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TUESDAY, JUNE 30, 18:00 – 20:30

LOCATION – CANADIAN ROOM

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Dept. of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, Canada, T6G 2G6, CME 5-81

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<sup>1</sup>Department of Materials Science and Engineering, Korea University, Seoul, 136-713, Korea

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A.Utz<sup>1</sup>, H. Störmer<sup>2</sup>, D. Gerthsen<sup>2</sup>, A. Weber<sup>1</sup>, E. Ivers-Tiffée<sup>1</sup>

<sup>1</sup>Institut für Werkstoffe der Elektrotechnik (IWE), Universität Karlsruhe (TH); Adenauerring 20b, D-76131 Karlsruhe, Germany; <sup>2</sup>Laboratorium für Elektronenmikroskopie (LEM), Universität Karlsruhe (TH), Engesserstraße 7, D-76131 Karlsruhe, Germany

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Newcastle University, Newcastle upon Tyne, UK

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Jyun-Yi Jhuang, Cheng-Yen Hsieh, Kuan-Zong Fung

Department of Materials Science and Engineering, National Cheng Kung University, No.1, Ta-Hsueh Road, Tainan 70101, Taiwan, ROC

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Department of Materials Science and Engineering, University of Science and Technology of China (USTC), Hefei, Anhui 230026, China, # Huainan Normal College, Department of Chemistry, Huainan, Anhui

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<sup>1</sup>Universität Heidelberg, Interdisciplinary Center for Scientific Computing (IWR), Heidelberg, Germany; <sup>2</sup>German Aerospace Center (DLR), Institute of Technical Thermodynamics, Stuttgart, Germany

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<sup>1</sup> ICG-AIME, CNRS, Université Montpellier 2, Montpellier, France

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Yeongap Kim, Yongsu Yoon, Dongwook Shin\*

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Jongmo Im, Inyu Park, Sungeun Jang, Dongwook Shin\*

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<sup>1</sup>Department of Energy and Hydrocarbon Chemistry, Graduate School of Engineering, Kyoto University Nishikyo-ku, Kyoto 615-8510, Japan; <sup>2</sup>Department of Chemical System Engineering, Graduate School of Engineering, The University of Tokyo, Bunkyo-ku, Tokyo 113-8656, Japan
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<sup>1</sup>Institute of Solid State Physics RAS, 142432, Chernogolovka, Moscow distr., Russia; <sup>2</sup> Department of Chemistry, Moscow State University, 119992, Moscow, Russia; <sup>3</sup> Institute of Chemical Physics Problems RAS, 142432, Chernogolovka, Moscow distr., Russia
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<sup>1</sup>Department of Materials, Imperial College, London, UK; <sup>2</sup>Nonmetallic Inorganic Materials, ETH Zurich, Switzerland
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<sup>1</sup> Center for Condensed Matter Science and Technology, Department of Physics, Harbin Institute of Technology, Harbin, China; <sup>2</sup> Institute of Advanced Ceramics, School of Materials Science and Engineering, Harbin Institute of Technology, Harbin, China; <sup>3</sup> International Center for Materials Physics, Chinese Academy of Sciences, Shenyang, China
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 Fuel Cell Research Center and Department of Materials Science and Engineering, Pohang University of Science and Technology, Pohang, 790-784, Korea

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<sup>1</sup> State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, Hubei, P.R. China
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<sup>1</sup>State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Luoshi Road 122, Wuhan 430070, China
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<sup>3</sup> Department of Chemistry, Lomonosov Moscow State University, Lenin Hills, Moscow, Russia, 119991
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Department of Physics and Meteorology, Indian Institute of Technology (IIT) Kharagpur-721302. INDIA
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<sup>1</sup>Department of Chemistry, University of Ulsan, Ulsan, Korea

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<sup>1</sup>Department of Mechanical Systems and Design, Graduate School of Engineering, Tohoku University, Japan  
<sup>2</sup>Department of Mechanical and Aerospace Engineering, University of California, San Diego, California, USA
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<sup>1</sup>Department of Engineering & Management of Energy Resources, University of Western Macedonia, Bakola & Sialvera, GR-50100 Kozani, Greece; <sup>2</sup>Chemical Process Engineering Research Institute, Centre for Research & Technology Hellas, 6<sup>th</sup> km. Charilaou-Thermi Rd., P.O. Box 361, GR-57001 Thermi, Thessaloniki, Greece
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<sup>1</sup>Department of Electronic Chemistry, Tokyo Institute of Technology, Yokohama 226-8502, Japan; <sup>2</sup>Chemical Resources Laboratory, Tokyo Institute of Technology, Yokohama 226-8502, Japan

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<sup>1</sup>Material Sciences, Graduate of Science and Engineering, Ibaraki University; <sup>2</sup>FC Development Co., Ltd.  
<sup>3</sup>Department of Bimolecular Functional Engineering, Faculty of Engineering, Ibaraki University; <sup>4</sup>Material and Biological Sciences, Graduate School of Science and Engineering, Faculty of Engineering, Ibaraki University  
 1,2,3,44-12-1, Nakanarusawa, Hitachi, Ibaraki, 316-8511, Japan
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<sup>1</sup>Department of Mechanical Engineering, Korea Advanced Institute of Science and Technology; 373-1 Guseong-Dong, Yuseong-Gu, Daejeon, 305-701, Republic of Korea; <sup>2</sup>Strategic Technology Laboratory, Korea Electric Power Research Institute, 103-16 Munji-Dong, Yuseong-Gu, Daejeon, 305-380, Republic of Korea
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<sup>a</sup> State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an Shaanxi 710049, P.R.China; <sup>b</sup> State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, Xi'an Shaanxi 710049, P.R.China.

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<sup>1</sup>Energy and Nuclear Research Institute-CCTM, R. do Matão, Trav. R, 400, Cidade Universitária, S. Paulo, 05508-000, SP, Brazil
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<sup>1</sup> CCTM - Energy and Nuclear Research Institute – IPEN; Travessa R 400, Cidade Universitária, S. Paulo, SP, Brazil, 05508-900; <sup>2</sup> Laboratoire de Electrochimie et Physico-chimie des Matériaux et Interfaces - LEPMI - CNRS UMR 563 ; Grenoble Université, B.P. 75, 1130 rue de la Piscine, 38402 St. Martin d'Hères Cedex, France

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<sup>1</sup>Materials Science and Engineering, Nagoya Institute of Technology, Gokiso-cyo, Showa-ku, Nagoya 466-8555, Japan; <sup>2</sup>Nagoya Municipal Industrial Research Institute, 6-3-4-41, Atsuta-ku, Nagoya456-0058, Japan; <sup>3</sup>Department of Chemistry, Mie University, 1577 Kurimamachiyacho, Tsu, Mie, 514-8507, Japan
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<sup>1</sup> Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University, 1-1 Gakuencho, Naka-ku, Sakai, Osaka 599-8531, Japan; <sup>2</sup> The Kansai Electric Power Co., Inc., Amagasaki, Hyogo, 661-0974, Japan
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<sup>1</sup>Department of Materials Science and Engineering, Korea University, Seoul, 136-713, Korea
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M.Malys<sup>1</sup>, W.Wrobel<sup>1</sup>, F.Krok<sup>1</sup>, I.Abrahams<sup>2</sup>, M.Holdynski<sup>1</sup>, J.R. Dygas<sup>1</sup>  
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- P102 MANUFACTURE AND CHARACTERISATION OF COMPOSITE ZIRCONIA ELECTROLYTES WITH OPTIMISED MECHANICAL AND ELECTRICAL PROPERTIES**  
 M. Ghatee<sup>1</sup>, M. H. Shariat<sup>2</sup>, L. Peng<sup>3</sup> and J. T. S. Irvine<sup>3</sup>  
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## GLASSES AND DISORDERED MATERIALS

### P104 CHARACTERIZATION OF SOLID ELECTROLYTES PREPARED FROM IONIC GLASS AND IONIC LIQUID FOR ALL-SOLID-STATE LITHIUM BATTERIES

Akitoshi Hayashi, Hideki Morishima, Daisuke Furusawa, Keiichi Minami, Kiyoharu Tadanaga and Masahiro Tatsumisago

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### P106 BROADBAND SPECTROSCOPY OF HALIDES-DOPED SILVER PHOSPHATE GLASSES

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## ION TRANSPORT

### P108 OXYGEN DIFFUSION IN $\text{SR}_3\text{YM}_4\text{O}_{10.5}$ (314-PHASES), M=CO, CO/FE, CO/GA

Dmitry Rupasov<sup>1,2</sup>, Andrey Berenov<sup>2</sup>, Alex Chronos<sup>2</sup>, John A. Kilner<sup>2</sup>, Sergey Ya. Istomin<sup>3</sup>, Evgeny V. Antipov<sup>3</sup>

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### P110 THE INFLUENCE OF A-SITE SUBSTITUTION ON PHASE FORMATION, CRYSTAL STRUCTURE AND ELECTRICAL PROPERTIES OF THE LLT-BASED PEROVSKITE SOLID SOLUTIONS

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### P112 SINGLE CRYSTAL GROWTH AND ELECTRICAL CONDUCTIVITY OF HOLLANDITE-TYPE $\text{K}_{1.98}\text{Fe}_{1.98}\text{Sn}_{6.02}\text{O}_{16}$

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### P114 STABILIZATION OF LITHIUM FAST-ION CONDUCTION PHASE OF $\text{LiBH}_4$ AT ROOM TEMPERATURE

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### P116 EFFECT OF HIGH-ENERGY BALL-MILLING ON ELECTRICAL PROPERTIES OF $\text{Li}_{1.3}\text{Al}_{0.3}\text{Ti}_{1.7}(\text{PO}_4)_{2.9}(\text{VO}_4)_{0.1}$ MATERIAL

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### P118 THE EFFECT OF HUMIDITY AND ION-EXCHANGE ON THE ELECTRICAL PROPERTIES OF POLYCRYSTALLINE $\text{Na}_x\text{Ga}_{4+x}\text{Ti}_{1-x}\text{O}_8$ , (x~0.7)

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- P120 EFFECT OF SINTERING CONDITIONS ON THE MICROSTRUCTURE AND ELECTRICAL IMPEDANCE OF POLYCRYSTALLINE  $M_2(WO_4)_3$  ( $M = Al, In, \text{ and } Sc$ )**  
 B. Higgins<sup>1</sup>, K. Vaneck<sup>1</sup>, B. Riley<sup>1</sup>, A. Neiman<sup>2</sup>, N. Pestereva, S. Adams<sup>3</sup>, Y.K. Zhou<sup>3</sup>, D. Edwards<sup>1</sup>  
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- P122 STUDY OF THE OXYGEN INCORPORATION AND DIFFUSION IN  $Sr(Ti_{0.65}Fe_{0.35})O_3$  CERAMICS**  
 Christos Argirusis<sup>1,2</sup>, S. F. Wagner<sup>3</sup>, W. Menesklou<sup>3</sup>, E. Ivers-Tiffée<sup>3</sup>  
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- P124 SYNTHESIS AND TRANSPORT PROPERTIES OF FAST OXYGEN ION CONDUCTING  $La_{2-x}A_xMo_{2-y}B_yO_9$  ( $A=K, Sm, \text{ and } B=W$ )**  
 Moon-Bong Choi,<sup>a</sup> Sang-Yun Jeon,<sup>a</sup> Hae-Jin Hwang,<sup>b</sup> and Sun-Ju Song<sup>a,\*</sup>  
<sup>a</sup>Department of Materials Science and Engineering, Chonnam National University, 300 Yongbong-dong, Buk-gu, Gwangju 500-757, Republic of Korea; <sup>b</sup>Department of Ceramic Engineering, Inha University, Incheon 402-751, Republic of Korea
- P126 ANTIFERROELECTRIC PHASE TRANSITION IN PYROCHLORE-LIKE  $(Dy_{1-x}Ca_x)_2Ti_2O_{7-\delta}$  ( $x = 0.0, 0.1$ ) AND  $(Yb_{0.9}Ca_{0.1})_2Ti_2O_{7-\delta}$  HIGH TEMPERATURE CONDUCTORS**  
 D.A. Belov<sup>1</sup>, A.V. Shlyakhtina<sup>2</sup>, S. Yu. Stefanovich<sup>1</sup>, A.E. Sokolov<sup>3</sup>, V.I. Ulianov<sup>3</sup>, V.A. Trounov<sup>3</sup>, I. V. Kolbanev<sup>2</sup>, L.G. Shcherbakova<sup>2</sup>  
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- P128 DYNAMICS OF PHASE TRANSITION OF THE LAMOX FAMILY COMPOUNDS DEPENDING ON DOPANT TYPE AND CONCENTRATION**  
 V.I. Voronkova, E.P. Kharitonova, A.E. Krasilnikova  
 Faculty of Physics, M.V. Lomonosov Moscow State University, Leninskie Gory, Moscow 119992, Russia
- P130 IONIC TRANSPORT STUDIES IN  $Sn_{(1-x)}K_xF_{(2-x)}$  TYPE SOLID SOLUTIONS**  
 Laxmi Narayana Patro and K.Hariharan  
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- P132 SYNTHESIS AND CHARACTERIZATION OF  $LiNiVO_4$  BY AC IMPEDANCE SPECTROSCOPY**  
 S.Selvasekarapandian<sup>1</sup>, A.Sakunthala<sup>2</sup>, H.Nithya<sup>2</sup>, D.Arunkumar<sup>2,5</sup>, M.Hema<sup>2,5</sup>, P.Christopher Selvin<sup>3</sup>, C.Sanjeeviraja<sup>4</sup>  
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- P134 KINETICS OF OXYGEN TRACER INCORPORATION INTO OXIDES**  
 Roger A. De Souza  
 Institute of Physical Chemistry, RWTH Aachen University, Landoltweg 2, 52056 Aachen, Germany
- P136 ION TRANSPORT PATHWAYS IN MD SIMULATED ALKALI SILICATE GLASSES**  
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## MIXED CONDUCTORS

### P138 OXYGEN NONSTOICHIOMETRY AND TRANSPORT PROPERTIES OF

#### $\text{Ln}_{0.5}\text{A}_{0.5}\text{FeO}_{3-\delta}$ (Ln = La-Sm, A = Sr, Ba): EFFECTS OF CATION SIZE

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### P140 HIGH TEMPERATURE CRYSTALLOGRAPHIC STUDY OF $(\text{La}_{0.6}\text{Sr}_{0.4})(\text{Co}_{0.8}\text{Fe}_{0.2})\text{O}_{3-\delta}$ PEROVSKITE

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### P142 DETERMINATION OF OXYGEN TRANSPORT PROPERTIES IN MIXED IONIC ELECTRONIC CONDUCTING PEROVSKITES

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### P144 HIGH-TEMPERATURE ELECTRICAL PROPERTIES OF IRON OXIDE-BASED CERAMICS

A.A. Yaremchenko<sup>1</sup>, A.V. Kovalevsky<sup>1,2</sup>, E.N. Naumovich<sup>1</sup>, V.V. Kharton<sup>1</sup>, J.R. Frade<sup>1</sup>

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### P146 OXYGEN TRANSPORT KINETICS IN $\text{PrBaCo}_{2-x}\text{Fe}_x\text{O}_{5+d}$ DOUBLE PEROVSKITE MEMBRANE

Ji Haeng Yu, Hye Jeong Lee

Korea Institute of Energy Research

### P148 DEFECT STRUCTURE AND ELECTROCHEMICAL PROPERTIES OF

#### $\text{Ln}_2\text{NiO}_{4+\delta}$ (Ln = La, Nd)

Toshiaki Ina<sup>1</sup>, Takayuki Nakao<sup>1</sup>, Yuki Orikasa<sup>1</sup>, Tomokazu Fukutsuka<sup>1</sup>, Atsushi Mineshige<sup>2</sup>, Koji Amezawa<sup>3</sup>, Tatsuya Kawada<sup>3</sup> and Yoshiharu Uchimoto<sup>1</sup>

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### P150 OXYGEN NONSTOICHIOMETRY, THERMOMECHANICAL AND TRANSPORT PROPERTIES OF $\text{RE}_{2-x}\text{AE}_x(\text{Fe}_{0.8}\text{Co}_{0.2})_{1-y}\text{Mg}_y\text{O}_{4+\delta}$ COMPOUNDS

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### P152 ELECTRICAL CONDUCTIVITY, SEEBECK COEFFICIENT AND DEFECT STRUCTURE OF $\text{Nd}_{2-x}\text{Sr}_x\text{NiO}_{4+\delta}$

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- P154 HOLE DEGENERACY AND PHASE STABILITY LIMIT OF  $\text{La}_2\text{NiO}_{4+\delta}$**   
Hong-Seok Kim, Han-Il Yoo  
 Department of Materials Science and Engineering, Seoul National University, Seoul 151-744, Korea
- P156 STRAIN-INDUCED MODIFICATION OF INTRINSIC COMPENSATION LAW IN HIGH TEMPERATURE TRANSPORT PROPERTIES OF  $\text{Sr}_4\text{Fe}_6\text{O}_{12+\delta}$  EPITAXIAL THIN FILMS**  
 Cecilia Solís<sup>1</sup>, Gemma Garcia<sup>2</sup> and José Santiso<sup>1,\*</sup>  
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- P158 EFFECTS OF Ga SUBSTITUTION ON THE HIGH TEMPERATURE PROPERTIES OF THE  $n = 3$  RUDDLESDEN-POPPER SYSTEM  $\text{LaSr}_3\text{Fe}_{1.5-x/2}\text{Co}_{1.5-x/2}\text{Ga}_x\text{O}_{10-\delta}$  ( $0 \leq x \leq 0.8$ )**  
F. Prado<sup>1,2</sup>, J. -H. Kim<sup>1</sup>, A. Manthiram<sup>1</sup>  
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## MODELLING AND SIMULATION

- P160 FIRST PRINCIPLES STUDY ON LITHIUM IRON BORATE**  
Yukinori Koyama<sup>1</sup>, Isao Tanaka<sup>1</sup>, Nobuyuki Iwane<sup>2</sup>, Shinichi Nishimura<sup>2</sup>, Ryoji Kanno<sup>2</sup>, Atsuo Yamada<sup>2</sup>  
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<sup>2</sup>Department of Electronic Chemistry, Tokyo Institute of Technology, Nagatsuta, Midori, Yokohama 226-8502, Japan
- P162 SIMULATION OF SURFACE ANISOTROPY AND SIZE INFLUENCE IN MAGNETIC PROPERTIES OF  $\text{La}_{2/3}\text{Ca}_{1/3}\text{MnO}_3$  NANOPARTICLES**  
E. Restrepo-Parra<sup>1</sup>, J. Restrepo-Cárdenas<sup>2</sup>, G. Orozco- Hernández<sup>1</sup>, J. A Urrea<sup>1</sup>, J. C. Riaño-Rojas<sup>1</sup>, C. Vargas-Hernández<sup>1</sup>, J. F. Jurado<sup>1</sup>  
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- P164 MULTI-SCALE MODELING OF PEM FUEL CELLS: FROM ELEMENTARY KINETICS TO THE SYSTEM**  
W. G. Bessler<sup>1</sup>, R. Coulon<sup>1,2</sup>, A. A. Franco<sup>2</sup>, M. Eschenbach<sup>1</sup>, J. Kallo<sup>1</sup>, K. A. Friedrich<sup>1</sup>  
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- P166 ATOMISTIC SIMULATION OF NANO-DOMAIN STRUCTURE IN GD DOPED CERIA ELECTROLYTE**  
Bu Wang<sup>1</sup>, Alastair Cormack<sup>1</sup>  
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## NOVEL MATERIALS

- P168 FABRICATION OF MILLE-FEUILLE STRUCTURE OF  $\text{Li}_0.35\text{La}_0.55\text{TiO}_3$  FOR ALL-SOLID-STATE LITHIUM ION BATTERY**  
Hirokazu Munakata, Atsushi Kaeriyama, Koichi Kajihara, Kiyoshi Kanamura  
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**P170 SYNTHESIS, MICROSTRUCTURAL AND ELECTRICAL STUDY OF NEW PHASES IN THE A-Sr-Co-O SYSTEM (A= Ba, Ca)**

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**P172 CHARACTERIZATION OF THE IMPORTANCE OF NANOSTRUCTURING IN SnO<sub>2</sub> NANOBASKET ELECTRODE MATERIALS**

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**P174 TiN<sub>x</sub>O<sub>y</sub> THIN FILMS AS NOVEL MATERIALS FOR PHOTOCATALYTIC APPLICATIONS**

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## OXYGEN PERMEABILITY

**P176 ELECTRICAL CONDUCTIVITY RELAXATION EXPERIMENTS ON Ba<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>0.8</sub>Fe<sub>0.2</sub>O<sub>3-δ</sub> (BSCF5582)**

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**P178 DETERMINATION OF TRANSPORT PROPERTIES IN La<sub>0.58</sub>Sr<sub>0.4</sub>Co<sub>0.2</sub>Fe<sub>0.8</sub>O<sub>3-δ</sub> PEROVSKITE TYPE OXIDES**

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**P180 OXYGEN EXCHANGE PROPERTIES OF CGO-LSCF COMPOSITES FOR OXYFUELLED CARBON CAPTURE AND STORAGE**

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**P182 MIXED-CONDUCTING LSC/CGO AND Ag/CGO COMPOSITES FOR PASSIVE OXYGEN SEPARATION MEMBRANES**

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## POLYMERS

**P184 HILLY SULFONATED POLY(ARYLENE SULFONE)S: STABILITY, MICROSTRUCTURE AND PROTON TRANSPORT**

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- P186 A STUDY OF NEW CONCEPT FOR PREPARING MEA WITH PHOTOCURABLE ELECTROLYTE**  
Tomoaki Iwadera, Yuki Nagao, Chih-Hao Chang, Fumitada Iguchi, Noriko Sata, Hiroo Yugami  
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- P188 STRUCTURAL ANALYSIS FOR THE CAST SOLVENT EFFECT ON SPEEK MEMBRANE PROPERTIES**  
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Department of Chemical Engineering, Sunkyunkwan University, Suwon, Kyunggy 440-470, Republic of Korea
- P190 PEO-BASED TERNARY SYSTEMS WITH ETHER-FUNCTIONALISED PYRROLIDINIUM IONIC LIQUIDS: SYNTHESIS AND ELECTROCHEMICAL CHARACTERIZATION**  
E. Quartarone<sup>1</sup>, S. Ferrari<sup>1</sup>, P. Mustarelli<sup>1</sup>, A. Magistris<sup>1</sup>, M. Fagnoni<sup>2</sup>, C. Gerbaldi<sup>3</sup>  
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- P192 PREPARATION AND CHARACTERIZATION OF A NANOSIZED SULFUR-POLYPYRROLE COMPOSITE AS HIGH CAPACITY CATHODE FOR SECONDARY BATTERIES**  
Xiao Liang, Yu Liu, Zhaoyin Wen, Xiaogang Xu  
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- P194 RADIATION EFFECTS IN WATER ABSORPTION CHARACTERISTICS OF PERFLUOROSULFONIC ACID MEMBRANES**  
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<sup>1</sup> Institute for Materials Research, Tohoku University: 2-1-1, Katahira, Aoba-ku, Sendai 980-8577, Japan
- P196 STUDIES ON PEM FUEL CELL NOBLE METAL CATALYST DISSOLUTION**  
Shuang Ma<sup>1</sup>, Laila Grahl-Madsen<sup>2</sup> & Eivind M. Skou<sup>1</sup>  
<sup>1</sup> Institute of Chemical Engineering, Biotechnology and Environmental Technology, University of Southern Denmark, Odense, Denmark; <sup>2</sup> IRD Fuel Cells A/S, Svendborg, Denmark
- P198 AN INVESTIGATION ON PAN-PVC-LITFSI BASED POLYMER ELECTROLYTES SYSTEM**  
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- P200 EFFECT OF NANO ZrO<sub>2</sub> DISPERSION ON ELECTRICAL AND STABILITY PROPERTIES OF PMMA BASED SOLID POLYMER ELECTROLYTE**  
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- P202 <sup>1</sup>H NMR STUDIES OF PVA: NH<sub>4</sub>I POLYMER ELECTROLYTE**  
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- P204 ELECTROCHEMICAL POLYPYRROLE-POLY(PROPYLENE IMINE) DENDRIMERIC STAR CO-POLYMER**  
Abd Almonam Baleg, Nazeem Jahed, Priscilla Baker and Emmanuel I Iwuoha  
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**P206 PERFORMANCE EVALUATION OF SOLID STATE SUPERCAPACITORS BASED ON ION CONDUCTING POLYMER**

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**PROTONS**

**P208 ELECTRICAL PROPERTIES OF NANO-GRAINED DOPED BaZrO<sub>3</sub>**

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**P210 NMR STUDY OF ELECTROLYTE MATERIALS FOR INTERMEDIATE TEMPERATURE SOLID OXIDE FUEL CELLS: HYDRATED YTTRIUM SUBSTITUED BARIUM ZIRCONATE**

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**P212 LATTICE STRAIN AND PROTON CONDUCTIVITY IN THE THIN FILMS OF PEROVSKITE-TYPE OXIDES**

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**P214 STRUCTURAL ANALYSIS OF BaZr<sub>1-x</sub>Sc<sub>x</sub>O<sub>3-δ</sub> PROTONIC CONDUCTOR BY Sc-45 NMR**

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**P216 SPARK PLASMA SINTERING OF PROTON CONDUCTING HETERODOPED LaNbO<sub>4</sub> COMPOSITES**

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**P218 PROTON DYNAMICS AND CRYSTAL SYMMETRY IN SUPERPROTONIC CONDUCTOR Cs<sub>3</sub>H(SeO<sub>4</sub>)<sub>2</sub>**

Yasumitsu Matsuo<sup>1</sup>, Junko Hatori<sup>2</sup>, Yukihiko Yoshida<sup>2</sup> and Seiichiro Ikehata<sup>2</sup>

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**P220 EFFECTS OF THE MONOCLINIC ANGLE ON THE PROTON MOBILITY IN LaNbO<sub>4</sub>**

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**P222 RESULTS OF STEAM FLUX MEASUREMENTS IN BZY20**

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- P224 DEPENDENCE OF THE THERMOPOWER OF A PEROVSKITE-TYPE PROTON CONDUCTOR ON THE HYDROGEN PARTIAL PRESSURE**  
U. Röder-Roith<sup>1</sup>, F. Rettig<sup>1</sup>, K. Sahner<sup>1</sup>, T. Röder<sup>2</sup>, J. Janek<sup>2</sup>, R. Moos<sup>1</sup>  
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- P226 CHEMICAL RELAXATION PROCESS OF PEROVSKITE-TYPE PROTON CONDUCTORS**  
Keiji Yashiro<sup>1</sup>, Satoshi Akoshima<sup>1</sup>, Takao Kudo<sup>1</sup>, Hiroshige Matsumoto<sup>2</sup>, Kazuhisa Sato<sup>1</sup>, Tatsuya Kawada<sup>3</sup>, Junichiro Mizusaki<sup>1</sup>  
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- P228 Co DOPED REDUCED SINTERING TEMPERATURE CERAMIC PROTON CONDUCTORS**  
 Maria A. Azimova<sup>1</sup>, Steven McIntosh<sup>1</sup>  
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## SENSORS

- P230 MECHANISM OF Pbs BASED POTENTIOMETRIC H<sub>2</sub>S SENSOR RESPONSE**  
Dedyulin S.N.<sup>1</sup>, Yashina L.V.<sup>1</sup>, Tamm M.E.<sup>1</sup>, Dobrovolsky Yu.A.<sup>2</sup>  
<sup>1</sup>M.V. Lomonosov Moscow State University, 119991 Moscow, Russia; <sup>2</sup>Institute of Problems of Chemical Physics RAS, 142432 Chernogolovka, Moscow Region, Russia
- P232 PERFORMANCE OF BI-ELECTROLYTE TYPE SO<sub>x</sub> SENSOR BASED ON Li<sub>3x</sub>La<sub>2/3-x</sub>TiO<sub>3</sub> AND YSZ**  
Min-Su Lee<sup>a)</sup>, Taewon Lee<sup>a)</sup>, Yang-Ki Kim<sup>b)</sup> and Han-Il Yoo<sup>a)</sup>  
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- P234 NEGATIVE AND POSITIVE MAGNETORESISTIVITY BEHAVIOURS AT VERY LOW TEMPERATURES WITH MAGNETIC FIELDS IN INSULATING CdSe SEMICONDUCTORS**  
A. El kaaouachi<sup>1</sup>, R. Abdia<sup>1</sup>, A. Nafidi<sup>1</sup>, J. Hemine<sup>2</sup>, and G. Biskupski<sup>3</sup>  
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- P236 A NEW SOLID ELECTROLYTE TYPE AMMONIA GAS SENSOR APPLYING RARE EARTH AMMONIUM SULFATE BASED AUXILIARY ELECTRODE**  
Tsukasa Nagai, Shinji Tamura, Nobuhito Imanaka  
 Department of Applied Chemistry, Faculty of Engineering, Osaka University, 2-1 Yamadaoka, Suite, Osaka 565-0871, Japan
- P238 pH SENSITIVITY OF Pr<sub>2</sub>NiO<sub>4</sub> ELECTRODES AND THEIR STABILITY IN AQUEOUS MEDIUM**  
 J. S. Rebello<sup>1</sup>, M. Berthold<sup>2</sup>, V. V. Vashook<sup>2</sup>, J. Zosel<sup>2</sup>, U. Guth<sup>1,2</sup>  
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## SFB 458

### **P240 CATION MOBILITY IN BULK AND SOL-GEL DERIVED MIXED CATION SILICATE GLASSES**

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### **P242 SPUTTER-DEPOSITED LiCoO<sub>2</sub> AND V<sub>2</sub>O<sub>5</sub> FILMS AS ELECTRODE MATERIALS**

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### **P244 IONIC CONDUCTIVITY OF DRIED x PSS-(1-x) PDADMAC POLYELEKTROLYTE COMPLEXES**

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### **P246 TERNARY IONOGEL-GLASSES AS SOLID STATE LITHIUM ION CONDUCTORS FOR BATTERY APPLICATIONS**

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### **P248 STRUCTURAL AND PHYSICAL PROPERTY TUNING IN THE SILVER(I) POLYCHALCOGENIDE HALIDES Ag<sub>23</sub>Q<sub>12</sub>X (Q = S, Se, Te; X = Cl, Br, I)**

Oliver Osters, Melanie Bawohl, Tom Nilges

University of Muenster, Institute of Inorganic and Analytical Chemistry, Corrensstraße 30, 48149 Münster,  
Germany; SFB 458 Ionic Motion in Materials with Disordered Structures -From Elementary Steps to Macroscopic  
Transport

### **P250 NANOSCOPIC CHARACTERISATION OF ION TRANSPORT IN SOLID ELECTROLYTES BY TIME-DOMAIN ELECTROSTATIC FORCE SPECTROSCOPY (TD-EFS)**

Ahmet Taskiran<sup>1,4</sup>, André Schirmeisen<sup>1,4</sup>, Hartmut Bracht<sup>2,4</sup>, Bernhard Roling<sup>3</sup>

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## SURFACES AND INTERFACES

### **P252 THE EFFECT OF ALKALINE EARTH OXIDE LAYERS ON THE OXYGEN EXCHANGE BEHAVIOUR OF Sr(Ti<sub>1-x</sub>Fe<sub>x</sub>)O<sub>3-δ</sub>**

Stefan F. Wagner<sup>1</sup>, Christos Argiris<sup>2</sup>, Wolfgang Menesklou<sup>1</sup>, Günter Borchardt<sup>2</sup>, Ellen Ivers-Tiffée<sup>1</sup>

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### **P254 COATING EFFECTS ON Li[Li<sub>1/9</sub>Ni<sub>1/3</sub>Mn<sub>5/9</sub>]O<sub>2</sub> CATHODES FOR RECHARGEABLE LITHIUM ION BATTERIES**

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- P256 Cu DOPED Mn-Co SPINEL PROTECTIVE COATING ON FERRITIC STAINLESS STEELS FOR SOFC INTERCONNECT APPLICATIONS**  
Yanjie Xu, Shaorong Wang\*, Xianshuang Xin, Ting-Lian Wen  
Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, 200050, China
- P258 HIGH-TEMPERATURE GRAVIMETRIC STUDY ON THE KINETICS OF THE FORMATION OF TITANATE OXIDES BY SOLID STATE REACTION OF TiO<sub>2</sub> AND MCO<sub>3</sub> (M=Ba, Sr, Ca)**  
Eiki Niwa, Kazuhisa Sato, Keiji Yashiro and Junichiro Mizusaki  
Institute of Multidisciplinary Research for Advance Materials, Tohoku University, 2-1-1 Katahira, Aoba-ku Sendai 980-8577, Japan
- P260 IMPROVEMENT IN STABILITY OF MIXED-POTENTIAL-TYPE ZIRCONIA-BASED HYDROCARBON SENSOR USING ZnCr<sub>2</sub>O<sub>4</sub> SENSING-ELECTRODE**  
Yuki Fujio<sup>1</sup>, Vladimir V. Plashnitsa<sup>2</sup>, Perumal Elumalai<sup>2,3</sup>, Norio Miura<sup>2</sup>  
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- P262 OXYGEN REDUCTION ON PLATINUM / YSZ: INVESTIGATION OF THE ELECTROCHEMICALLY ACTIVE ZONE BY MEANS OF WELL-DEFINED MICROELECTRODES**  
Alexander Opitz<sup>1</sup>, Arno Schintlmeister<sup>2</sup>, Herbert Hutter<sup>2</sup>, Jürgen Fleig<sup>1</sup>  
<sup>1</sup>Vienna University of Technology, Institute of Chemical Technology and Analytics, Research Division Electrochemistry; <sup>2</sup>Vienna University of Technology, Institute of Chemical Technology and Analytics, Research Division Instrumental Analytical Chemistry
- P264 ELECTRODE CATALYST FOR POLYMER ELECTROLYTE FUEL CELLS BASED ON MULTI-WALLED CARBON NANOTUBES AS Pt CATALYST SUPPORTS**  
Mika Eguchi<sup>1</sup>, Shun Yamamoto<sup>2</sup>, Toshiaki Aoki<sup>3</sup>, Yoshio Kobayashi<sup>1</sup>, Mikka Nishitani-Gamo<sup>3</sup>, Toshihiro Ando<sup>4</sup>, Katsuhiko Uno<sup>5</sup> and Yasuyuki Tsutsumi<sup>6</sup>  
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- P266 ELECTROCHEMICAL ACTIVATION OF DINITROGEN – AN IN-SITU XPS STUDY**  
I. Valov<sup>1</sup>, B. Luerßen<sup>1</sup>, E. Mutoro<sup>1</sup>, R. A. De Souza<sup>2</sup>, S. Guenther<sup>3</sup>, L. Gregoratti<sup>4</sup>, A. Barinov<sup>4</sup>, P. Dudin<sup>4</sup>, M. Martin<sup>2</sup> and J. Janek<sup>1</sup>  
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- P268 IN SITU CHARACTERIZATION OF SOLID/LIQUID INTERFACES**  
Vojtech Svoboda and Bor Yann Liaw  
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- P270 AN XPS STUDY OF SURFACE-FILM FORMATION ON Li<sub>2</sub>FeSiO<sub>4</sub> CATHODES FOR DIFFERENT SALT/SOLVENT COMBINATIONS**  
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