

Shuang Ma Andersen  
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Department of Green Technology (IGT)  
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Phone: +4565509186



## Research outputs

### **Towering non-Faradaic capacitive storage based on high quality reduced graphene oxide from spent graphite: Direct approach and waste utilization**

Perumal, P., Mohapatra, M., Mukherjee, A., Basu, S. & Andersen, S. M., 25. Aug 2022, In: Journal of Energy Storage. 52, 104989.

### **Critical thinking on baseline corrections for electrochemical surface area (ECSA) determination of Pt/C through H-adsorption/H-desorption regions of a cyclic voltammogram**

Sharma, R., Gyergyek, S. & Andersen, S. M., 15. Aug 2022, In: Applied Catalysis B: Environmental. 311, 12 p., 121351.

### **Microwave-Assisted Scalable Synthesis of Pt/C: Impact of the Microwave Irradiation and Carrier Solution Polarity on Nanoparticle Formation and Aging of the Support Carbon**

Sharma, R., Gyergyek, S. & Andersen, S. M., 24. Jan 2022, In: ACS Applied Energy Materials. 5, 1, p. 705-716

### **Gram-size Pt/C catalyst synthesized using Pt compound directly recovered from an end-of-life PEM fuel cell stack**

Chourashiya, M., Sharma, R., Gyergyek, S. & Andersen, S. M., 15. Jan 2022, In: Materials Chemistry and Physics. 276, 9 p., 125439.

### **Performance and future directions of transition metal sulfide-based electrode materials towards supercapacitor/supercapattery**

Das, A., Raj, B., Mohapatra, M., Andersen, S. M. & Basu, S., Jan 2022, In: Wiley Interdisciplinary Reviews: Energy and Environment. 11, 1, 36 p., e414.

### **Leading strategies and research advances for the restoration of graphite from expired Li<sup>+</sup> energy storage devices**

Perumal, P., Andersen, S. M., Nikoloski, A., Basu, S. & Mohapatra, M., Dec 2021, In: Journal of Environmental Chemical Engineering. 9, 6, 17 p., 106455.

### **Degradation mechanisms of electrochemical activity of Pt/C during the accelerated stress test focused on catalyst support corrosion**

Sharma, R. & Andersen, S. M., Sep 2021.

### **Recovery of Pt and Ru from Spent Low-Temperature Polymer Electrolyte Membrane Fuel Cell Electrodes and Recycling of Pt by Direct Redeposition of the Dissolved Precursor on Carbon**

Sharma, R., Gyergyek, S., Lund, P. B. & Andersen, S. M., 26. Jul 2021, In: ACS Applied Energy Materials. 4, 7, p. 6842-6852

### **Synthesis of Pt/C from (NH<sub>4</sub>)<sub>2</sub>PtCl<sub>6</sub> through Microwave-Assisted Synthesis: A particle size-controlled growth**

Sharma, R., Wang, Y., Li, F., Chamier, J. & Andersen, S. M., Jul 2021, p. 129. 322 p.

### **Circular use of Pt/C through Pt dissolution from spent PEMFC cathode and direct reproduction of new catalyst with microwave synthesis**

Sharma, R. & Andersen, S. M., 1. Jun 2021, In: Materials Chemistry and Physics. 265, 9 p., 124472.

### **A method of recovering iridium**

Andersen, S. & Sharma, R., 6. May 2021, IPC No. C22B3/00, C22B3/44, Patent No. WO2021083758 (A1), 6. May 2021, Priority date 28. Oct 2019, Priority No. EP20190205560

**Increasing fuel cell durability during prolonged and intermittent fuel starvation using supported IrO<sub>x</sub>**

Labi, T., Van Schalkwyk, F., Andersen, S. M., Morgen, P., Ray, S. C. & Chamier, J., 1. Apr 2021, In: Journal of Power Sources. 490, 7 p., 229568.

**Pt/C Electrocatalyst Durability Enhancement by Inhibition of Pt Nanoparticle Growth Through Microwave Pretreatment of Carbon Support**

Sharma, R., Gyergyek, S., Chamier, J., Morgen, P. & Andersen, S. M., 12. Mar 2021, In: ChemElectroChem. 8, 6, p. 1183-1195

**Crystalline Disorder, Surface Chemistry, and Their Effects on the Oxygen Evolution Reaction (OER) Activity of Mass-Produced Nanostructured Iridium Oxides**

Sharma, R., Karlsen, M., Morgen, P., Chamier, J., Ravnsbæk, D. B. & Andersen, S. M., Feb 2021, In: ACS Applied Energy Materials. 4, 3, p. 2552-2562

**Spent fuel cell electrocatalyst recycling through potentiodynamic dissolution of platinum**

Sharma, R. & Andersen, S. M., 4. Oct 2020.

**Electrochemical Dissolution of PtRu Nanoparticles: Electrocatalyst Stability During Operation and Recycling of Spent Catalysts**

Sharma, R., Gyergyek, S., Morgen, P. & Andersen, S. M., 30. Aug 2020. 1 p.

**Platinum recycling through electroless dissolution under mild conditions using a surface activation assisted Pt-complexing approach**

Sharma, R., Morgen, P. & Andersen, S. M., 17. Jun 2020, In: Physical chemistry chemical physics : PCCP. 22, 23, p. 13030-13040

**Preparation and Characterization of Poly(Vinyl Alcohol) (PVA)/SiO<sub>2</sub>, PVA/Sulfosuccinic Acid (SSA) and PVA/SiO<sub>2</sub>/SSA Membranes: A Comparative Study**

Remiš, T., Bělský, P., Andersen, S. M., Tomáš, M., Kadlec, J. & Kovářík, T., Mar 2020, In: Journal of Macromolecular Science: Part B - Physics. 59, 3, p. 157-181

**Solution combustion synthesized ceria or alumina supported Pt as cathode electrocatalyst for PEM fuel cells**

Chourashiya, M., Gyergyek, S. & Andersen, S. M., 15. Feb 2020, In: Materials Chemistry and Physics. 242, 122444.

**On the Electrochemical Stability of PtRu Alloy Electrodes in Aqueous Acidic Baths: A Strategy for Recycling Pt and Ru**

Sharma, R., Gyergyek, S., Morgen, P. & Andersen, S. M., 5. Feb 2020, In: Journal of The Electrochemical Society. 167, 2, 9 p., 024521.

**Method for dissolving precious metals**

Andersen, S. M. & Sharma, R., 7. Nov 2019, IPC No. C22B3/00, C25C5/02, Patent No. WO2019211318 (A1), 1. May 2019, Priority date 2. May 2018, Priority No. EP20180170312 20180502

**Inhibition of Ostwald ripening through surface switching species during potentiodynamic dissolution of platinum nanoparticles as an efficient strategy for platinum group metal (PGM) recovery**

Sharma, R., Simonsen, S. B., Morgen, P. & Andersen, S. M., 20. Oct 2019, In: Electrochimica Acta. 321, 11 p., 134662.

**Particle Size-Controlled Growth of Carbon-Supported Platinum Nanoparticles (Pt/C) through Water-Assisted Polyol Synthesis**

Sharma, R., Wang, Y., Li, F., Chamier, J. & Andersen, S. M., 24. Sep 2019, In: ACS Omega. 4, 13, p. 15711-15720

**Synthesis of Pt/C electrocatalyst from a user-friendly Pt precursor - ammonium hexachloroplatinate through microwave-assisted polyol synthesis**

Sharma, R., Wang, Y., Li, F., Chamier, J. & Andersen, S. M., 23. Sep 2019, In: ACS Applied Energy Materials. 2, 9, p. 6875-6882

**Sustainable platinum recycling through electrochemical dissolution of platinum nanoparticles from fuel cell electrodes**  
Sharma, R., Rode Nielsen, K., Lund, P. B., Simonsen, S. B., Grahl-Madsen, L. & Andersen, S. M., 2. Sep 2019, In: ChemElectroChem. 6, 17, p. 4471-4482

**Pt/C Electrocatalyst Synthesis from Recycling of the Spent PEMFC Membrane Electrode Assembly: A Closed Loop Circular Economy**

Sharma, R., Andreasen, S. J., Chamier, J. & Andersen, S. M., 22. Aug 2019, In: Journal of The Electrochemical Society. 166, 13, p. F963-F970 8 p.

**Evolution of the degradation mechanisms with the number of stress cycles during an accelerated stress test of carbon supported platinum nanoparticles**

Sharma, R., Gyergyek, S., Li, Q. & Andersen, S. M., 1. Apr 2019, In: Journal of Electroanalytical Chemistry. 838, p. 82-88

**Influence of dispersion media on Nafion® ionomer distribution in proton exchange membrane fuel cell catalyst carbon support**

Sharma, R., Grahl-Madsen, L. & Andersen, S. M., 15. Mar 2019, In: Materials Chemistry and Physics. 226, p. 66-72

**Accurate Determination of Catalyst Loading on Glassy Carbon Disk and Its Impact on Thin Film Rotating Disk Electrode for Oxygen Reduction Reaction**

Chourashiya, M., Sharma, R. & Andersen, S. M., 18. Dec 2018, In: Analytical Chemistry. 90, 24, p. 14181-14187

**An opinion on catalyst degradation mechanisms during catalyst support focused accelerated stress test (AST) for proton exchange membrane fuel cells (PEMFCs)**

Sharma, R. & Andersen, S. M., Dec 2018, In: Applied Catalysis B: Environmental. 239, p. 636-643

**Low-cost graphite as durable support for pt-based cathode electrocatalysts for proton exchange membrane based fuel cells**

Chourashiya, M., Thrane Vindt, S., Palenzuela, A. A., Pedersen, C. M., Kallesøe, C. & Andersen, S. M., 19. Nov 2018, In: International Journal of Hydrogen Energy. 43, 52, p. 23275-23284

**Exploring the XRF technique as a tool to estimate the degree of leaching in alloy-catalysts used for PEMFCs**

Chourashiya, M. & Andersen, S. M., 1. Nov 2018.

**Environmentally and industrially friendly recycling of platinum nanoparticles through electrochemical dissolution–electrodeposition in acid-free/dilute acidic electrolytes**

Sharma, R., Gyergyek, S. & Andersen, S. M., 11. Sep 2018, In: ChemSusChem (Print). 11, 21, p. 3742-3750

**Investigating the single-step solution combustion method for synthesis of oxide supported/unsupported Pt/PtO<sub>x</sub> as cathode electrocatalysts for PEMFCs**

Chourashiya, M. & Andersen, S. M., 19. Jul 2018.

**Accurate determination of catalyst loading on glassy carbon disk and its impact on thin film rotating disk electrode for oxygen reduction reaction.**

Chourashiya, M., Sharma, R. & Andersen, S. M., 18. Jul 2018.

**Probing the electrolyte/electrode interface of half-cells using electrochemical impedance spectroscopy**

MEDINA, J., Chourashiya, M., Sharma, R. & Andersen, S. M., 2018, p. 32. 32 p.

**Quantification on Degradation Mechanisms of Polymer Electrolyte Membrane Fuel Cell Catalyst Layers during an Accelerated Stress Test**

Sharma, R. & Andersen, S. M., 2018, In: ACS Catalysis. 8, 4, p. 3424-3434

**Zoom in catalyst/ionomer interface in polymer electrolyte membrane fuel cell electrodes: Impact of catalyst/ionomer dispersion media/solvent**

Sharma, R. & Andersen, S. M., 2018, In: A C S Applied Materials and Interfaces. 10, 44, p. 38125-38133

**Performance of the electrode based on silicon carbide supported platinum catalyst for proton exchange membrane fuel cells**

Andersen, S. M. & Larsen, M. J., 15. Apr 2017, In: Journal of Electroanalytical Chemistry. 791, p. 175–184

**Genuine electrodes Morphology Studies with Helium Ion Microscopy (HIM) for Proton Exchange Membrane Fuel Cells (PEMFCs)**

Andersen, S. M. & Chiriaev, S., 2017.

**Helium Ion Microscopy of proton exchange membrane fuel cell electrode structures**

Chiriaev, S., Dam Madsen, N., Rubahn, H-G. & Andersen, S. M., 2017, In: A I M S Materials Science. 4, 6, p. 1289-1304

**Improved Durability of Proton Exchange Membrane Fuel Cells by Introducing Sn (IV) Oxide into Electrodes using an Ion Exchange Method**

Gildsig Poulsen, M., Larsen, M. J. & Andersen, S. M., 2017, In: Journal of Power Sources. 343, p. 174-182

**Strengthen electrode interface structure for proton exchange membrane fuel cells**

Gildsig Poulsen, M., Larsen, M. J. & Andersen, S. M., 2017.

**Tungsten Carbide Support Materials for the Hydrogen Evolution Reaction Produced by the Self-Propagating High-Temperature Synthesis Method**

Gildsig Poulsen, M. & Andersen, S. M., 2017.

**Nano carbon supported platinum catalyst interaction behavior with perfluorosulfonic acid ionomer and their interface structures**

Andersen, S. M., 1. Feb 2016, In: Applied Catalysis B: Environmental. 181, p. 146-155

**Interface contribution to the electrode performance of proton exchange membrane fuel cells - Impact of the ionomer: Impact of the Ionomer Content**

Andersen, S. M. & Grahl-Madsen, L., 21. Jan 2016, In: International Journal of Hydrogen Energy. 41, 3, p. 1892-1901

**IMPROVED UNDERSTANDING ON ELECTRODE INTERFACE STRUCTURE**

Andersen, S. M., 2016.

**Importance of Electrode Hot-Pressing Conditions for the Catalyst Performance of Proton Exchange Membrane Fuel Cells**

Andersen, S. M., Dhiman, R., Larsen, M. J. & Skou, E. M., Aug 2015, In: Applied Catalysis B: Environmental. 172-173, p. 82-90

**Chemistry of carbon polymer composite electrode - An X-ray photoelectron spectroscopy study**

Andersen, S. M., Dhiman, R. & Skou, E. M., 15. Jan 2015, In: Journal of Power Sources. 274, January, p. 1217-1223 7 p.

**Activity and stability studies of platinized multi-walled carbon nanotubes as fuel cell electrocatalysts**

Stamatin, S. N., Borghei, M., Dhiman, R., Andersen, S. M., Ruiz, V., Kauppinen, E. & Skou, E. M., 2015, In: Applied Catalysis B: Environmental. 162, January, p. 289-299 11 p.

**The Importance of Ion Selectivity of Perfluorinated Sulfonic Acid Membrane for the Performance of Proton Exchange Membrane Fuel Cells**

Andersen, S. M., 2015, In: Journal of Fuel Cell Science and Technology. 12, 6, 7 p., 061010.

**Tin Dioxide as an Effective Antioxidant for Proton Exchange Membrane Fuel Cells**

Andersen, S. M., Nørgaard, C. F., Larsen, M. J. & Skou, E. M., 2015, In: Journal of Power Sources. 273, January, p. 158-161

**X-ray Photoelectron Spectroscopy Investigation on Electrochemical Degradation of Proton Exchange Membrane Fuel Cell Electrodes**

Andersen, S. M., Dhiman, R. & Skou, E. M., 2015, In: Journal of Power Sources. 282, p. 87-94

**Electrochemical performance and durability of carbon supported Pt catalyst in contact with aqueous and polymeric proton conductors**

Andersen, S. M. & Skou, E. M., 8. Oct 2014, In: A C S Applied Materials and Interfaces. 6, 19, p. 16565-16576

**Influence of different carbon nanostructures on the electrocatalytic activity and stability of Pt supported electrocatalysts**

Stamatin, S. N., Borghei, M., Andersen, S. M., Veltzé, S., Ruiz, V., Kauppinen, E. & Skou, E. M., 27. May 2014, In: International Journal of Hydrogen Energy. 39, 16, p. 8215-8224

**Adsorption behavior of perfluorinated sulfonic acid ionomer on highly graphitized carbon nanofibers and their thermal stabilities**

Andersen, S. M., Borghei, M., Dhiman, R., Ruiz, V., Kauppinen, E. & Skou, E. M., 28. Apr 2014, In: The Journal of Physical Chemistry Part C. 118, 20, p. 10814–10823 10 p.

**Interaction of multi-walled carbon nanotubes with perfluorinated sulfonic acid ionomers and surface treatment studies**

Andersen, S. M., Dhiman, R., Borghei, M., Jiang, H., Ruiz, V., Kauppinen, E. & Skou, E. M., 2014, In: Carbon. 71, p. 218–228

**The interaction effect between Pt and NbO<sub>2</sub> support with enhanced stability in PEMFC**

Stamatin, S. N., Andersen, S. M. & Skou, E. M., 2014.

**Oxygen reduction and methanol oxidation behaviour of SiC based Pt nanocatalysts for proton exchange membrane fuel cells**

Dhiman, R., Stamatin, S. N., Andersen, S. M., Morgen, P. & Skou, E. M., 16. Oct 2013, In: Journal of Materials Chemistry. 1, 48, p. 15509-15516 8 p.

**SiC nanocrystals as Pt catalyst supports for fuel cell applications**

Dhiman, R., Johnson, E., Skou, E. M., Morgen, P. & Andersen, S. M., 18. Mar 2013, In: Journal of Materials Chemistry A. 1, 19, p. 6030-6036 7 p.

**Durability of Carbon Nanofiber (CNF) & Carbon Nanotube (CNT) as Catalyst Support for Proton Exchange Membrane Fuel Cells**

Andersen, S. M., Borghei, M., Lund, P., Elina, Y-R., Pasanen, A., Kauppinen, E., Ruiz, V., Kauranen, P. & Skou, E. M., 2013, In: Solid State Ionics. 231, p. 94-101

**Interaction between Nafion ionomer and noble metal catalyst for PEMFCs**

Andersen, S. M., 12. Oct 2012.

**Electrochemical recovery of platinum from PEM fuel cell electrodes**

Nørgaard, C. F., Larsen, M. J., Andersen, S. M. & Skou, E. M., 22. Jun 2012.

**Public Pedagogical Portfolio**

Andersen, S. M., 20. Jan 2012, Syddansk Universitet. Institut for kemi-, bio- og miljøteknologi. 22 p.

**Nafion degradation in DMFC due to contamination**

Andersen, S. M., 6. Oct 2011.

**Modified carbon nanofiber and nanotube as alternative catalyst support for PEMFCs**

Andersen, S. M., 14. Sep 2011.

**Activation of Engineering Students with Clickers**

Andersen, S. M., 19. Jul 2011. 1 p.

**Degradation of Nafion due to contamination from Swelling-Dehydration Cycles**

Andersen, S. M., Morgen, P. & Skou, E. M., 3. Jul 2011.

**CNF & CNT supported catalyst for Proton Exchange Membrane Fuel Cells**

Andersen, S. M., Lund, P., Elina, Y-R., Pasanen, A., Kauranen, P. & Skou, E. M., 12. Jun 2011.

**Activation of Students with Various Teaching Methods**

Andersen, S. M., 9. May 2011. 1 p.

**Graphitised Carbon Nanofibres as Catalyst Support for PEMFC**

Yli-Rantala, E., Pasanen, A., Kauranen, P., Ruiz, V., Borghei, M., Kauppinen, E., Oyarce, A., Lindbergh, G., Lagergren, C., Darab, M., Sunde, S., Thomassen, M., Ma-Andersen, S., Andersen, S. M. & Skou, E., 2011, In: Fuel Cells. 11, 6, p. 715-725 11 p.

**Studies on PEM fuel cell noble metal catalyst dissolution**

Andersen, S. M., Grahl-Madsen, L. & Skou, E. M., 2011, In: Solid State Ionics. 192, 1, p. 602-606 5 p.

**Degradation and contamination of perfluorinated sulfonic acid membrane due to swelling-dehydration cycles**

Andersen, S. M., Morgen, P. & Skou, E. M., 30. Sep 2010.

**Wetting properties of Proton Exchange Membrane Fuel Cell electrodes**

Andersen, S. M. & Skou, E. M., 2009.

**Microscopy studies on proton exchange membrane fuel cell electrodes with different ionomer contents**

Ma, S., Solterbeck, C. H., Odgaard, M. & Skou, E. M., 2009, In: Applied Physics A. 96, 3, p. 581-589

**Platinum Porous Electrodes for Fuel Cells: with focus on Proton Exchange Membrane Fuel Cells (PEMFCs)**

Andersen, S. M., 2009, Odense: Verlag Dr. Müller. 208 p.

**Porgress on PEMFC noble metal catalyst dissolution**

Andersen, S. M. & Skou, E. M., 2009.

**Studies on PEM Fuel Cell Noble Metal Catalyst Dissolution**

Ma, S. & Skou, E. M., 2009.

**Characterizing Carbon Nanotube Supported Platinum Catalyst by Electrochemistry**

Veltzé, S., Andersen, S. M. & Skou, E. M., 2008. 1 p.

**PEM Fuel Cell Catalyst and Carbon Durability**

Ma, S., 2008.

**PEMFC Durability Issues**

Ma, S., 2008.

**<sup>19</sup>F-NMR Studies of Nafion<sup>TM</sup> ionomer Adsorption on PEMFC Catalysts and Supporting Carbons**

Ma, S. & Skou, E. M., 2007.

#### **19F NMR studies of Nafion™ ionomer adsorption on PEMFC catalysts and supporting carbons**

Ma, S., Chen, Q., Jørgensen, F., Stein, P. C. & Skou, E. M., 2007, In: Solid State Ionics. 178, 29-30, p. 1568-1575

#### **CO<sub>2</sub> permeability in Nafion EW1100 at elevated temperature**

Ma, S. & Skou, E. M., 2007, In: Solid State Ionics. 178, 7-10, p. 615-619 5 p.

#### **Investigations on Platinum Porous Electrodes for Proton Exchange Membrane Fuel Cells (PEMFCs)**

Andersen, S. M., 2007

#### **Microscopy study on proton exchange membrane fuel cell electrodes with different ionomer content**

Ma, S. & Skou, E. M., 2007.

#### **CO<sub>2</sub> Permeability in Nafion® EW1100 at Elevated Temperature**

Ma, S. & Skou, E. M., 2006.

#### **Novel method of Proton Exchange Membrane Fuel Cell catalyst characterization**

Ma, S. & Skou, E. M., 2006.

#### **Carbon dioxide permeability of proton exchange membranes for fuel cells**

Andersen, S. M., Odgaard, M. & Skou, E., 2005, In: Solid State Ionics. 176, 39-40, p. 2923-2927

#### **Investigation on Platinum Catalyst Utilization in Porous Electrodes of MEA for PEMFCs**

Ma, S. & Skou, E. M., 2005.

#### **Gas Permeability of PEMs for Fuel cells**

Ma, S. & Skou, E. M., 2004.

## **Activities**

#### **Study of the catalyst/ionomer interface in PEMFC electrodes through quantification of the degradation mechanisms during an accelerated stress test**

Raghunandan Sharma (Speaker) & Shuang Ma Andersen (Other)

31. Oct 2019 → 1. Nov 2019

#### **Internal Examiner (censor) Individuel studieaktivitet: Genvinding og oprensning af ædelmetaller fra katalysatorer fra tunge køretøjer - i samarbejde med Landson Emission Technologies A/S**

Knud Villy Christensen (Censor) & Shuang Ma Andersen (Examiner)

21. Jun 2018

#### **Internal Examiner (censor) bachelor project: Analysis of the filtration of platinum nanoparticles dissolved in hydrochloric acid**

Knud Villy Christensen (Censor) & Shuang Ma Andersen (Examiner)

6. Jun 2018

#### **7th International Colloids Conference**

Shuang Ma Andersen (Participant)

18. Jun 2017 → 21. Jun 2017

#### **First International Conference on Electrolysis**

Shuang Ma Andersen (Participant)

12. Jun 2017 → 15. Jun 2017

**Danscatt annual meeting 2017**

Shuang Ma Andersen (Participant)

1. Jun 2017 → 2. Jun 2017

**6Th International Conference on Fuel Cell & Hydrogen Technology**

Shuang Ma Andersen (Participant)

11. Apr 2017 → 13. Apr 2017

**Engineering programmes in Chemical Engineering and Biotechnology**

Shuang Ma Andersen (Guest lecturer)

10. Apr 2017

**Den danske brint- og brændselscelledag 2016**

Shuang Ma Andersen (Organizer)

10. Nov 2016

**2016 Annual Meeting of the Danish Electrochemical Society**

Shuang Ma Andersen (Participant)

23. Oct 2016 → 24. Oct 2016

**Progress on Modificatin of Electrode Interface Structure in Proton Exchange Membrane Fuel cells (PEMFCs)**

Shuang Ma Andersen (Speaker)

9. Jun 2016

**DanScatt annual meeting 2016**

Shuang Ma Andersen (Participant)

26. May 2016 → 27. May 2016

**International Society of Electrochemistry**

Shuang Ma Andersen (Participant)

31. Aug 2014 → 5. Sep 2014

**School of physics and engineering**

Shuang Ma Andersen (Visiting researcher)

16. Mar 2014 → 19. Mar 2014

**Electrochemical Conference on Energy & the Environment**

Shuang Ma Andersen (Participant)

13. Mar 2014 → 16. Mar 2014

**BIT's 4th Annual Global Congress of Catalysis**

Shuang Ma Andersen (Speaker)

30. Jun 2013

**Physical Chemistry Atkins 9th edition (3 chapters) (Journal)**

Shuang Ma Andersen (Peer reviewer)

13. Nov 2012

**Medlemskab af Partnerskabet for brint og brændselsceller (External organisation)**

Shuang Ma Andersen (Member)

9. Nov 2012

**Communication with publisher (Oxford) - regarding to the teaching book Physical Chemistry Atkins**

Shuang Ma Andersen (Guest lecturer)

5. Nov 2012



**Interactions between Nafion® ionomer and catalyst / support materials**

Shuang Ma Andersen (Speaker)

12. Oct 2012

**36th International Conference on Improving University Teaching**

Shuang Ma Andersen (Participant)

19. Jul 2011 → 21. Jul 2011

**Pedagogical conference, improving university teaching**

Shuang Ma Andersen (Participant)

19. Jul 2011 → 22. Jul 2011

**Solid State Ionic Conference - 18**

Shuang Ma Andersen (Participant)

3. Jul 2011 → 8. Jul 2011

**Workshop and summer school in connection with NanoduraMEA project**

Shuang Ma Andersen (Participant)

12. Jun 2011

**Solid State Ionics (Journal)**

Shuang Ma Andersen (Peer reviewer)

27. May 2011

**Adjunkt pædagogikum**

Shuang Ma Andersen (Participant)

9. May 2011

**Journal of Physics and Chemistry of Solids (Journal)**

Shuang Ma Andersen (Peer reviewer)

7. Feb 2011

**Dansk Elektrokemisk Forenings Årsmøde**

Shuang Ma Andersen (Participant)

30. Sep 2010 → 1. Oct 2010

**University of Applied Sciences Kiel**

Shuang Ma Andersen (Visiting researcher)

26. Jul 2010 → 27. Jul 2010

**Nanoduramea summer school**

Shuang Ma Andersen (Participant)

22. Jun 2010 → 24. Jun 2010

**Solid State Ionics (Journal)**

Shuang Ma Andersen (Peer reviewer)

3. Jan 2010

**Solid State Ionics (Journal)**

Shuang Ma Andersen (Peer reviewer)

4. Nov 2009

**Electrochemical Science and Technology 2009**

Shuang Ma Andersen (Participant)

1. Oct 2009 → 2. Oct 2009

**Smart material # 3**

Shuang Ma Andersen (Participant)

18. Aug 2009 → 21. Aug 2009

**Solid State Ionics - 17**

Shuang Ma Andersen (Participant)

27. Jun 2009 → 5. Jul 2009

**Nanoduramea 2009**

Shuang Ma Andersen (Participant)

7. Jun 2009 → 9. Jun 2009

**University of Southern Denmark**

Shuang Ma Andersen (Visiting researcher)

25. May 2009

**Udlands studerende udvikling**

Shuang Ma Andersen (Participant)

5. Apr 2009 → 9. Apr 2009

**Electrochemical Science and Technology 2008**

Shuang Ma Andersen (Participant)

2. Oct 2008 → 3. Oct 2008

**14<sup>th</sup> International Conference on Solid State Protonic Conductors**

Shuang Ma Andersen (Participant)

7. Sep 2008 → 11. Sep 2008

**Fuel Cells Norfa Workshop: New Materials and Technologies for Low Temperature Fuel Cells 2008**

Shuang Ma Andersen (Participant)

13. Aug 2008 → 16. Aug 2008

**Summer school: Carbon nanotubes and nanofibers**

Shuang Ma Andersen (Participant)

11. Aug 2008 → 12. Aug 2008

**Electrochemical Science and Technology 2007**

Shuang Ma Andersen (Participant)

4. Oct 2007 → 5. Oct 2007

**Fuel Cell Durability**

Shuang Ma Andersen (Participant)

19. Sep 2007 → 21. Sep 2007

**2<sup>nd</sup> Smart Materials & Structures**

Shuang Ma Andersen (Participant)

29. Aug 2007 → 31. Aug 2007

**Solid State Ionics - 16 (SSI-16)**

Shuang Ma Andersen (Participant)

1. Jul 2007 → 7. Jul 2007

**University of Southern Denmark**

Shuang Ma Andersen (Visiting researcher)  
2. Apr 2007 → 27. Apr 2007

**Advances in Materials for Proton Exchange Membrane Fuel Cell Systems 2007**

Shuang Ma Andersen (Participant)  
18. Feb 2007 → 21. Feb 2007

**University of Applied Sciences Upper Austria**

Shuang Ma Andersen (Visiting researcher)  
5. Feb 2007 → 9. Feb 2007

**University of Southern Denmark**

Shuang Ma Andersen (Visiting researcher)  
13. Nov 2006 → 12. Dec 2006

**Electrochemical Science and Technology 2006**

Shuang Ma Andersen (Participant)  
5. Oct 2006 → 6. Oct 2006

**Nodic PEMFC 06**

Shuang Ma Andersen (Participant)  
25. Sep 2006 → 27. Sep 2006

**Solid State Protonic Conductor - 13 (SSPC-13)**

Shuang Ma Andersen (Participant)  
4. Sep 2006 → 6. Sep 2006

**Impedance Day 2006**

Shuang Ma Andersen (Participant)  
29. Mar 2006 → 31. Mar 2006

**University of Applied Sciences Upper Austria**

Shuang Ma Andersen (Visiting researcher)  
6. Mar 2006 → 11. Mar 2006

**Nordic Hydrogen Seminar 2006**

Shuang Ma Andersen (Participant)  
6. Feb 2006 → 9. Feb 2006

**Energy Camp 05**

Shuang Ma Andersen (Participant)  
23. Nov 2005 → 24. Nov 2005

**Fuel Cells Norfa Workshop: New Materials and Technologies for Low Temperature Fuel Cells 2005**

Shuang Ma Andersen (Participant)  
30. Aug 2005 → 4. Sep 2005

**Summer School: Hands-On Nano-Technology 2005**

Shuang Ma Andersen (Participant)  
25. Jul 2005 → 19. Aug 2005

**Electrochemistry Summer School 2005**

Shuang Ma Andersen (Participant)

25. Jun 2005 → 1. Jul 2005

**Advances in Materials for Proton Exchange Membrane Fuel Cell Systems 2005**

Shuang Ma Andersen (Participant)

20. Feb 2005 → 23. Feb 2005

**Solid State Protonic Conductor - 12 (SSPC-12)**

Shuang Ma Andersen (Participant)

15. Aug 2004 → 19. Aug 2004

**Fuel Cells Norfa Workshop: New Materials and Technologies for Low Temperature Fuel Cells 2004**

Shuang Ma Andersen (Participant)

12. Aug 2004 → 15. Aug 2004