

**Sunday, July 3 WORKSHOPS**

## Physics Building, Warsaw University of Technology

|                  |  |  |
|------------------|--|--|
| 10:00 -<br>10:50 | INTRODUCTION TO IMPEDANCE SPECTROSCOPY<br><b>Bernard Boukamp</b>                           |  |
| 11:00 –<br>11:50 | TRANSPORT RELATIONS AND DEFECT CHEMISTRY I<br><b>Ilan Riess</b>                            |  |
| 12:00 –<br>12:50 | TRANSPORT RELATIONS AND DEFECT CHEMISTRY II<br><b>Ilan Riess</b>                           |  |
| 12:50 –<br>13:40 | Lunch Break (12:50 – 13:40)  |  |
| 13:40 –<br>14:30 | COMPUTATIONAL SOLID STATE CHEMISTRY<br><b>Rob Jackson</b>                                  |  |
| 14:40 –<br>15:30 | COMPUTATIONAL SOLID STATE CHEMISTRY<br><b>Rob Jackson</b>                                  |  |
| 15:40 -<br>16:10 | STRUCTURAL ANALYSIS OF IONIC CONDUCTORS, INTRODUCTION<br><b>Isaac Abrahams</b>             |  |
| 16:20 –<br>18:10 | STRUCTURAL ANALYSIS OF IONIC CONDUCTORS, HANDS-ON PROBLEM SOLVING<br><b>Isaac Abrahams</b> | IMPEDANCE ANALYSIS, HANDS-ON PROBLEM SOLVING<br><b>Bernard Boukamp</b> |

**Sunday, July 3 – Marriott Hotel****REGISTRATION:** 14:00 – 21:00**GET TOGETHER:** 19:30 – 21:00

**Monday, July 4**

Grand Ballroom I+II (2<sup>nd</sup> floor)

|      |   |
|------|---|
| 8:30 | Opening Ceremony  |
| 9:00 | THERMODYNAMIC AND SIMS ANALYSES ON MATERIALS COMPATIBILITY AND ELECTROCHEMICAL PROCESS IN SOLID OXIDE FUEL CELLS<br><br><b>PLENARY Harumi Yokokawa (JPN)</b><br><br>Chair: M.S. Whittingham |

|                | Grand Ballroom I (2 <sup>nd</sup> floor)   | Grand Ballroom II (2 <sup>nd</sup> floor)  | Baltic (3 <sup>rd</sup> floor)   | Congress Hall (3 <sup>rd</sup> floor)   |
|----------------|--|--|--|---|
|                | <b>Session A</b>   | <b>Session B</b>   | <b>Session C</b>   | <b>Session D</b>  |
| Chair          | J. Mizusaki  | M. Martin  | H.Tuller   | T. Norby  |
| <b>Session</b> | <b>SOFC</b>  | <b>FUNDAMENTALS</b>  | <b>MIXED ELECTRONIC-IONIC</b>  | <b>PROTON CONDUCTORS</b>  |
| 10:05          | QUANTITATIVE ANALYSIS OF MICROSTRUCTURAL CHANGE IN ELECTRODES DURING DISCHARGE OPERATION OF SOLID OXIDE FUEL CELLS<br><b>KEYNOTE K. Eguchi (JPN)</b>       | FIRST AND SECOND UNIVERSALITIES – PHENOMENA AND MODELING<br><br><b>KEYNOTE K. Funke (DEU)</b>                                    | COMPLETE REPRESENTATION OF ISOTHERMAL MASS & CHARGE TRANSPORT PROPERTIES OF MIXED IONIC ELECTRONIC CONDUCTORS<br><b>KEYNOTE H.-I. Yoo (KOR)</b>  | HYDROGEN ELECTRO-OXIDATION AT THE Pt   CsH <sub>2</sub> PO <sub>4</sub> INTERFACE<br><br><b>KEYNOTE S. M. Haile (USA)</b>                                   |
| 10:35          | TIME-TEMPERATURE-TRANSFORMATION (TTT) DIAGRAMS FOR CRYSTALLIZATION OF METAL-OXIDE THIN FILMS IN MEMS-SOFC APPLICATIONS<br><b>INVITED J.L.M. Rupp (CHE)</b> | INSIDE-OUT CORE-SHELL STRUCTURES IN PEROVSKITES: PROCESSING, CHARACTERIZATION AND PROPERTIES<br><br><b>INVITED Y. Tsur (ISR)</b> | DETERMINATION OF TOTAL OXYGEN NONSTOICHIOMETRIES: A CASE STUDY OF BSCF<br><br><b>INVITED D.N.Mueller (DEU)</b>   | INFLUENCE OF SINTERING ADDITIVE ON THE DEFECT STRUCTURE AND ELECTRICAL CONDUCTIVITY OF Y-DOPED BaZrO <sub>3</sub><br><br><b>INVITED Jong-Ho Lee I (KOR)</b> |
| 10:55          | YTTRIA-STABILISED-ZIRCONIA THIN FILMS FOR MICRO-SOLID OXIDE FUEL CELLS<br><br><b>A. Evans(CHE)</b>   | INTERATOMIC POTENTIAL MODEL FOR YTTRIA DOPED CERIA<br><br><b>M. Burbano (IRL)</b>  | HIGH ELECTRICAL PERFORMANCES OF ELECTROSPRAYED La <sub>0.6</sub> Sr <sub>0.4</sub> Co <sub>x</sub> Fe <sub>1-x</sub> O <sub>3-δ</sub> THIN FILMS CATHODE FOR IT-SOFCs<br><br><b>E. Djurado (FRA)</b> | BLOCKING GRAIN BOUNDARIES IN BaZrO <sub>3</sub> : DOPANT SEGREGATION AND SPACE CHARGE EFFECTS<br><br><b>INVITED R. Merkle (DEU)</b>                         |
| 11:15          | Coffee Break (11:15 – 11:30)   |  |  |   |

| Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b> |   | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>  |   | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>   |  | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b> |  |
|--|---|--|---|--|--|---|--|
| Chair F. Marques   |   | M. Saiful Islam  |   | H. Bouwmeester   |  | S. M. Haile   |  |
| Session  | SOFC  | FUNDAMENTALS   | MIXED ELECTRONIC-IONIC  | PROTON CONDUCTORS  |  |   |  |
| 11:30  | INFLUENCE OF La(Ni,Fe)O <sub>3</sub> MICROSTRUCTURE ON THE Cr-POISONING IMPACT<br><b>M. K. Stodolny (NLD)</b>   | INTER-ATOMIC FORCE CONSTANTS OF Ag <sub>2</sub> O FROM DIFFUSE NEUTRON SCATTERING MEASUREMENT<br><b>INVITED T. Sakuma (JPN)</b>  | OXYGEN DIFFUSION AND SURFACE EXCHANGE IN ANISOTROPIC LAYERED COBALTITES<br><b>INVITED M. Burriel (GBR)</b>  | NEW DEVELOPMENT STRATEGIES FOR PBI MEMBRANES FOR HT-PEMFCs<br><b>INVITED P. Mustarelli (ITA)</b>   |  |   |  |
| 11:50  | NANOSTRUCTURED CATALYTIC ELECTRODES FOR LOW-TEMPERATURE FUEL CELLS: APPLICATION OF THIN FILMS OF METAL OXO SPECIES TO ACTIVATE NOBLE METAL NANOPARTICLES<br><b>INVITED P.J. Kulesza (POL)</b> | COMPUTER MODELLING OF THE CONCENTRATION DEPENDENCE OF DOPING IN SOLID STATE IONIC MATERIALS<br><b>R. A. Jackson (GBR)</b>  | STRUCTURES, PHASE TRANSITIONS AND PROPERTIES OF THE MIXED IONIC-ELECTRONIC CONDUCTORS Ba <sub>4</sub> Nb <sub>2-x</sub> Ta <sub>x</sub> O <sub>9</sub><br><b>M. Dunstan (AUS)</b> | FABRICATION AND HIGH-TEMPERATURE MECHANICAL PROPERTIES OF DOPED BARIUM CERATE PEROVSKITE PROTON CONDUCTOR<br><b>M. Jiménez-Melendo (ESP)</b> |  |   |  |
| 12:10  | CLUSTER EXPANSION AND MONTE CARLO SIMULATION OF THE GA-DOPED Ba <sub>2</sub> IN <sub>2</sub> O <sub>5</sub> FAST ANIONIC CONDUCTOR<br><b>R. Dervisoglu (GBR)</b>                              | UNDERSTANDING CHEMICAL EXPANSION IN CeO <sub>2</sub><br><b>D. Marrocchelli (USA)</b>   | ELECTRONIC CONDUCTIVITY OF COBALT DOPED LANTHANUM GALLATE BY MODIFIED HEBB-WAGNER TECHNIQUE<br><b>Y. Fujiwara (JPN)</b>   | SNO <sub>2</sub> -SUPPORTED CARBON-FREE PEFC ELECTROCATALYSTS WITH DURABILITY AGAINST VOLTAGE CYCLING<br><b>K. Sasaki (JPN)</b>              |  |   |  |
| 12:30  | CHARACTERIZATION OF THE COMPOSITE PARTICLES FOR AMMONIA-FUELED SOLID OXIDE FUEL CELLS<br><b>H. Yoshida (JPN)</b>  | AB-INITIO STUDY OF THE STRUCTURAL FEATURES OF APATITE-TYPE LANTHANUM SILICATE COMPOUNDS<br><b>A. Berghout (FRA)</b>  | OXYGEN SURFACE EXCHANGE AND DIFFUSION KINETICS OF B-SITE DOPED LANTHANUM STRONTIUM FERRITES<br><b>T. N. Phung (NLD)</b>   | ENHANCED PERFORMANCE OF CO POISONED PEM FUEL CELLS VIA TRIODE OPERATION<br><b>F. Sapountzi (GRC)</b>   |  |   |  |
| 12:50  | INTERMEDIATE TEMPERATURE SOLID OXIDE ELECTROLYSIS CELL USING LaGaO <sub>3</sub> -BASE OXIDE ION CONDUCTORS<br><b>T. Ishihara (JPN)</b>  | SLOW RELAXATION, CHEMICAL EXPANSION AND FERROELASTIC PHASE TRANSITION IN La <sub>x</sub> Sr <sub>1-x</sub> MnO <sub>3±δ</sub> (x= 0.2 AND 0.3)<br><b>INVITED T. Grande (NOR)</b> | EFFECT OF DOPING AND GRAIN SIZE ON OXYGEN PERMEATION OF LA <sub>2</sub> NIO <sub>4+δ</sub> -BASED MIXED CONDUCTING CERAMICS<br><b>A. Feldhoff (DEU)</b>                           | NMR STUDIES OF THE PROTON CONDUCTOR, CsH <sub>2</sub> PO <sub>4</sub> – A POTENTIAL FUEL CELL ELECTROLYTE?<br><b>G. Kim (USA)</b>            |  |   |  |
| 13:10  | Lunch Break (13:10 – 14:30)   |  |   |  |  |   |  |

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|--|---|--|--|---|--|---------------------------------------|--|
| Session A                                |   | Session B  |  | Session C   |  | Session D                             |  |
| Chair K. Eguchi                          |   | H. Yokokawa  |  | H.D. Wiemhöfer  |  | M. Forsyth                            |  |
| Session                                  | SOFC  | FUNDAMENTALS   | MIXED ELECTRONIC-IONIC   | PROTON CONDUCTORS   |  |                                       |  |
| 14:30                                    | ELEMENTARY KINETIC AND ATOMISTIC MODELING OF H <sub>2</sub> AND CO OXIDATION AT Ni/YSZ ELECTRODES<br><br><b>V. Yurkiv (DEU)</b>   | SCREENING OF THE INORGANIC CRYSTAL STRUCTURE DATABASE (ICSD) FOR MATERIALS FAVOURING HIGH IONIC CONDUCTIVITY<br><br><b>INVITED M. Avdeev (AUS)</b> | CONDUCTIVITY, NON STOICHIOMETRY AND OXYGEN TRANSPORT PROPERTIES OF Ba <sub>x</sub> Sr <sub>1-x</sub> Co <sub>0.8</sub> Fe <sub>0.2</sub> O <sub>3-<math>\delta</math></sub> ( $x=0, 0.2$ and $0.5$ )<br><br><b>K. Wiik (NOR)</b>                                       | UNDERSTANDING ELECTRODES IN PROTON CONDUCTING FUEL CELLS. CASE OF Ni-LaNbO <sub>4</sub> CERMET ANODES<br><br><b>A. Magraso (NOR)</b>                                      |  |                                       |  |
| 14:50                                    | INVESTIGATION OF SURFACE ELECTRONIC STRUCTURE OF SrTi <sub>1-x</sub> Fe <sub>x</sub> O <sub>3</sub> AT HIGH TEMPERATURE AND OXYGEN ENVIRONMENT<br><br><b>Yan Chen (USA)</b> | A MODEL FRAMEWORK FOR ION TRANSPORT EQUATIONS IN SOLID ELECTROLYTES<br><br><b>M. Landstorfer (DEU)</b>   | OXYGEN SURFACE EXCHANGE, PHASE STABILITY AND OXYGEN PERMEABILITY OF ZR-SUBSTITUTED Ba <sub>0.5</sub> Sr <sub>0.5</sub> Co <sub>0.8</sub> Fe <sub>0.2</sub> O <sub>3-<math>\delta</math></sub> PEROVSKITE-TYPE CERAMICS<br><br><b>INVITED H. J.M. Bouwmeester (NLD)</b> | INVESTIGATION OF DOPED BARIUM ION CONDUCTING FUEL CELL ELECTROLYTES<br><br><b>A. Jarry (FRA)</b>  |  |                                       |  |
| 15:10                                    | FIRST OBSERVATION OF IONIC CONDUCTIVITY AND REACTION MECHANISMS IN SOLID OXIDE FUEL CELLS BY IN-SITU ELECTRON HOLOGRAPHY<br><br><b>A. Hossein Tavabi (JPN)</b>              | ORIGIN OF ACTIVATION ENERGY IN SUPER IONIC CONDUCTOR<br><br><b>O. Kamishima (JPN)</b>  | ANOMALOUS PROPERTIES OF PEROVSKITE-TYPE OXIDE ELECTRODE FILMS PREPARED BY PULSED LASER DEPOSITION<br><br><b>INVITED J. Mizusaki (JPN)</b>  | CRYSTAL SYMMETRY AND BF <sub>4</sub> MOLECULE DYNAMICS IN PROTON CONDUCTOR (C <sub>4</sub> H <sub>4</sub> N <sub>2</sub> )HBF <sub>4</sub><br><br><b>Y. Yoshida (JPN)</b> |  |                                       |  |
| 15:30                                    | IMPACT OF Ni ON THE ACCELERATED DEGRADATION OF 8.5 mol% Y <sub>2</sub> O <sub>3</sub> -DOPED ZrO <sub>2</sub><br><br><b>H. Störmer (DEU)</b>                                | NON-DEBYE RELAXATION FUNCTION AND SHORT-TIME AND LONG-TIME HOPPING IN ION CONDUCTING SOLIDS<br><br><b>G. Govindaraj (IND)</b>                      | DIFFUSION-CONTROLLED DEGRADATION OF Ba(Co, Fe, Nb)O <sub>3-<math>\delta</math></sub> PEROVSKITES IN CARBON DIOXIDE AND EFFECT OF CATION SUBSTITUTION<br><br><b>Jianxin Yi (DEU)</b>  | THERMOGRAVIMETRIC RELAXATION STUDY OF LANTHANUM TUNGSTATE, La <sub>x</sub> W <sub>y</sub> O <sub>12-<math>\delta</math></sub> , $x/y = 5.6$<br><br><b>R. Hancke (NOR)</b> |  |                                       |  |
| 15:50                                    | APPLICATION OF ScSZ FOR LOW TEMPERATURE OPERATION OF 3DOM Ni-YSZ-SUPPORTED SOFC<br><br><b>H. Munakata (JPN)</b>   | STUDY ON DEFECT STRUCTURES OF A-CATION-DEFICIENT PEROVSKITE La <sub>2/3-x</sub> Li <sub>3x</sub> TiO <sub>3</sub><br><br><b>T. Tsurui (JPN)</b>    | EFFECT OF WATER VAPOR ON THE ELECTRICAL PROPERTIES OF LI DOPED ZNO UNDER OXIDIZING CONDITIONS<br><br><b>T. S. Bjørheim (NOR)</b>   | HIGH FLUX NEUTRON DIFFRACTION STUDY OF THE STRUCTURAL PHASE TRANSITION IN LANBO <sub>4</sub><br><br><b>C. S. Knee (SWE)</b>   |  |                                       |  |
| 16:10                                    | STRUCTURED NANOCOMPOSITE CATALYSTS FOR INTERNAL REFORMING OF METHANE IN SOLID OXIDE FUEL CELLS<br><br><b>V. Sadykov (RUS)</b>   | SCALING OF SUPERIONIC TRANSITION TEMPERATURE IN M <sub>3</sub> D(XO <sub>4</sub> ) <sub>2</sub><br><br><b>Y. Matsuo (JPN)</b>                      | EXPERIMENTAL AND THEORETICAL STUDIES OF NON-GALVANIC HYDROGEN SEPARATIONS USING YTTERBIUM DOPED STRONTIUM CERATES<br><br><b>M. Matsuka (JPN)</b>   | NOVEL HYBRID HETEROPOLY ACID OR ZIRCONIUM PHOSPHONATE/POLYMER IONOMERS WITH VERY HIGH PROTON CONDUCTIVITY<br><br><b>A. M. Herring (USA)</b>                               |  |                                       |  |
| 16:30                                    | Coffee Break (16:30 – 16:50)  |  |  |   |  |                                       |  |

|                | Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b>   | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>   | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>  | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b>   |
|----------------|--|---|---|---|
| Chair          | M. Backhaus-Ricoult  | D.Teeters   | M. Wasiucionek  | P. Kulesza  |
| <b>Session</b> | <b>SENSORS</b>   | <b>THIN FILMS</b>   | <b>GLASSES</b>  | <b>ELECTRO-CATALYSIS</b>  |
| 16:50          | DEVELOPMENT OF MIXED-POTENTIAL-TYPE YSZ-BASED GAS SENSORS<br><br><b>KEYNOTE N. Miura (JPN)</b>   | POLARIZATION OF OXIDE AMORPHOUS FILMS UNDER INTENSE ELECTRICAL FIELD PROBED BY IN-SITU HARD X-RAY PES MEASUREMENTS<br><br><b>KEYNOTE S. Yamaguchi (JPN)</b>   | SUPERIONIC GLASSES AND GLASS-CERAMICS FOR ALL-SOLID-STATE BATTERIES<br><br><b>KEYNOTE M. Tatsumisago (JPN)</b>  | THE USE OF ANIONIC AND CATIONIC CONDUCTORS FOR THE ELECTROCHEMICAL PROMOTION OF CATALYSIS<br><br><b>KEYNOTE C. G. Vayenas (GRC)</b>   |
| 17:20          | POLYMER BASED MATERIALS FOR SOLID ELECTROLYTE SENSORS<br><br><b>INVITED J. Zosel (DEU)</b>   | C-V AND R-V CHARACTERISTICS OF COMPLEX OXIDE FILM PREPARED WITH ELECTROCHEMICAL DEPOSITION METHOD<br><br><b>INVITED H. Zhang (CHN)</b>  | MECHANISMS OF ION CONDUCTION IN POLYELECTROLYTE MULTILAYERS AND COMPLEXES<br><br><b>INVITED C. Cramer (DEU)</b>   | OXYGEN MIGRATION THROUGH NAFION MEMBRANES IN DIRECT ETHANOL FUEL CELL AND ITS INFLUENCE ON DISTRIBUTION OF PRODUCTS OF ETHANOL ELECTROOXIDATION<br><br><b>A. Lewera (POL)</b> |
| 17:40          | ELECTROCHEMICAL PROPERTY OF PROTON-CONDUCTIVE MANGANESE DIOXIDE FOR SENSING HYDROGEN GAS CONCENTRATION<br><b>Y. Ueda (JPN)</b>                           | CATHODE PERFORMANCE OF SPRAY PYROLYSIS-DEPOSITED $\text{La}_{1-x}\text{Sr}_x\text{Fe}_{1-y-z}\text{Co}_y\text{Ni}_z\text{O}_{3-\square}$ THIN FILMS FOR MICRO-SOLID OXIDE FUEL CELLS<br><b>P. M. Rørvik (NOR)</b> | NEW HYBRID INORGANIC-ORGANIC SOLID ELECTROLYTE BASED ON LITHIUM BOROPHOSPHATE GLASS AND $\text{EMI}:\text{BF}_4$ IONIC LIQUID<br><b>B. K. Money (IND)</b> | DIRECT ELECTRO-OXIDATION OF ACETIC ACID FOR HYDROGEN PRODUCTION AND POWER GENERATION IN A SOLID OXIDE FUEL CELL REACTOR<br><b>G.E. Marnellos (GRC)</b>                        |
| 18:00          | THE ELECTRICAL PROPERTIES OF CARBONATE-BASED $\text{NO}_x$ -STORAGE MATERIALS FOR IN-SITU CHARACTERIZATION OF CATALYST SYSTEMS<br><b>A. Geupel (DEU)</b> | GRAIN BOUNDARY AND INTERFACE EFFECTS IN THIN FILMS OF YTTRIA STABILIZED ZIRCONIA: NEW EXPERIMENTAL APPROACHES<br><b>M. Gerstl (AUT)</b>   | MIXED GLASS FORMER EFFECT IN LITHIUM BOROPHOSPHATE GLASSES: A STRUCTURAL APPROACH<br><b>INVITED B. Raguinet (FRA)</b>                                     | FIRST PRINCIPLES INVESTIGATIONS OF LI-FE/MN-OXIDES AS ELECTROCATALYSTS FOR LI-AIR BATTERIES<br><b>INVITED M. K. Y. Chan (USA)</b>   |
| 18:20          | CHLORINE SENSOR COMBINING NASICON WITH Cr-BASED SPINEL-TYPE OXIDE ELECTRODES<br><b>Xishuang Liang (CHN)</b>  | SYNTHESIS AND PROPERTIES OF PROTON CONDUCTING Y-DOPED $\text{CaZrO}_3$ FILMS<br><b>L.A. Dunyushkina (RUS)</b>   | IONIC VS ELECTRONIC CONDUCTIVITY IN $\text{CdX-Agl-As}_2\text{X}_3$ (X=Se or Te) CHALCOGENIDE GLASSES<br><b>D. Le Coq (FRA)</b>                           | STUDY OF THE MECHANISM OF THE ELECTROCHEMICAL PROMOTION OF Rh/YSZ CATALYSTS FOR $\text{C}_2\text{H}_4$ OXIDATION VIA AC IMPEDANCE SPECTROSCOPY<br><b>S. Brosda (GRC)</b>      |
| 18:40          | Time for supper  |   |   |   |

**Tuesday, July 5**

Grand Ballroom I+II (2<sup>nd</sup> floor)

|      |   |
|------|---|
| 8:30 | <p>FROM FUEL CELLS TO LITHIUM BATTERIES:<br/>ATOMIC-SCALE INSIGHTS INTO ENERGY MATERIALS</p> <p style="text-align: center;"><b>PLENARY M.Saiful Islam (GBR)</b></p> <p>Chair: F. Krok</p> |
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|---------|---|---|---|---|
|         | <b>Session A</b>  | <b>Session B</b>  | <b>Session C</b>  | <b>Session D</b>  |
| Chair   | A. Evans  | I. Abrahams   | C.M. Julien   | J. Fleig  |
| Session | <b>SOFC – II</b>  | <b>OXYGEN ION CONDUCTORS</b>  | <b>MIXED ELECTRONIC-IONIC</b>   | <b>NANOIONICS</b>   |
| 9:35    | <p>INVESTIGATION ON ANODE MATERIALS FOR SOLID OXIDE FUEL CELLS RUNNING ON HYDROCARBON FUELS</p> <p style="text-align: center;"><b>KEYNOTE T. L. Wen (CHN)</b></p>             | <p>ADVANCED FUNCTIONAL OXIDE MATERIALS</p> <p style="text-align: center;"><b>KEYNOTE M. Martin (DEU)</b></p>  | <p>ODD RECTIFICATION, HYSTERESIS AND SWITCHING IN SOLID STATE DEVICES BASED ON MIXED IONIC ELECTRONIC CONDUCTORS</p> <p style="text-align: center;"><b>KEYNOTE I. Riess (ISR)</b></p> | <p>NANOIONICS: THERMODYNAMICS, TRANSPORT AND STORAGE</p> <p style="text-align: center;"><b>KEYNOTE J. Maier (DEU)</b></p>   |
| 10:05   | <p>IMPACT OF HUMID ATMOSPHERES ON THE OXYGEN EXCHANGE PROPERTIES OF SR-SUBSTITUTED LANTHANUM COBALTITE AT 600°C</p> <p style="text-align: center;"><b>E. Bucher (AUT)</b></p> | <p>SINGLE CRYSTAL NEUTRON SCATTERING STUDIES OF OXIDE ION DISORDER IN BROWNMILLERITE-TYPE STRONTIUM FERRITE</p> <p style="text-align: center;"><b>INVITED C. D. Ling (AUS)</b></p>  | <p>LOW TEMPERATURE OXYGEN INCORPORATION IN SINGLE CRYSTALLINE SrTiO<sub>3</sub> FACILITATED BY HIGH DENSITY DISLOCATIONS</p> <p style="text-align: center;"><b>Xin Guo (DEU)</b></p>  | <p>DEFECT DISTRIBUTION AND SILVER-ION MOBILITY IN AgI (β γ)-HETEROSTRUCTURES</p> <p style="text-align: center;"><b>B. J. Morgan (GBR)</b></p>   |
| 10:25   | <p>COMPARISON OF Y AND LA-SUBSTITUTED SrTiO<sub>3</sub> AS ANODE MATERIALS FOR SOFCS</p> <p style="text-align: center;"><b>Q. Ma (DEU)</b></p>                                | <p>ION CONDUCTION ANISOTROPY EVIDENCED IN POLYCRYSTALLINE LANTHANUM SILICATES BY IMPEDANCE SPECTROSCOPY</p> <p style="text-align: center;"><b>INVITED J.S. Lee (KOR)</b></p>  | <p>NEW OXYGEN ELECTRODES FOR SOFC-H<sup>+</sup> APPLICATIONS: STUDY OF THEIR ELECTROCHEMICAL BEHAVIOUR</p> <p style="text-align: center;"><b>F. Mauvy (FRA)</b></p>                   | <p>TRANSPORT PROPERTIES IN BULK NANOCRYSTALLINE Sm-DOPED CERIA PREPARED BY HIGH PRESSURE FIELD ASSISTED SINTERING.</p> <p style="text-align: center;"><b>U. Anselmi-Tamburini (ITA)</b></p> |
| 10:45   | <p>DEVELOPMENT OF EVALUATION TECHNIQUES ON EFFECTIVE REACTION ZONE OF NI-GDC CERMET ANODE</p> <p style="text-align: center;"><b>H. Watanabe (JPN)</b></p>                     | <p>IMPROVED OXIDE ION CONDUCTIVITY IN Pr<sub>2</sub>Ni<sub>0.75</sub>Cu<sub>0.25</sub>Ga<sub>0.05</sub>O<sub>4+□</sub>Sm<sub>0.2</sub>Ce<sub>0.8</sub>O<sub>1.9</sub> (PNCG-SDC) LAMINATED FILM</p> <p style="text-align: center;"><b>INVITED T. Ishihara (JPN)</b></p> | <p>NEUTRON SCATTERING STUDY OF IONIC DIFFUSION IN Cu-Se SUPERIONIC COMPOUNDS</p> <p style="text-align: center;"><b>INVITED S. A. Danilkin (AUS)</b></p>                               | <p>CHARGE CARRIER CHEMISTRY OF DOPED AND UNDOPEd NANOCRYSTALLINE STRONTIUM TITANATE</p> <p style="text-align: center;"><b>P. Lupetin (DEU)</b></p>  |
| 11:05   | Coffee Break (11:05 – 11:20)  |   |   |   |

| Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b> |   | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>   |   | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>   |  | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b> |  |
|--|---|---|---|--|--|---|--|
| Chair T. L. Wen  |   | T. Ishihara   |   | H.I.Yoo  |  | P. Heitjans   |  |
| Session  | SOFC – II   | OXYGEN ION CONDUCTORS   | MIXED ELECTRONIC-IONIC  | NANOIONICS   |  |   |  |
| 11:20  | PROGRESS IN THE DEVELOPMENT OF ANODE MATERIALS FOR SOLID OXIDE FUEL CELLS<br><br><b>INVITED S. Tao (GBR)</b>  | ENERGETICS OF RARE EARTH DOPED SOLID SOLUTIONS WITH FLUORITE STRUCTURE: INSIGHT INTO VACANCY CLUSTERING<br><br><b>INVITED A. Navrotsky (USA)</b>      | ELECTRICAL CONDUCTIVITY AND DEFECT EQUILIBRIUM OF HEAVILY DONOR-DOPED STRONTIUM TITANATES<br><br><b>INVITED H. Takamura (JPN)</b>   | SPACE-CHARGE EFFECT OF LITHIUM FLUORIDE THIN FILMS<br><br><b>Chilin Li (DEU)</b>   |  |   |  |
| 11:40  | AC IMPEDANCE ANALYSIS OF AN EFFECT OF REDOX CYCLES ON THE ELECTRICAL PERFORMANCE OF AN ANODE-SUPPORTED PLANAR SOLID OXIDE FUEL CELL<br><br><b>T. Hatae (JPN)</b>    | STRUCTURAL DISORDER IN DOPED ZIRCONIAS – THE $Zr_{0.8}Sc_{0.2-x}Y_xO_{1.9}$ ( $0.0 \leq x \leq 0.2$ ) SYSTEM<br><br><b>INVITED S.T. Norberg (SWE)</b> | ENHANCING ELECTRONIC CONDUCTIVITY IN STRONTIUM TITANATES THROUGH CORRELATED A AND B SITE DOPING<br><br><b>D. Neagu (GBR)</b>  | THE TECHNOLOGY LEVEL CRITERIA FOR ADVANCED SUPERCAPACITORS<br><br><b>A.L. Despotuli (RUS)</b>  |  |   |  |
| 12:00  | STRESS ANALYSIS IN OPERATED ANODE SUPPORT TYPE CELLS USING <i>IN-SITU</i> RAMAN SCATTERING SPECTROSCOPY<br><br><b>F. Iguchi (JPN)</b>                               | LANTHANUM OXIDE AS A SCAVENGING AGENT FOR ZIRCONIA ELECTROLYTES<br><br><b>J.R. Frade (PRT)</b>  | COMBINATORIAL AND DIRECT SOLID STATE CHEMISTRY; DISCOVERY OF NEW DOPED LANTHANUM NICKELATES<br><br><b>S. Alexander (GBR)</b>  | IONIC CONDUCTIVITY OF COMPOSITES WITH MESOPOROUS OXIDES<br><br><b>N.F. Uvarov (RUS)</b>  |  |   |  |
| 12:20  | ELECTRICAL CONDUCTIVITY, REDOX AND DIMENSIONAL STABILITY, AND ELECTROCHEMICAL PROPERTIES OF PR-DOPED $SrTiO_3$ FOR SOFC ANODES<br><br><b>A.A. Yaremchenko (PRT)</b> | GRAIN BOUNDARY EFFECTS ON THE ELECTRICAL CONDUCTIVITY OF ACCEPTOR AND DONOR DOPED CERIUM OXIDE THIN FILMS<br><br><b>M. C. Göbel (DEU)</b>             | INTRINSIC DISORDER AND DIFFUSION IN $LnBaCo_2O_{5.5}$ DOUBLE PEROVSKITES<br><br><b>INVITED J. A. Kilner (GBR)</b>   | HIGH CONDUCTIVE PROTON ELECTROLYTES BASED ON $CsH_2PO_4$ : TRANSPORT AND STRUCTURAL PROPERTIES<br><br><b>V.G. Ponomareva (RUS)</b>         |  |   |  |
| 12:40  | STABILITY AND PERFORMANCE OF SOFC WITH $SrTiO_3$ -BASED ANODE IN $CH_4$ FUEL<br><br><b>G. M. Choi (KOR)</b>   | OXYGEN SURFACE EXCHANGE KINETICS OF GADOLINA- AND SAMARIA-DOPED CERIA<br><br><b>Chung.Yul Yoo (NLD)</b>   | OXYGEN DEFICIENCY, DEFECT INTERACTIONS AND TRANSPORT IN PEROVSKITE-TYPE $(Ln,A)(Fe,M)O_{3-\delta}$ ( $Ln = La, Pr; A = Sr, Ba, Ca; M = Al, Nb$ )<br><br><b>E.N. Naumovich (PRT)</b> | MASS TRANSPORT PROPERTIES IN SOLIDIFIED LITHIUM-ION CONDUCTING IONIC LIQUIDS AT OXIDE PARTICLE SURFACES<br><br><b>A. Unemoto (JPN)</b>     |  |   |  |
| 13:00  | REDOX STABLE MIXED IONIC AND ELECTRONIC CONDUCTING MATERIALS AS ELECTRODES FOR SOLID OXIDE FUEL CELLS<br><br><b>INVITED F. Chen (USA)</b>                           | ON THE INTERPLAY OF STRAIN AND IONIC CONDUCTIVITY IN ELECTROCERAMIC THIN FILMS<br><br><b>J.L.M. Rupp (CHE)</b>  | EFFECT OF B-SITE DOPING ON OXYGEN TRANSPORT PROPERTIES AND STABILITY OF $La_{0.2}Sr_{0.8}Fe_{1-x}M_xO_{3-\square}$ , $M=Al, Zr, Ta$<br><br><b>Ø.F. Lohne (NOR)</b>                  | IN SITU AND EX SITU X-RAY STUDY OF FORMATION AND DECOMPOSITION OF $Li_2CoPO_4F$ UNDER HEATING AND COOLING<br><br><b>N.V. Kosova, (RUS)</b> |  |   |  |
| 13:20  | Lunch Break (13:20 – 14:40)   |   |   |  |  |   |  |

Grand Ballroom I (2<sup>nd</sup> floor)

## Session A

Grand Ballroom II (2<sup>nd</sup> floor)

## Session B

Baltic (3<sup>rd</sup> floor)

## Session C

Congress Hall (3<sup>rd</sup> floor)

## Session D

Chair

S. Bredikhin

J. Frade

J. Garbarczyk

S. Skinner

| Session | SOFC – I  | OXYGEN ION CONDUCTORS   | MIXED ELECTRONIC-IONIC  | J. KILNER SESSION  |
|---------|---|---|---|--|
| 14:40   | ELECTROCHEMICAL PROPERTIES OF $\text{La}_{1.7}\text{Ca}_{0.3}\text{Ni}_{1-y}\text{Cu}_y\text{O}_{4+\delta}$ CATHODE MATERIALS FOR IT-SOFC<br><b>H. Zhao (CHN)</b> | SYNTHESIS AND PROPERTIES OF OXYGEN STORAGE MATERIALS<br><br><b>INVITED B. Dabrowski (USA)</b>   | OPTICALLY DETERMINED OXYGEN EXCHANGE KINETICS IN $\text{Pr}_x\text{Ce}_{1-x}\text{O}_{2-\square}$<br><br><b>S. R. Bishop (USA)</b>  | 14:30-14:35<br><br><b>S. Skinner(GBR)/R. DeSouza (DEU)</b>   |
| 15:00   | DEVELOPMENT OF SOLID OXIDE FUEL CELLS ANODE WITH TUNGSTEN OXIDE AND COPPER OXIDE COMPOSITE<br><b>A. J. Mohammed Hussain (DNK)</b>                                 | MULTINUCLEAR SOLID STATE NMR STUDIES OF DOPED PEROVSKITES: ION MOBILITY AND TRAPPED DEFECTS<br><b>F. Blanc (GBR)</b>  | ELECTRONIC PROPERTIES OF OLIVINE MATERIALS FOR POSITIVE ELECTRODES IN LITHIUM-ION BATTERIES<br><b>INVITED C.M. Julien (FRA)</b>   | 14:35-15:00<br><br><b>H. Tuller (USA)</b>  |
| 15:20   | IRON AND MANGANESE DOPED LANTHANUM STRONTIUM TITANATES FOR SOFC ANODES<br><b>D. N. Miller (GBR)</b>   | STABILITY OF $(\text{Ln}_{0.8}\text{Ca}_{0.1}\text{Ln}_{0.1})_2\text{Ti}_2\text{O}_{7-\delta}$ (Ln=Dy, Yb; Ln=Ce, Tb) PYROCHLORES IN REDOX CONDITIONS<br><b>A. V. Shlyakhtina (RUS)</b> | DETERMINATION OF THE PHASE COMPOSITION IN $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$ BY MEANS OF ELECTRON MICROSCOPY<br><b>P. Müller (DEU)</b> | 15:00-15:25<br><br><b>R. Catlow (GBR)</b>  |
| 15:40   | MULTIDIMENSIONAL MODELING OF THIN FILM MIXED CONDUCTORS: THE CASE OF CERIA.<br><br><b>F. Ciucci (DEU)</b>   | ATOMIC FORCE MICROSCOPY INVESTIGATIONS ON SPACE CHARGE REGIONS IN DOPED CERIA THIN LAYERS<br><b>K. Schmale (DEU)</b>  | CORRELATION OF IONIC TRANSPORT AND VISCOELASTIC LOSS IN HIGH-TEMPERATURE PIEZOELECTRIC CRYSTALS<br><b>H. Fritze (DEU)</b>   | 15:25-15:50<br>GAS PHASE ANALYSIS OF $^{18}\text{O}$ - $^{16}\text{O}$ ISOTOPIC EXCHANGE REACTIONS ON SOLID OXIDE ION CONDUCTORS<br><b>H. J.M. Bouwmeester (NLD)</b> |
| 16:00   | EFFECT OF MN-DOPING ON STABILITY OF SCANDIA STABILIZED ZIRCONIA ELECTROLYTE UNDER DUAL ATMOSPHERE OF SOLID OXIDE FUEL CELLS<br><b>K. Yamaji (JPN)</b>             | SIMS CHARACTERISATION OF THIN FILMS GROWN ON ISOTOPICALLY LABELED SUBSTRATES<br><br><b>D. Stender (CHE)</b>   | CATION IMPURITY DIFFUSION IN THE MIXED CONDUCTING PEROVSKITE $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8}\text{Fe}_{0.2}\text{O}_{3-\delta}$<br><br><b>S. P. Harvey (DEU)</b>       | 15:50-16:15<br>CAN WE EVER GET AWAY FROM $\text{CeO}_2$ ?<br><br><b>J. Drennan (AUS)</b>   |
| 16:20   | PERFORMANCE AND LONG TERM STABILITY OF LARGE AREA ANODE SUPPORTED SOLID OXIDE FUEL CELL (SOFC)<br><b>Hyung-Tae Lim (KOR)</b>                                      | SOLID STATE NMR INVESTIGATION OF OXYGEN DYNAMICS IN SCANDIUM DOPED CERIA IN 50 K TO 1073 K TEMPERATURE RANGE<br><b>J. Subbi (EST)</b>   | SYNTHESIS AND CHARACTERISATION OF COBALT CONTAINING PEROVSKITES DOPED WITH OXYANIONS<br><br><b>J.M. Porras (GBR)</b>  | 16:15-16:40<br><br><b>J.A. Lane (GBR)</b>  |
| 16:40   | Coffee Break (16:40 – 17:00)  |   |   |  |

| Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b> |   | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>   |   | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>   |  | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b> |  |
|--|---|---|---|--|--|---|--|
| Chair  | W. Sitte  | B. Boukamp  |   | I. Riess   |  | R. De Souza   |  |
| Session  | SOFC – I  | EXPERIMENTAL  | MIXED ELECTRONIC-IONIC  | J. KILNER SESSION  |  |   |  |
| 17:00  | CATHODE SELECTION FOR PROTON CERAMIC FUEL CELL<br><br><b>INVITED O. Joubert (FRA)</b>   | SURFACE AND BULK PROPERTIES OF LiFePO <sub>4</sub> : THE MAGNETIC ANALYSIS<br><br><b>INVITED A. Mauger (FRA)</b>  | IN-SITU OBSERVATION OF METAL/AMORPHOUS TANTALUM OXIDE HETERO-INTERFACE USING HARD X-RAY PHOTOEMISSION SPECTROSCOPY<br><br><b>T. Tsuchiya (JPN)</b>                      | 17:00-17:25<br>ONIC NANOPARTICLES IN HERITAGE CONSERVATION<br><br><b>A. Chadwick (GBR)</b>                         |  |   |  |
| 17:20  | INVESTIGATION ON SOFC CATHODIC REACTION BY USING TIME-RESOLVED IN-SITU X-RAY ABSORPTION SPECTROSCOPY<br><br><b>K. Amezawa (JPN)</b> | EFFECT OF UNIAXIAL STRESS ON CONDUCTIVITIES OF IONIC AND MIXED CONDUCTOR<br><br><b>INVITED K. Sato (JPN)</b>  | I ELECTROCHEMICAL PERFORMANCE OF NOVEL LAYERED PEROVSKITES FOR SOFC CATHODES<br><br><b>R. Sayers (GBR)</b>  | 17:25-17:50I<br><br><b>J. Owen (GBR)</b>   |  |   |  |
| 17:40  | 3D FEM MODEL FOR THE RECONSTRUCTION OF POROUS MIEC CATHODES<br><br><b>J. Joos (DEU)</b>   | DIRECT OBSERVATION OF LITHIUM IONS AT ATOMIC RESOLUTION USING AN ABERRATION-CORRECTED ANNULAR-BRIGHT-FIELD IMAGING CONDITION<br><br><b>Lin Gu (CHN)</b> | PHONON SPECTRA OF SUPERIONIC SODIUM AND POTASSIUM OXIDES<br><br><b>A. Sharma (IND)</b>  | 17:50-18:15<br><br><b>T. Ishihara (JPN)</b>  |  |   |  |
| 18:00  | OXYGEN INCORPORATION KINETICS OF THE POTENTIAL SOFC CATHODE MATERIAL (Bi,Sr)(Co,Fe)O <sub>3-Δ</sub><br><br><b>A. Wedig (DEU)</b>    | IN-SITU CONDUCTIVITY MEASUREMENTS AND HYDRATION STUDIES USING NEUTRON POWDER DIFFRACTION<br><br><b>F. Kinyanjui (SWE)</b>                               | PARTIAL CONDUCTIVITIES AND ONSAGER TRANSPORT COEFFICIENT MATRIX OF BaCo <sub>0.7</sub> Fe <sub>0.2</sub> Nb <sub>0.08</sub> O <sub>3-δ</sub><br><br><b>T. Lee (KOR)</b> | 18:15-18:40<br><br>ON THE IONIC CONDUCTIVITY OF CERIA/ZIRCONIA SUPERLATTICES FABRICATED BY PULSED LASER DEPOSITION |  |   |  |
| 18:20  | STABILITY, COMPATIBILITY AND DEGRADATION OF CATHODES IN PROTON CONDUCTING SOFCS<br><br><b>V. Øygarden (NOR)</b>                     | ANISOTROPY OF IONIC CONDUCTIVITY IN YSZ THIN FILMS<br><br><b>E. Navickas (AUT, LTU)</b>   | DEFECT STRUCTURE AND DEFECT-INDUCED EXPANSION OF ADVANCED MIEC OXIDE MATERIALS<br><br><b>A. Zuev (RUS)</b>  | <b>E. Traversa (JPN)</b>   |  |   |  |
| 18:40  | Time for supper   |   |   |  |  |   |  |
| 20:00  | <b>POSTER SESSION I (20:00-22:00)</b>   |   |   |  |  |   |  |

**Wednesday, July 6**

Grand Ballroom I+II (2<sup>nd</sup> floor)

|      |   |
|------|---|
| 8:30 | Elections   |
| 9:00 | <p>REDOX-BASED MEMRISTIVE SWITCHING - SCALING BEYOND FLASH?</p> <p style="text-align: center;"><b>PLENARY Rainer Waser (DEU)</b></p> <p>Chair: S. Yamaguchi</p> |

|         | Grand Ballroom I (2 <sup>nd</sup> floor)  | Grand Ballroom II (2 <sup>nd</sup> floor)   | Baltic (3 <sup>rd</sup> floor)  | Congress Hall (3 <sup>rd</sup> floor)  |
|---------|---|---|---|--|
|         | <b>Session A</b>  | <b>Session B</b>  | <b>Session C</b>  | <b>Session D</b>   |
| Chair   | B. Dabrowski  | J. Owen   | J. Drennan  | K. Edstrom/ T. Gustafsson  |
| Session | <b>SOFC-CATHODES</b>  | <b>LI-ION BATTERIES</b>   | <b>OXYGEN-ION CONDUCTORS</b>  | <b>J. THOMAS SESSION</b>   |
| 10:05   | <p>STRUCTURE-PROPERTY RELATIONSHIP IN THE CATION ORDERED, OXYGEN DISORDERED LAYERED PEROVSKITE CATHODES <math>\text{LnBa}_{0.5}\text{Sr}_{0.5}\text{Co}_2\text{O}_{5+\delta}</math></p> <p style="text-align: center;"><b>KEYNOTE J.T.S. Irvine (GBR)</b></p> | <p>ADVANCED CATHODE MATERIALS FOR LI-ION BATTERIES IN TRANSPORT APPLICATIONS</p> <p style="text-align: center;"><b>KEYNOTE J. Molenda (POL)</b></p>                                 | <p>BISMUTH OXIDES AMONG OXIDE ION CONDUCTORS: A FOCUS AROUND COMPOSITION <math>\text{Bi}_{38}\text{Mo}_7\text{O}_{78}</math></p> <p style="text-align: center;"><b>KEYNOTE R.N. Vannier (FRA)</b></p> | <b>W. Wieczorek (POL)</b>  |
| 10:35   | <p>OXYGEN ADSORPTION AND INCORPORATION MECHANISMS ON <math>\text{La}_2\text{CoO}_{4+d}</math> SURFACE</p> <p style="text-align: center;"><b>INVITED J. W. Han (USA)</b></p>   | <p>MESO/MACRO-SCALE MODELING OF LITHIUM-AIR BATTERY</p> <p style="text-align: center;"><b>INVITED H. Takaba (JPN)</b></p>   | <p>ELECTROCHEMISTRY OF NITROGEN-DOPED ZIRCONIA</p> <p style="text-align: center;"><b>S. Berendts (DEU)</b></p>  | <p><math>\text{LiCoO}_2</math>: A GOOD OR A FALSE FRIEND?</p> <p style="text-align: center;"><b>Michel Menetrier (FRA)</b></p> |
| 10:55   | <p>INFLUENCE OF CONFIGURATION AND MICROSTRUCTURE ON PERFORMANCE OF <math>\text{La}_2\text{NiO}_{4+\delta}</math> SOFC CATHODES.</p> <p style="text-align: center;"><b>J. M. Serra (ESP)</b></p>   | <p>ELECTROCHEMICAL PERFORMANCE OF SiO-C COMPOSITES WITH DIFFERENT CARBON SOURCES AS ANODE MATERIAL FOR LI-ION BATTERIES</p> <p style="text-align: center;"><b>J. Wang (CHN)</b></p> | <p>MODIFIED OXYGEN-ION CONDUCTORS FOR OXYGEN STORAGE AND CATALYSIS</p> <p style="text-align: center;"><b>INVITED H.D Wiemhöfer (DEU)</b></p>  | <p>BEYOND VANADATES</p> <p style="text-align: center;"><b>M.S..Whittingham (USA)</b></p>                                       |
| 11:15   | Coffee Break (11:15 – 11:30)  |   |   |  |

| Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b> |  | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>   |  | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>  |  | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b> |  |
|--|--|---|--|---|--|---|--|
| Chair J.S. Irvine  |  | J. Molenda  |  | C.D. Ling   |  | K. Edstrom/ T. Gustafsson                                 |  |
| Session  | SOFC-CATHODES  | LI-ION BATTERIES  | OXYGEN-ION CONDUCTORS  | J. THOMAS SESSION   |  |   |  |
| 11:30  | INFLUENCE OF CONFIGURATION AND MICROSTRUCTURE ON PERFORMANCE OF La <sub>2</sub> NiO <sub>4+δ</sub> SOFC CATHODES.<br><b>INVITED B.A. Boukamp (NLD)</b>                 | STRUCTURAL TRANSFORMATION OF Li <sub>2</sub> CoPO <sub>4</sub> F UPON LI-DEINTERCALATION<br><b>INVITED E.V. Antipov (RUS)</b>   | DETERMINATION OF OXIDE ION CONDUCTION IN APATITE CERAMICS THROUGH ISOTOPIC LABELLING<br><b>INVITED S.J.Skinner (GBR)</b>                             | THE LESSONS OF POLYMER ELECTROLYTES, BACK TO THE FUTURE<br><b>KEYNOTE M.Armand (FRA)</b>  |  |   |  |
| 11:50  | THIN FUNCTIONAL LAYER OF PREDOMINANTLY ELECTRONIC CONDUCTING PEROVSKITE BETWEEN CATHODE AND ELECTROLYTE FOR SOFCs<br><b>INVITED P. Jasinski (POL)</b>                  | FIB/SEM-TOMOGRAPHY FOR THE EXPLOITATION OF MICROSCALE CHARACTERISTICS OF LiFePO <sub>4</sub> - CARBON BLACK CATHODES<br><b>M. Ender (DEU)</b>   | SCANDIA-STABILIZED ZIRCONIA DOPED WITH YTTRIA:SYNTHESIS, PROPERTIES AND AGEING BEHAVIOR<br><b>A.V. Spirin (RUS)</b>                                  | SODIUM POLYMER ELECTROLYTES-A NEW HOPE FOR THE BATTERY WORLD?<br><b>M. Marcinek (POL)</b> |  |   |  |
| 12:10  | THE ROLE OF B-SITE DOPING IN (La,Sr)TiO <sub>3</sub> UTILISED IN SOLID OXIDE ELECTROLYSIS CELL CATHODES<br><b>G. Tsekouras (GBR)</b>                                   | PREPARATION OF ALL-SOLID-STATE LITHIUM SECONDARY BATTERIES USING NEGATIVE ELECTRODE PARTICLES COATED WITH Li <sub>2</sub> S-P <sub>2</sub> S <sub>5</sub> SOLID ELECTROLYTE<br><b>A. Sakuda (JPN)</b> | PROBING INHOMOGENEOUS DEFECT DISTRIBUTIONS IN SINGLE CRYSTAL SrTiO <sub>3</sub> SUBSTRATES: AN OXYGEN DIFFUSION STUDY<br><b>R. A. De Souza (DEU)</b> | THE LESSONS OF POLYMER ELECTROLYTES, BACK TO THE FUTURE<br><b>P. Johansson (SWE)</b>      |  |   |  |
| 12:30  | THREE DIMENSIONAL STRUCTURE AND ELECTROCHEMICAL ANALYSIS OF SOFC COMPOSITE CATHODES<br><b>J. S. Cronin (USA)</b>   | ACTIVATED-PHOSPHORUS AS NEW ELECTRODE MATERIAL FOR LI-ION BATTERIES<br><b>L. Monconduit (FRA)</b>   | ELECTRICAL CHARACTERIZATION OF COLUMNAR CERIA THIN FILMS GROWN BY CHEMICAL VAPOR DEPOSITION<br><b>Tae-Sik Oh (USA)</b>                               | FROM SMALL BATTERIES TO LARGE – THE LI-ION BATTERY SAGA<br><b>T. Gustafsson (SWE)</b>     |  |   |  |
| 12:50  | STRAIN EFFECTS ON SURFACE CHEMISTRY AND ELECTRONIC STRUCTURE OF EPITAXIAL La <sub>0.8</sub> Sr <sub>0.2</sub> CoO <sub>3</sub> FILMS<br><b>INVITED B. Yildiz (USA)</b> | <i>in situ</i> ELECTROCHEMICAL XAFS STUDY ON INTERFACIAL PHENOMENA BETWEEN ELECTRODE AND ELECTROLYTE FOR LITHIUM-ION BATTERY<br><b>Y. Uchimoto (JPN)</b>  | HETEROGENEOUS ZIRCONIA ELECTROLYTES WITH IMPROVED PERFORMANCE<br><b>INVITED F.M. Figueiredo (PRT)</b>  | DUBBLE DUTCH – WELLISH NIETES<br><b>E. Kelder (NLD)</b>                                   |  |   |  |
| 13:30  | Excursion (13:30 - 17:30)  |   |  |   |  |   |  |
| 19:00  | Conference Banquet (19:00 - 22:00 )  |   |  |   |  |   |  |

Thursday, July 7

Grand Ballroom I+II (2<sup>nd</sup> floor)

|      |  |
|------|--|
| 8:30 | <p>ORGANIC IONIC PLASTIC CRYSTALS – TOWARDS SOLID STATE DEVICES</p> <p style="text-align: center;"><b>PLENARY Maria Forsyth (AUS)</b></p> <p>Chair: K. Funke</p> |
|------|--|

|         | Grand Ballroom I (2 <sup>nd</sup> floor)   | Grand Ballroom II (2 <sup>nd</sup> floor)   | Baltic (3 <sup>rd</sup> floor)  | Congress Hall (3 <sup>rd</sup> floor)  |
|---------|--|---|---|--|
|         | Session A  | Session B   | Session C   | Session D  |
| Chair   | R. Palacin   | Z. Florjańczyk  | P. Mustarelli   | M. Tatsumisago   |
| Session | LI-ION BATTERIES – I   | LI-ION CONDUCTORS   | PROTON CONDUCTORS   | NOVEL MATERIALS  |
| 9:35    | <p>F-BASED POLYANIONIC FRAMEWORKS AND THEIR USE IN LI-ION BATTERIES</p> <p style="text-align: center;"><b>KEYNOTE J.M. Tarascon (FRA)</b></p>                                  | <p>LI-CONDUCTORS POLYMER ELECTROLYTES OF PROTIC IONIC LIQUIDS FOR NON-HUMIDIFIED INTERMEDIATE TEMPERATURE FUEL CELLS</p> <p style="text-align: center;"><b>KEYNOTE M. Watanabe (JPN)</b></p>  | <p>STRATEGIES FOR IMPROVEMENT OF SULFONATED AROMATIC IONOMERS</p> <p style="text-align: center;"><b>KEYNOTE P. Knauth (FRA)</b></p>   | <p>DUAL-PHASE MIXED CONDUCTING COMPOSITE MEMBRANES FOR OXYGEN SEPARATION AND FUEL PROCESSING</p> <p style="text-align: center;"><b>KEYNOTE Chu-Sheng Chen (CHN)</b></p>        |
| 10:05   | <p>DEFECT CHEMISTRY OF <math>\text{LiFePO}_4</math> AND ITS DELITHIATED COUNTERPART <math>\text{FePO}_4</math></p> <p style="text-align: center;"><b>K. Weichert (DEU)</b></p> | <p>THIN FILMS OF LI-CONDUCTING GARNET-TYPE PHASES</p> <p style="text-align: center;"><b>INVITED J. Reinacher (DEU)</b></p>  | <p>NOVEL NANOCOMPOSITE MEMBRANES BASED ON ORGANO-MODIFIED GRAPHITE OXIDE FOR LOW-HUMIDITY PEM FUEL CELLS</p> <p style="text-align: center;"><b>K. Angjeli (ITA)</b></p>                                   | <p>GLASS TRANSITION AND CONDUCTIVITY RELAXATION OF NANOCOMPOSITE POLYMER ELECTROLYTES</p> <p style="text-align: center;"><b>INVITED J. Swenson (SWE)</b></p>                   |
| 10:25   | <p>NEW HIGH CAPACITY SiOC NEGATIVE ELECTRODE MATERIALS FOR LI-ION BATTERIES</p> <p style="text-align: center;"><b>J. Kaspar (DEU)</b></p>                                      | <p>Li DIFFUSION IN GARNET-TYPE <math>\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}</math> CRYSTALLIZING WITH TETRAGONAL SYMMETRY AT ROOM TEMPERATURE — A <math>^7\text{Li}</math> NMR STUDY</p> <p style="text-align: center;"><b>M. Wilkening (DEU)</b></p> | <p>CONTENT AND DYNAMICS OF BULK PROTON IN <math>\text{H}^+</math>-CONDUCTING PEROVSKITE CERAMIC MEMBRANES BY QUASI-ELASTIC NEUTRON STUDY</p> <p style="text-align: center;"><b>A. Ślodyczyk (FRA)</b></p> | <p>EXPANSION OF OXIDE-ION CONDUCTOR FAMILY WITH THE <math>\text{La}_2\text{Mo}_2\text{O}_9</math> STRUCTURE</p> <p style="text-align: center;"><b>V.I. Voronkova (RUS)</b></p> |
| 10:45   | <p>POLYMORPHISM OF <math>\text{Li}_2\text{FeSiO}_4</math>: IMPACT ON ELECTROCHEMISTRY</p> <p style="text-align: center;"><b>C. Masquelier (FRA)</b></p>                        | <p>STABILITY IN AIR AND STRUCTURE CHANGE OF <math>\text{Li}_2\text{S-P}_2\text{S}_5</math> BASED SOLID ELECTROLYTES FOR ALL-SOLID-STATE RECHARGEABLE LITHIUM BATTERIES</p> <p style="text-align: center;"><b>INVITED A. Hayashi (JPN)</b></p>                 | <p>PREPARATION OF PROTON-CONDUCTIVE ORGANIC-INORGANIC HYBRID TITANOPHOSPHITE MEMBRANES</p> <p style="text-align: center;"><b>Y. Tokuda (JPN)</b></p>  | <p>AMMONIUM POLYPHOSPHATE BASED ELECTROLYTES FOR INTERMEDIATE TEMPERATURE DIRECT ETHANOL FUEL CELLS</p> <p style="text-align: center;"><b>N. Kluy (DEU)</b></p>                |
| 11:05   | Coffee Break (11:05 – 11:20)   |   |   |  |

| Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b> |  | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>  |   | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>  |  | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b> |  |
|--|--|--|---|---|--|---|--|
| Chair J.M. Tarascon  |  | M. Watanabe  |   | R. Merkle   |  | I. Metcalfe   |  |
| Session  | LI-ION BATTERIES – I   | LI-ION CONDUCTORS  | PROTON CONDUCTORS   | NOVEL MATERIALS   |  |   |  |
| 11:20  | AN OPERANDO STUDY OF ELECTROCHEMICAL MECHANISMS IN $\text{LiFe}_{0.33}\text{Mn}_{0.67}\text{PO}_4$ , - A NOVEL MIXED-METAL CATHODE MATERIAL FOR LI-ION BATTERIES<br><b>L. Stievano (FRA)</b> | CONSTRUCTION AND PERFORMANCE FOR ALL-SOLID-STATE LITHIUM ION BATTERY USING GARNET-TYPE OXIDE ELECTROLYTE<br><b>S. Ohta (JPN)</b>   | A TWO-ELECTROLYTE HYBRID POLYMER FUEL CELL<br><b>J. L. Hertz (USA)</b>  | DNA-BASED MEMBRANES FOR ELECTROCHROMIC DEVICES<br><b>INVITED A.Maule (BRA)</b>  |  |   |  |
| 11:40  | LITHIUM ION BATTERIES - STUDYING THE INTERCALATION OF LITHIUM IN DIFFERENT ELECTRODE MATERIALS<br><b>F. Berkemeier (DEU)</b>   | CHARACTERIZATION OF $\text{Li}_2\text{S}-\text{P}_2\text{S}_5-\text{P}_2\text{Se}_5$ GLASSES AND GLASS-CERAMICS AS A SOLID ELECTROLYTES FOR ALL-SOLID-STATE LITHIUM ION BATTERIES<br><b>J. Kim (KOR)</b> | PROTON-CONDUCTIVE MULTIBLOCK COPOLYMERS WITH FULLY SULFONATED POLY(PHENYLENE SULFONE) BLOCKS<br><b>G. Titvinidze (DEU)</b>                          | DECOMPOSITION OF METHYLENE BLUE BY PHOTOCATALYTIC ACTIVITY OF CRYSTALLINE MESOPOROUS $\text{TiO}_2$<br><b>Y. Ikuma (JPN)</b>  |  |   |  |
| 12:00  | NICKEL OXIDE – POLYPYRROLE COMPOSITE AS ANODE MATERIAL FOR LITHIUM ION BATTERY<br><b>Ya Mao (CHN)</b>  | SINGLE ALKALINE ION ( $\text{Li}^+$ , $\text{Na}^+$ ) CONDUCTORS BY ION EXCHANGE OF PROTON CONDUCTING IONOMERS AND POLYELECTROLYTES<br><b>A. Wohlfarth (DEU)</b>   | ANION AMPHIPROTIC IONIC LIQUIDS AS PROTON CONDUCTING ELECTROLYTES".<br><b>M. Treskow (SWE)</b>  | IONIC LIQUID BASED POLYMER ELECTROLYTES: STRUCTURAL, THERMAL AND ELECTRICAL PROPERTIES<br><b>R. K. Singh (IND)</b>  |  |   |  |
| 12:20  | CRYSTAL-CHEMISTRY: A BASIC RESEARCH TOOL TO DEFINE AND PREPARE NEW CLASSES OF ACTIVE MATERIALS FOR LI-BATTERIES<br><b>P. Rozier (FRA)</b>  | Li ION TRANSPORT MECHANISM OF TREHALOSE-WATER-LiI MIXTURES<br><b>R. Takekawa (JPN)</b>   | $\text{CSH}_2\text{PO}_4$ NANOPARTICLES FOR SOLID ACID FUEL CELL ELECTRODES VIA ELECTROSPRAY AND AEROSOL SIZE MEASUREMENTS<br><b>A. Varga (USA)</b> | PROPERTIES OF VANADIUM-DOPED $\text{LiFePO}_4$ GLASSES AND NANOMATERIALS<br><b>T. Pietrzak (POL)</b>  |  |   |  |
| 12:40  | INFLUENCE OF THE ADDITION OF ORGANIC SOLVENTS ON THE IONIC LIQUIDS PHYSICOCHEMICAL AND ELECTROCHEMICAL PROPERTIES<br><b>M. L. P. Le (FRA)</b>  | STRUCTURE AND TRANSPORT STUDIES OF LI ARGYRODITES<br><b>INVITED S. Adams (SGP)</b>   | PROTON CONDUCTING MEMBRANES FOR THE CO-ELECTROLYSIS OF $\text{CO}_2$ AND $\text{H}_2\text{O}$<br><b>E. Ruiz-Trejo (GBR)</b>                         | ELECTROCHEMICAL STUDIES ON COMPOSITED CELLULOSE POLYMER GEL ELECTROLYTES FOR LITHIUM-AIR CELLS<br><b>M.Z.A. Yahya (MYS)</b>   |  |   |  |
| 13:00  | UNRAVELING THE DECOMPOSITION PATH OF $\text{LiPF}_6$ -BASED ELECTROLYTES<br><b>S. Wilken (SWE)</b>   | LITHIUM ION CONDUCTION IN CATION SUBSTITUTED $\text{LiBH}_4$ -LiI COMPOSITE ELECTROLYTE<br><b>INVITED H. Maekawa (JPN)</b>   | ELECTRICAL CONDUCTIVITY OF $\text{CsH}_5(\text{PO}_4)_2$ AT AMBIENT AND HIGH PRESSURE<br><b>M. Zdanowska-Frączek (POL)</b>                          | MIXED ALKALI EFFECT ON THERMAL AND ELECTROCHEMICAL PROPERTIES OF $\text{MH}_5(\text{PO}_4)_2/\text{SiP}_2\text{O}_7$ COMPOSITE ELECTROLYTES<br><b>H. Muroyama (JPN)</b> |  |   |  |
| 13:20  | Lunch Break (13:20 – 14:40)  |  |   |   |  |   |  |

|         | Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b>  | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>  | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>   | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b>  |
|---------|---|--|--|--|
| Chair   | E. Antipov  | P. Knauth  | K. Sasaki  | A. Maule   |
| Session | LI-ION BATTERIES – I  | LI-ION CONDUCTORS  | PROTON CONDUCTORS  | NOVEL MATERIALS  |
| 14:40   | INTERFACIAL PHENOMENA IN SOLID-STATE LITHIUM BATTERY<br><br><b>K. Takada (JPN)</b>  | LITHIUM ION DYNAMICS IN VANADIUM FLUOROPHOSPHATES PROBED BY SOLID-STATE NMR EXCHANGE SPECTROSCOPY<br><br><b>G. R. Goward (CAN)</b>   | DEVELOPMENT OF QUASI-SOLID STATE TERNARY SYSTEM BASED ELECTROLYTES<br><br><b>H P.S. Missan (TTO)</b>   | PHASE TRANSITIONS AND TRANSPORT IN TAVORITE-TYPE CATHODE MATERIALS<br><br><b>S. Adams (SGP)</b>  |
| 15:00   | HIGH VOLTAGE CATHODE MATERIAL $\text{Li}[\text{Li}_{0.2}\text{Mn}_{0.56}\text{Ni}_{0.16}\text{Co}_{0.08}]\text{O}_2$ WITH IMPROVED RATE CAPABILITY<br><br><b>J. Li (DEU)</b>            | STRUCTURE AND BROADBAND IMPEDANCE SPECTROSCOPY OF $\text{Li}_{1.3}\text{Al}_y\text{Y}_{x-y}\text{Ti}_{2-x}(\text{PO}_4)_3$ ( $x = 0.3$ ; $y = 0.1, 0.2$ ) SOLID ELECTROLYTE CERAMICS<br><br><b>INVITED A.F. Orliukas (LTU)</b> | HIGH PROTON CONDUCTION VIA QUASI ONE-DIMENSIONAL WATER NETWORK IN NEW MOLECULAR POROUS CRYSTAL $\{[\text{Co}^{\text{III}}(\text{H}_2\text{bim})_3](\text{TMA}) 20\text{H}_2\text{O}\}_n$<br><br><b>H. Matsui (JPN)</b> | HOT-PRESS CASTED SOLID POLYMER ELECTROLYTE (SPE) FILMS: (PEO: $x\text{KNO}_3$ ); CHARACTERIZATION OF MATERIALS, ION TRANSPORT PROPERTIES AND STUDY OF ALL-SOLID-STATE CELL PERFORMANCE<br><br><b>R. C. Agrawal (IND)</b> |
| 15:20   | UNDERSTANDING CHARGE AND DISCHARGE MECHANISMS IN NANOMATERIALS USED AS NEGATIVE ELECTRODES IN LI-ION BATTERIES<br><br><b>M. Alfredsson (GBR)</b>  | THREE DISTINCT Li DIFFUSION PROCESSES IN $\text{Li}_{12}\text{Si}_7$ : ULTRAFAST 1D DIFFUSION AND TWO DIFFERENT 3D DIFFUSION PROCESSES SEPARATELY REVEALED BY $^7\text{Li}$ NMR RELAXOMETRY<br><br><b>A. Kuhn (DEU)</b>        | STUDIES ON PROTON CONDUCTING GEL POLYMER ELECTROLYTE SYSTEM BASED ON PMMA/ PVdF-HFP BLEND<br><br><b>D. K. Rai (IND)</b>  | SULPHUR DOPED $\text{TiO}_2$ – THE NEW MATERIAL ACTIVE UNDER VISIBLE LIGHT ILLUMINATION<br><br><b>K. Siuzdak (POL)</b>   |
| 15:40   | NANOPOROUS GRAPHITIZED CARBONS AS AN ANODE MATERIAL OF RECHARGEABLE LI-ION BATTERIES<br><br><b>I. Moriguchi (JPN)</b>   | INTERFACES IN BATTERY CATHODE MATERIAL LITHIUM COBALT OXIDE<br><br><b>C. A. J. Fisher (JPN)</b>  | Numerical study of cold-start behaviors of Polymer Electrolyte Fuel Cells (PEFCs): Parametric study<br><br><b>J. Ko (KOR)</b>  | INTERFACIAL CHARGING AND ENHANCED CYCLE LONGEVITY OF TIN IV OXIDE NANOBASKET ELECTRODES<br><br><b>D. Teeters (USA)</b>   |
| 16:00   | APPLICATION OF NONFLAMMABLE GEL ELECTROLYTE CONTAINING ALKYLPHOSPHATE TO $\text{Li}_4\text{Ti}_5\text{O}_{12}$ NEGATIVE ELECTRODE FOR LI-ION BATTERIES<br><br><b>N. Yoshimoto (JPN)</b> | UNDERSTANDING LI ION TRANSPORT MECHANISMS IN BRANCHED PEO-BASED POLYMER ELECTROLYTES: A MOLECULAR DYNAMICS APPROACH<br><br><b>D. Brandell (SWE)</b>  | GRAIN BOUNDARIES IN DENSE NANOCRYSTALLINE DOPED $\text{ZrO}_2$ AND $\text{CeO}_2$ : EXCLUSIVE PATHWAYS FOR PROTON CONDUCTION AT ROOM TEMPERATURE<br><br><b>S. Kim (USA)</b>  | SILVER ION CONDUCTING SOLID ELECTROLYTE WITH NASICON-TYPE STRUCTURE<br><br><b>S. Tamura (JPN)</b>  |
| 16:20   | ELECTROCHEMICAL PROPERTY OF KEGGIN TYPE POLYOXOMETALATES AS THE CATHODE MATERIAL OF LITHIUM BATTERY<br><br><b>N. Sonoyama (JPN)</b>   | HIGH-THROUGHPUT METHODOLOGY FOR SCREENING OF LITHIUM-ION SOLID ELECTROLYTES – FEASIBILITY STUDY BY $\text{LiO}_{0.5}\text{-LaO}_{1.5}\text{-TiO}_2$ SYSTEM<br><br><b>C. Yada (JPN)</b>   | OXYGEN PERMEABILITY OF $\text{BaCe}_{0.9}\text{Y}_{0.1}\text{O}_{3-x}$ AT 923-1073 K UNDER SOFC ATMOSPHERES<br><br><b>K. Kawamura (JPN)</b>  | SIMILARITY AND DISCREPANCY OF COMPLEX HYDROXIDE AND OXO ACID SALTS AS SOLID PROTONIC CONDUCTORS: FUNDAMENTAL AND APPLIED ASPECTS<br><br><b>Y.M. Baikov (RUS)</b>   |

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| 16:40          | Coffee Break (16:40 – 17:00)  |   |  |  |
|                | Grand Ballroom I (2 <sup>nd</sup> floor)<br><b>Session A</b>  | Grand Ballroom II (2 <sup>nd</sup> floor)<br><b>Session B</b>   | Baltic (3 <sup>rd</sup> floor)<br><b>Session C</b>   | Congress Hall (3 <sup>rd</sup> floor)<br><b>Session D</b>  |
| Chair          | C. Grey   | S. Adams  | J. Kilner  | R. Dziembaj  |
| <b>Session</b> | <b>LI-ION BATTERIES – I</b>   | <b>MISCELLANEOUS</b>  | <b>OXYGEN-ION CONDUCTORS</b>   | <b>SOFC</b>  |
| 17:00          | THE MECHANISM OF INTERACTION OF Li <sup>+</sup> WITH SINGLE-LAYER AND MULTILAYER GRAPHENE<br><br><b>INVITED R. Kostecki (USA)</b> | MAPPING OF PEROVSKITE OXIDES IN THE LOCALIZED VS ITINERANT ELECTRON DIAGRAM AND ITS RELATION WITH THE IONIC CONDUCTIVITY<br><br><b>INVITED M. Aniya (JPN)</b> | ELECTRICALLY INDUCED CHARGE STORAGE ON ZIRCONIA CERMIC ELECTRETS<br><br><b>Y. Tanaka (JPN)</b>   | IMPROVEMENT OF LONG TERM ELECTRICAL CONDUCTIVITY BETWEEN LSM CATHODE AND Fe/Cr BASED STEEL CURRENT COLLECTOR WITH MODIFIED NEAR SURFACE LAYER<br><br><b>INVITED S. Bredikhin (RUS)</b>   |
| 17:20          | STABILITY AND PERFORMANCE OF POLYPHOSPHAZENE BASED ELECTROLYTES IN LITHIUM-ION CELLS<br><br><b>M. M. Hiller(GER)</b>              | STRUCTURAL TRANSFORMATIONS WITHIN THE NICKEL OXYHYDROXIDE ELECTRODE DURING BATTERY OPERATION<br><br><b>INVITED M.R. Palacín (ESP)</b>                         | STRUCTURAL KEY OF THE THERMAL EXPANSION AND OF THE OXIDE IONIC CONDUCTION IN CHEMICALLY β-STABILIZED LAMOX COMPOUNDS<br><br><b>G. Corbel (FRA)</b> | CHARACTERISATION OF LSCM IN THE CONDITIONS OF USE OF A SYMMETRIC SOFC<br><br><b>INVITED C. Pirovano (FRA)</b>  |
| 17:40          | DEVELOPMENT OF CYANIDE-BRIDGED PEROVSKITE FRAMEWORK FOR ELECTRODE MATERIALS IN LI-ION BATTERIES<br><br><b>M. Okubo (JPN)</b>      | CATIONIC SELF-AGGREGATION IN PYRROLIDINIUM-BASED IONIC LIQUIDS<br><br><b>M. Kunze (DEU)</b>   | ELECTRICAL PROPERTIES OF SUB-MICROMETRIC CERIA-BASED ELECTROLYTES<br><br><b>F.M.B. Marques (PRT)</b>   | HIGH TEMPERATURE ELECTROLYSIS OF STEAM AND CO <sub>2</sub> IN SOLID OXIDE CELLS<br><br><b>M. Chen (DNK)</b>  |
| 18:00          | CARBON COMPOSITE ELECTRODES FOR LI-ION BATTERIES<br><br><b>M. Molenda (POL)</b>   | DIRECT UREA/URINE FUEL CELLS FOR POWER GENERATION<br><br><b>S. Tao (GBR)</b>  | WATER ADSORPTION AT THE SURFACE OF GD-DOPED CERIA<br><br><b>I. Lubomirsky (ISR)</b>  | ENHANCEMENT OF SOFC CATHODE PERFORMANCE THROUGH STRUCTURED ELECTROLYTE/CATHODE INTERFACE WITH SCSZ CONVEX PARTICLE OF HIGH ELECTRICAL CONDUCTIVITY<br><br><b>Chang-Jiu Li (CHN)</b>  |
| 18:20          | IONIC VS ELECTRONIC LIMITATIONS IN COMPOSITE ELECTRODES FOR LITHIUM BATTERIES<br><br><b>B. Lestriez (FRA)</b>                     | CHAOTIC MOTION OF IONS IN POLYMER GEL ELECTROLYTES: FIRST OBSERVATIONS<br><br><b>INVITED A. Chandra (IND)</b>   | REDUCTION OF CARBON DIOXIDE THROUGH HIGH TEMPERATURE SOLID OXIDE ELECTROLYSIS CELLS<br><br><b>Xianling Yue (GRB)</b>                               | EXPLORING PROTONIC AND MIXED PROTONIC/ELECTRONIC CONDUCTIVITY BY Y AND P <sub>r</sub> CO-DOPING BAZ <sub>r</sub> O <sub>3</sub> FOR APPLICATION IN INTERMEDIATE TEMPERATURE SOLID OXIDE FUEL CELLS<br><br><b>E. Fabbri (JPN)</b> |
| 18:40          | Time for supper   |   |  |  |

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| 20:00 | <b>POSTER SESSION II( 20:00-22:00)</b> |
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**Friday, July 8**

Grand Ballroom I+II (2<sup>nd</sup> floor)

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| 8:30 | <p>PROBING LOCAL STRUCTURE AND DYNAMICS IN BATTERY MATERIALS – NEW APPROACHES</p> <p style="text-align: center;"><b>PLENARY Clare P. Grey (GBR)</b></p> <p><b>Chair: J. Maier</b></p> |
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|         | Grand Ballroom I (2 <sup>nd</sup> floor)   | Grand Ballroom II (2 <sup>nd</sup> floor)  | Baltic (3 <sup>rd</sup> floor)  | Congress Hall (3 <sup>rd</sup> floor)   |
|---------|--|--|---|---|
|         | <b>Session A</b>   | <b>Session B</b>   | <b>Session C</b>  | <b>Session D</b>  |
| Chair   | K. Edstrom   | M. Armand  | C. Chen   | C. Vayenas  |
| Session | <b>LI-ION BATTERIES (CATHODES)</b>   | <b>LI-ION BATTERIES (ANODES)</b>   | <b>PERMEATION</b>   | <b>INTERFACES</b>   |
| 9:35    | <p>TOWARDS CHEAPER CATHODES FOR LARGE-SCALE LITHIUM-ION BATTERIES</p> <p style="text-align: center;"><b>INVITED J. Thomas (SWE)</b></p>  | <p>Sn@C NANOPARTICLES IN HOLLOW CARBON FIBERS: A NOVEL POWERFUL ANODE FOR LI-BASED BATTERIES</p> <p style="text-align: center;"><b>Yan Yu (CHN)</b></p>  | <p>9:25<br/>HYDROGEN PERMEATION THROUGH DENSE CERAMIC OXIDES; APPLICATIONS, PRINCIPLES, MATERIALS, AND CHALLENGES</p> <p style="text-align: center;"><b>KEYNOTE T. Norby (NOR)</b></p>                                    | <p>9:25<br/>SURFACE CHEMISTRY IN ELECTROCHEMICAL NO<sub>x</sub> SENSORS</p> <p style="text-align: center;"><b>KEYNOTE M. Backhaus-Ricoult (USA)</b></p>   |
| 9:55    | <p><i>In situ</i> RAMAN SPECTROSCOPY OF THIN FILM BATTERY: STRUCTURE CHANGE AND PHASE BOUNDARY MOVEMENT OF Li<sub>x</sub>CoO<sub>2</sub></p> <p style="text-align: center;"><b>N. Kuwata (JPN)</b></p> | <p>GRAPHITE PARTICLES EMBEDDED IN SiC<sub>0</sub> CERAMIC MATRIX: NEW STABLE “HIGH-POWER” ANODE MATERIALS FOR LITHIUM-ION BATTERIES</p> <p style="text-align: center;"><b>M. Graczyk-Zajac (DEU)</b></p> | <p>MICROSCOPIC OXYGEN EXCHANGE PROPERTIES OF CGO-LSCF COMPOSITES</p> <p style="text-align: center;"><b>INVITED J.A. Kilner (GBR)</b></p>  | <p>FOCUSED ION-BEAM MILLING OF MULTILAYERS FOR DIRECT MEASUREMENTS FROM LAYERS AND INTERFACES</p> <p style="text-align: center;"><b>Y. Kuru (USA)</b></p> |
| 10:15   | <p>STUDY OF CATHODE MATERIAL FOR LITHIUM ION BATTERY BY NMR MICRO IMAGING</p> <p style="text-align: center;"><b>Y. Iwai (JPN)</b></p>  | <p>SELF-ASSEMBLY OF LITHIUM BATTERIES WITH 3D ARCHITECTURE</p> <p style="text-align: center;"><b>J.R. Owen (GBR)</b></p>   | <p>EXPERIMENTAL DETERMINATION OF THERMOCHEMICAL DATA AND LONG TERM STABILITIES FOR VARIOUS MIEC MEMBRANE MATERIALS FOR THE USE IN OXYFUEL PROCESSES</p> <p style="text-align: center;"><b>INVITED T. Markus (DEU)</b></p> | <p>LOCAL STRUCTURE AND IONIC CONDUCTION AT HETERO-INTERFACE OF SOLID ELECTROLYTES</p> <p style="text-align: center;"><b>H. Yamada (JPN)</b></p>           |
| 10:35   | <p>STUDY OF DEFECTS IN LiFePO<sub>4</sub> BY USING PDF ANALYSIS AND MOSSBAUER SPECTROSCOPY</p> <p style="text-align: center;"><b>S. Ferrari (ITA)</b></p>  | <p>TOWARDS A BETTER UNDERSTANDING OF THE SURFACE REACTIVITY OF LAYERED LITHIUM OXIDES</p> <p style="text-align: center;"><b>D. Gonbeau (FRA)</b></p>   | <p>OXYGEN PERMEATION THROUGH Ta-DOPED SrCo<sub>0.8</sub>Fe<sub>0.2</sub>O<sub>3-δ</sub></p> <p style="text-align: center;"><b>INVITED W. Chen (NLD)</b></p>   | <p>OPTIMIZATION OF THE INTERFACES IN SODIUM SULFUR BATTERY</p> <p style="text-align: center;"><b>INVITED Z. Wen (CHN)</b></p>                             |

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|-------|---|--|--|--|
| 10:55 | ELECTROCHEMICAL IMPEDANCE STUDIES OF THIN FILM COMPOSITE LiFePO <sub>4</sub> /C<br><br><b>INVITED G. Bajars (LVA)</b>             | INFLUENCE OF Li-ION DIFFUSION DISTANCE ON THE NEGATIVE ELECTRODE PROPERTIES OF Si THIN PLATELETS FOR Li SECONDARY BATTERIES<br><br><b>M. Saito (JPN)</b> | LSFTa PEROVSKITE BASED MEMBRANES FOR OXYGEN SEPARATION<br><br><b>J. Gorauskis (NOR)</b>  | TRANSPORT PROPERTIES AND STRUCTURE OF INTERFACES IN N-TYPE BARIUM TITANATE CERAMICS<br><br><b>INVITED W. Preis (AUT)</b>         |
| 11:15 | SYNTHESIS, STRUCTURE AND ELECTROCHEMICAL PROPERTIES FOR RUTHENIUM-SUBSTITUTED LITHIUM MANGANESE OXIDE<br><br><b>D. Mori (JPN)</b> | NEW HIGH CAPACITY MIXED CONDUCTING ANODES FOR ALL SOLID STATE LITHIUM ION BATTERIES<br><br><b>R. B. Cervera (JPN)</b>                                    | HYDROGEN PRODUCTION FROM WATER SPLITTING USING MIEC MEMBRANES: DETERMINATION OF THE RATE LIMITING STEP<br><br><b>R. Franca (GBR)</b> | ELUCIDATING EQUILIBRIUM & NON-EQUILIBRIUM SURFACE CHEMISTRY IN DOPED CERIUM OXIDE USING IN-SITU XPS<br><br><b>W. Chueh (USA)</b> |
| 11:35 | Coffee Break (11:35 – 11:50)  |  |  |  |
| 11:50 | SPECIAL PLENARY LECTURE<br><br><b>PLENARY Christian Masquelier</b><br><br><b>Chair: W. Wieczorek</b>                              |  |  |  |
| 12:40 | Closing Ceremony  |  |  |  |