Research outputs:

**Complementary analyses of aging in a commercial LiFePO$_4$/graphite 26650 cell**
Research output: Research - peer-review › Journal article – Annual report year: 2018

**Electrochemical Characterization of a PEMEC Using Impedance Spectroscopy (vol 164, F1419, 2017)**
Research output: Communication › Comment/debate – Annual report year: 2018

**Electrochemical impedance of an alkaline organic flow battery**
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

**Noise Phenomena in Electrochemical Impedance Spectroscopy of Polymer Electrolyte Membrane Electrolysis Cells**
Research output: Research - peer-review › Journal article – Annual report year: 2018

**Reactivating the Ni-YSZ electrode in solid oxide cells and stacks by infiltration**
Research output: Research - peer-review › Journal article – Annual report year: 2018

**Durable fuel electrode**
Research output: Research › Patent – Annual report year: 2017

**A Physically-Based Equivalent Circuit Model for the Impedance of a LiFePO$_4$/Graphite 26650 Cylindrical Cell**
Research output: Research - peer-review › Journal article – Annual report year: 2017

**Carbon deposition and sulfur poisoning during CO$_2$ electrolysis in nickel-based solid oxide cell electrodes**
Research output: Research - peer-review › Journal article – Annual report year: 2017

**Challenges and Possibilities of EIS on PEMEC**
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

**Chemical and Electrochemical Properties of La$_{0.58}$Sr$_{0.4}$Fe$_{0.8}$Co$_{0.2}$O$_{3-δ}$ (LSCF) Thin Films upon Oxygen Reduction and Evolution Reactions**
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

**Chemical and Electrochemical Properties of La$_{0.58}$Sr$_{0.4}$Fe$_{0.8}$Co$_{0.2}$O$_{3-δ}$ (LSCF) Thin Films upon Oxygen Reduction and Evolution Reactions**
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2017
Determination of the bonding strength in solid oxide fuel cells’ interfaces by Schwickerath crack initiation test
Research output: Research - peer-review › Journal article – Annual report year: 2017

Electrochemical Characterization of a PEMEC Using Impedance Spectroscopy
Research output: Research - peer-review › Journal article – Annual report year: 2017

An Ag based brazing system with a tunable thermal expansion for the use as sealant for solid oxide cells
Research output: Research - peer-review › Journal article – Annual report year: 2016

An Electrochemical Impedance Spectroscopy Study on the Effects of the Surface- and Solution-Based Mechanisms in Li-O₂ Cells
Research output: Research - peer-review › Journal article – Annual report year: 2016

An Electrochemical Impedance Study of the Capacity Limitations in Na−O₂ Cells
Research output: Research - peer-review › Journal article – Annual report year: 2016

Electrochemical Characterization of PEMECs Operating at Various Current Densities
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2016

Electrochemical Impedance Spectroscopy on Industrially-Relevant Solid Oxide Electrolyzer Cell Stacks: A Powerful Tool for in-Situ Investigations of Degradation Mechanisms
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2016

Electron microscopy investigations of changes in morphology and conductivity of LiFePO4/C electrodes
Research output: Research - peer-review › Journal article – Annual report year: 2016

Investigation of the bonding strength and bonding mechanisms of SOFCs interconnector-electrode interfaces
Research output: Research - peer-review › Journal article – Annual report year: 2016

Kinetic Studies on State of the Art Solid Oxide Cells: A Comparison between Hydrogen/Steam and Reformate Fuels
Research output: Research - peer-review › Journal article – Annual report year: 2016

Performance and Lifetime Limiting Effects in Li-Ion Batteries

Quantitative review of degradation and lifetime of solid oxide cells and stacks
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Alkali Metal-O₂ Batteries. Performance and Lifetime Limiting Effects
Research output: Research › Ph.D. thesis – Annual report year: 2015

Analysis of the Interphase on Carbon Black Formed in High Voltage Batteries
Research output: Research - peer-review › Journal article – Annual report year: 2015

Analysis of the Interphase on Carbon Black Formed in High Voltage Batteries
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

An Electrochemical Impedance Spectroscopy Investigation of the Overpotentials in Li−O₂ Batteries
Research output: Research - peer-review › Journal article – Annual report year: 2015
A Study of $e^-$ Transport through Li$_2$O$_2$, the Main Discharge Product in the Li-O$_2$ Battery
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2015

Carbon Deposition during CO$_2$ Electrolysis in Ni-Based Solid-Oxide-Cell Electrodes
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2015

Carbon Deposition during CO$_2$ Electrolysis in Ni-Based Solid-Oxide-Cell Electrodes
Research output: Research - peer-review › Conference article – Annual report year: 2015

Degradation Studies on LiFePO$_4$ cathode
Research output: Research - peer-review › Conference article – Annual report year: 2015

Electrochemical Impedance Spectroscopy as a Tool for PEMECs Development
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Electrode Kinetics and Gas Conversion in Solid Oxide Cells

Enhancement of the chemical stability in confined δ-Bi$_2$O$_3$
Research output: Research - peer-review › Letter – Annual report year: 2015

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

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

Kinetic Studies on Ni-YSZ Composite Electrodes
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2015

Kinetic Studies on Ni-YSZ Composite Electrodes
Research output: Research - peer-review › Conference article – Annual report year: 2016

Kinetic Studies on State of the Art Solid Oxide Cells – A Comparison between Hydrogen/Steam and Reformate Fuels
Research output: Research - peer-review › Conference article – Annual report year: 2015

Low-voltage FIB/SEM Tomography for 3D Microstructure Evolution of LiFePO$_4$/C Electrode
Research output: Research - peer-review › Conference abstract in journal – Annual report year: 2015

Low-voltage FIB/SEM Tomography for 3D Microstructure Evolution of LiFePO$_4$/C Electrode
Research output: Research - peer-review › Conference article – Annual report year: 2016

Reactions and SEI Formation during Charging of Li-O$_2$ Cells
Research output: Research - peer-review › Journal article – Annual report year: 2015

Redox Probing Study of the Potential Dependence of Charge Transport Through Li$_2$O$_2$
Research output: Research - peer-review › Journal article – Annual report year: 2015

SOFC brændselsceller i et intelligent elnet
Research output: Research › Journal article – Annual report year: 2015
**Sulfur Poisoning of Ni/stabilized-zirconia Anodes: Effect on Long-Term Durability**  
Research output: Research › Sound/Visual production (digital) – Annual report year: 2015

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

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

**Degradation Studies on LiFePO₄ cathode**  
Research output: Research › peer-review › Conference abstract in journal – Annual report year: 2014

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

**Impedance of SOFC electrodes: A review and a comprehensive case study on the impedance of LSM:YSZ cathodes**  
Research output: Research › peer-review › Journal article – Annual report year: 2014

**Impedance perspectives on Li-air battery overpotentials**  
Research output: Research › peer-review › Conference abstract for conference – Annual report year: 2014

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

**Rheological analysis of stabilized cerium-gadolinium oxide (CGO) dispersions**  
Research output: Research › peer-review › Journal article – Annual report year: 2014

**Solid Oxide Fuel Cell Stack Diagnostics**  
Research output: Research › Ph.D. thesis – Annual report year: 2015

**Structural instability and electrical properties in epitaxial Er₂O₃-stabilized Bl₂O₃ thin films**  
Research output: Research › peer-review › Journal article – Annual report year: 2014

**Sulfur Poisoning of SOFC Anodes: Effect of Overpotential on Long-Term Degradation**  
Research output: Research › peer-review › Journal article – Annual report year: 2014

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

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

**High Temperature and Pressure Alkaline Electrolysis**  
Research output: Research › Ph.D. thesis – Annual report year: 2013

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

**Rheology of stabilized cerium-gadolinium oxide (CGO) colloidal system**  
Research output: Research › peer-review › Conference abstract for conference – Annual report year: 2013
<table>
<thead>
<tr>
<th>Title</th>
<th>Research output:</th>
<th>Publication type</th>
<th>Annual report year:</th>
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<tr>
<td>Sulfur Poisoning of Ni/stabilized-zirconia Anodes – Effect on Long-Term Durability</td>
<td>Research › peer-review › Conference article</td>
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<td>The Influence of CO2 Poisoning on Overvoltages and Discharge Capacity in Non-aqueous Li-Air Batteries</td>
<td>Research › Poster</td>
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<td>Three-dimensional Nanofiber Cathode for Low Temperature and High Temperature Fuel Cells</td>
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<td>Use of Intrinsic Viscosity for evaluation of polymer-solvent affinity</td>
<td>Research › Conference article</td>
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<td>Detailed Electrochemical Characterisation of Large SOFC Stacks</td>
<td>Research › Article in proceedings</td>
<td>Article in proceedings</td>
<td>2012</td>
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<td>Durable and Robust Solid Oxide Fuel Cells</td>
<td>Research › Report</td>
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<td>Electrochemical Switching of Conductance with Diarylethene-Based Redox-Active Polymers</td>
<td>Research › Journal article</td>
<td>Journal article</td>
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<td>Highly durable anode supported solid oxide fuel cell with an infiltrated cathode</td>
<td>Research › Journal article</td>
<td>Journal article</td>
<td>2012</td>
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<td>A high performance ceria based interdiffusion barrier layer prepared by spin-coating</td>
<td>Research › Journal article</td>
<td>Journal article</td>
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<td>Determination of overpotential characteristics of reversible solid oxide cells via impedance spectroscopy and correlation with cell degradation</td>
<td>Research › Conference abstract in proceedings</td>
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<td>Development of Long-Term Stable and High-Performing Metal-Supported SOFCs</td>
<td>Research › Conference article</td>
<td>Conference article</td>
<td>2011</td>
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<td>Durability of Solid Oxide Cells</td>
<td>Research › Journal article</td>
<td>Journal article</td>
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<td>High performance anode supported SOFC produced by multilayer tape casting</td>
<td>Research › Conference abstract for conference</td>
<td>Conference abstract for conference</td>
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<td>Manufacturing and characterization of metal-supported solid oxide fuel cells</td>
<td>Research › Conference article</td>
<td>Conference article</td>
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Planar metal-supported SOFC with novel cermet anode
Research output: Research - peer-review › Journal article – Annual report year: 2011

Technological implementation of LSC40 as porous cathode in SOFCs
Research output: Research › Poster – Annual report year: 2011

Towards Quantification of Relations Between Electrode Polarisation and Microstructure
Research output: Research - peer-review › Journal article – Annual report year: 2011

Cathode-Electrolyte Interfaces with CGO Barrier Layers in SOFC
Research output: Research - peer-review › Journal article – Annual report year: 2010

Comparison of the Degradation of the Polarisation Resistance of Symmetrical LSM-YSZ cells, with Anode Supported Ni-YSZ/YSZ/LSM-YSZ SOFCs
Research output: Research - peer-review › Conference article – Annual report year: 2009

Comparison of the Degradation of the Polarization Resistance of Symmetrical LSM-YSZ Cells, with Anode Supported Ni-YSZ/YSZ/LSM-YSZ SOFCs
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2009

Development of Planar Metal Supported SOFC with Novel Cermet Anode
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2009

Development of Planar Metal Supported SOFC with Novel Cermet Anode
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2009

Electrochemical impedance spectroscopy as diagnostic tool
Research output: Research - peer-review › Book chapter – Annual report year: 2009

Electro- and photochemical switching of dithienylethene self-assembled monolayers on gold electrodes
Research output: Research - peer-review › Journal article – Annual report year: 2008

Electrochemical Characterization of Planar Anode Supported SOFC with Strontium-Doped Lanthanum Cobalt Oxide Cathodes
Research output: Research - peer-review › Conference article – Annual report year: 2008

On/Off Photoswitching of the Electropolymerizability of Terthiophenes
Research output: Research - peer-review › Journal article – Annual report year: 2008

ORGN 495 - From solutions to surfaces: Exploring the effect of surface confinement on molecular photochemistry and conformational behavior
Research output: Research › Conference abstract in proceedings – Annual report year: 2008

Performance and Electrochemical Characterisation of Thin Electrolyte SOFCs
Research output: Research - peer-review › Conference article – Annual report year: 2008

Performance and Electrochemical Characterisation of Thin Electrolyte SOFCs
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2008

Photochromism and electrochemistry of a dithienylcyclopentene electroactive polymer
Research output: Research - peer-review › Journal article – Annual report year: 2008
SOFC research and development at Risø DTU
Research output: Research › Paper – Annual report year: 2008

Electrochemical Impedance Studies of SOFC Cathodes
Research output: Research - peer-review › Conference article – Annual report year: 2007

Synthesis and characterization of dinuclear ruthenium(II) complexes based on 4,4’-bipyridyl type gridging ligands
Research output: Research - peer-review › Journal article – Annual report year: 2007

Projects:

Organic Redox Flow Batteries: Active Materials and Cell Stability
Project: PhD

Electrochemical Characterization for Improvement of PEM Electrolyzers for Flexible Energy Storage
Project: PhD

In-operando spatially resolved probing of solid oxide electrolysis/fuel cells
Project: PhD

Acid-base chemistry and HT-polymer electrolyte membranes
Project: PhD

In-operando localized probing of solid oxide electrolysis/fuel cells by controlled atmosphere high temperature scanning probe microscopy
Project: PhD

Electron microscopy of electrochemical processes
Project: PhD

In situ characterisation of structure and transport in battery electrolytes and electrodes
Project: PhD

Electrode Kinetics and Gas Conversion In Solid Oxide Cells
Project: PhD

Investigating the Stability of Electrode-electrolyte-interfaces
Project: PhD

Low Temperature NOx decomposition using an electrochemical Reactor
Project: PhD

Computational Investigations of transport mechanisms across battery interfaces
Project: PhD

High Temperature Alkaline Electrolyser Cell
Project: PhD

Investigation of performance and lifetime limiting effects in Li-air battery cells
Project: PhD
Performance and lifetime limiting effects in Li-ion batteries  
Project: PhD

Degradation mechanism of the LSCF Cathode  
Project: PhD

SOFC Stack Diagnostics  
Project: PhD

Lifetime limiting effects in pre-commercial solid cell devices  
Project: PhD

Towards Smart Grid Ready SOFC  
Project: Research

Durable and Robust SOFC  
Project: Research