Ming Chen - DTU Orbit (30/06/2017)

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Department of Energy Conversion and Storage - Senior Scientist
Mixed Conductors

Publications:

Durable fuel electrode
Brodersen, K., Hauch, A., Chen, M. & Hjelm, J. 23 Feb 2017
Publication: Research › Patent – Annual report year: 2017

A Contribution to the Understanding of the Combined Effect of Nitrogen and Boron in Grey Cast Iron
Publication: Research - peer-review › Journal article – Annual report year: 2017

A Decade of Solid Oxide Electrolysis Improvements at DTU Energy
Publication: Research - peer-review › Conference article – Annual report year: 2017

High performance LaNi1-xCoxO2-δ (x = 0.4 to 0.7) infiltrated oxygen electrodes for reversible solid oxide cells
Publication: Research - peer-review › Journal article – Annual report year: 2017

In-situ formed Ce0.8Gd0.2O1.9barrier layers on yttria stabilized zirconia backbones by infiltration - A promising path to high performing oxygen electrodes of solid oxide cell
Publication: Research - peer-review › Journal article – Annual report year: 2017

Mechanical Properties of Supports and Half-Cells for Solid Oxide Electrolysis Influenced by Alumina-Zirconia Composites
Publication: Research - peer-review › Journal article – Annual report year: 2017

Relation Between Ni Particle Shape Change and Ni Migration in Ni–YSZ Electrodes – a Hypothesis
Publication: Research - peer-review › Journal article – Annual report year: 2017

Spinel-based coatings for metal supported solid oxide fuel cells
Publication: Research - peer-review › Journal article – Annual report year: 2017

A Decade of Improvements for Solid Oxide Electrolysis Cells. Long-Term Degradation Rate from 40%/Kh to 0.4 % Kh
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2016

An Ag based brazing system with a tunable thermal expansion for the use as sealant for solid oxide cells
Publication: Research - peer-review › Journal article – Annual report year: 2016
Characterisation of a Planar Solid Oxide Cell Stack Operated at Elevated Pressure
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2016

Characterization of a Planar Solid Oxide Cell Stack Operated at Elevated Pressure
Publication: Research - peer-review › Conference article – Annual report year: 2016

Effects of strong cathodic polarization of the Ni-YSZ interface
Publication: Research - peer-review › Journal article – 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
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2016

High-Performance Microchanneled Asymmetric Gd_{0.1}Ce_{0.9}O_{1.95-δ-La_{0.6}Sr_{0.4}FeO_{3-δ}}-Based Membranes for Oxygen Separation
Publication: Research - peer-review › Journal article – Annual report year: 2016

In-Situ Formed Ce_{0.8}Gd_{0.2}O_{1.9} Barrier Layer on Yttria Stabilized Zirconia Back-Bone for Infiltrated Oxygen Electrodes
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2016

Long-term operation of a solid oxide cell stack for coelectrolysis of steam and CO\textsubscript{2}
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Low temperature processed MnCo_{2}O_{4} and MnCo_{1.8}Fe_{0.2}O_{4} as effective protective coatings for solid oxide fuel cell interconnects at 750 °C
Publication: Research - peer-review › Journal article – Annual report year: 2016

Ni/YSZ electrodes structures optimized for increased electrolysis performance and durability
Publication: Research - peer-review › Journal article – Annual report year: 2016

Phase diagram for a nano-yttria-stabilized zirconia system
Publication: Research - peer-review › Journal article – Annual report year: 2016

Pressurized Operation of a Planar Solid Oxide Cell Stack
Publication: Research - peer-review › Journal article – Annual report year: 2016
Relation between shape of Ni-particles and Ni migration in Ni-YSZ electrodes – a hypothesis
Publication: Research - peer-review › Article in proceedings – Annual report year: 2016

Thermodynamic modeling of the Sr-Co-Fe-O system
Publication: Research - peer-review › Journal article – Annual report year: 2016

Understanding degradation of solid oxide electrolysis cells through modeling of electrochemical potential profiles
Publication: Research - peer-review › Journal article – Annual report year: 2016

A novel CO₂- and SO₂-tolerant dual phase composite membrane for oxygen separation
Publication: Research - peer-review › Journal article – Annual report year: 2015

Assessment of (Mn,Co)₃O₄ powders for possible coating material for SOFC/SOEC Interconnects
Publication: Research - peer-review › Journal article – Annual report year: 2016

LaNi₁₋ₓCoₓO₃₋δ (x=0.4 to 0.7) cathodes for solid oxide fuel cells by infiltration
Publication: Research - peer-review › Journal article – Annual report year: 2016

Life Time Performance Characterization of Solid Oxide Electrolysis Cells for Hydrogen Production
Publication: Research - peer-review › Conference article – Annual report year: 2015

Life Time Performance Characterization of Solid Oxide Electrolysis Cells for Hydrogen Production
Publication: Research - peer-review › Conference abstract in journal – Annual report year: 2015

Modeling of Ni Diffusion Induced Austenite Formation in Ferritic Stainless Steel Interconnects
Publication: Research - peer-review › Conference 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

Residual stresses and strength of multi-layer tape cast solid oxide fuel and electrolysis half-cells
Publication: Research - peer-review › Journal article – Annual report year: 2015

Stability of La₀.₆Sr₀.₄Co₀.₂Fe₀.₈Oₓ/Oₓ cathodes during sintering and solid oxide fuel cell operation
Publication: Research - peer-review › Journal article – Annual report year: 2015
Ceria based protective coatings for steel interconnects prepared by spray pyrolysis
Szymczewska, D., Molin, S., Chen, M., Hendriksen, P. V. & Jasinski, P. 2014 In : Procedia Engineering. 98, p. 93 – 100
Publication: Research - peer-review › Conference article – Annual report year: 2015

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

Electrochemistry Unlocks Wettability: Epitaxial Growth of Oxide Nanoparticles on Rough Metallic Surfaces
Publication: Research - peer-review › Journal article – Annual report year: 2014

Electron microscopy investigation of electrochemically enabled wetting of Y stabilized zirconia on Ni
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Influence of Mn-Co Spinel Coating on Oxidation Behavior of Ferritic SS Alloys for SOFC Interconnect Applications
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Optimization of Ferritic Steel Porous Supports for Protonic Fuel Cells Working at 600°C
Publication: Research - peer-review › Article 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

Optimization of Ferritic Steel Porous Supports for Protonic Fuel Cells Working at 600°C
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Optimization of Ferritic Steel Porous Supports for Protonic Fuel Cells Working at 600°C
Residual stresses in a co-sintered SOC half-cell during post-sintering cooling
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Solid oxide cell oxygen electrode with enhanced durability
Chen, M., Liu, Y-L. & Hendriksen, P. V. 2014
Publication: Research › Patent – Annual report year: 2014

Stability and oxygen transport property of La_{0.8}Sr_{0.2}Cr_{0.5}Fe_{0.5}O_{3-δ}
Publication: Research - peer-review › Journal article – Annual report year: 2014

Storing electricity and CO₂ as synthetic hydrocarbon fuels by high temperature electrolysis
Publication: Research - peer-review › Conference article – Annual report year: 2013

Thermodynamic Evaluation of LSCF Cathode Stability and Tolerance towards Gas Impurities
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

TOF-SIMS characterization of impurity enrichment and redistribution in solid oxide electrolysis cells during operation
Publication: Research - peer-review › Journal article – Annual report year: 2014

Diffusion of Nickel into Ferritic Steel Interconnects of Solid Oxide Fuel/Electrolysis Stacks
Molin, S., Chen, M., Bowen, J. R. & Hendriksen, P. V. 2013 In : E C S Transactions. 57, 1, p. 2245-2252
Publication: Research - peer-review › Conference 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
Publication: Research - peer-review › Journal article – 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

High Temperature Oxidation of Ferritic Steels for Solid Oxide Electrolysis Stacks
Molin, S., Chen, M., Bentzen, J. J. & Hendriksen, P. V. 2013 In : E C S Transactions. 50, 30, p. 11-20
Publication: Research - peer-review › Conference 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
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
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Reversible solid oxide cells: Limitations and possibilities
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2014

Reversible Solid Oxide Cells: Limitations and Possibilities
Publication: Research › Sound/Visual production (digital) – Annual report year: 2013

Thermodynamic modeling of the Co-Fe-O system
Zhang, W. & Chen, M. 2013 In : C A L P H A D. 41, p. 76-88
Publication: Research - peer-review › Journal article – Annual report year: 2013

Transmission Electron Microscopy Specimen Preparation Method for Multiphase Porous Functional Ceramics
Publication: Research - peer-review › Journal article – Annual report year: 2013

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 dual layer interconnect coating for high temperature electrochemical devices
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 oxidation resistance of ferritic steels with LSM coating for high temperature electrochemical applications
Publication: Research - peer-review › Conference article – Annual report year: 2012
Thermodynamic assessment of the La-Fe-O system
Publication: Research - peer-review › Journal article – Annual report year: 2009

Degradation mechanisms on LSM/YSZ electrodes
Hendriksen, P. V., Liu, Y.-L., Chen, M., Barfod, R., Poulsen, F. W. & Hagen, A. 2008
Publication: Research › Paper – Annual report year: 2008

Modelling of oxides for use in high temperature fuel cells
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

Thermodynamics and phase equilibria in the ZrO2-61485; La=1.5 system
Chen, M. 2008
Publication: Research › Paper – Annual report year: 2008

Deposition of La0.8Sr0.2Cr0.97V0.03O3 and MnCr2O4 thin films on ferritic alloy for solid oxide fuel cell application
Publication: Research - peer-review › Conference article – Annual report year: 2007

LSM-YSZ interface reactions during long-term heat treatment
Chen, M., Liu, Y.-L., Hendriksen, P. V. & Hagen, A. 2007
Publication: Research › Paper – Annual report year: 2007

Reaction thermodynamics at the LSM-YSZ interface in SOFCs
Publication: Research › Paper – Annual report year: 2007

Thermodynamic evaluation of the CoOx-Cr2O3 system
Publication: Research › Poster – Annual report year: 2007

Thermodynamic modeling of the LaMnO3-YSZ interface reactions using the CALPHAD approach
Publication: Research › Conference abstract for conference – Annual report year: 2006

Thermodynamic modeling of the La-Mn-Y-Zr-O system
Publication: Research - peer-review › Journal article – Annual report year: 2006

Projects:

Novel Cobalt Free Oxygen Electrodes for Solid Oxide Electrolysis Cells
Tong, X., Chen, M., Hendriksen, P. V. & Ovtar, S.
01/11/2016 → 31/10/2019
Project: PhD
Modeling of degradation processes in high temperature electrolysis cells
Trini, M., Chen, M., Hauch, A. & Hendriksen, P. V.
01/09/2016 → 31/08/2019
Project: PhD

Degradation mechanism of the LSCF Cathode
Zhang, W., Chen, M., Barfod, R. G., Hendriksen, P. V., Hjelm, J., Hallstedt, B. & Markus, T.
15/04/2010 → 19/03/2013
Project: PhD

Activities:

Materials Science & Technology 2016 (MS&T16) conference
Chen, M. (Invited speaker)
Activity: Talks and presentations › Conference presentations

69th Annual Gaseous Electronics Conference
Chen, M. (Invited speaker)
10 Oct 2016
Activity: Talks and presentations › Conference presentations

Denmark-China Bilateral Workshop on Energy Conversion and Storage
Chen, M. (Organizer)
Activity: Participating in or organising an event › Participating in or organising workshops, courses, seminars etc.

12th European SOFC & SOE Forum 2016
Chen, M. (Speaker)
5 Jul 2016 → 8 Jul 2016
Activity: Talks and presentations › Conference presentations

Hydrogen2Storage & Transport in Denmark
Chen, M. (Participant)
8 Jun 2016
Activity: Participating in or organising an event › Participating in or organising workshops, courses, seminars etc.

Sino-Denmark Bilateral Forum: Possibilities and Challenges of Solid Oxide Cells in Energy Transition
Chen, M. (Organizer)
8 Apr 2016 → 11 Apr 2016
Activity: Participating in or organising an event › Participating in or organising a conference

Chemical thermodynamics in CO2 capture and electrolysis
Chen, M. (Speaker)
12 Apr 2011
Activity: Other › Other (prizes, external teaching and other activities) - External teaching and subject coordination