Elektrolyse gør al energi fra vindmøller værdifuld
Publication: Communication › Internet publication – Annual report year: 2015

Eliminating degradation in solid oxide electrochemical cells by reversible operation
Publication: Research - peer-review › Journal article – Annual report year: 2014

Er der vedvarende energi nok til os alle?: om brændselscelle og elektrolyseceller til effektiv energikonvertering
Hauch, A. 2015
Publication: Research › Sound/Visual production (digital) – Annual report year: 2015

Fabrication of thin ytria-stabilized-zirconia dense electrolyte layers by inkjet printing for high performing solid oxide fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2015

High performing SOFC via multilayer tape casting?
Hauch, A. 2015
Publication: Research - peer-review › Poster – Annual report year: 2015

Influence of hydroxyl content of binders on rheological properties of cerium-gadolinium oxide (CGO) screen printing inks
Publication: Research - peer-review › Journal article – Annual report year: 2014

In Situ Studies of Fe⁴⁺ Stability in β-Li₃Fe₂(PO₄)₃ Cathodes for Li Ion Batteries
Publication: Research - peer-review › Journal article – Annual report year: 2015

Ni/YSZ microstructure optimization for long-term stability of solid oxide electrolysis cells
Hauch, A., Brodersen, K. & Chen, M. 2015
Publication: Research - peer-review › Poster – Annual report year: 2015
Sulfur Poisoning of Ni/stabilized-zirconia Anodes: Effect on Long-Term Durability
Hauch, A., Hagen, A., Hjelm, J. & Ramos, T. 2015
Publication: Research › Sound/Visual production (digital) – Annual report year: 2015

Triple phase boundary specific pathway analysis for quantitative characterization of solid oxide cell electrode microstructure
Publication: Research - peer-review › Journal article – Annual report year: 2015

Advanced impedance modeling of solid oxide electrochemical cells
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

A rechargeable carbon-oxygen battery
Graves, C. R. & Mogensen, M. B. 2014
Publication: Research › Patent – Annual report year: 2014

Carbon Deposition in Solid Oxide Cells during Co-Electrolysis of H₂O and CO₂
Publication: Research - peer-review › Conference article – Annual report year: 2014

Carbon nanotube growth on nanozirconia under strong cathodic polarization in steam and carbon dioxide
Publication: Research - peer-review › Journal article – Annual report year: 2014

Communication: The influence of CO₂ poisoning on overvoltages and discharge capacity in non-aqueous Li-Air batteries
Publication: Research - peer-review › Journal article – Annual report year: 2014

Degradation of Solid Oxide Electrolysis Cells Operated at High Current Densities
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Degradation Studies on LiFePO₄ cathode
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2014
Durability of high performance Ni-yttria stabilized zirconia supported solid oxide electrolysis cells at high current density
Publication: Research - peer-review › Journal article – Annual report year: 2014

Durable solid oxide electrolysis cells for hydrogen production
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Effect of low temperature in-situ sintering on the impedance and the performance of intermediate temperature solid oxide fuel cell cathodes
Publication: Research - peer-review › Journal article – Annual report year: 2014

Electrical conductivity of titanium pyrophosphate between 100 and 400 °C: effect of sintering temperature and phosphorus content
Publication: Research - peer-review › Journal article – Annual report year: 2014

Electrochemical characterization of La$_{0.6}$Ca$_{0.4}$Fe$_{0.8}$Ni$_{0.2}$O$_3$ cathode on Ce$_{0.8}$Gd$_{0.2}$O$_{1.9}$ electrolyte for IT-SOFC
Publication: Research - peer-review › Journal article – Annual report year: 2014

Electrochemical evaluation of sulfur poisoning in a methane-fuelled solid oxide fuel cell: Effect of current density and sulfur concentration
Publication: Research - peer-review › Journal article – Annual report year: 2014

Fuel flow distribution in SOFC stacks revealed by impedance spectroscopy
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

High Temperature Electrolysis in Alkaline Cells, Solid Proton Conducting Cells, and Solid Oxide Cells
Publication: Research - peer-review › Journal article – Annual report year: 2014

Impedance of SOFC electrodes: A review and a comprehensive case study on the impedance of LSM:YSZ cathodes
Nielsen, J. & Hjelm, J. 2014 In : Electrochimica Acta. 115, p. 31-45
Publication: Research - peer-review › Journal article – Annual report year: 2014
Impedance perspectives on Li-air battery overpotentials
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Impedance Spectra of Activating/Passivating Solid Oxide Electrodes
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Improved ceramic anodes for SOFCs with modified electrode/electrolyte interface
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Kinetic Studies on State of the Art Solid Oxide Cells
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2014

Ni/YSZ microstructure optimization for long-term stability of solid oxide electrolysis cells
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Performance characterization of solid oxide cells under high pressure
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Power to fuel using electrolysis and CO2 capture
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2014

Rejset ud og bliv en bedre forsker
Hauch, A. 2014 1, 4, D T U Avisen
Publication: Communication › Feature article – Annual report year: 2014

Rheological analysis of stabilized cerium-gadolinium oxide (CGO) dispersions
Publication: Research - peer-review › Journal article – Annual report year: 2014
A modified anode/electrolyte structure for a solid oxide electrochemical cell and a method for making said structure
Jabbar, M., Hegh, J. V. T., Stamate, E. & Bonanos, N. 2013
Publication: Research › Patent – Annual report year: 2013

Are reversible fuel cells better batteries for large-scale renewable energy storage?
Graves, C. R. 2013
Publication: Research › Sound/Visual production (digital) – Annual report year: 2014

Biogas Upgrading Using SOEC with a Ni-ScYSZ Electrode
Publication: Research - peer-review › Conference article – Annual report year: 2013

Break-down of Losses in High Performing Metal-Supported Solid Oxide Fuel Cells
Publication: Research - peer-review › Journal article – Annual report year: 2013

Co-Electrolysis of Water and CO₂ for synthetic fuels
Jensen, S. H. 2013
Publication: Research › Sound/Visual production (digital) – Annual report year: 2013

Current density - overvoltage relations for solid oxide electrodes
Mogensen, M. B., Frandsen, H. L., Nielsen, J., Li, W., Jacobsen, T. & Graves, C. R. 2013
Publication: Research › Sound/Visual production (digital) – Annual report year: 2013

Defect chemistry, thermomechanical and transport properties of (RE₂ - xSrₓ)₀·₉₈(Fe₀·₈Co₀·₂)₁₋₇Mg₀·₄₋₇O₄ - δ (RE = La, Pr)
Publication: Research - peer-review › Journal article – Annual report year: 2013

Durability and Performance of High Performance Infiltration Cathodes
Publication: Research - peer-review › Journal article – Annual report year: 2013

Durability of Solid Oxide Electrolysis Cell and Interconnects for Steam Electrolysis
Publication: Research - peer-review › Conference article – Annual report year: 2013

Durability of Solid Oxide Electrolysis Cells for Syngas Production
In : Journal of the Electrochemical Society. 160, 9, p. F1074-F1080
Durability of the Solid Oxide Cells for Co-Electrolysis of Steam and Carbon Dioxide under High Current Densities
Publication: Research › Ph.D. thesis – Annual report year: 2014

Effective improvement of interface modified strontium titanate based solid oxide fuel cell anodes by infiltration with nanosized palladium and gadolinium-doped cerium oxide
Publication: Research - peer-review › Journal article – Annual report year: 2013

Electrochemical Characterization and Degradation Analysis of Large SOFC Stacks by Impedance Spectroscopy
Publication: Research - peer-review › Conference article – Annual report year: 2013

Electrochemical characterization of La_{0.6}Ca_{0.4}Fe_{0.8}Ni_{0.2}O_{3-δ} perovskite cathode for IT-SOFC
Publication: Research - peer-review › Journal article – Annual report year: 2013

Electrolytes and Electrodes for Electrochemical Cells Operating at 200 - 300 °C
Publication: Research › Ph.D. thesis – Annual report year: 2013

High performance fuel electrode for a solid oxide electrochemical cell
Jabbar, M., Høgh, J. V. T. & Bonanos, N. 2013
Publication: Research › Patent – Annual report year: 2013

High purity H-2/H2O/Ni/SZ electrodes at 500 degrees C
Publication: Research - peer-review › Journal article – Annual report year: 2013

High purity H2/H2O/Ni/SZ electrodes at 500° C
Publication: Research - peer-review › Journal article – Annual report year: 2013

High Temperature and Pressure Alkaline Electrolysis
Publication: Research › Ph.D. thesis – Annual report year: 2013
High Temperature Co-Electrolysis of Steam and CO₂ in an SOC Stack: Performance and Durability
Publication: Research - peer-review › Conference article – Annual report year: 2013

Infiltrated SrTiO₃:FeCr-based Anodes for Metal-Supported SOFC
Publication: Research - peer-review › Journal article – Annual report year: 2013

Influence of the oxygen electrode and inter-diffusion barrier on the degradation of solid oxide electrolysis cells
Publication: Research - peer-review › Journal article – Annual report year: 2013

In Situ Study of High Voltage Performance of Li₂Fe₂(PO₄)₃ Cathodes for Li Ion batteries
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2013

Investigation of Cu-based Infiltration Coatings for Metal-supported SOFC
Publication: Research - peer-review › Conference article – Annual report year: 2013

Investigation of novel solid oxide fuel cell cathodes based on impregnation of SrTixFe1-xO3-δ into ceria-based backbones
Publication: Research - peer-review › Article in proceedings – Annual report year: 2013

Method and system for purification of gas/liquid streams for fuel cells or electrolysis cells
Ebbesen, S. D. & Mogensen, M. B. 2013
Publication: Research › Patent – Annual report year: 2013

Microstructural Degradation of Ni/YSZ Electrodes in Solid Oxide Electrolysis Cells under High Current
Publication: Research - peer-review › Journal article – Annual report year: 2013

Microstructure characterisation of solid oxide electrolysis cells operated at high current density
Modeling degradation in SOEC impedance spectra

Optimizing solid oxide fuel cell cathode processing route for intermediate temperature operation

Origin of electrolyte dopant dependent sulfur poisoning of SOFC anodes

Origin of electrolyte-dopant dependent sulfur poisoning of SOFC anodes.

Origin of Electrolyte-Dopant Dependent Sulfur Poisoning of SOFC Anodes

Reversible fuel cells instead of electrolysers and batteries for large-scale renewable energy storage
Graves, C. R. 2013

Reversible solid oxide cells: Limitations and possibilities

Reversible Solid Oxide Cells: Limitations and Possibilities

Reversing and Repairing Microstructure Degradation in Solid Oxide Cells During Operation
Rheology of stabilized cerium-gadolinium oxide (CGO) colloidal system
Marani, D., Hjelm, J. & Wandel, M. 2013
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Solid Oxide Electrolysis Cells - High pressure operation
Ebbesen, S. D. 2013
Publication: Research › Sound/Visual production (digital) – Annual report year: 2013

Status of the Solid Oxide Fuel Cell Development at Topsoe Fuel Cell A/S and DTU Energy Conversion
Christiansen, N., Primdahl, S., Wandel, M., Ramousse, S. & Hagen, A. 2013 In : E C S Transactions. 57, 1, p. 43-52
Publication: Research - peer-review › Conference article – Annual report year: 2013

Sulfur Poisoning of Ni/stabilized-zirconia Anodes – Effect on Long-Term Durability
Hauch, A., Hagen, A., Hjelm, J. & Ramos, T. 2013 In : E C S Transactions. 57, 1, p. 615-625
Publication: Research - peer-review › Conference article – Annual report year: 2013

Sulfur Poisoning of the Water Gas Shift Reaction on Anode Supported Solid Oxide Fuel Cells
Publication: Research - peer-review › Journal article – Annual report year: 2013

The Influence of CO2 Poisoning on Overvoltages and Discharge Capacity in Non-aqueous Li-Air Batteries
Publication: Research › Poster – Annual report year: 2013

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

Use of Intrinsic Viscosity for evaluation of polymer-solvent affinity
Publication: Research - peer-review › Conference article – Annual report year: 2014

Advances in Metal Supported Cells in the METSOFC EU Consortium
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Anodes for Solid Oxide Fuel Cells Operating at Low Temperatures
Publication: Research › Ph.D. thesis – Annual report year: 2012
Development of SOEC Cells and Stacks: Highlights, Challenges and future Perspectives
Publication: Research › Sound/Visual production (digital) – Annual report year: 2012

Durable and Robust Solid Oxide Fuel Cells
Publication: Research › Report – Annual report year: 2013

Efficient ceramic anodes infiltrated with binary and ternary electrocatalysts for SOFCs operating at low temperatures
Publication: Research - peer-review › Journal article – Annual report year: 2012

Electrical conductivity measurements of aqueous and immobilized potassium hydroxide
Publication: Research - peer-review › Journal article – Annual report year: 2012

Electrochemical performance and stability of nano-particulate and bi-continuous La_{1-x}Sr_{x}CoO_3 and Ce_{0.9}Gd_{0.1}O_{1.95} composite electrodes
Publication: Research - peer-review › Journal article – Annual report year: 2012

Electrochemical Switching of Conductance with Diarylethene-Based Redox-Active Polymers
Publication: Research - peer-review › Journal article – Annual report year: 2012

Electrolysis activities at FCH Test Center
Ravn Nielsen, E. & Nygaard, F. B. 2012
Publication: Communication › Poster – Annual report year: 2012

Highly durable anode supported solid oxide fuel cell with an infiltrated cathode
Publication: Research - peer-review › Journal article – Annual report year: 2012

High Temperature Co-electrolysis of Steam and CO2 in an SOC stack: Performance and Durability
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012
Improved ceramic anodes for SOFCs with modified electrode/electrolyte interface
Publication: Research - peer-review › Journal article – Annual report year: 2012

Infiltrated SrTiO3:FeCr-based anodes for metalsupported SOFC
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Investigation of the degradation of LSM-YSZ SOFC cathode by electrochemical impedance spectroscopy
Publication: Research › Ph.D. thesis – Annual report year: 2012

Kinetics of oxidation of H2 and reduction of H2O in Ni-YSZ based solid oxide cells
Publication: Research - peer-review › Conference article – Annual report year: 2013

Measurements of Electric Performance and Impedance of a 75 Ah NMC Lithium Battery Module
Publication: Research - peer-review › Journal article – Annual report year: 2012

Multilayer tape cast SOFC – Effect of anode sintering temperature
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Performance and Durability of Solid Oxide Electrolysis Cells for Syngas Production
Publication: Research - peer-review › Conference article – Annual report year: 2012

Plasma properties during RF magnetron sputtering of lithium phosphorous oxynitride thin films
Publication: Research - peer-review › Article in proceedings – Annual report year: 2012

Production of "Green Natural Gas" Using Solid Oxide Electrolysis Cells (SOEC): Status of Technology and Costs
Solid oxide cell stack and method for preparing same
Publication: Research › Patent – Annual report year: 2012

Spectroelectrochemical cell for in situ studies of solid oxide fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2012

Test and Approval Center for Fuel Cell and Hydrogen Technologies: Phase I. Initiation: Final report
Publication: Research › Report – Annual report year: 2013

Thermodynamic analysis of synthetic hydrocarbon fuel production in pressurized solid oxide electrolysis cells
Publication: Research - peer-review › Journal article – Annual report year: 2012

Solid-State Ammonia As Carbon Free Energy Vector: Current Status And Future Prospects
Publication: Research - peer-review › Book chapter – Annual report year: 2010

Properties and Performance of SOFCs Produced on a Pre-Pilot Plant Scale
Hagen, A., Menon, M., Barfod, R., Hendriksen, P. V., Ramousse, S. & Larsen, P. H. 2006 In : Fuel Cells. 6, 2, p. 146-150
Publication: Research - peer-review › Conference article – Annual report year: 2006

Projects:

Towards Smart Grid Ready SOFC
Hjelm, J.
01/08/12 → 31/07/14
Project

Durable and Robust SOFC
Hjelm, J.
01/07/10 → 30/06/12
Project
BioSOFC - 3rd Generation Biomass Based Combined Heat and Power (CHP)
01/03/10 → 01/03/13
Project

Test and Approval Center for Fuel Cell and Hydrogen Technologies: Phase I. Initiation
Hagen, A.
01/01/10 → 30/06/12
Project

Innovative solid oxide electrolyser stacks for efficient and reliable hydrogen production
Bowen, J. R., Ebbesen, S. D. & Ehora, G.
01/01/08 → 31/12/11
Project

Activities:

Material & Struktur – Entscheidende Kombination für Hochtemperaturbrennstoff- und Elektrolysezellen
Anke Hagen (Invited speaker), 27 Jan 2015
Activity: Lecture and oral contribution

Højlands Helte: Tre DTU'ers løsninger på fremtidens problemer med CO2
Anne Hauch (Participant), Radio24syv, 15 Mar 2015
Activity: Appearance in mass media › Participation in Radio Programme

RFCcontrol
Søren Koch (Head), Department of Energy Conversion and Storage, 2015
Activity: Other research and communication activities › Other

Department of Energy Conversion and Storage-Solid Oxide Fuel and Electrolysis Cells
Anke Hagen (Invited speaker), 12 Mar 2014
Activity: Lecture and oral contribution

Forskningsens Døgn
Anke Hagen (Organizer), Apr 2014
Activity: Other research and communication activities › Other

In situ and operando X-ray absorption spectroscopy on SOFC materials and cells
Anke Hagen (Lecturer), 27 Jun 2014
Activity: Lecture and oral contribution
Overview of SOFC/SOEC development at DTU Energy Conversion
Anke Hagen (Lecturer), 2 Jul 2014
Activity: Lecture and oral contribution

Er der vedvarende energi nok til os alle?: Om brændselsceller og elektrolyseceller til effektiv energikonvertering
Anne Hauch (Lecturer), 26 Sep 2014
Activity: Lecture and oral contribution

Solid oxide cells: Smart electrochemical devices for the smart energy systems of the future
Anke Hagen (Invited speaker), 22 Oct 2014
Activity: Lecture and oral contribution

High temperature electrolysis activities at Technical University of Denmark
Sune Dalgaard Ebbesen (Invited speaker), 7 Nov 2014
Activity: Lecture and oral contribution

Børnenes Universitet
Anke Hagen (Organizer), 22 Nov 2014
Activity: Other research and communication activities › Other

Elchemea Data Acquisition
Søren Koch (Head), Dec 2014
Activity: Other research and communication activities › Other

Using biofuels for SOFC
Anke Hagen (Invited speaker), 13 Apr 2013
Activity: Lecture and oral contribution

13th International Symposium on Solid Oxide Fuel Cells (SOFC-XIII)
Anne Hauch (Participant), 6 Oct 2013 → 11 Oct 2013
Activity: Participation in conference/workshop/course/seminar › Participation in workshop, seminar, course

The Danish Energy Agreement and Solid Oxide Cells
Anke Hagen (Lecturer), 6 Oct 2013
Activity: Lecture and oral contribution
Elchemea Analytical
Søren Koch (Head), 2013
Activity: Other research and communication activities › Other

Strom & Gas Synergie
Anke Hagen (Participant), Sonnenenergie, 2013
Activity: Appearance in mass media › Participation in Interview for Printed Media

Studienævn DTU Energi
Anne Hauch (Chairman), 1 Jan 2012 → 31 Dec 2015
Activity: Participation in council, board, committee and network › Membership in committee, council, board

10th European Fuel Cell Forum
Anke Hagen (Member), Jan 2012 → Jun 2012
Activity: Participation in council, board, committee and network › Membership in committee, council, board

Durability of Solid Oxide Fuel Cells and Solid Oxide Electrolysis Cells: Status and Challenges
Anke Hagen (Invited speaker), Jan 2012
Activity: Lecture and oral contribution

SOFC Durability under Realistic Operation
Anke Hagen (Lecturer), May 2012
Activity: Lecture and oral contribution

SYMPOSIUM Water Electrolysis and Hydrogen as Part of the Future Renewable Energy System
Anke Hagen (Organizer), May 2012
Activity: Participation in conference/workshop/course/seminar › Organisation of and participation in conference

Werkstofffragen der Hochtemperatur-Brennstoffzelle (SOFC): Risø/Topsoe SOFC Aktivitäten
Anke Hagen (Lecturer), May 2012
Activity: Lecture and oral contribution

European Fuel Cell Forum 2012
Anne Hauch (Participant), 30 Jun 2012 → 3 Jul 2012
Activity: Participation in conference/workshop/course/seminar › Participation in workshop, seminar, course

Solid State Electrochemistry Applied to Solid Oxide Fuel and Electrolysis Cells
Anke Hagen (Invited speaker), Sep 2012
Activity: Lecture and oral contribution
Degradation of state-of-the-art SOFC in hydrogen and carbon containing fuels
Anke Hagen (Invited speaker), Nov 2012
Activity: Lecture and oral contribution

Ergebnisse aus Langzeittests von Einzelzellen
Anke Hagen (Lecturer), Dec 2012
Activity: Lecture and oral contribution

Durability and degradation of SOFCs – Where are we?
Anke Hagen (Lecturer), May 2011
Activity: Lecture and oral contribution

2nd International Workshop on Degradation Issues of Fuel Cells
Anke Hagen (Participant), Sep 2011
Activity: Participation in conference/workshop/course/seminar › Participation in workshop, seminar, course

Assessing durability of SOFC stacks
Anke Hagen (Lecturer), Sep 2011
Activity: Lecture and oral contribution

Annual Meeting International Energy Agency (IEA) Annex 24 (Solid Oxide Fuel Cells)
Anke Hagen (Member), 2011 → 2015
Activity: Participation in council, board, committee and network › Membership in committee, council, board

PhD Thesis Alfred Samson
Anke Hagen (Censor), 2011 → Apr 2012
Activity: Other research and communication activities › Supervision and co-examiner

UDTU Education in University Teaching at DTU
Anne Hauch (Participant), 2 Aug 2010 → 30 Jul 2011
Activity: Participation in conference/workshop/course/seminar › Participation in workshop, seminar, course

8th European Fuel Cell Forum
Anke Hagen (Member), Dec 2007 → Jun 2008
Activity: Participation in council, board, committee and network › Membership in committee, council, board