

Nordic Conference on Ceramic and Glass Technology

6-7 December 2012, Risø Campus, Technical University of Denmark, Roskilde

CONFERENCE PROGRAMME

Wednesday 5th December

18:00 - **Registration**
19:00 *The lobby, Hotel Prindsen, Roskilde*

Thursday 6th December

08:00 **Registration** and coffee
Hall in front of Niels Bohr Auditorium

08:45 **Welcome**
Niels Bohr Auditorium

PLENARY SESSION I

Niels Bohr Auditorium

Chairman: Dr. Karsten Agersted, DTU

09:00 Chemically Induced Strain in Electroceramics
Prof. Tor GRANDE, NTNU, Trondheim (Invited speaker)

09:45 Dense Ceramic Membranes for Hydrogen Separation Prepared by Solid-State Reactive Sintering
Prof. Grover COORS, Coors Tech Inc. (Invited speaker)

10:30 **Morning break** (Coffee, tea)
Hall in front of Niels Bohr Auditorium

PLENARY SESSION II

Niels Bohr Auditorium

Chairman: Dr. Francis CAMBIER, Belgian Ceramic Research Centre

11:00 Dissolution Studies of Borate Glasses
Prof. Richard BROW, Missouri University of Science and Technology (Invited speaker)

11:45 Characterization of Silicon Nitride using Advanced Thermal Analysis Methods
Dr. Jürgen BLUMM, Netzsch GmbH (Invited speaker)

12:30 **Lunch, Exhibition and Poster session**
Hall in front of Niels Bohr Auditorium

MEMBRANE TRANSPORT PROPERTIES

Niels Bohr Auditorium

Chairman: Prof. Mogens Mogensen, DTU

13:30 Defect thermodynamics and transport in $\text{Ce}_{0.8}\text{Pr}_x\text{Tb}_{0.2-x}\text{O}_{2-\delta}$ and use of ceria in oxygen permeation membranes
Dr. Christodoulos CHATZICHRISTODOULOU, DTU, (Invited speaker)

14:15 Hydrogen permeable asymmetric $\text{La}_{28-x}\text{W}_{4+x}\text{O}_{54+3x/2}$ membranes
Dr. Vanesa GIL, DTU

14:35 Lanthanum strontium ferrites as MIEC membranes - Effect of B-site substitution on stability and transport properties
Mr. Ørjan F. LOHNE, NTNU, Trondheim

15:00 **Afternoon break** (Coffee, tea)
Hall in front of Niels Bohr Auditorium

GLASS SCIENCE AND STRUCTURE

HH Koch Auditorium

Chairman: Dr. Morten M. Smedskjær, AAU

13:30 "Simple"- glass-forming liquids
Dr. Kristine NISS, DNR center, RUC

13:50 Can liquids in nano-confinement be simple?
Mr. Trond INGEBRIGTSEN, NSM, RUC

14:10 Structural Dependence of Physical Properties in Sodium Boroaluminosilicate Glasses
Dr. Quiju ZHENG, AAU

14:30 Single-Side Ion Exchange Strengthening of Holed Float Glass
Dr. Stefan KARLSSON, Linnaeus University

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Thursday 6th December (afternoon)

FILTER AND MEMBRANE DEVELOPMENT		DISPERSION AND COLLOIDAL CHEMISTRY	
<i>Niels Bohr Auditorium</i>		<i>HH Koch Auditorium</i>	
Chairman: Dr. Christodoulos CHATZICHRISTODOULOU		Chairman: Prof. Lennart Bergström, Stockholm University	
15:30	Ceramic based water filters for bacteria and virus filtration Dr. Thomas GRAULE, EMPA (Invited speaker)	15:30	Sol-gel co-assembly as an alternative method for deposition of ceramic 3D ordered macroporous coatings and polymer/ceramic hybrid coatings, Dr. Roman KUBRIN, TUHH
16:10	Fabrication and tailoring of porous metal membranes by tape casting Dr. Åsa PERSSON, DTU	16:00	Shaping of hierarchically porous monoliths by freeze-casting of zeolites, Mr. Arto OJUVA, Stockholm University
16:30	Development of nano-porous TiO ₂ and SiC membranes for membrane filtration Dr. Katja KÖNIG, AAU	16:20	High-performance porous zirconia nano-ceramics with hierarchical heterogeneities Dr. Andraz KOCJAN, Stockholm University
17:00	Transfer to Roskilde		
18:00	Guided tour in Roskilde Cathedral		
19:00	Conference dinner in "Golden age Hall" Hotel Prindsen, Roskilde		

The organisers gratefully acknowledge support for student participation in this conference:

Student contests have been sponsored by JECS Trust fund

The Trust enables ECerS to engage in a broader range of activities than possible for the benefit of the membership, strengthens research and teaching in Europe within the subject of ceramic and builds on the strong position of the Journal of the European Ceramic Society.



Student conference fee has been sponsored by Christian og Anny Wendelbo's fund.

The Fund supports activities focused on scientific research, development and implementation of energy-related technologies, primarily taking place at RISØ Campus, and including conferences, publications and visiting scientists.



Publication of selected papers from the conference in "Advances in Applied Ceramics" has been supported by the Materials Science & Engineering Collection at Maney Publishing, UK.

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Friday 7th December

PLENARY SESSION III	
<i>Niels Bohr Auditorium</i>	
<i>Chairman: Prof. Tor Grande, NTNU</i>	
09:00	Processing Porous Powders into Hierarchically Porous Macroscopic Adsorbents for Gas separation Prof. Lennart BERGSTRÖM, Stockholm University (Invited speaker)
09:30	Technical ceramics for advanced applications Dr. Alexander HEIDMANN, Friatech AG (Invited speaker)
10:00	From the nano- to the macro-scale - Mechanical properties of hierarchically structured biological and biomimetic materials with high ceramic content Prof. Gerold SCHNEIDER, TU-Harburg (Invited speaker)
10:30	Morning break (Coffee, tea) <i>Hall in front of Niels Bohr Auditorium</i>
FORMING AND FIRING CERAMICS	GLASS SCIENCE AND STRUCTURE
<i>Niels Bohr Auditorium</i>	<i>HH Koch Auditorium</i>
<i>Chairman: Dr. Thomas GRAULE, EMPA</i>	<i>Chairman: Dr. Kristine NIS, RUC</i>
11:00	11:00
Laser green shape milling of complex shaped ceramic parts: the Evomill process Dr. Francis CAMBIER, BCRC (Invited speaker)	Predicting the Viscosity of Multicomponent Glass-Forming Liquids Dr. Morten M. SMEDSKJÆR, AAU
11:30	11:30
Processing of asymmetric membranes for oxygen gas separation Dr. Jonas GURAUSKIS, NTNU Trondheim	Complex mechanical moduli of a supercooled liquid measured over 14 decades in frequency Dr. Tina HECKSHER, RUC
11:50	11:50
In-situ techniques for investigation of the role of sintering aids on the preparation of Ce _{0.9} Gd _{0.1} O _{1.95} multi-layer membranes Dr. Andreas KAISER, DTU	Experimental methods for measuring on viscoelastic glass-forming liquids Dr. Bo JAKOBSEN, RUC
12:10	Lunch, Exhibition and poster session <i>Hall in front of Niels Bohr Auditorium</i>
MATERIALS FOR ENERGY STORAGE AND CONVERSION	GLASS MATERIALS AND APPLICATION
<i>Niels Bohr Auditorium</i>	<i>HH Koch Auditorium</i>
<i>Chairman: Prof. Grover COORS, CoorsTech Inc.</i>	<i>Chairman: Dr. Richard BROW, Missouri University for Science and Technology</i>
13:00	13:00
Upscaling the synthesis of Li-ion battery cathode materials: Critical to getting EVs on the road Prof. Josh THOMAS, Upsala University (Invited speaker)	Bioactive glasses - from bone grafting to tissue engineering Dr. Lena HUPA, Åbo Akademi
13:30	13:20
Thermal analysis in the development of Li-ion battery materials Dr. Søren DAHL, Haldor Topsøe A/S	Optimized Synthesis of Foam Glass from Recycled CRT Panel Glass Mr. Rasmus R- PETERSEN, AAU
14:00	13:40
Preparation of Stable Pt-Clay Nanocatalysts for Self-humidifying Proton Exchange Membrane Fuel Cells Dr. Zhang WENJING, DTU	Foaming of waste cathode ray tube panel glass via CaCO ₃ Dr. Jakob KÖNIG, AAU
14:20	14:00
Fabrication and Characterization of Proton Conducting Phosphate Electrolytes for Intermediate Temperature Fuel Cell Assembling Ms. Annemette H. JENSEN, DTU	Glass fiber transporting daylight into our homes Dr. Christina STÅLHANDSKE, GLAFO
14:40	14:20
Afternoon break (Coffee, tea) and student competition awards <i>Hall in front of Niels Bohr Auditorium</i>	Functional Ceramic and Glass Materials in Solid Oxide Fuel Cells – An overview about state-of-the-art technology and current challenges Dr. Wolff-Ragnar KIEBACH, DTU
15:30	
Guided tour in the ceramic laboratory facilities at ERS, RISØ campus <i>Building 227, DTU, RISØ campus</i>	
17:00	
Departure	