

SCIENTIFIC PROGRAM

Sunday, June 11th

- 18:00-20:00 Registration (“Palais des congrès” – Arcachon)
19:00-21:30 Welcome party

Monday, June 12th

- 8:30-9:00 Opening - C. Delmas, Chairman

- 9:00-9:40 **INV1** “Li Transport Limitations and Opportunities in the Layered Mn-rich, Li excess Cathodes”
K. Persson - Berkeley University of California (USA)

- 9:40-10:20 **INV2** “Li-ion transport in Li-ion and solid state batteries, direct observations from Neutron Depth Profiling and solid state NMR”
M. Wagemaker - Delft University of Technology (The Netherlands)

- 10:20-10:50 Coffee Break

- 10:50-12:30 Poster session

- 12:30-14:30 Lunch break

14:30-16:30 **Li LAYERED**

- O01** Versatile Approach Combining Theoretical and Experimental Aspects of Raman Spectroscopy To Investigate Battery Materials: The Case of the $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ Spinel
M. Ben Yahia - Institut Charles Gerhardt, Montpellier (France)
- O02** Comparative study of additives improving the safety and electrochemical performance of lithium ion batteries
T. Dagger - MEET Battery Research Center and Institute of Physical Chemistry, University of Münster (Germany)
- O03** Measuring the Parasitic and Entropic Heat Flow in Coated and Uncoated $\text{Li}(\text{Ni}_{1-x-y}\text{Mn}_x\text{Co}_y)\text{O}_2$ /graphite Pouch Cells
S. L. Glazier - Department of Physics and Atmospheric Science, Dalhousie University (Canada)
- O04** Dilution of Concentrated Electrolyte Solutions for High Voltage Cathode Materials
M. Inaba - Doshisha University (Japan)
- O05** Inhomogeneous fading reactions of electrode material in 4 Ah-class commercial pouch-type battery by in-situ X-ray diffraction measurement
T. Kobayashi - Central Research Institute of Electric Power Industry, Yokosuka (Japan)
- O06** Comparison of Single Crystal and Polycrystalline $\text{LiNi}_{0.5}\text{Mn}_{0.3}\text{Co}_{0.2}\text{O}_2$ Positive Electrode Materials for High Voltage Li-ion Cells
J. Li - Department of Physics and Atmospheric Science, Dalhousie University (Canada)

O07 **Current distribution in Li-ion batteries probed in operando**
A. Senyshyn - Heinz Maier-Leibnitz Zentrum, Technische Universität München (Germany)

>> **General discussion**

16:30-17:00 *Coffee Break*

17:00-17:30 **Keynote** **Design Strategies for Multivalent Energy Dense Cathode Materials**
G. Ceder - Lawrence Berkeley National Laboratory (USA)

17:30-19:00 **Poster Session**

19:00 **Welcome Cocktail**

Tuesday, June 13th

8:30-9:10

INV3

Towards safe solid state Li metal rechargeable batteries with ionogel electrolytes

D. Guyomard – Institut des Matériaux Jean ROUXEL, Nantes (France)

9:10-10:20

OLIVINE

O08 **Toward Enhanced Electronic and Ionic Conductivity in Olivine-type Electrode Materials for 5V Lithium Ion Batteries**

G. Cherkashinin - Institute of Materials Science, Surface Science Division, Technische Universität Darmstadt (Germany)

O09 **Ionic conductivity and thermodynamic properties of $\text{LiMn}_{1-x}\text{Fe}_x\text{PO}_4$ and $\text{LiMn}_{1-x}\text{Ni}_x\text{PO}_4$ single-crystals**

R. Klingeler - Kirchhoff Institute of Physics, University of Heidelberg (Germany)

O10 **Atomic-Scale Analysis of Surfaces of Chemically Delithiated $\text{Li}_{1-x}\text{FePO}_4$ Single Crystals using Electron Microscopy and Computer Simulation**

A. Kuwabara - Japan Fine Ceramics Center, Nagoya (Japan)

O11 **Electrochemical activity of olivine MgMnSiO_4 towards an application for Li-ion Batteries**

G. Lefèvre - Université Grenoble Alpes, CEA, LITEN, DEHT (France)

O12 **Advanced Phase Transition Analysis of LiFePO_4 at Various Temperatures and Improvement of Rate Capability**

Y. Orikasa - Ritsumeikan University, Shiga (Japan)

>> **General discussion**

10:20-10:50

Coffee Break

10:50-12:30

Na NEGATIVE

O13 **Size Dependent Ion Diffusion in $\text{Na}_2\text{Ti}_3\text{O}_7$ and $\text{Na}_2\text{Ti}_6\text{O}_{13}$**

Y. Fukuzumi - Graduate School of Pure and Applied Sciences, University of Tsukuba (Japan)

O14 **Electrochemical Lithiation and Sodiation of Nb-Doped Rutile TiO_2**

H. Sakaguchi – Department of Chemistry and Biotechnology, Graduate School of Engineering, Tottori University (Japan)

O15 Pioneering study of phosphosilicides as negative electrode for Li- and Na-ion batteries
L. Monconduit - Institut Charles Gerhardt, Montpellier (France)

O16 On the stability of interphases in Na batteries
A. Ponrouch - Institut de Ciència de Materials de Barcelona (Spain)

O17 The mechanism of sodium uptake into hard carbon elucidated by operando PXRD and SAXS
D. Saurel - CIC Energigune, Miñano (Spain)

O18 The intriguing mechanism of phosphorus anodes for sodium ion batteries revealed by operando pair distribution function and X-ray diffraction computed tomography
D. Wragg - Department of Chemistry, University of Oslo (Norway)

>> **General discussion**

12:30-14:30 Lunch break

14:30-15:10 **INV4** **The Fading Promise of High-Energy Cathodes**
J. Croy - Argonne National Laboratory, Chicago (USA)

15:10-16:20 Poster session and Coffee Break

16:20-17:20 **SOLID STATE**

O20 Further insight in sputtered $\text{LiMn}_{1.5}\text{Ni}_{0.5}\text{O}_4$ thin film for solid state Li-ion microbattery
M. Hallot - Institut d'électronique, de microélectronique et de nanotechnologie, Université de Lille (France)

O21 Local Structures and Li Ion Dynamics in Oxidic and Sulfidic Solid Electrolytes Investigated by Solid-State NMR Spectroscopy
S. Indris - Karlsruhe Institute of Technology (Germany)

O22 Towards All Solid State Batteries using perovskite solid electrolytes
M. Lachal - Université de Montréal (Canada)

O23 Discussion on the effects of state of electrolyte (solid or liquid) on battery reaction kinetics
Y. Kato - Toyota Motor Europe NV/SA (Belgium)

>> **General discussion**

20:00 Banquet in Arcachon “Tir au Vol” (by bus)

Wednesday, June 14th

8:30-9:10 **INV5** **Several routes for tuning the redox shuttle effect in Li/S batteries**
M. Morcrette – Laboratoire de Réactivité et Chimie des Solides, Université de Picardie Jules Verne, Amiens (France)

9:10-10:10 **POLYANION**

O24 **Crystal chemistry of $\text{LiVPO}_4\text{F}_{1-x}\text{O}_x$ Tavorite-type compositions: Influence of the concentration of vanadyle-type defects on the electrochemical performances.**

E. Boivin - Institut de Chimie de la Matière Condensée de Bordeaux (France)

O25 **Structural and electrochemical studies of new $\text{Na}_7\text{V}_{4-x}\text{Al}_x(\text{P}_2\text{O}_7)_4(\text{PO}_4)$ ($x = 1, 2$) high-potential cathode materials**

V. M. Kovrugin - Laboratoire de Réactivité et Chimie des Solides, Université de Picardie Jules Verne, Amiens (France)

O26 **Combining Ex Situ Na-23 Solid-State NMR and DFT to Study Polyanionic Cathode Materials for Sodium Ion Batteries**

D. L. Smiley - Department of Chemistry & Chemical Biology, McMaster University (Canada)

O27 **Polyanionic solid-solution cathodes for rechargeable batteries**

A. Yamada - University of Tokyo (Japan)

>> **General discussion**

10:10-11:00 *Coffee Break and Poster session*

11:00-12:30 **Li_2MnO_3**

O28 **From stacking disorder to random stacking in Li_2MnO_3**

M. Casas-Cabanas - CIC Energigune, Miñano (Spain)

O29 **Nanostructured Li_2MnO_3 : a Disordered Rock Salt type structure for High Energy Density Li ion batteries**

M. Freire – CRISMAT, Université de Caen (France)

O30 **Singlet oxygen in non-aqueous battery chemistries**

S. A. Freunberger - Graz University of Technology (Austria)

O31 **Screening the rich crystal structure of Li_3MO_4 rocksalt (M = Ru, Nb, Sb): Towards rationalization of cation ordering**

Q. Jacquet – Collège de France, Paris (France)

O32 **^{17}O NMR Investigations into the Oxygen Local Environment in Pristine and Charged Li-excess Cathode Materials**

P. J. Reeves - Department of Chemistry, University of Cambridge (United Kingdom)

O33 **Oxygen Redox in Li-Ion Battery Chemistries**

A. Sobkowiak - Department of Materials, University of Oxford (United Kingdom)

>> **General discussion**

12:30 **FREE AFTERNOON**

Thursday, June 15th

- 8:30-9:10** **INV6** **Solid-state lithium metal batteries: electrochemistry, materials and prospects**
Y.-G. Guo - Institute of Chemistry, Chinese Academy of Sciences, Beijing (China)
- 9:10-10:20** **Li-RICH**
- O34** **Charge compensation and electrochemical kinetics in Li-rich layered cathodes using operando-XAS and hard-XPS? From practical to model systems**
G. Assat – Collège de France, Paris (France)
- O35** **Combined X-ray diffraction studies and X-ray ptychography tomography to study ageing mechanisms of Li-rich Ni, Mn, Co oxides**
J. Billaud - Paul Scherrer Institut, Villigen (Switzerland)
- O36** **Enhancement and Stabilization of Li-rich Cathode Materials**
D. Aurbach - Department of Chemistry, Bar Ilan University (Israel)
- O37** **Capacity Loss/Fading of Li-Rich Layered Cathode Based on Structural/Electrochemical Analyses**
K.-Z. Fung - National Cheng Kung University (Taiwan)
- O38** **Charge compensation mechanism in lithium-rich cathode materials with different ionic or covalent character**
K. Yamamoto - Graduate School of Human and Environmental Studies, Kyoto University (Japan)
- >> **General discussion**
- 10:20-10:40** *Coffee Break*
- 10:40-12:30** **Li NEGATIVE**
- O39** **Rapid, non-invasive method for quantifying particle orientation distributions in graphite anodes**
P. Baade - Department of Information Technology and Electrical Engineering, ETH Zurich (Switzerland)
- O40** **High-capacity Si-Ti-Ni and Si-Ti-C nanocomposites with long cycle-life as anodes for Li-ion batteries**
F. Cuevas - Institut de Chimie et des Matériaux Paris-Est, Thiais (France)
- O41** **Application of TEM and EELS to the study of solid electrolyte interphase on graphite anode**
C. Davoisne - Laboratoire de Réactivité et Chimie des Solides, Université de Picardie Jules Verne, Amiens (France)
- O42** **The superiority of the EMI-FSI ionic liquid for cycling a Si/Sn composite anode**
D. Lemordant - Université François Rabelais de Tours (France)

- O43** Generation and evolution of materials in the anode Solid Electrolyte Interphase (SEI) of lithium ion batteries
B. Lucht - University of Rhode Island (USA)
- O44** Combining Alloying and Conversion Reactions in Sb-based Transition Metal Oxohalides
V. Renman - Department of Chemistry - Ångström Laboratory, Structural Chemistry, Uppsala University (Sweden)
- O45** Understanding the anomalously high capacity of electrode materials for Li-ion batteries
W.-S. Yoon - Department of Energy Science, Sungkyunkwan University (South Korea)

>> **General discussion**

12:30-14:30 Lunch break

14:30-15:10 **INV7** Layered Sodium Manganese Oxides for Na-ion Batteries
R. Armstrong - School of Chemistry, University of St. Andrews (United Kingdom)

15:10-16:20 **Na LAYERED**

- O46** Na⁺ transport and effect of transition metal layers in P2-type: atomistic modeling and neutron scattering study
M. Avdeev – Australian Centre for Neutron Scattering, Kirrowee (Australia)
- O47** Enhancing the structural stability and electrochemical performance of Li- and Na-ion battery cathode materials: Insights from NMR spectroscopy and DFT computations
R. Clément - University of Cambridge (United Kingdom) and Berkeley University of California (USA)
- O48** Electrochemical thermoelectric effects in several intercalation compounds
W. Kobayashi - Graduate School of Pure and Applied Sciences, University of Tsukuba (Japan)
- O49** High Voltage Mg-Doped Na-Ion Cathodes with Enhanced Stability and Rate Capability
U. Maitra - Department of Materials, University of Oxford (United Kingdom)
- O50** Improving the stability of Fe rich layered oxides for Sodium Ion Batteries
B. Silvàn - CIC Energigune, Miñano (Spain)

>> **General discussion**

16:20-16:50 Coffee break

16:50-18:00 **Li SULFUR**

- O51** Performance enhancement of Lithium-Sulfur Batteries by Atomic Layer Deposition of Lithium Tantalate at the Solid-State Electrolyte : Electrode interface
S. Adams - Department of Materials Science and Engineering, National University of Singapore (Singapore)
- O52** Towards thorough characterization of lithium/sulfur batteries by coupling operando X-ray diffraction and absorption tomography techniques
G. Tonin - French Atomic Energy and Alternative Energy Agency, Laboratory of Innovation for New Energy Technologies and Nanomaterials (France)

- O53 Metal hydride nanocomposites as anode material for sulfur Li-ion all-solid-state batteries**
P. López-Aranguren – Saft, Bordeaux (France)
- O54 Elucidation of Mg-S electrochemical mechanism**
A. Robba - National institute of chemistry, Ljubljana (Slovenia)
- O55 In Situ AFM Investigation of Electrochemical Processes at Electrode/Electrolyte Interface in Li-S Battery**
R. Wen - Institute of Chemistry, Chinese Academy of Sciences, Beijing (China)
- >> **General discussion**

Friday, June 16th

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| 8:30-9:10 | INV8 | The long and winding road towards Ca-based batteries
<i>M. R. Palacin – ICMAB-CSIC, Barcelona (Spain)</i> |
| 9:10-9:50 | INV9 | Fast phase transitions in biphasic systems
<i>H. Arai - Tokyo Institute of Technology (Japan)</i> |
| 9:50-10:10 | | <i>Coffee break</i> |
| 10:10-12:00 | | Discussions on transverse topics
Conclusion |