KIFEE Symposium
Trondheim, Norway - September 22-23, 2015
Session Program for Electrolysis Systems and Advanced Inorganic Materials

Tuesday September 22 - Nanovrimle		
Joint Session I **Chairs: Koji Amezawa and Mari-Ann Einarsrud**		
9:00 – 9:20	***Toshiyuki Nohira, Kyoto University*** "A New Electrodeposition Process of Crystalline Silicon Film Using Water-soluble KF-KCl Molten Salt"	
9:20 – 9:40	***Olena Zavorotynska, Institute for Energy Technology*** "Hydrogen storage materials	
9:40 – 10:00	***Tetsuo Sakka, Kyoto University,*** "Electrodeposition of thin metal film at an oil-water interface: Behavior of microspherical particles dispersed at the interface"	
10:00 – 10:20	***Sverre Magnus Selbach, Department of Materials Science and Engineering, NTNU*** "DFT electronic structure simulations of new oxide materials for energy technology"	
10:20 – 10:40	**Coffee break**	
Joint Session II **Chairs: Tetsuo Sakka and Ann Mari Svensson**		
10:40 – 11:00	***Signe Kjelstrup, Department of Chemistry, NTNU*** "Thermoelectric cells with molten carbonate electrolytes"	
11:00 – 11:20	***Hiroshi Inoue, Osaka Prefecture University,*** "Development of Highly Active Electrocatalysts for Glycerol Oxidation Reaction"	
11:20 – 11:40	***Steffen Møller-Holst, SINTEF Materials and Chemistry*** "Large scale export of hydrogen from Norway to Japan - Results from a recent feasibility study"	
11:40 – 12:00	***Hiroshi Ito, AIST*** "System evaluation of unitized reversible fuel cells"	
12:00–12:50	**Lunch**	
Parallel sessions		
	Electrolysis Systems I Chairs: Hiroshi Inoue and Frode Seland	**Advanced Inorganic Materials I** Chairs: Yasushige Mori and Kjell Wiik
12:50 – 13:10	***Tommy Mokkelbost, SINTEF Materials and Chemistry,*** "Aluminium electrolysis by using methane gas anode"	***Hilde Lea Lein, Department of Materials Science and Engineering, NTNU*** "Coatings for anti-icing applications"

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13:10 – 13:30	***Kouji Yasuda, Kyoto University*** "Electrolytic Reduction of SiO2 on Liquid Zn Cathode in Molten Salt toward Solar-grade Silicon Production"	***Yuta Kimura, Tohoku University*** "What determines the reaction distribution in LiCoO2 composite cathode for Li ion batteries? Answers from operando 2D-XAS measurements "
13:30 – 13:50	***Junli Xu, Department of Materials Science and Engineering, NTNU*** "Electrodepositon of Mg-based alloys at low temperature"	***Mali H. Rosnes, Department of Chemistry, University of Bergen*** "Inorganic-organic nanoporous materials for application in gas processes"
13:50 – 14:10	***Naoya Nishi, Kyoto University*** "Electrochemical formation of gold nanofibers at ionic liquid|water interface"	***Ryohei Yagi, The University of Tokyo*** "Development of New Recovery Process for Rhenium from Nickel-based Superalloy Scraps"
14:10 – 14:30	***Gurvinder Singh, Department of Materials Science and Engineering, NTNU*** "Design of Nanoporous Catalytic Nanoparticles and Their Electrochemical Activity"	***Carlos Bernuy-Lopez, Department of Materials Science and Engineering, NTNU*** "Ordering effects at operating temperatures of LaBaCo2O5+δ, a promising SOFC cathode"
14:30 – 14:50	**Coffee break**	
	Electrolysis Systems II Chair: Espen Sandnes	Advanced Inorganic Materials II Chair: Naoya Nishi and Fride Vullum-Bruer
14:50 – 15:10	***Thomas Holm, NTNU*** "FEM modelling of diffusional electrochemical impedance spectroscopy at a channel electrode"	***Xinchi Chen, Department of Materials Science and Engineering, NTNU*** "Novel cathode materials for Mg-ion batteries"
15:10 – 15:30	***Taiki Morishige, Kansai University*** "Effect of overpotential on metal fog formation during Li electrolysis in the eutectic LiCl-KCl melt"	***Muhammad Hasanuzzaman, Department of Materials Science and Engineering, NTNU*** "New silica based anodes combined with alginate binders for Li-ion batteries"
15:30 – 15:40	**Break**	

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Joint Session II **Chairs: Toshiyuki Nohira and Geir Martin Haarberg**		
15:40 – 16:30	Short presentations for posters (2 min each)	
	P1	***Belma Talic, Department of Materials Science and Engineering, NTNU*** "Protective coatings for solid oxide fuel cell interconnects - influence of coating density"
	P2	***Susanne Linn Skjærvø, Department of Materials Science and Engineering, NTNU*** “In situ studies of phase developments during synthesis of alkali niobates”
	P3	***Yuta Kimura, Tohoku University*** "The influence of ferroelastic domain reorientation on mechanical properties of La0.6Sr0.4Co0.2Fe0.8O3-δ"
	P4	***Temesgen Debelo Desissa, University of Oslo,*** "Interface properties at n/p junction of oxide thermoelectric materials"
	P5	***Katie Inzani, Department of Materials Science and Engineering, NTNU*** MoO3 as intermediate band material in solar cells
	P6	***Nikola Kanas, Department of Materials Science and Engineering, NTNU*** “Ceramics processing of all-oxide thermoelectric device”
	P7	***Sathya Singh, Department of Materials Science and Engineering, NTNU*** “Development of oxide n-conductors for thermoelectric devices”
	P8	***Geofrey Sahini Mtabazi, Department of Materials Science and Engineering, NTNU*** “Self-healing of dense oxygen permeable membranes”
	P9	***Mads Christensen, Department of Materials Science and Engineering, NTNU*** “Lead-free piezoelectric thin films by wet chemical deposition”
	P9	***Antoine Dalod, Department of Materials Science and Engineering, NTNU*** “Synthesis of in situ surface functionalized TiO2 nanoparticles with silane coupling
	P10	***Ayumu Matsumoto, Kyoto University*** "Underwater Laser-Induced Breakdown Spectroscopy Combined with Electrodeposition for Sensitive and Quantitative Elemental Analysis of Dissolved Metal Ions"
	P11	***Thomas Holm, Department of Materials Science and Engineering, NTNU*** "Electrochemical impedance spectroscopy at a downstream electrode: Spiral impedance"
	P12	***Ingrid Roten Mattson, Department of Materials Science and Engineering, NTNU*** "MnO2-carbon composite electrodes for supercapacitors"

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	P13	***Wojciech Gebarowski, Department of Materials Science and Engineering, NTNU*** "Electrochemically active area in relation to surface morphology of anodes in aluminium cells"
	P14	***Sigrid Lædre, Department of Materials Science and Engineering, NTNU*** "Bipolar plate for PEM systems"
	P15	***Babak Khalaghi, Department of Materials Science and Engineering, NTNU*** "Supplying of Methane through Porous Carbon Anodes during Aluminium Electrolysis"
	P16	***Peng Cui, Department of Materials Science and Engineering, NTNU*** "Current efficiency of aluminium electrolysis in a KF-AlF3 based electrolyte in laboratory cell"
	P17	***Wenting Xu, Department of Materials Science and Engineering, NTNU*** "DSA for oxygen evolution during copper electrowinning"
	P18	***Henrik Åsheim, Department of Materials Science and Engineering, NTNU*** "Partial anode effects during aluminium electrolysis"
	P19	***Seiji Katakura, Kyoto University*** "Electrode potential effect on the interfacial structures of a quaternary ammonium based ionic liquid: a molecular dynamics study"
	P20	***Akifumi Ido, Kyoto University*** "Impurity Segregation during Precipitation of Silicon from Liquid Si-Zn Alloy in Molten CaCl2"
	P21	***Kazumi Saeki, Kyoto University*** " Effects of Temperature on the Optimization of Electrodeposition of Crystalline Silicon Films in Water-soluble KF-KCl Molten Salt"
	P22	***R. Bock, NTNU and Sør Trøndelag University College*** “Thermal conductivities for PEMFC materials”
	P23	***F. Richter, NTNU*** “Li-ion secondary batteries and temperature management”
	P24	***O. S. Burheim, NTNU and Sør Trøndelag University College*** “Tsuper Capacitor Thermal Conductivity”
	P25	***B. Volseth, NTNU and Sør Trøndelag University College*** “Impact of Flow Patterns in Reverse Electrodialysis - RED”
	P26	***A. Zlotorowicz, NTNU and Sør Trøndelag University College*** “Determination of Water transference number in Reverse Electridialysis – RED”
16:30 – 18:00	Poster Session	
17:00	Co-chair meeting	

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Wednesday September 23 - Nanovrimle	
Joint Session III **Chairs: Hiroshi Inoue and Ana Maria Martinez**	
9:00 – 9:20	***Jonathan Pontus, SINTEF Materials and Chemistry*** "First-principles studies of ceramic interfaces in energy conversion devices"
9:20 – 9:40	***Yasuhiro Fukunaka, Waseda University*** "Electrochemical Nucleation & Growth"
9:40 – 10:00	***Ann Mari Svensson, NTNU*** "Effect of a Boron Based Anion Receptor on Graphite Anode in Li-ion Batteries"
10:00 – 10:20	***Ana Maria Martinez, SINTEF Materials and Chemistry*** "High Temperature Electrolysis Processes and Relevance for Rare Earth's Recycling"
10:20 - 10:40	***Kjell Wiik, Department of Materials Science and Engineering, NTNU*** "Oxide thermoelectric materials"
10:40 – 11:00	**Coffee break**
Joint session IV **Chair: Signe Kjelstrup**	
11:00 – 11:20	***Frode Seland, Department of Materials Science and Engineering, NTNU*** "Low temperature fuel cells – where are we going?"
11:20 – 11:40	***Koji Amezawa, Tohoku University*** "Experimental evaluation of reaction distribution in solid oxide fuel cell cathode"
11:40	**Lunch**