

**19th Edition of the International Symposium on Intercalation
Compounds
(Assisi-Italy)**

28th May 2017

15.00-19.30 **Registration of participants**

20.00-22.00 **Welcome party**

29th May 2017

8.30-9.00 **Opening ceremony**

Session 1: Intercalated materials for energy applications

Chair: F. Leroux

9.00-9.45 **1PL1** **H. S. Shin** (Ulsan National Institute of Science and Technology, Korea)
Two-Dimensional Materials for Energy Applications

9.45-10.15 **1KN1** **Md.K. Nazeeruddin** (EPFL, Switzerland)
Perovskite Solar Cells: A New Paradigm in Energy Sector

10.15-10.35 1O1 K. Park, K. Ahn, T. Hyeon, I. Chung
Nanochemical Synthesis to Design n-type Bi₂Te₃ for Thermoelectric Applications

10.35-11.00 *Coffee-break*

Chair: S.J. Hwang

11.00-11.30 **1KN2** **S. Ida** (Kyushu University, Japan)
Development of Light Energy Conversion Materials Using Two-Dimensional Inorganic Nanosheets

11.30-11.50 1O2 M. Toyoda, Y. Ouchi, K. Etoh, N. Tadano, T. Kinumoto, T. Tsumura
Discussion of deintercalation behavior from Li-Carbon Fiber Intercalation Compounds

11.50-12.10 1O3 N. Emery, T. Cavoué, S. Bach, C. Cénac-Morthe, J.-P. Pereira-Ramos
Structural response of Li₂Ni_{0.67}N during electrochemical solicitation: Evidence of a vacancy ordered solid-solution behavior

- 12.10-12.30 1O4 L. Guerlou-Demourgues, C. Tang, D. Giaume, A. Adan-Mas, G. Godillot, C. Delmas
Designing cobalt slab – based materials for enhancing the electrochemical performances of aqueous asymmetric supercapacitors
- 12.30-12.50 1O5 M. Errahali, L. Tei, M. Cossi, L. Marchese, G. Gatti
On the gas storage properties of 3D porous carbons derived from hyper-crosslinked polymers
- 12.50-14.30 Lunch

Session 2: Industrial and catalytic applications of intercalated materials

Chair: K. Tanigaki

- 14.30-15.00 **2KN1** **X. Lei** (State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, China)
From Basic Research to Industrial Application of Layered Double Hydroxides with an Example: Resourceful Treatment of Wastewater from Desulfurization of Coke Oven
- 15.00-15.20 2O1 S. Zheng and J. Lu
An Inexpensive Co-Intercalated Layered Double Hydroxide Composite with Electron Donor-Acceptor Character for Photoelectrochemical Water Splitting
- 15.20-15.40 2O2 H.-F. Wang, Q. Zhang
The structure design of layered double hydroxide (LDH) based catalysts for efficient oxygen electrocatalysis
- 15.40-16.00 2O3 X.K. Cheng, D.Q. Li, P.G. Tang, Y.J. Feng
Carbon fiber paper supported three dimensional Ni₂Fe-SDS-LDHs with improved OER electrocatalytic activity
- 16.00-16.20 2O4 L. Shuangde, M. Shenpeng, C. Yunfa
Co-based nanocatalysts with tunable performance for benzene oxidation derived from layered double hydroxide
- 16.20-16.40 2O5 J.-C. Buffet, Coral F. H. Byles, R. Felton, C. Chen and D. O'Hare
Core shell@LDH supported catalysts for ethylene polymerisation
- 16.40-17.00 2O6 D.G. Crivoi, M.G. Álvarez, D. Tichit, F. Medina
Tunable properties of the LDH/graphene nanohybrid catalysts in the Claisen-Schmidt condensation
- 17.00-17.30 Coffee break

Chair: V. Zima

- 17.30-17.50 207 M. Guidotti, C. Dragonetti, M. C. Ranghieri, C. Bisio, F. Carniato, D. Costenaro, M. F. Starodub, A. M. Katsev
Metal-montmorillonite clays as active sorbents: the genesis of a prototypal catalytic on-field decontamination device against chemical warfare agents
- 17.50-18.10 208 A. Zhou, Y. Zhang, Y. Shi and Q. Xu
Integrated Synthesis of Metallocene@Support Catalysts Based on Glyphosate and its Zirconium Derivatives
- 18.10-18.30 209 E. Catizzone, M. Migliori, A. Aloise, G. Giordano
Catalytic assessment of zeolites in methanol dehydration to dimethyl ether reaction
- 18.30-20.00 **Poster session**

30th May

Session 3: Synthesis and characterization

Chair: J. Brendlè

- 9.00-9.45 **3PL1** **M. Cossi** (Università del Piemonte Orientale, Italy)
*Ab initio and classical modeling:
a tool for the design and characterization of new materials*
- 9.45-10.05 3O1 R. B. Vieira and H. O. Pastore
One-Step Dual-Silylation: Expanded Organosilane-Magadiite
- 10.05-10.25 3O2 C. Taviot-Guého, P. Vialat, F. Leroux, F. Razzaghi, H. Perrot, S. Peulon, C. Mousty
Dynamic characterization of inter- and intra- lamellar domains of Co-based Layered Double Hydroxide upon electrochemical oxidation
- 10.25-10.45 3O3 A.Y.A Kaassis, S.M. Xu, S. Qi, D.G. Evans, X. Duan, M. Wei and G.R. Williams
Combined In Situ and In Silico Studies of Guest Intercalation into the Layered Double Hydroxide $[LiAl_2(OH)_6]X \cdot yH_2O$
- 10.45-11.05 3O4 V. I. Kasneryk, M. V. Shamzhy, M. V. Opanasenko, S. A. Morris, S. Russell, J. Čejka, R.E. Morris
IPC-12 - a new zeolite obtained by the ADOR approach
- 11.05-11.30 *Coffee-break*

Chair: M. Cossi

- 11.30-12.00 **3KN1** **A. Leitao** (Universidade Federal de Juiz de Fora, Brazil)
Simulations of chemical processes in layered hydroxides and hydroxysalts from DFT calculations and statistical thermodynamics
- 12.00-12.20 3O5 R. Yu, Y. Kim
Synthesis and Versatile Color of Iron-based Powders
- 12.20-12.40 3O6 J. Demel, J. Hynek, J. Rathouský, L. Hanyková, K. Lang, J. Lang
Modification of a MOF pore structure by organic polymers
- 12.40-13.00 3O7 K. Maeda, T. Sugawara, T. N. Dam, R. Takamatsu, A. Kondo, W.-J. Chun
XAFS study on nanosheets obtained by exfoliation of surfactant-intercalated layered zinc benzenetriphosphonate MOF
- 13.00-14.30 Lunch

Session 4: Intercalation materials for polymer, electronic and magnetic applications

Chair: H.O. Pastore

- 14.30-15.00 **4KN1** G. Totaro, **L. Sisti**, A. Celli, H. Askanian, V. Verney, F. Leroux (University of Bologna, Italy)
Progress in Bionanocomposite Technology: a novel bio-organo modified layered double hydroxide for poly(butylene succinate) reinforcement
- 15.00-15.20 4O1 C. Chen, A. Wangriya, J.-C. Buffet and D. O'Hare
High surface area layered double hydroxides treated by aqueous miscible organic solvent
- 15.20-15.40 4O2 O. Shimomura, T. Nishisako, K. Tokizane, S. Yamaguchi, J. Ichihara, M. Kirino, A. Ohtaka, R. Nomura
Amines-intercalated α -zirconium phosphate as latent thermal curing agents in the reaction of epoxy resin
- 15.40-16.00 4O3 H. M. Moura, N. L. Gibbons, S. A. Miller and H. O. Pastore
Tailoring 2D and 3D Molecular Sieves for PE Composites: Do All Roads Lead to High Performance Polyolefin?

- 16.00-16.20 4O4 A. Akrouf, A. Delrue, M. Zatón, B. Prelot, M. Taillades-Jacquín, S. Cavaliere, D. Jones, J. Rozière
Halloysite nanotubes: friend or foe for PEMFC membranes?
- 16.20-16.40 4O5 G. Totaro, L. Sisti, A. Celli, A. Diouf-Lewis, V. Verney, F. Leroux
Agrowaste with antioxidant properties as intercalating agents for LDH
- 16.40-17.00 *Coffee-break*
- Chair: P.Rabu
- 17.00-17.20 4O6 T. Nakano, R. Kishimoto, G. Prasad Hettiarachchi, Y. Ishii, I. Watanabe, Yasuo Nozue
Anomalous enhancement of ferromagnetic properties in Na-K alloy nanoclusters incorporated into zeolite LSX
- 17.20-17.40 4O7 K. Tanigaki, H. Shimotan, S. Yu Matsushita, K. K. Huynh, T. Kanagasakaran, Y. Tanabe, S. Heguri
Order and Disorder in Intercalation Compounds
- 17.40-18.00 4O8 M. Kawaguchi, H. Higuchi, H. Ishikawa
Intercalation of Calcium into Boron/Carbon Materials Based on the Graphite Network
- 18.00-18.20 4O9 M. Igarashi, T. Nakano, Y. Nozue, P. Jeglič, T. Mežnaršič, A. Krajnc, N. Watanabe, D. Arčon
Strong influence of atomic motion on metallic and magnetic properties of LSX zeolite with guest sodium atoms
- 18.20-20.00 **Poster session**

31st May

Session 5: Intercalation Chemistry (in honor of Prof. Umberto Costantino)

Chair: G. Alberti / D. Jones

- 9.00-9.45 **5PL1** **A. Clearfield** (Texas State University, USA)
Intercalation chemistry: from chemical approaches to special processes and applications
- 9.45-10.05 5O1 A. Infantes-Molina, D. Ballesteros-Plata, E. Rodríguez-Aguado, P. Braos-García and E. Rodríguez-Castellón
Zirconium phosphate heterostructures as catalyst support for hydrodesoxygenation reactions

- 10.05-10.25 502 V. Zima, K. Melánová, L. Beneš, J. Svoboda, M. Pospíšil, P. Kovář
Organophosphonates of alkaline-earth metals as host materials in intercalation chemistry
- 10.25-10.45 503 P. Benito, G. Fornasari, P.H. Ho, M. Monti, E. Scavetta, D. Tonelli, A. Vaccari
Electrodeposition: an innovative way to prepare supported layered double hydroxides
- 10.45-11.05 504 M. Casciola, A. Donnadio, M. Pica
Nanosized α -zirconium phosphate and its organic derivatives: synthesis, characterization and applications
- 11.05-11.30 Coffee-break
- Chair: D. O'Hare
- 11.30-12.00 **5KN1** **J. M. Brendlé** (University of Mulhouse, France)
Organic-inorganic hybrids having a talc-like structure as suitable hosts to guest a wide range of species
- 12.00-12.20 505 M. Bolmont, S. Cahen, G. Medjahdi, P. Lagrange, C. Hérol
LiCl-KCl molten eutectic, a medium of high interest for the intercalation of metals into graphite
- 12.20-12.40 506 R. Matsumoto, T. Aarii, Y. Okabe
Thermal stability of metal chloride-graphite intercalation compounds with graphite sheets prepared from polyimide films
- 12.40-13.00 507 J. Yu, L. Xiang, B. Martin, A. Clearfield, L. Suna
Direct growth of layered intercalation compounds via single step one-pot in situ synthesis
- 13.00-14.30 Lunch
- 15.00-19.00 **Excursion**
20.00 **Social dinner**

1st June

Session 6: Functional materials

Chair: D. Evans

- 9.00-9.45 **6PL1** **M. Osada** (National Institute for Material Science, Japan)
Nanosheet Architectonics: Atomic Layer Engineering of Functional Oxides
- 9.45-10.05 6O1 Q. Evrard, P.-A. Jaffres, M. Roger, A. Pautrat, J.-M. Rueff, O. Pérez, E. Delahaye, P. Rabu, G. Rogez
Functionalization of layered simple hydroxides by molecules bearing phosphonates grafting functions: towards multiferroic materials
- 10.05-10.25 6O2 Y. Wang, C. Leuvrey, D. Ihiawakrim, O. Ersen, F. Leroux, E. Delahaye, P. Rabu, G. Rogez
Microwave-assisted functionalization and post-synthesis modification of an Aurivillius phase: an easy approach to new functional layered perovskites
- 10.25-10.45 6O3 S.-J. Hwang
Exfoliated 2D Nanosheets of Layered Metal Oxides and Hydroxides: Efficient Building Blocks to Functional 3D Nano hybrids
- 10.45-11.05 6O4 T. Nakato, Y. Nono, E. Mouri
Flexible Assembly of Exfoliated Nanosheets of Layered Oxides at Macroscopic Scales by Electric Manipulation
- 11.05-11.30 *Coffee-break*
- Chair: G. Rogez
- 11.30-12.00 **6KN1** **P. Rabu** (CNRS, University of Strasbourg, France)
Perspective view on hybridization of functional layered materials
- 12.00-12.20 6O5 M. Sisani, R. Spogli, M. Bastianini, M. Scatto, A. Sánchez, S. Villanueva, A. Egizabal
Layered compounds as active fillers of biopolymeric nanocomposites for 3D printed functionally graded scaffolds for bone tissue regeneration
- 12.20-12.40 6O6 D. Arcon
 π -electron quantum spin liquid states in ionic polyaromatic hydrocarbons
- 12.40-13.00 6O7 Q. Zheng, L. Huang, Q. Wang
Unexpected highly reversible topotactic CO₂ sorption/desorption capacity for potassium dititanate
- 13.00-13.30 **Closing ceremony**