

TABLE OF CONTENTS

POSTER SESSION I

MONDAY, JUNE 29, 18:00 – 20:30

LOCATION – CANADIAN ROOM

ODD NUMBERED BOARDS

ANODES - SOFC

P001 ELECTROCHEMICAL ACTIVITY AND PHASE TRANSITION OF $\text{Ce}_{0.9}\text{Sr}_{0.1}\text{VO}_3$ AND $\text{Ce}_{0.9}\text{Sr}_{0.1}\text{Cr}_{0.5}\text{V}_{0.5}\text{O}_3$ SOLID OXIDE FUEL CELL ANODES IN H_2S

Nemanja Danilovic, Karl T. Chuang, Jingli L. Luo

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

P003 REDOX STABILITY OF $\text{SrNb}_x\text{Ti}_{1-x}\text{O}_3$ -YSZ FOR USE IN SOFC ANODES

Michael D. Gross

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P005 ELECTROCHEMICAL PERFORMANCES OF $\text{La}_{0.75}\text{Sr}_{0.25}\text{Cr}_{0.5}\text{Mn}_{0.5}\text{O}_{3-\delta}$ / $\text{Ce}_{0.8}\text{Cu}_{0.2}\text{O}_{2-\delta}$ BILAYER ANODE FOR INTERMEDIATE TEMPERATURE SOFC

Hengyong Tu, Haixia Wang and Qingchun Yu

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P007 METHANE ACTIVATION ON NOVEL YSZ – LaB_6 COMPOSITES AND NICKEL-YSZ CERMETS

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P009 TEMPERATURE PROGRAMMED OXYGEN DESORPTION INVESTIGATION OF Ni/YSZ SOFC ANODES

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P011 LST-GDC COMPOSITE ANODE ON LaGaO_3 -BASED SOLID OXIDE FUEL CELL

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P013 $\text{Ce}_{1-x}\text{Mo}_x\text{O}_{2+\delta}$ ($0 \leq x \leq 0.1$): POTENTIAL ANODE MATERIALS FOR INTERMEDIATE-TEMPERATURE SOLID OXIDE FUEL CELLS (SOFCs)

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ANODES – Li BATTERIES

P015 SYNTHESIS AND CHARACTERIZATION OF SNO NANOPARTICLES FOR SUPER CAPACITORS

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P017 MICROWAVE SYNTHESIS, CHARACTERIZATION, AND ELECTROCHEMICAL PROPERTIES OF α -Fe₂O₃ NANOPARTICLES

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APATITES

P019 DENSE OXIDE ION CONDUCTING APATITES PREPARED BY SPARK PLASMA SINTERING

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P021 CORRELATION BETWEEN PHASE PURITY AND IONIC CONDUCTIVITY IN LA₉SRSI₆O_{26.5} APATITE ELECTROLYTES

S. Beaudet-Savignat, S. Lambert, B. Minot, E. Estrade, JL. Longuet, S. Guillot, T. Piquero, K. Escudié, AL. Sauvet, C. Drouel

CEA/Le Ripault/SRCC/LCCA/ 37260 Monts, France

P023 INTERMEDIATE TEMPERATURE SOLID OXIDE FUEL CELL USING LANTHANUM SILICATE-BASED SOLID ELECTROLYTES

A. Mineshige¹, T. Mitsui¹, Y. Ohnishi¹, Y. Daiko¹, M. Kobune¹, T. Yazawa¹, H. Yoshioka², T. Nakao³, T. Fukutsuka³ and Y. Uchimoto³

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CATHODES - SOFC

P025 MÖSSBAUER SPECTROSCOPY IN THE SYSTEM La_{0.8}Sr_{0.2}(Mn,Fe,Co)O₃

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P027 ELECTROCHEMICAL PERFORMANCE OF TRANSITION METAL DOPED La_xGd_(1-x)Ba_ySr_(1-y)M_zCo_(2-z)O_{5+δ} DOUBLE PEROVSKITE MATERIALS FOR SOFC

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- P029 ELECTROCHEMICAL AND LONG-TERM PROPERTY OF COMPOSITE CATHODE WITH $\text{SmBa}_{0.5}\text{Sr}_{0.5}\text{Co}_2\text{O}_{5+\delta}$ CATHODES FOR INTERMEDIATE TEMPERATURE-OPERATING SOLID OXIDE FUEL CELL**
Jung Hyun Kim¹, Mark Cassidy², John T.S.Irvine^{2*}, and Joongmyeon Bae^{1*}
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- P031 SOFT CHEMISTRY APPROACHES TOWARDS NANOSTRUCTURED SOFC ELECTRODES**
 Aaron J. Capizzi¹, Yannick C. Kimmel¹, Steven McIntosh¹
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- P033 PERFORMANCE DEGRADATION OF SOFC CAUSED BY CATHODE DELAMINATION FOR LONG-TERM TEST**
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- P035 INFLUENCE OF COLLOIDAL TEMPLATES ON THE ELECTRICAL PROPERTIES OF $\text{Pr}_{0.7}\text{Sr}_{0.3}\text{Fe}_{0.8}\text{Ni}_{0.2}\text{O}_3$ MATERIAL FOR SOFC APPLICATIONS**
 R. Pinedo¹, I. Ruiz de Larramendi¹, J.I. Ruiz de Larramendi¹, M.I. Arriortua² and T. Rojo¹
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- P037 CRYSTAL STRUCTURE, ELECTRICAL CONDUCTIVITY, REACTION WITH OXYGEN AND CATALYTIC PROPERTIES OF SELECTED $(\text{La,Sm})_{1-x}(\text{Sr,Ba})_x(\text{Co,Fe,Ni})_{3-\delta}$ PEROVSKITE TYPE OXIDES**
Konrad Świerczek
 Faculty of Materials Science and Ceramics, AGH University of Science and Technology al. Mickiewicza 30, 30-059 Kraków, Poland
- P039 MIGRATION OF PLATINUM FROM CURRENT COLLECTOR TO TRIPLE PHASE BOUNDARIES OF LSM CATHODE**
Katsuhiko Yamaji, Yue-Ping Xiong, Masashi Yoshinaga, Haruo Kishimoto, Manuel E. Brito, Teruhisa Horita and Harumi Yokokawa
 Fuel Cell Materials Group, Energy Technology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)
- P041 $\text{GdBaCo}_2\text{O}_{5+x}$ CATHODE FOR ANODE-SUPPORTED CERIA SOFC**
Younki Lee, Gyeong Man Choi^{*}
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- P043 THERMAL STABILITY, OXYGEN NON-STOICHIOMETRY AND ELECTRICAL CONDUCTIVITY OF $\text{LaNi}_{0.6}\text{Fe}_{0.4}\text{O}_3$**
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- P045 THERMAL EXPANSION AND ELECTROCHEMICAL PROPERTIES OF Ni-doped GdBaCo₂O_{5+δ} DOUBLE PEROVSKITES**
 Bo Wei^{1,2}, Zhe Lü¹, Dechang Jia², Xiqiang Huang¹, Wenhui Su^{1,3}
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- P047 ELECTROCHEMICAL CHARACTERIZATION OF NEW CATHODE MATERIALS, LaBaCo₂O_{5+δ}, (LBC) FOR SOFC APPLICATION**
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CATHODES – Li-BATTERIES

- P049 PHYSICOCHEMICAL PROPERTIES OF Na_xCoO₂ AS A CATHODE FOR SOLID STATE SODIUM BATTERY**
 Amrtha Bhide, K. Hariharan
 Solid State Ionics Laboratory, Department of Physics, Indian Institute of Technology Madras Chennai- 600 036, India
- P051 PREPARATION OF LiNi_{0.5}Mn_{0.5}O₂ CATHODE BY UREA HYDROLYSIS CO-PRECIPIATION**
 Liang Xiao¹, Hanxing Liu¹, Xuan Zhao¹, Xiaojun Liu¹, Haixia Liang¹
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- P053 STRUCTURAL, TRANSPORT AND ELECTROCHEMICAL PROPERTIES OF Li_xNi_{1-y-z}Co_yMn_zO₂ CATHODE MATERIALS**
 A. Milewska, J. Molenda
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- P055 HIGH-THROUGHPUT EXPLORATION OF PSEUDO-QUATERNARY LAYERED-TYPE Li-Ni-Co-Ti COMPOUNDS AND ITS CHARGE-DISCHARGE PROPERTY**
 Hideaki Ohtake¹, Kenjiro Fujimoto¹ and Shigeru Ito¹
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- P057 SYNTHESIS AND ELECTROCHEMICAL PROPERTIES OF HYBRID VANADIUM OXIDE/POLYANILINE NANOSCROLLS**
 Semenko D.A.¹, Itkis D.M.¹, Kulova T.L.², Skundin A.M.², Pomerantseva E.A.¹, Goodilin E.A.^{1,3}, Tretyakov Yu.D.^{1,3}
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³ Department of Chemistry, Lomonosov Moscow State University, Lenin Hills, Moscow, Russia, 119991
- P059 STUDY ON La_{0.8}Sr_{0.2}Co_{0.3}Cr_{0.7}O_{3-δ} AS A CANDIDATE MATERIALS FOR THE POSITIVE CURRENT COLLECTOR IN SODIUM SULFUR BATTERIES**
 Ying Huang, Zhaoyin Wen, Jianhua Yang, Yu Liu
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- P061 ORIGIN OF ENHANCED LI-INTERCALATION IN TiO₂-B NANOWIRES**
 M.V. Koudriachova
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DEVICES

- P063 APPLICATION OF STATISTICAL IMAGE ANALYSES TO QUANTITATIVE MICROSTRUCTURE IN SOLID OXIDE FUEL CELLS**
Seung-Muk Bae¹, Jong-Won Lee¹, Jong-Ho Lee², Jinha Hwang¹
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- P065 ELECTROCATALYTIC ABATEMENT OF N₂O IN A Pd/YSZ SOLID ELECTROLYTE MEMBRANE REACTOR (SEMR)**
K. Kalimeri¹, C. Athanasiou^{1,2}, G.E. Marnellos^{1,2}
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- P067 A DIRECT CARBON FUEL CELL BY APPROACH OF TUBULAR SOLID OXIDE FUEL CELLS**
Renzhu Liu, Shaorong Wang^{*}, Chunhua Zhao, Junliang Li, Fanrong Zeng, Zhaoyin Wen, Tinglian Wen
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- P069 CELL RESISTANCES OF ABPBI-BASED HT-PEFC-MEAs: TIME DEPENDENCE AND INFLUENCE OF OPERATING PARAMETERS**
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- P071 EFFECT OF STARCH/CHITOSAN BLEND TO THE PERFORMANCE OF A SOLID STATE CELL**
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- P073 CO-ELECTROLYSIS OF CO₂ AND H₂O IN SOLID OXIDE CELLS**
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- P075 FEASIBILITY OF HYDROGEN PRODUCTION IN A STEAM-CARBON ELECTROCHEMICAL CELL**
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ELECTROLYTES

- P077 MESOSTRUCTURED MATERIALS IN DISPERSE ELECTROLYTES FOR LITHIUM-ION BATTERIES**
Henrik Buschmann¹, Kerstin Sann¹, Bjoern Luerssen¹, Jürgen Janek¹, Jan Roggenbuck², Michael Fröba²
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- P079 GROWTH OF $Zr_{1-x}Y_xO_2$ NANO-TUBES IN FLUORIDE SOLUTIONS**
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- P081 SOLID SOLUTION FORMATION, DENSIFICATION AND IONIC CONDUCTIVITY OF Gd- AND Sm-DOPED CERIA**
 S. L. Reis, E. C. C. Souza, E. N. S. Muccillo
 Instituto de Pesquisas Energéticas e Nucleares-CCTM, R. do Matão, trav. R, 400, Cidade Universitária, S. Paulo, SP, 05508000, Brazil
- P083 ELECTROPHORETIC DEPOSITION OF YSZ CLOSE-END TUBES FOR OXYGEN SENSORS**
 E. Caproni¹, R. Muccillo¹
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- P085 THERMOMECHANICAL STABILITY OF SELF SUPPORTED YSZ MEMBRANES FOR MICRO SOFCS**
 J. Santiso^{1,*}, A. Tarancón², A. Cavallaro¹, I. Garbayo², N. Sabaté², I. Gràcia², J. Roqueta¹ and G. Garcia³
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- P087 HIGH FIELD O-17 NMR STUDY OF DEFECTS IN DOPED ZIRCONIA AND CERIA**
 Mariko Ando¹, Itaru Oikawa¹, Yasuto Noda¹, Hajime Kiyono², Masataka Tansho³, Tadashi Shimizu³, Hideki Maekawa¹
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- P089 DIFFUSION INDUCED GRAIN-BOUNDARY MIGRATION IN SrO Doped Ceria**
 Pyeong-Seok Cho¹, Seoung-Young Park¹, Jeong-Joo Kim², Hyun-Min Park³, Jong-Heun Lee¹
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- P091 ELECTRONIC CONDUCTIVITY OF PURE CERIA**
 Yue-Ping Xiong, Haruo Kishimoto, Katsuhiko Yamaji, Masashi Yoshinaga, Teruhisa Horita, Manuel E. Brito and Harumi Yokokawa
 National Institute of Advanced Industrial Science and Technology (AIST)
- P093 MICROSTRUCTURE AND ELECTRICAL PROPERTIES OF GADOLINIA-DOPED CERIA PREPARED BY LOW TEMPERATURE MULTI-STEP SINTERING**
 Yong Ke Yan, Fei Ye, Toshiyuki Mori, Ding Rong Ou
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- P095 FABRICATION AND PERFORMANCE OF SDC-Fe₂O₃ COMPOSITE ELECTROLYTES IN IT-SOFCS**
 Dan Xu, Xiaomei Liu, Duanting Yan, Li Pei, Chengjun Zhu, Dejun Wang, Xianying Li, Wenhui Su
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- P097 PROPERTIES OF DOPED CERIA SOLID ELECTROLYTES IN REDUCTING ATMOSPHERES**
 W. Zajac, J. Molenda
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P099 TWO-STEP SINTERING AND ELECTRICAL CONDUCTIVITY OF YTTRIA-SUBSTITUTED ZIRCONIA CERAMICS

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P101 KINETICS OF DEFECT INTERACTIONS AND THE LATTICE PARAMETER OF Ce_{0.8}Gd_{0.2}O_{1.9}

Anna Kossov¹, Isai Feldman², Ellen Wachtel² and Igor Lubomirsky* Joachim Maier³

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P103 CORRELATION EFFECTS AMONG THERMAL DISPLACEMENTS OF ATOMS IN KBr

Takashi Sakuma¹, Xianglian¹, Norifumi Shimizu¹, Jo Yokokawa¹, Haruyuki Takahashi², Khairul Basar³, Naoki Igawa⁴

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GLASSES AND DISORDERED MATERIALS

P105 CHARACTERIZATION OF HYBRID ELECTROLYTES PREPARED FROM THE Li₂S-P₂S₅ GLASSES AND ALKANEDIOLS

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P107 PROTON CONDUCTION IN PHOSPHATE GLASSES

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P109 CRYSTALLIZATION AND ELECTRICAL CONDUCTIVITY OF AMORPHOUS BISMUTH RUTHENATE THIN FILMS DEPOSITED BY SPRAY PYROLYSIS

Thomas Ryll, Andreas Brunner, Stefan Ellenbroeck, Anja Bieberle-Hutter, Jennifer L. M. Rupp and Ludwig J. Gauckler

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ION TRANSPORT

P111 OXYGEN NONSTOICHIOMETRY AND CHARGE TRANSFER IN DOUBLE PEROVSKITE GdBaCo₂O_{5.5-d}

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P113 LITHIUM ION CONDUCTION IN LITHIUM BOROHYDRIDES UNDER HIGH PRESSURE

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- P115 STUDY ON THE STRUCTURAL AND CONDUCTIVITY FOR THE NASICON -TYPE $\text{Li}_{1+x}\text{Al}_x\text{Ti}_{2-x}(\text{PO}_4)_3$ ($x=0.1\sim 1.0$)**
 Chih-Ying Shen, Chung-Ta Ni, Kuan-Zong Fung
 Department of Materials Science and Engineering, National Cheng Kung University, 1 Ta-Hsueh Road, Tainan 701, Taiwan
- P117 ANION-EXCHANGE AND EVALUATION OF IONIC CONDUCTIVITY OF Mg-AI LAYERED DOUBLE HYDROXIDE**
 Yoshihiro Furukawa¹, Kiyoharu Tadanaga¹, Akitoshi Hayashi¹, Masahiro Tatsumisago¹
¹Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University, 1 - 1 Gakuen-cho, Naka-ku, Sakai, Osaka 599-8531. Japan,
- P119 ROLES OF VIBRATION MODES AND OPTICAL DIELECTRIC CONSTANT ON IONIC CONDUCTION FOR SOME DEFECT-TYPE Li- ION CONDUCTORS**
Kunio Wakamura and Naoki Inoue[□]
 Dept. of Applied Science, Okayama Science Univ. 1-1 Ridai-cho, Okayama 700-0005, Japan
 *Dept. of Physics, Ehime Univ., 2-5 Bunkyo-cho, Matsuyama 790-8577, Japan
- P121 TETRAVALENT Ti^{4+} ION CONDUCTION IN SOLIDS**
N. Nunotani, S. Tamura, N. Imanaka
 Department of Applied Chemistry, Faculty of Engineering, Osaka University, 2-1 Yamadaoka, Suita, Osaka 565-0871, Japan
- P123 EFFECTS OF Si SUBSTITUTION ON VARIOUS PROPERTIES OF $\text{Na}_5\text{YSi}_4\text{O}_{12}$ -TYPE GLASS-CERAMIC Na^+ -SUPERIONIC CONDUCTORS**
Toshinori Okura¹, Mitsugu Saimaru¹, Koji Kawada¹, Hideki Monma¹, Kimihiro Yamasita²
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- P125 A ^{45}Sc MAS NMR AND IMPEDANCE SPECTROSCOPIC STUDY OF THE NATURE OF OXYGEN VACANCY HOPPING IN Sc DOPED CERIA**
Hugo J. Avila-Paredes, Pragati Jain, Sabyasachi Sen and Sangtae Kim
 Department of Chemical Engineering and Materials Science, University of California Davis, Davis, CA, 95616, USA
- P127 STRUCTURAL PHASE TRANSITION AND ION CONDUCTIVITY OF $\text{Ba}_2\text{In}_{2-x}\text{Fe}_x\text{O}_5$**
Takao Ishii¹, Hideyuki Abe²
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- P129 PHASE TRANSITIONS AND CONDUCTIVITY IN $\text{La}_{2-x}\text{Ba}_x\text{Mo}_2\text{O}_9$ AND $\text{La}_{2-x}\text{Na}_x\text{Mo}_2\text{O}_9$ SOLID SOLUTIONS**
V.I. Voronkova, D.S. Kolesnikova, E.P. Kharitonova
 Faculty of Physics, M.V. Lomonosov Moscow State University, Leninskie Gory, Moscow 119991, Russia
- P131 DEFECT STRUCTURE AND IONIC CONDUCTIVITY IN ORDERED FLOURITES IN THE SYSTEM $\text{Bi}_2\text{O}_3\text{-Nb}_2\text{O}_5\text{-Ta}_2\text{O}_5$**
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P133 STUDY OF THE STRUCTURAL CHANGES UPON REVERSIBLE ELECTROCHEMICAL LITHIUM INSERTION IN COPPER BASED LAYERED OXYSULFIDES

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P135 STRUCTURAL AND DEFECT CHARACTERISTICS OF BISMUTH OXIDE BASED ION CONDUCTORS

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P137 DIMENSIONALITY OF LI PATHWAYS IN DISORDERED LIFEPO4 AND RELATED OLIVINES

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MIXED CONDUCTORS

P139 ANISOTROPIC STRUCTURAL AND MORPHOLOGICAL INSTABILITY OF SINGLE CRYSTAL SURFACE OF $\text{La}_2\text{NiO}_{4+\delta}$ AT HIGH TEMPERATURE

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P141 OXYGEN RELAXATION AND PHASE TRANSITION IN $\text{GdBaCo}_2\text{O}_{5+\delta}$ OXIDE

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P143 OXYGEN TRANSPORT PROPERTIES OF THIN FILM PEROVSKITES FOR USE IN SOFC CATHODES

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P145 OXYGEN DEFICIENCY, VACANCY ORDERING AND SURFACE-LIMITED IONIC TRANSPORT IN $(\text{La,Sr})\text{CoO}_{3-\delta}$

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P147 AN INVESTIGATION OF THE DEFECT CHEMISTRY OF $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_x\text{Fe}_{1-x}\text{O}_{3-\delta}$ ($0 \leq x \leq 0.8$) USING COMBINED 4-POINT DC CONDUCTIVITY AND THERMOPOWER MEASUREMENTS

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- P149 INVESTIGATION OF SR-DOPED AND SR-FREE $\text{La}_{1-y}\text{Cr}_y\text{O}_{3\pm\delta}$ PEROVSKITES AS SULFUR TOLERANT SOFC ANODES**
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- P151 INVESTIGATION OF CATHODE BEHAVIOR, AND DEFECT AND TRANSPORT PROPERTIES OF MODEL THIN FILM $\text{SrTi}_{1-x}\text{Fe}_x\text{O}_{3-\delta}$ ELECTRODES**
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- P153 ANALYSIS OF ELECTRONIC AND IONIC TRANSFERENCE NUMBERS IN THIN FILM NANOSTRUCTURED OXIDES AT HIGH TEMPERATURES AND VARYING OXYGEN PARTIAL PRESSURE**
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- P155 OXYGEN NONSTOICHIOMETRY OF $\text{Nd}_{2-x}\text{Sr}_x\text{NiO}_{4+\delta}$**
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- P157 OPTICAL PET SURFACES RECLAMATION BY TWIN-SPHEROID TOOL**
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- P159 SYNTHESIS AND CHARACTERIZATION OF $\text{La}_{0.6}\text{Ca}_{0.4}\text{CoO}_3$ PEROVSKITE PREPARED BY MPPM.**
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- P161 CERAMIC HOLLOW FIBER GAS SEPARATION MEMBRANES FOR SUSTAINABLE ENERGY PRODUCTION**
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MODELLING AND SIMULATION

- P163 ELECTRONIC STRUCTURE OF LiMPO_4 ($M=\text{V, Mn, Fe, Co, Ni}$) PHASES: EFFECTS OF DELITHIATION, SUBSTITUTIONS AND DEFECTS**
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- P165 MODELLING OF PHYSICO-CHEMICAL CHARACTERISTICS FOR AN INTERNAL REFORMING SOFC**
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P167 A MODEL FOR THE TRANSPORT PROPERTIES IN IONIC LIQUIDS

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NOVEL MATERIALS

P169 NEW BISMUTH ION CONDUCTING SOLID ELECTROLYTE

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P171 DEVELOPMENT OF CERAMIC NANOFIBERS AS ELECTROCHEMICAL CAPACITORS

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P173 STRUCTURAL AND ELECTROCHEMICAL PROPERTIES OF NANOCRYSTALLINE LiNiPO_4 PREPARED VIA CITRATE ROUTE

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P175 CARBON-FREE Pt ELECTROCATALYSTS SUPPORTED ON SnO_2 FOR PEFC

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P177 PREPARATION AND PYROELECTRIC PROPERTIES OF SOL-GEL DERIVED $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$ CERAMICS FOR THERMAL-SENSORS

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OXYGEN PERMEABILITY

P179 Ba-Fe BASED PEROVSKITE-TYPE OXIDE AS POTENCIAL OXYGEN SORBENT FOR PRESSURE-SWING ADSORPTION PROCESS

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P181 CATALYTIC PARTIAL OXIDATION OF SIMULATED COG TO SYNGAS IN A DENSE MEMBRANE REACTOR

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P183 HIGH-TEMPERATURE TRANSPORT PROPERTIES OF $\text{La}_{0.1}\text{Sr}_{0.9}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$

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P185 MIXED CONDUCTING PROPERTY OF STRONTIUM TITANATE, $\text{SrO}(\text{SrTiO}_3)_N$ ($N = 1, 2, \alpha$) COMPOUNDS WITH ANALOGOUS STRUCTURE
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P187 THERMOCHEMICAL BEHAVIOR OF $\text{Ba}_{0.50}\text{Sr}_{0.50}\text{CO}_{0.80}\text{Fe}_{0.20}\text{O}_{3-\Delta}$ MEMBRANE MATERIAL
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POLYMERS

P189 CONDUCTIVITY, THERMAL AND RAMAN STUDIES OF POLYMER ELECTROLYTE BASED ON P(ECH-co-EO)
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P191 STRUCTURAL ANALYSIS FOR THE CAST SOLVENT EFFECT ON SPEEK MEMBRANE PROPERTIES
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P193 STRONTIUM CROSSLINKED SPEEK PROTON EXCHANGE MEMBRANES FOR FUEL CELL
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P195 CORRELATION BETWEEN THE TEMPERATURE RANGE OF COOPERATIVITY AND THE FRAGILITY INDEX IN ION CONDUCTING POLYMERS
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P197 CONDUCTANCE BEHAVIOR OF POLYMERIC GEL ELECTROLYTE CONTAINING IONIC LIQUID AND ALKYL MAGNESIUM BROMIDE
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P199 THE IMPACT OF UV-MODIFIED RUBBER IN PMMA BLEND ELECTROLYTE
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P201 A SIMPLE P(VdF-HFP)-LiTf SYSTEM YIELDS HIGHLY IONIC CONDUCTING AND THERMALLY STABLE SOLID POLYMER ELECTROLYTES
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- P203 DIELECTRIC AND FTIR STUDIES ON BLENDING OF [xPMMA-(1-x)PVC] WITH LITFSI**
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- P205 CONDUCTIVITY SPECTROSCOPY ANALYSIS OF ION DYNAMICS IN A DISPERSED PHASE POLYMER NANOCOMPOSITE**
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- P207 MATERIALS AND TRANSPORT PROPERTY STUDIES ON HOT – PRESS CASTED SOLID POLYMER ELECTROLYTE MEMBRANES: [(1-x) PEO: x KIO₃]**
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- P209 POLYMER ELECTROLYTE MEMBRANES BY RADIATION-INDUCED GRAFTING OF STYRENE/DIVINYLBENZENE INTO ULTRA-HIGH MOLECULAR WEIGHT POLYETHYLENE FILMS**
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- P211 ELECTRICAL AND ELECTROCHEMICAL PROPERTIES OF MAGNESIUM ION CONDUCTING COMPOSITE GEL POLYMER ELECTROLYTES**
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PROTONS

- P213 HIGH TEMPERATURE NEUTRON AND X-RAY SYNCHROTRON DIFFRACTION INVESTIGATION OF THE BaCe_{0.85-x}Zr_xY_{0.15}O_{3-δ}**
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- P215 RADIATION INDUCED ELECTRICAL DEGRADATION OF HYDROGEN-DOPED BACe_{0.9}Y_{0.1}O_{3-δ} BY ELECTRONS WITH HIGH ENERGY AND DOSE RATE**
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- P217 FABRICATION AND PROPERTIES OF DENSE CaZr_{0.9}In_{0.1}O_{3-δ} CERAMICS BY AN AUTO-IGNITION COMBUSTION PROCESS**
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P219 PRODUCTION AND TESTING OF LaNbO₄-BASED THIN ELECTROLYTE FOR HIGH TEMPERATURE PROTON CONDUCTING SOFCs (PC-SOFCs)

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P221 EFFECT OF HALOGENS ON ENHANCEMENT OF PROTONIC CONDUCTIVITY OF MESOPOROUS Al₂O₃

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P223 CORE-SHELL POLYMER STRUCTURE IN 3DOM SILICA COMPOSITE MEMBRANE FOR HIGH PROTON SELECTIVITY

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P225 BRÖNSTED ACID-BASE IONIC LIQUID MEMBRANES AS PROTON CONDUCTING ELECTROLYTES

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P227 PROTON CONDUCTIVITY IN ACCEPTOR DOPED LaVO₄

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P229 MICROSTRUCTURE AND PROTON CONDUCTIVITY IN SPARK-PLASMA SINTERED CERAMIC BaZr_{0.5}Yb_{0.5}O_{3-δ}

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P231 PROTON CONDUCTING SOLID OXIDE FUEL CELLS WITH THE NOVEL LaNbO₄ AS THE ELECTROLYTE

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SENSORS

P233 CHARACTERIZATION OF MECHANOCHEMICALLY SYNTHESIZED ZINC SELENIDE

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P235 MICRO GAS SENSOR FOR MONITORING THE AUTOMOBILE EXHAUST GASES

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P237 YSZ-BASED POTENTIOMETRIC SENSOR AIMING AT DETECTION OF VOCs IN AIR ENVIRONMENT

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P239 MIXED POTENTIAL TYPE AMMONIA EXHAUST GAS SENSOR FOR HARSH ENVIRONMENTS

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P241 RAMAN STUDY OF LATTICE VIBRATIONS MODES OF KDP CRYSTALS

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P243 PREPARATION AND PYROELECTRIC PROPERTIES OF SOL-GEL DERIVED CaCu₃Ti₄O₁₂ CERAMICS FOR THERMAL-SENSORS

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SFB 458

P245 CATION TRANSPORT IN PEO/LiTFSI – A MOLECULAR DYNAMICS SIMULATION STUDY

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P247 STUDY OF THE ION DYNAMICS IN IONIC LIQUIDS BY FLUIDITY SPECTROSCOPY

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P249 MACROSCOPIC DYNAMICS IN POLYSILOXANE- AND POLYPHOSPHAZENE-BASED POLYMER ELECTROLYTES

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P251 STRUCTURAL INTEGRATION OF TELLURIUM OXIDE INTO MIXED-NETWORK-FORMER GLASSES STUDIED BY THE COMBINATION OF SOLID-STATE NMR TECHNIQUES AND XPS

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P253 FOREIGN-ION AND SELF-DIFFUSION IN A CROSSLINKED SALT-IN-POLYETHER COMPLEX

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SURFACES AND INTERFACES

P255 ELECTRODEPOSITED COBALT COATING ON CROFER22APU STEEL FOR INTERCONNECT APPLICATION IN SOLID OXIDE FUEL CELLS

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P257 CARBON DEPOSITION ON THE NICKEL SURFACE SPUTTERED ON OXIDE SUBSTRATE

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P259 SUBSTRATE DEPENDENCE OF ELECTROCHEMICAL PROPERTY OF LiMn₂O₄ THIN FILMS SYNTHESIZED BY PLD METHOD

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P261 WIRELESS ELECTROCHEMICAL PROMOTION OF CATALYSIS AND LOW TEMPERATURE OXYGEN PERMEATION STUDIES ON A NOVEL HOLLOW FIBRE MEMBRANE REACTOR

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P263 EFFECT OF ELECTROLYTE SURFACE MODIFICATION ON THE PERFORMANCE OF COMPOSITE ELECTRODES

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P265 NANODISPERSED Pt/YSZ CATALYSTS FOR PROPANE DEEP OXIDATION

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P267 DEPTH-RESOLVED X-RAY ABSORPTION SPECTROSCOPY FOR THE DIRECT OBSERVATION OF THE INTERFACE AT LiCoO₂ / Li₂O-Al₂O₃-P₂O₅-TiO₂-BASED GLASS CERAMICS

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- P269 ROBUST IMPEDANCE SPECTROSCOPY FOR INSULATING AND SEMICONDUCTING Mn-doped BaTiO₃ IN QUENCHED STATE**
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- P271 CONVERSION OF COPPER AND MANGANESE COATINGS TO SPINEL COATINGS ON STAINLESS STEEL INTERCONNECTS**
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- P273 CARBON SUPPORTED VN NANOPARTICLES FOR OXYGEN REDUCTION IN PEMFCs**
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