

Wednesday, June 1

HydEM 2016

Hydrides as Energy Materials

Aarhus University, Denmark



CARLSBERGFONDET



Hidden Isochema
Advancing Sorption Analysis

Auditorium I (1514-213)
Department of Chemistry
Aarhus University

www.hydem2016.au.dk

12:00 LUNCH

Session 1: Energy

Chair: Torben Jensen

13:30 **Welcome**

13:40 **Andreas Züttel** – *From Renewable Energy to Hydrogen and Synfuels*

14:20 **Jens Oluf Jensen** – *Can we Replace Platinum Metals in PEM Fuel Cells and Electrolyzers?*

15:00 **Craig Buckley** – *High Temperature Metal Hydrides for Concentrated Solar Thermal Energy Storage*

15:30 **Puru Jena** – *Complex Hydrides – Multifunctional Materials for Energy Storage and Conversion*

16:00 COFFEE

Session 2: Energy Applications

Chair: Craig Buckley

16:30 **Petra de Jongh** – *The Stability of Supported Transition Metal Catalysts for Synthesis Gas Conversion*

17:10 **Andrea Mazzucco** – *HYSDEP: A Simulation and Design Tool for On-Board Hydrogen Storage*

17:30 **Marek Polanski** – *Size Does Matter. Hydrogen Hybrid Car Project.*

18:00 **Amelia Montone** – *Magnesium Nanocomposites for Innovative Hydrogen Storage*

18:20 BREAK

18:30 **Panel Discussion**

19:00 DINNER

20:30 **Poster Session**

Thursday, June 2

Session 3: Metal Hydrides

Chair: Mark Paskevicius

8:30 **Etsuo Akiba** – *Metal Hydrides: Fundamentals and Application of Interstitial Hydrides*

9:00 **Volodymyr Yartys** – *Metal-Hydrogen Systems at High H₂ Pressures: New Materials and Metal Hydride Compressors*

9:30 **Fermin Cuevas** – *Mechanochemical Synthesis of Hydrides*

10:00 COFFEE

Session 4: Hydrides for Batteries

Chair: Dorthe Ravnsbæk

10:30 **Shin-ichi Orimo** – *Complex Hydrides as Advanced Battery Materials*

11:10 **Tejs Vegge** – *Integrated Computational and Experimental Design of Next-Generation Battery Materials*

11:40 **Angelina Gigante** – *Novel Ionic Conductors: Synthetic Approaches to Boranate Ionic Liquids (BILs)*

12:00 **Michel Latroche** – *Advanced Metal Hydrides for Battery Applications*

12:30 LUNCH

Session 5: Complex Metal Hydrides

Chair: Hai-wen Li

14:00 **Martin Dornheim** – *Development, Utilization and Future Prospects of Reactive Hydride Composites for Hydrogen Storage*

14:30 **Arndt Remhof** – *Novel Complex Hydrides for Energy Storage and Conversion*

15:00 **Jose R. Ares** – *Tribochemical Decomposition of Light Hydrides*

15:20 **Drew Sheppard** – *Thermodynamic Difference Rules Applied to Complex Hydrides*

15:40 **Marcello Baricco** – *Assessment of Thermodynamic Properties of Hydrides*

16:10 COFFEE & GROUP PHOTO

Session 6: Light Element Hydrides

Chair: Morten Ley

16:40 **Radovan Černý** – *Crystal Chemistry of Metal Borohydrides*

17:10 **Yaroslav Filinchuk** – *From Light to Complex: Twists and Turns in the Research on Light Complex Hydrides*

17:40 **Michael Felderhoff** – *Amino Alanes – Possible New Materials for Hydrogen Storage*

18:10 BREAK

18:20 **Panel Discussion**

18:50 DINNER

20:30 **Poster Session**

Friday, June 3

Session 7: Characterisation

Chair: Yaroslav Filinchuk

8:30 **Bjørn Hauback** – *Structural Characterization of Metal Hydrides using Diffraction Methods*

9:00 **Christoph Langhammer** – *Sensing Hydrogen with (Single) Nanoparticles*

9:30 **Luca Pasquini** – *Hydrogen Storage in Nanostructured Metal Hydrides*

10:00 COFFEE

Session 8: Characterisation

Chair: Petra de Jongh

10:30 **Darren Broom** – *Characterisation of the Hydrogen Sorption Properties of Metal Hydrides*

11:00 **Hans Hagemann** – *Relating Structure and Spectroscopic Properties of Borohydride Species from BH₄⁻ to B₁₂H₁₂²⁻*

11:30 **Daniel Reed** – *Raman Studies on Hydrides*

11:50 **Sabrina Sartori** – *Nanoscale Phenomena Studied in Real-Time: The Role of Small-Angle Scattering*

12:10 **Jim Webb** – *Magnesium Hydride: Modifications and Enhancements for Hydrogen Storage*

12:40 LUNCH

Session 9: Physisorption and New Properties

Chair: Arndt Remhof

14:00 **Michael Hirscher** – *Hydrogen Storage in Porous Materials, Current Status and Future Challenges*

14:30 **Petra Szilágyi** – *Hydrogen Storage in Metal-Organic Frameworks: A Chemical Perspective*

14:50 **Giacomo Magnani** – *Fullerides as a New Promising Material for Hydrogen Storage*

15:10 **Irina Petrushina** – *Corrosion Study of Stainless Steels as Construction Materials for Ionic Liquid Hydrogen Compressor*

15:30 **Martin Sahlberg** – *Metal Hydrides in Magnetism*

16:00 COFFEE

Session 10: Interesting Properties

Chair: Radovan Černý

16:30 **Didier Blanchard** – *Solid-State Lithium-Sulfur Batteries Based on Nano-Confined LiBH₄*

17:00 **Morten Brix Ley** – *Synthesis of Complex Aluminium and Boron Hydrides*

17:30 **Hai-wen Li** – *Gain New Directions of Metal Borohydrides through Restudying Old Materials*

18:00 **Mark Paskevicius** – *New Directions for Higher Boranes*

18:30 **Closing Remarks**

18:40 DINNER

20:30 **Scientific Discussions (at the bar)**