year: 2012

Anion conducting polymer membranes for hydrogen production through alkaline water electrolysis
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Bifunctional Pt-Si Alloys for Small Organic Molecule Electro-oxidation
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2012

Conductive Properties of Neodymium Phosphate composites Investigated by Electrochemical Impedance Spectra
Publication: Research - peer-review › Poster – Annual report year: 2012

Conductivity of NdPO4-CsH2PO4 composites investigated by electrochemical impedance spectroscopy
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Corrosion behavior of construction materials for intermediate temperature steam electrolysers
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Corrosion Behavior of Construction Materials for Intermediate Temperature Steam Electrolysers
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Direct dimethyl ether fueling of a high temperature polymer fuel cell
Publication: Research - peer-review › Journal article – Annual report year: 2012
Direct dimethyl ether high temperature polymer electrolyte membrane fuel cells
Publication: Research › Poster – Annual report year: 2012

Energy Dispersive X-ray Analysis used to quantify the Phosphoric Acid Doping Level in Polybenzimidazole based Fuel Cells
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

High Temperature Polymer Electrolyte Membrane Fuel Cells - Performance and degradation
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

High Temperature Polymer Fuel Cells: From laboratory towards commercialization
Publication: Research › Paper – Annual report year: 2012

Metal Phosphates as Intermediate Temperature Proton Conducting Electrolytes
Publication: Research - peer-review › Conference article – Annual report year: 2012

Nickel and its alloys as perspective materials for intermediate temperature steam electrolysers operating on proton conducting solid acids as electrolyte
Publication: Research - peer-review › Conference article – Annual report year: 2013

Niobium phosphates as an intermediate temperature proton conducting electrolyte for fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2012

Niobium Phosphates as Intermediate Temperature Proton Conductor
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

PEM steam electrolysis at 130 °C using a phosphoric acid doped short side chain PFSA membrane
Publication: Research - peer-review › Journal article – Annual report year: 2012

PEM Water Electrolysis at Elevated Temperatures
Publication: Research › Ph.D. thesis – Annual report year: 2012
Tungsten carbide promoted Pd and Pd–Co electrocatalysts for formic acid electrooxidation
Publication: Research - peer-review › Journal article – Annual report year: 2012

Water Electrolysis using Polymeric Electrolyte Membranes at Elevated Temperatures
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Crosslinking of polybenzimidazole membranes by divinylsulfone post-treatment for high-temperature proton exchange membrane fuel cell applications
Publication: Research - peer-review › Journal article – Annual report year: 2011

Development and Characterisation of Active and Durable Electrocatalysts for HT-PEM Fuel Cells
Publication: Research › Conference abstract for conference – Annual report year: 2011

Development and Characterisation of Active and Durable Electrocatalysts for HT-PEM Fuel Cells 2
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2011

Effect of chloride impurities on the performance and durability of polybenzimidazole-based high temperature proton exchange membrane fuel cells
Publication: Research - peer-review › Conference article – Annual report year: 2011

High temperature proton exchange membranes based on polybenzimidazole and clay composites for fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2011

Method of operating a direct dme fuel cell system
Publication: Research › Patent – Annual report year: 2012

New Construction and Catalyst Support Materials for Water Electrolysis at Elevated Temperatures
Publication: Research › Ph.D. thesis – Annual report year: 2011

Oxidative degradation of polybenzimidazole membranes as electrolytes for high temperature proton exchange membrane fuel cells
Publication: Research - peer-review › Conference article – Annual report year: 2011

Performance and durability of high performance MEAs for high temperature PBI fuel cells
Publication: Research - peer-review › Paper – Annual report year: 2012
Phosphoric acid doped membranes based on Nafion®, PBI and their blends – Membrane preparation, characterization and steam electrolysis testing
Publication: Research - peer-review › Journal article – Annual report year: 2011

Recent progress in material development and durability evaluation
Publication: Research - peer-review › Paper – Annual report year: 2011

A direct DME fuel cell based on acid doped PBI
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2010

A Medical Delivery Device
Nielsen, O. C., Jensen, J. O., Nielsson, M. S., Bjerrum, N. & Hennesø, E. 2010
Publication: Research › Patent – Annual report year: 2010

Development and Characterizations of High Performance MEAs For High Temperature PBI Fuel Cells
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2010

Durability Issues and Status of High Temperature Proton Exchange Membrane Fuel Cells Based on Acid Doped Polybenzimidazole Membranes
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

High Temperature PEMFC and its Integration with Fuel Processors - An Approach to Portable Fuel Cells
Li, Q., Jensen, J. O. & Bjerrum, N. 2010
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

Introduktion til højtemperatur PEM brændselsceller
Jensen, J. O., Li, Q., Pan, C. & Bjerrum, N. 2010
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

Ongoing Efforts Addressing Degradation of High Temperature PEMFC
Jensen, J. O., Li, Q., Pan, C. & Bjerrum, N. 2010
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

PEM fuel cells, Towards higher working temperature
Jensen, J. O., Li, Q. & Bjerrum, N. 2010
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

Polymer Degradation and Catalyst Sintering in High Temperature PEMFC Based on Acid Doped Polybenzimidazole Membranes
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2010

Possibilities of High Temperature PEMFC as Compared with Conventional PEMFC
Jensen, J. O., Li, Q., Pan, C. & Bjerrum, N. 2010
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

Properties, degradation and high temperature fuel cell test of different types of PBI and PBI blend membranes
Publication: Research - peer-review › Journal article – Annual report year: 2010
Properties, Degradation and High Temperature Fuel Cell Test of Different Types of PBI and PBI Blend Membranes
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2010

Recent advances with high temperature PEMFC in Denmark
Jensen, J. O., Li, Q., Pan, C., Rudbeck, H. C., Steenberg, T. & Bjerrum, N. 2010
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

The energy efficiency of onboard hydrogen storage
Publication: Research - peer-review › Book chapter – Annual report year: 2010

The Energy Efficiency of Onboard Hydrogen Storage
Jensen, J. O., Li, Q. & Bjerrum, N. 2010
Publication: Research › Sound/Visual production (digital) – Annual report year: 2010

New nitrogen-containing materials for hydrogen storage and their characterization by high-pressure microbalance
Publication: Research › Ph.D. thesis – Annual report year: 2009

CHEMISTRY, ELECTROCHEMISTRY, AND ELECTROCHEMICAL APPLICATIONS: Aluminum
Publication: Research - peer-review › Book chapter – Annual report year: 2009

Degradation of high temperature PEM fuel cells
Publication: Research › Sound/Visual production (digital) – Annual report year: 2009

Durability Issues of High Temperature Proton Exchange Membrane Fuel Cells Based on Acid Doped Polybenzimidazole Membranes
Publication: Research › Sound/Visual production (digital) – Annual report year: 2009

Durable Catalysts for High Temperature Proton Exchange Membrane Fuel Cells
Li, Q., Buazar, F., Cleemann, L. N., Pan, C., Jensen, J. O., Steenberg, T., Christensen, E. & Bjerrum, N. 2009
Publication: Research › Sound/Visual production (digital) – Annual report year: 2009

High Temperature PEM Fuel Cells: From Membranes to Stacks
Publication: Research › Conference abstract for conference – Annual report year: 2009

High temperature PEM fuel cells in Denmark
Publication: Research › Paper – Annual report year: 2009

High temperature PEM fuel cells in Denmark: Part I: Introduction to HT-PEMFC, selected results, Part II: Durability, Electrolysis, activities in Denmark
Publication: Research › Conference abstract for conference – Annual report year: 2009

High temperature PEM fuel cells in Denmark
High temperature proton exchange membranes based on polybenzimidazoles for fuel cells

PEM Fuel cells

PEM fuel cells at elevated temperature

Thermal coupling of a high temperature PEM fuel cell with a complex hydride tank

Water electrolysis at elevated temperatures

A high temperature PEMFC integrated with a diesel reforming system

Fuel cells

Partially fluorinated arylene polyethers and their ternary blends with PBI and H3PO4.: Part II. Characterisation and fuel cell tests of the ternary membranes

Partially fluorinated arylene polyethers and their ternary blend membranes with PBI and H3PO4.: Part I. Synthesis and characterisation of polymers and binary blend membranes

Recent progress in high temperature PEM fuel cells
Jensen, J. O. 2008

Development of a high-pressure microbalance for hydrogen storage materials
Cross-linked polybenzimidazole membranes for fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2007

Doping phosphoric acid in polybenzimidazole membranes for high temperature proton exchange membrane fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2007

Further Improvement and System Integration of High Temperature Polymer Electrolyte Membrane Fuel Cells: 36 Month Periodic Activity Report
Publication: Research › Report – Annual report year: 2007

Further Improvement and System Integration of High Temperature Polymer Electrolyte Membrane Fuel Cells: 24 Month Periodic Activity Report
Publication: Research › Report – Annual report year: 2007

High temperature PEMFC and the possible utilization of the excess heat for fuel processing
Publication: Research - peer-review › Journal article – Annual report year: 2007

Membranes for High Temperature PEFC Based on Polybenzimidazoles
Publication: Research › Book chapter – Annual report year: 2007

Membranes for High Temperature PEMFC Based on Acid-Doped Polybenzimidazoles
Publication: Research - peer-review › Book chapter – Annual report year: 2007

Preparation and operation of gas diffusion electrodes for high-temperature proton exchange membrane fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2007

Recent Development of PBI Membranes for PEMFC
Publication: Research › Article in proceedings – Annual report year: 2007

The Energy Efficiency of Onboard Hydrogen Storage
Publication: Research - peer-review › Conference article – Annual report year: 2007

Brief Introduction to Fuel Cells, Hydrogen Production and Storage
Jensen, J. O. 2006
Publication: Research › Sound/Visual production (digital) – Annual report year: 2006

Brint og brændselceller
Publication: Communication › Book chapter – Annual report year: 2006
Development of a high-pressure microbalance for hydrogen storage materials
Publication: Research - peer-review › Poster – Annual report year: 2006

FURIM
Jensen, J. O. 2006
Publication: Research › Poster – Annual report year: 2006

Gas Diffusion Electrodes for PBI Cells
Electrochemical Society, Incorporated, p. Abstract 541
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2006

Physicochemical properties of phosphoric acid doped polybenzimidazole membranes for fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2006

Recent Progress in Preparation and Characterization of PBI Membranes for PEMFC
Electrochemical Society, Incorporated, p. Abstract 412
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2006

The Energy Efficiency of On-board Hydrogen Storage
Publication: Research › Conference abstract for conference – Annual report year: 2006

100-200°C Polymer Fuel Cells for use with NaAlH4
Publication: Research - peer-review › Journal article – Annual report year: 2005

200°C PEM Fuel Cells
Jensen, J. O., Li, Q. & Bjerrum, N. 2005
Publication: Research › Poster – Annual report year: 2005

Danish Hydrogen Association
Publication: Communication › Conference abstract for conference – Annual report year: 2005

Fuel cells: a promise of electrochemistry and challenges for electrochemists
Publication: Research › Article in proceedings – Annual report year: 2005

Fuel cells: a promise of electrochemistry and challenges for electrochemists
Publication: Research › Conference abstract for conference – Annual report year: 2005

FURIM: Further improvement of high temperature PEM fuel cells
Publication: Research › Sound/Visual production (digital) – Annual report year: 2005

FURIM. Further improvement of high temperature PEM fuel cells
Further Improvement and System Integration of High Temperature Polymer Electrolyte Membrane Fuel Cells: 12 Month Periodic Activity Report
Publication: Research › Report – Annual report year: 2005

High Temperature PEMFC
Publication: Research › Sound/Visual production (digital) – Annual report year: 2005

High temperature PEM fuel cells at Technical University of Denmark
Publication: Research › Sound/Visual production (digital) – Annual report year: 2005

HT-PEMFC as a bridge to new metal hydride storage systems
Jensen, J. O. 2005
Publication: Research › Sound/Visual production (digital) – Annual report year: 2005

HT-PEMFC as a bridge to new metal hydride systems
Publication: Research › Paper – Annual report year: 2005

Integration of high temperature PEM fuel cells with a methanol reformer
Publication: Research - peer-review › Journal article – Annual report year: 2005

Proton Conductivity and Operational Features Of PBI-Based Membranes
Publication: Research › Article in proceedings – Annual report year: 2005

Proton Exchange Membranes for Fuel Cells: - Challenges and Recent Developments
Publication: Research › Article in proceedings – Annual report year: 2005

Proton Exchange Membranes For Fuel Cells - Challenges And Recent Developments
Publication: Research › Article in proceedings – Annual report year: 2005

Recent Progress in High Temperature PEMFC and the Possible Utilization of the Excess Heat for Fuel Processing
Publication: Research › Conference abstract for conference – Annual report year: 2005

The FURIM Project
Jensen, J. O., Li, Q. & Bjerrum, N. 2005
Publication: Research › Sound/Visual production (digital) – Annual report year: 2005

The FURIM Project (IP) - SES6-CT-2004-502782
Jensen, J. O., Li, Q. & Bjerrum, N. 2005
Publication: Research › Sound/Visual production (digital) – Annual report year: 2005
X-ray diffraction of subfractions of petroleum asphaltenes
Publication: Research - peer-review › Journal article – Annual report year: 2005

100-200°C Polymer Fuel Cells for use with NaAlH4
Publication: Research › Conference abstract for conference – Annual report year: 2004

An in-situ neutron diffraction study of the ageing of CaNi5Dx at 80°C and 9 bar.
Publication: Research - peer-review › Journal article – Annual report year: 2004

A PEMFC operating at up to 200°C as a possible link to the complex metal hydrides like NaAlH4
Jensen, J. O., Li, Q., Pan, C., He, R. & Bjerrum, N. 2004
Publication: Research › Conference abstract for conference – Annual report year: 2004

Ca-Ni alloys and the search for lighter interstitial hydrides. New metal hydrides for hydrogen storage
Jensen, J. O. & Bjerrum, N. 2004
Publication: Research › Sound/Visual production (digital) – Annual report year: 2004

Materials Issues and System Prospects of High Temperature PEMFC
Li, Q., Jensen, J. O., He, R., Pan, C. & Bjerrum, N. 2004
Publication: Research › Paper – Annual report year: 2004

PBI-based polymer membranes for high temperature fuel cells – preparation, characterizations and fuel cell demonstrations
Publication: Research - peer-review › Journal article – Annual report year: 2004

Polymer Membranes for Fuel Cells
Li, Q., He, R., Jensen, J. O. & Bjerrum, N. 2004
Publication: Research › Paper – Annual report year: 2004

Acid-doped Polybenzimidazole Membranes as Electrolyte for Fuel Cells Operating Above 100°C
Publication: Research - peer-review › Book chapter – Annual report year: 2003

Approaches and Recent Development of Polymer Electrolyte Membranes For Fuel Cells Operational Above 100°C: A Review
Publication: Research - peer-review › Journal article – Annual report year: 2003

CO tolerance by the PEMFC operational at temperatures up to 200°C
Publication: Research › Article in proceedings – Annual report year: 2003

Fuel Cell Activities at DTU
Jensen, J. O. 2003 Fuel Cell Activities at DTU. Reykjavik, Iceland
Publication: Research › Article in proceedings – Annual report year: 2003
The carbon monoxide poisoning effect on the performance of polymer electrolyte membrane fuel cells operational at temperatures up to 200°C
Publication: Research › Article in proceedings – Annual report year: 2001

Development of air metal hydride battery
Publication: Research › Poster – Annual report year: 2000

Mechanical Alloying for the Preparation of Alloys not Easily Cast (CaNi5, MgNi and MoCo3)
Publication: Research › Article in proceedings – Annual report year: 2000

Metalhydridbatterier og lavtemperaturbrænsecelle
Publication: Research › Book chapter – Annual report year: 2000

Metal hydride storage tank for demonstration in hydrogen vehicle
Publication: Research › Article in proceedings – Annual report year: 2000

Stability of CaNi5HX stored at temperatures between 20 and 150°C
Publication: Research › Conference abstract for conference – Annual report year: 2000

Development of Air Metal Hydride Battery (Amhbat): Fourth Periodic Report 1/12-98 til 30/11-99
Publication: Research - peer-review › Report – Annual report year: 1999

Development of Air Metal Hydride Battery (Amhbat): Mid-term Review
Publication: Research - peer-review › Report – Annual report year: 1999

Metal hydrides for electrodes: Towards higher capacity
Publication: Research › Article in proceedings – Annual report year: 1999

Structural studies of disordered Mg2NiH4 formed by mechanical grinding
Publication: Research - peer-review › Conference article – Annual report year: 1999

Systematic B-metal substitution in CaNi5
Publication: Research - peer-review › Journal article – Annual report year: 1999

Development of Air Metal Hydride Battery (Amhbat): First Periodic Report 1/12-97 til 30/6-98
Publication: Research - peer-review › Report – Annual report year: 1998
Development of Air Metal Hydride Battery (Amhbat): Second Periodic Report 1/12-97 til 30/11-98
Publication: Research - peer-review › Report – Annual report year: 1998

Structural studies of disordered Mg2NiH4 formed by mechanical grinding
Publication: Research › Conference abstract for conference – Annual report year: 1998

Systematic B-metal substitution in CaNi5
Publication: Research › Poster – Annual report year: 1998

Anodematerialer til metalhydridbatterier
Publication: Research - peer-review › Report – Annual report year: 1997

Anodematerials for Metal Hydride Batteries
Publication: Research › Ph.D. thesis – Annual report year: 1997

CaNi5 prepared by mechanical alloying
Publication: Research › Article in proceedings – Annual report year: 1996

Metalhydridter til batteriformål: Kortlægning af udviklingmulighederne indenfor metalhydridforskningen på Kemisk Laboratorium A, Danmarks Tekniske Højskole
Publication: Research - peer-review › Report – Annual report year: 1993

Projects:

Development of Porous Electrodes for Alkaline Electrolyzers
Reumert, A. K., Jensen, J. O., Cleemann, L. N. & Kraglund, M. R.
01/09/2017 → 31/08/2020
Project: PhD

Active Magnetic regenerator refrigeration with rotary multi-bed technology
Eriksen, D., Engelbrecht, K., Bahl, C., Bjørk, R., Jensen, J. O., Kitanoinski, A. & Palm, B.
01/04/2016 → 20/09/2016
Project: PhD

Development of a new synthesis for highly active fuel cell electrocatalysis
Brandes, B. A., Jensen, J. O., Cleemann, L. N. & Li, Q.
15/12/2015 → 14/12/2018
Project: PhD

Development of non-precious metal polymer fuel cell catalysts
Shypunov, I., Jensen, J. O., Cleemann, L. N. & Li, Q.
15/09/2015 → 14/09/2018
Project: PhD

Acid-base chemistry and HT-polymer electrolyte membranes
Becker, H., Li, Q. & Jensen, J. O.
15/12/2014 → 14/12/2017
Project: PhD

**Development of High temperature PEM fuel cells**
Kannan, A. & Jensen, J. O.
15/11/2014 → 14/11/2017
Project: PhD

**Robust HT-MEAs for Dynamic Operation under Smart Grid Conditions**
Jensen, J. O., Pensini, A. & Træholt, C.
01/08/2014 → 01/08/2017
Project

**Alkaline Electrolyser Cell**
01/08/2014 → 31/07/2017
Project: PhD

**Development of Proton Conductive membranes**
Kirkebæk, A., Li, Q., Aili, D., Jensen, J. O., Søndergaard, R. R., Hjuler, H. A. & Kerres, J.
01/05/2014 → 09/07/2017
Project: PhD

**Noble Metals Free Intermediate -Temperature Supported Liquid Phase Electrolyzer**
Nikiforov, A. V., Bjerrum, N. J., Petrushina, I., Christensen, E. & Jensen, J. O.
01/01/2014 → ...
Project

**HT PEMFC Durability and Lifetime**
Søndergaard, T., Jensen, J. O., Cleemann, L. N., Li, Q., Petrushina, I., Bajo, J. L. & Grahl-Madsen, L.
01/04/2013 → 30/06/2016
Project: PhD

**Pressurized HT PEM Cells for H2/O2 operation**
01/08/2012 → 30/09/2015
Project: PhD

**High-efficiency, low-cost electrode surfaces for next generation alkaline electrolysis**
14/12/2011 → 12/12/2014
Project

**Optimizing the anaerobic digestion of manure**
01/12/2011 → 01/07/2015
Project: PhD

**Højtemperatur PEM Brændselsceller og organiske brændsler**
Intermediate Temperature Proton Conducting Systems (PROCON)
Bjerrum, N. J., Li, Q., Petrushina, I., Jensen, J. O., Christensen, E. & Cleemann, L. N.
01/06/2010 → 31/05/2013

Development of improved electrodes in high temperature PEM fuel cells
15/03/2010 → 11/12/2013

Fuel Cell Hydrogen Manifold for Lift Trucks
Hosseinzadeh, E., Rokni, M., Elmegaard, B., Jensen, J. O., Nielsen, M. P. & Yuan, J.
01/01/2010 → 04/04/2013

New Electrolytes for CO2 Electrolysis Cells
01/09/2009 → 19/03/2013

Danish high temperature PEMFC components, MEA and stack
01/04/2009 → 31/03/2013

Production of Hydrogen by Electrolysis
01/06/2007 → 15/10/2008

Dry, Intrinsic proton conducting membranes for fuel cells
01/01/2006 → 31/12/2008

Udvikling af lette materialer til brintlagring
01/11/2005 → 01/04/2009

New Metal Hydrides for Energy Storage
01/01/2003 → 31/12/2006

Fremstilling og karakterisering af nye Metalhydridrider til Lagring af Brint
01/10/2002 → 07/03/2006
Project: PhD

**High Temperature Polymer Methanol Fuel Cell**
Kløv, K., Bjerrum, N. J., Jensen, J. O., Li, Q., Tunold, R. & Ekdunge, P.
01/01/2001 → 31/12/2002

**Metal hydride storage tank for hydrogen vehicle**
Bjerrum, N. J., Jensen, J. O. & Hennesø, E.
01/01/1999 → 30/06/2000

**Development of air metal hydride battery (AMHBAT)**
Bjerrum, N. J. & Jensen, J. O.
01/12/1997 → 30/11/2000

**Electrochemical and Spectroscopic Investigation of Electrochemical Cells and Catalysts**
01/01/1996 → 31/12/2002

**Lubricants for Cold Forging of Stainless Steel**
Bjerrum, N. J., Christensen, E., Berg, R. W., Andersen, B. K., Jensen, J. O. & Bergqvist, R. S.
01/01/1994 → 31/12/2001

**Anode Materials for Metal Hydride Batteries**
08/02/1993 → 30/04/1997

### Activities:

**International Carisma Conference**
Jensen, J. O. (Speaker)
1 Dec 2014 → 3 Dec 2014
Activity: Talks and presentations › Conference presentations

**Conference on Energy and Environment for the Future**
Jensen, J. O. (Speaker)
24 Nov 2014 → 25 Nov 2014
Activity: Talks and presentations › Conference presentations

**A Stability Study of Alkali Doped PBI Membranes for Alkaline Electrolyzer Cells**
Jensen, J. O. (Invited speaker)
5 Oct 2014 → 10 Oct 2014
Activity: Talks and presentations › Conference presentations

**Solid State Protonic Conductors - 17**
Jensen, J. O. (Invited speaker)
14 Sep 2014 → 19 Sep 2014
Activity: Talks and presentations › Conference presentations
20th World Hydrogen Energy Conference 2014
Jensen, J. O. (Speaker)
15 Jun 2014 → 20 Jun 2014
Activity: Talks and presentations › Conference presentations