



# Solgel 2022

Lyon FRANCE

# PROGRAM



## SATURDAY

### “International Workshop: Sol-Gel Materials for Bio-Encapsulation and Bio-Delivery”

Ecole Normale Supérieure de Lyon

<https://www.slu.se/en/departments/molecular-sciences/Bioencapsulation-workshop-info/>

## SUNDAY

### “International workshop on Photonic Glasses by Sol-Gel”

Conference center – Cité internationale, Lyon

|             |  |
|-------------|--|
| 08:30-08:50 | Opening remarks<br>Aleksandra Lobnik, Stephane Parola, Alessandro Martucci   |
| 08:50-09:50 | <i>D. Levy</i><br>“Sol-Gel Materials for Optical and Electrooptical Application”   |
| 09:50-10:05 | <b>Coffee break</b>  |
| 10:10-11:10 | <i>S. Parola</i><br>“Hybrid sol-gel glasses for optics and nonlinear optics : chemical challenges and importance of the micro/nanostructure” |
| 11:10-12:10 | <i>A. Martucci</i><br>“Sol-gel film for optical gas sensors”   |
| 12:15-13:15 | <b>Lunch</b>   |
| 13:15-14:15 | <i>S. Ribeiro</i><br>“Innovative sol-gel materials for IR light activated processes. Photocatalysis, Photodynamic Therapy and Nanothermome”  |
| 14:15-15:15 | <i>B. Julián López</i><br>“Design of photoluminescent nanoparticles, soft gels and glassy materials by sol-gel strategies ”                  |
| 15:15-15:30 | <b>Coffee break</b>  |
| 15:35-16:35 | <i>R. Almeida</i><br>“Up-conversion materials for solid state lighting and PV solar cells”   |

## SOLGEL2022

|             |   |
|-------------|---|
| 14:00-18:00 | <b>Registration</b><br>Conference center – Cité internationale      |
| 19:00-22:00 | <b>Welcome reception</b><br>Conference center – Cité internationale |

## MONDAY

**09:00-09:30**

**Welcome**

**09:30 – 10:15 Auditorium Lumière  
Plenary lecture P01**

**Krzysztof MATYJASZEWSKI**

(Carnegie Mellon University, Pittsburgh, USA)  
"Nanostructured Functional Materials by ATRP"

**10:15 – 11:00 Auditorium Lumière  
Plenary lecture P02**

**Markus ANTONIETTI**

(Max Planck Institute of Colloids and Interfaces - University of Potsdam, GERMANY)  
"Simply Black Magic: towards a low(er) temperature sol-gel chemistry of carbon materials"

**11:00-11:30 Coffee Break**

**11:30-13:00 Parallel sessions**

|             | <b>Auditorium Lumière<br/>Porous materials</b>  | <b>Auditorium Pasteur<br/>Materials for energy<br/>and environment</b>   | <b>Salon Pasteur<br/>Materials for health<br/>applications</b>  |
|-------------|---|--|---|
| 11:30-11:55 | <b>Invited<br/>David Avnir</b><br>(The Hebrew University of<br>Jerusalem, Israel)<br><i>Aerogels: Magnetism,<br/>sustained release, 3d-printing</i>   | <b>Invited<br/>Raffaella Buonsanti</b><br>(EPFL, Switzerland)<br><i>Colloidal chemistry to design<br/>well-defined and tunable<br/>nanomaterials for catalysis<br/>and energy applications</i> | <b>Invited<br/>Mateus CARDOSO</b> (LNLS,<br>Brazil)<br><i>Interaction of surface-<br/>modified silica nanoparticles<br/>and biological components:<br/>a synchrotron approach</i> |
| 11:55-12:10 | <b>Sidney. Ribeiro</b><br><i>"Nanocellulose-based<br/>organic-inorganic hybrid<br/>aerogels for in-flow<br/>photocatalytic water<br/>purification</i> | <b>B.-K. Wakshlak Racheli</b><br><i>Sol-gel glazes - a safe glass<br/>and ceramics coloring<br/>approach</i>   | <b>Florestan Vergnaud</b><br><i>Superparamagnetic and<br/>bioactive nanoparticles for<br/>bone cancer<br/>treatment</i>   |
| 12:10-12:25 | <b>D. Cantero Martin</b><br><i>Synthesis optimization of high<br/>performance polyurethane<br/>aerogels for thermal<br/>insulation</i>                | <b>Janique Hupperetz</b><br><i>Thermochromic Coatings<br/>and Laminates for Smart<br/>Windows Comprising VO<sub>2</sub><br/>Nanopigments</i>   | <b>Andrea Montero</b><br><i>Design of multi-functional<br/>NPs for controlled enzyme<br/>delivery</i>   |
| 12:25-12:40 | <b>Shanyu Zhao</b><br><i>3D printing of silica aerogels</i>   | <b>Elodie Layan</b><br><i>Design of MOx-Si(HIPE) self-<br/>standing monoliths bearing<br/>hierarchical porosity towards<br/>environmental remediation</i>                                      | <b>Alessandra Pinna</b><br><i>Inorganic nanoparticles for<br/>Tuberculous Meningitis<br/>treatment</i>  |
| 12:40-12:55 | <b>Salihovic Miralem</b><br><i>Hybrid Carbon Spherogels:<br/>Incorporation of Metal<br/>Oxides</i>  | <b>Mathieu Salaün</b><br><i>New generation of<br/>aluminium borate phosphors<br/>for white leds lighting<br/>prepared by "chimie<br/>douce"</i>  | <b>Mathilde Laird</b><br><i>Biodegradable organosilica<br/>nanoparticles as<br/>nanocarriers in boron<br/>neutron capture therapy</i>   |

**13:00-14:00**

**Lunch & Posters & Industrial expo**

**14:00-18:00 Parallel Sessions**

|             | <b>Auditorium Lumière<br/>Porous materials</b>   | <b>Auditorium Pasteur<br/>Characterization of<br/>materials</b>   | <b>Salon Pasteur<br/>Materials for health<br/>applications</b>  |
|-------------|--|---|---|
| 14:00-14:25 | <b>Invited</b><br><b>Corine GÉRARDIN</b><br>(ICGM, France)<br><i>Efficient polymer templates<br/>for tailoring properties of<br/>functional ordered<br/>mesoporous materials</i> | <b>Invited</b><br><b>Anne LESAGE</b><br>(CRMN France)<br><i>Decoding Structural<br/>Complexity of Supported<br/>Molecular Catalysts by DNP<br/>Surface Enhanced Solid-<br/>State NMR Spectroscopy</i> | <b>Invited</b><br><b>Vadim G. KESSLER</b><br>(SLU, Sweden)<br><i>Metal oxide Sol-Gel<br/>materials as drug delivery<br/>vehicles and components of<br/>tissue scaffolds: from<br/>(OXO)Alkoxide paperbag<br/>models to applications</i> |
| 14:25-14:40 | <b>Wagner Lysander</b><br><i>Synthesis of PEO-b-PHA Block<br/>Copolymers for Mesoporosity<br/>Tuning</i>   | <b>Eric Besson</b><br><i>SBA-15 wall embedded<br/>nitroxide as DNP polarizing<br/>matrice: application to the<br/>study of crystallization<br/>process</i>  | <b>Peter Hesemann</b><br><i>Ionosilica nanoparticles for<br/>drug delivery,<br/>photodynamic therapy and<br/>the photochemical<br/>internalization of siRNA</i>   |
| 14:40-14:55 | <b>Mohamed Nawfal<br/>Ghazzal</b><br><i>Cellulose nanocrystals: a<br/>biotemplate for highly active<br/>and mesostructured<br/>photocatalyst</i>                                 | <b>Alvin Chang</b><br><i>Quantitative Measure of 3D<br/>Nanostructure and Size<br/>Dispersity of Ultrasmall<br/>Fluorescent Silica Nanorings<br/>via Small-Angle X-ray<br/>Scattering</i>             | <b>Mariia Spiridonova</b><br><i>Stromal stem cells in<br/>composition with deposited<br/>silica nanoparticles<br/>functionalized growth factor</i>  |
| 14:55-15:10 | <b>Maggie Fox</b><br><i>Engineering Mesoporous<br/>Silica for Superior Optical<br/>and Thermal Properties</i>  | <b>Christian Scherdel</b><br><i>Specific surface area<br/>determination of thin porous<br/>aerogel layers with SAXS</i>   | <b>Monica Onrubia</b><br><i>Engineering msns from L-<br/>DOPA derivatives to<br/>overcome the limitations of<br/>conventional drug<br/>administration for parkinson's<br/>disease</i>   |
| 15:10-15:25 | <b>Haibo Zhao</b><br><i>Aerogel materials for<br/>potential automotive<br/>applications</i>  | <b>Gavin Mountjoy</b><br><i>Ce L3 edge HERFD-XANES of<br/>in situ reduction-oxidation<br/>cycles of ceria nanocubes<br/>embedded in a silica<br/>aerogel</i>  | <b>Myriam Neumann</b><br><i>Differentiation and<br/>Encapsulation of <math>\beta</math>-like cells<br/>for the treatment of type 1<br/>Diabetes mellitus</i>  |
| 15:25-15:40 | <b>Leigh Peles-Strahl</b><br><i>Bipyridine modified<br/>conjugated carbon aerogels<br/>as a platform for oxygen<br/>reduction reaction<br/>electrocatalysis</i>                  |   | <b>Marc Maleval</b><br><i>Innovative porous materials<br/>for enhanced glycomic<br/>analysis</i>  |

**15:40-16:10 Coffee break**

|             | <b>Auditorium Lumière<br/>Porous materials</b>                                  | <b>Auditorium Pasteur<br/>Characterization of<br/>materials</b>  | <b>Salon Pasteur<br/>Nano- and micro-<br/>structured materials</b>                             |
|-------------|---|--|--|
| 16:10-16:25 | <b>Alexander Eychmüller</b><br><i>Metal aerogels and their<br/>applications</i> | <b>Thibaud Divoux</b><br><i>Time-Resolved Mechanical<br/>Spectroscopy of sol-gel<br/>transitions via Optimally<br/>Windowed Chirp (OWCh)</i> | <b>David Grosso</b><br><i>Nanoimprinted sol-gel<br/>materials for optics and<br/>photonics</i> |

|             |  |   |  |
|-------------|--|---|--|
| 16:25-16:40 | <b>Petr Machac</b><br>Highly porous hybrid zirconium phosphonates by non-hydrolytic sol-gel methods  | <b>Amyar Hajar</b><br>Cyclic ellipsometry: new approach to probe sorption response of nanoporous materials in out-of-equilibrium condition                | <b>Glenna Drisko</b><br>Diffuse halos in 2D monolayer surfaces thanks to disordered nano features  |
| 16:40-16:55 | <b>Anna Corrias</b><br>Magnetic hydrophobic aerogels   | <b>Gabriela Zelenkova</b><br>Is thermoporometry really a simple method for characterization of porous properties of carbon gels?                          | <b>Maria Eugenia Cruz</b><br>Transparent RE-doped glass ceramics produced by sol-gel from nanofluoride-crystalline suspensions                   |
| 16:55-17:10 | <b>Stefanie Hauser</b><br>Surfactant-free synthesis of mono- and di-methyl functionalized alkoxy silanes derived silica gels with tuneable pore structures | <b>Julien Acquadro</b><br>Characterization of innovative sol-gel coatings by electrical and mechanical measurements by atomic force microscopy techniques | <b>Maria Basso</b><br>Laser crystallization of thermochromic VO <sub>2</sub> thin films obtained by an environmentally friendly sol gel approach |
| 17:10-17:25 | <b>Seeni Meera Kamal Mohamed</b><br>Resorcinol-formaldehyde (rf) aerogel microbeads via dropping method  |   | <b>Daniel Gutiérrez-Martín</b><br>Sponge-like surface design: NdNiO <sub>3</sub> synthesis by pmma-templated sol gel method                      |

**Evening "Lyonnais", reception at Lyon City Hall**



## TUESDAY

**09:00 – 09:45 Auditorium Lumière**

**Plenary lecture P03**

**Bruce DUNN**

(University of California, Los Angeles, USA)

*“Creating new generations of electrochemical materials by exploiting Sol-Gel chemistry”*

**09:45 – 10:30 Auditorium Lumière**

**Plenary lecture P04**

**Julia GREER**

(CALTECH, Pasadena, USA)

*“Materials by Design: Three-Dimensional (3D) Nano-Architected Meta-Materials”*

**10:30-11:00 Coffee Break**

**11:00-13:00 Parallel sessions**

|             | <b>Auditorium Lumière<br/>Nano- and micro-structured materials</b>   | <b>Auditorium Pasteur<br/>Coatings</b>  | <b>Salon Pasteur<br/>Materials for catalysis and photocatalysis</b>   |
|-------------|--|---|---|
| 11:00-11:25 | <b>Invited</b><br><b>Atsushi SHIMOJIMA</b><br>(Waseda University, Japan)<br><i>Design of self-healing siloxane-based nanomaterials</i>           | <b>Invited</b><br><b>Benoît HEINRICH</b><br>(University of Liège, Belgium)<br><i>Upscaling sol-gel technology to make it a competitive way for coating manufacture and process at an industrial scale</i> | <b>Invited</b><br><b>Damien DEBECKER</b><br>(UCL, Belgium)<br><i>Preparation of porous catalysts by aerosol-assisted Sol-Gel</i>                                    |
| 11:25-11:40 | <b>Taiki Hayashi</b><br><i>Preparation of nanoporous materials containing cage germanoxanes with exchangeable organoammonium cations</i>         | <b>Thierry Gacoin</b><br><i>Amazing physico-chemical properties of alkaline silicates and applications for sol-gel functional coatings</i>  | <b>Tim-Patrick Feller</b><br><i>Activation revisited: a sol-gel process to functional carbons</i>   |
| 11:40-11:55 | <b>Takuya Hikino</b><br><i>Synthesis of nanoporous titanossiloxane materials for oxidation catalysis using cage siloxane as a building block</i> | <b>Hikomitsu Kozuka</b><br><i>Instability of Stress in Sol-Gel-Derived Ceramic and Glass Thin Films</i>   | <b>Francisco Gonell</b><br><i>From clusters to functional materials: molecular design of molybdenum sulfide electrocatalysts derived from well-defined clusters</i> |
| 11:55-12:10 | <b>Ruohong Sui</b><br><i>Sol-Gel Synthesis of TiO<sub>2</sub> with a Large Pore Size and High Surface Area</i>                                   | <b>Christophe Boscher</b><br><i>Contamination-resistant antireflective coatings for laser optics</i>  | <b>Amélie Maertens</b><br><i>Gallium-silicate catalysts: from a sustainable synthesis toward the efficient conversion of crude glycerol</i>                         |
| 12:10-12:25 | <b>Sandra Dirè</b><br><i>Effect of titania nanoparticles addition on the structure of ladder-like polysilsequioxanes</i>                         | <b>Fredric Svensson</b><br><i>Facile synthesis of sulfate-modified titania nanoparticles from titanyl sulfate: catalytic activity and surface properties</i>  | <b>Ryma Haddad</b><br><i>Green synthesis of heterogeneous catalysts by solvent-free reactive extrusion</i>  |
| 12:25-12:40 | <b>Christine Revenant</b><br><i>Self-organization in sol-gel oxide thin films</i>  | <b>Juan Pablo Fernández-Hernán</b><br><i>Influence of substrate's surface state on the thickness and integrity of sol-gel coatings deposited by dip-coating</i>   | <b>Hana Adachi</b><br><i>Development of MnO<sub>x</sub> nanocluster catalyst by using PVA-stabilized Mn colloid as a precursor</i>                                  |

|  |   |   |   |
|--|---|---|---|
| 12:40-12:55  | <b>Massimiliano D'Arienzo</b><br>Ladder-like polysilsesquioxanes as powerful platform for developing multifunctional polymer nanocomposites   | <b>Lea Marichez</b><br>Sol-gel based microstructured luminescent coating  | <b>David Skoda</b><br>Homogeneous molybdenum silicate microspheres and their application as heterogeneous epoxidation catalysts   |
| <b>13:00-14:00</b><br><b>Lunch &amp; Posters &amp; Industrial expo</b> |   |   |   |
| <b>14:00-18:00 Parallel Sessions</b>                                   |   |   |   |
|  | <b>Auditorium Lumière</b><br><b>Materials for sensors, optics, nonlinear optics, photonics and optoelectronics</b>  | <b>Auditorium Pasteur</b><br><b>Materials for energy and- environment</b>   | <b>Salon Pasteur</b><br><b>Coatings</b>   |
| 14:00-14:25  | <b>Invited</b><br><b>Eva HEMMER</b><br>(University of Ottawa, Canada)<br>Colour-tuneable lanthanide-based nanoparticles for applications from biomedecine to printing   | <b>Invited</b><br><b>Christel LABERTY-ROBERT</b><br>(LCMCP, France)<br>Combining sol-gel chemistry and electrospinning process to develop composite membrane with self-healing properties: application in li-ion battery and fuel cells | <b>Invited</b><br><b>Lourdes CALZADA</b><br>(ICMM-CSIC, Spain)<br>Low-temperature Sol-Gel methods for the integration of crystalline metal oxide thin films in flexible electronics |
| 14:25-14:40  | <b>Maia Lauro June Queiroz</b><br>Nd <sup>3+</sup> /Yb <sup>3+</sup> co-doped Ge <sub>2</sub> Y <sub>2</sub> O <sub>7</sub> and Ge <sub>2</sub> Gd <sub>2</sub> O <sub>7</sub> for luminescent thermometry applications | <b>Marco Faustini</b><br>Nanostructuring noble metal-based materials by sol-gel process for electrocatalysis  | <b>Daniel Mandler</b><br>Electrochemical Deposition of Sol-Gel Thin Films: Why and How?   |
| 14:40-14:55  | <b>Jan Mrazek</b><br>Nanocrystalline (Ho <sub>0.05</sub> Y <sub>0.95</sub> ) <sub>2</sub> Ti <sub>2</sub> O <sub>7</sub> luminophore for short- and mid-infrared lasers   | <b>Koceila Maouacine</b> Design of lithium-ion conducting porous hybrid thin films for the development of solid lithium battery electrolytes  | <b>Karine Valle</b><br>Development of high-quality coatings using an optimized spray-technique process  |
| 14:55-15:10  | <b>Yan Yige</b><br>Ultra-small YPO <sub>4</sub> -YAG:Ce composite nanophosphors with a photoluminescence quantum yield exceeding 50%  | <b>Trang Phan</b><br>Crosslinked single-ion silica-PEO hybrid electrolytes for lithium metal battery  | <b>Mari-Ann Einarsrud</b><br>Tailoring preferential orientation in oxide films from aqueous chemical deposition   |
| 15:10-15:25  | <b>Alessandro Lauria</b><br>Structure/function relationship in luminescent pure and Ti-doped HfO <sub>2</sub> nanocrystals  | <b>Jorge González-Morales</b><br>Cathode Materials for Zn-Oxygen Aqueous Batteries based on Titanium Compounds  | <b>Clément Genet</b><br>Innovative sol-gel coating for interconnexion systems   |
| 15:25-15:40  | <b>Denis Chateau</b><br>Sol-gel nanocomposite glasses for optical protection up to the short-wave infrared range  | <b>Kiyofumi Katagiri</b><br>Preparation of Perovskite Oxynitrides Using Sol-Gel Derived Precursors and Solid Nitriding Agents   | <b>Simon Chwatal</b><br>Cross-Linking Processes in UV-Sol-Gel Systems Initiated by Atmospheric Pressure Plasma Characterized by FTIR  |

|                                 |  |   |   |
|---------------------------------|--|---|---|
| 15:40-15:55                     | <b>David Levy</b><br>Sol-gel optic smart windows   | <b>Antoine Vardon</b><br>Binary $\text{M}^{\text{Ox}}\text{-SiO}_2/\text{M}^{\text{O}}\text{-SiO}_2$<br>porous self-standing<br>nanostructures for<br>environmental remediation | <b>Ana Suarez Vega</b><br>Effect of Lanthanum 4-<br>hydroxycinnamate on the<br>reactions of two hybrid sol-<br>gel coating formulations           |
| <b>16:00-16:30 Coffee break</b> |  |   |   |
|                                 | <b>Auditorium Lumière</b><br><b>Materials for sensors,<br/>optics, nonlinear optics,<br/>photonics and<br/>optoelectronics</b>   | <b>Auditorium Pasteur</b><br><b>Materials for health<br/>applications</b>   | <b>Salon Pasteur</b><br><b>Coatings</b>   |
| 16:30-16:45                     | <b>Luca Malfatti</b><br>Integration of C-dots in<br>hybrid fluorescent<br>nanocomposite films  | <b>Stephanie Lambert</b><br>Protein encapsulation in<br>functionalized and structured<br>silica gel for bone<br>reconstruction application                                      | <b>Joanna Mikolei</b><br>Tuning of wettability and<br>fluid flow through sol gel<br>silica paper hybrid materials                                 |
| 16:45-17:00                     | <b>Olivier Soppera</b><br>Au nanoparticles/ $\text{InZnO}$ thin<br>film prepared by laser<br>annealing for wide range<br>photodetector applications  | <b>Bjorn Greijer</b><br>POM as models for metal<br>oxide nanoparticle – peptide<br>interactions   | <b>Elena Colusso</b><br>Tuned wettability of $\text{SiO}_2$ sol-<br>gel coatings for humid air<br>and saturated vapor<br>condensation             |
| 17:00-17:15                     | <b>Daniel Mann</b><br>Phase Separation of $\text{VO}_2$<br>and $\text{SiO}_2$ on $\text{SiO}_2$ -Coated<br>Float Glass Yields Robust<br>Thermochromic Coating<br>with Unrivalled Optical<br>Properties | <b>Gowsihan<br/>Poologasundarampillai</b><br>Sol-gel derived hydrogels for<br>biofabrication of biological<br>tissues   | <b>Emilia Merino</b><br>An effective peo and<br>epoxy-silane hybrid coating<br>system to enhance the<br>corrosion resistance of<br>AZ31B MG alloy |
| 17:15-17:30                     | <b>Patrick Gailly</b><br>Laser deposition of sol-gel<br>for sensor applications  | <b>Imane El Moujarrad</b><br>Size-tuning of hollow periodic<br>mesoporous organosilica<br>nanoparticles (HPMO-NPs) for<br>theranostic applications                              | <b>Andrei Jitianu</b><br>Hybrid anticorrosive<br>coatings for of the AZ31B<br>magnesium alloy   |
| 17:30-17:45                     | <b>Xavier Guichard</b><br>Interdependence of<br>structural and compositional<br>parameters on up-<br>converting hafnia<br>nanoparticles  | <b>Karim Dahmouche</b><br>Siloxane-PPO hybrids for<br>prolonged release of penicillin<br>G: structure-release<br>mechanisms relationships                                       | <b>Lavinia Saltarelli</b><br>Novel class of metalorganic<br>solutions for the preparation<br>of high-performance<br>superconducting films         |



## WEDNESDAY

**09:00 – 09:45 Auditorium Lumière  
Industrial session**

**Plenary lecture P04**

**Delphine BLANC**

(ELKEM, FRANCE)

*"Elkem Silicones – Colloids for soft chemistry & new applications – The Open Innovation eco-system"*

**09:45 – 10:30 Auditorium Lumière**

**Plenary lecture P05**

**Iryna GOZHUK**

(Saint-Gobain Recherche, France)

*"Flat and patterned Sol-Gel films : From scalable nano-fabrication to optics"*

**10:30-11:00 Coffee Break**

**11:00-13:00 Parallel sessions**

|             | <b>Auditorium Lumière<br/>Industrial session</b>  | <b>Auditorium Pasteur<br/>Materials for catalysis<br/>and photocatalysis</b>   | <b>Salon Pasteur<br/>Nano- and micro-<br/>structured materials</b>   |
|-------------|---|--|--|
| 11:00-11:25 | <b>Invited</b><br><b>Jean-Yves DELANNOY</b><br>(Siemens technology,<br>USA)<br><i>Molecular Informed Large-<br/>Scale Simulations</i>                 | <b>Invited</b><br><b>Valentin SMEETS</b><br>(UCL, Belgium)<br><i>Original Sol-Gel synthetic<br/>approaches to high-<br/>performance Ti-SiO<sub>2</sub><br/>catalysts</i> | <b>Invited</b><br><b>Mateusz ODZIOMEK</b><br>(Max Planck Institute,<br>Germany)<br><i>Crack self-ordering:<br/>fabrication of nanoporous<br/>periodic arrays of metal<br/>oxides</i> |
| 11:25-11:40 | <b>Roland Ramsch</b><br><i>Diffusing wave spectroscopy<br/>(DWS) as a powerful tool for<br/>the optimization of sol-gel<br/>formulation</i>           | <b>Julien Mahy</b><br><i>Crystalline ZnO<br/>photocatalysts with different<br/>morphologies prepared at<br/>ambient temperature</i>                                      | <b>David Riassetto</b><br><i>Multifunctional ZnO<br/>nanowires-based<br/>nanocomposites by capillary<br/>rise infiltration</i>   |
| 11:40-11:55 | <b>Itziar Azpitarte</b><br><i>Anti-soiling coating<br/>development and<br/>performance on solar<br/>reflectors for water saving in<br/>CSP plants</i> | <b>Karim Bouchmella</b><br><i>Hydrolytic vs. non-hydrolytic<br/>sol-gel routes to prepare Si-<br/>Al-Ni mixed oxide catalysts<br/>for ethylene oligomerization</i>       | <b>Aubry Martin</b><br><i>Development of sol-gel<br/>derived ZnO nanowires<br/>(NWs) arrays for optical<br/>applications</i>   |
| 11:55-12:10 | <b>Alizée Boullé</b><br><i>Magnetic nanohybrids for<br/>api manufacturing</i>   | <b>Maria Casula</b><br><i>Prospective catalysts based<br/>on nanocomposite aerogels</i>  | <b>Wonjoong Kim</b><br><i>Nanocomposite printing for<br/>high-efficiency<br/>metahologram in the visible</i>   |
| 12:10-12:25 | <b>Brice Fiorentino</b><br><i>Silica aerogel powder<br/>impregnations of textile for<br/>the optimisation of thermal<br/>performance</i>              | <b>Margot Van Der Verren</b><br><i>Highly dispersed gold silica<br/>catalyst prepared in one<br/>step by the aerosol-assisted<br/>sol-gel process</i>                    | <b>Claire Förster</b><br><i>Asymmetric nanopore<br/>architectures and nanolocal<br/>functionalization by visible<br/>light induced<br/>polymerizations</i>                           |
| 12:25-12:40 | <b>Florent Deliane</b><br><i>Towards safe sol-gel finishing<br/>solutions for textiles: from lab<br/>scale to industrial textile<br/>production</i>   |  | <b>Lavinia Calvi</b><br><i>A comparative study on the<br/>switching kinetics of W/VO<sub>2</sub><br/>micron-sized powders and<br/>nanoparticles</i>                                  |

**12:40-14:00 Lunch**

**14:00-18:00**

**Excursion**

## THURSDAY

**09:00 – 13:00 Auditorium Lumière  
ISGS Session**

**09:00-10:30 : Ulrich Awards ceremony and lectures**  
*Nataly Carolina Rosero Navarro (Hokkaido Univ., Japan)*  
*George Hasegawa (Nagoya Univ., Japan)*

**10:30-11:00 : Coffee break**

**11:00 – 12:30 : Life Achievement Awards ceremony and lectures**  
*Sara Aldabe Bilmes (Argentina)*  
*Kazuki Nakanishi (Nagoya Univ., Japan)*

**12:30 – 12:50 : PhD Awards ceremony**

**12:50-13:00 : Presentation of Journal of Sol-Gel Science and Technology**  
*Jack Manzi, Assistant Editor Springer*

**13:00-14:00**

**Lunch & Posters & Industrial expo**

**14:00- Parallel Sessions**

|             | <b>Auditorium Lumière<br/>Nanoparticles synthesis,<br/>self-assembly</b>   | <b>Auditorium Pasteur<br/>Materials for energy<br/>and environment</b>  | <b>Salon Pasteur<br/>3D printing</b>  |
|-------------|--|---|---|
| 14:00-14:25 | <b>Invited</b><br><i>Luis D CARLOS</i><br>(University of Aveiro,<br>Portugal)<br>Light-emitting hybrid<br>materials for temperature<br>sensing, molecular logic and<br>IoT applications      | <b>Invited</b><br><i>Beatriz JULIAN-LOPEZ</i><br>(University Jaume<br>I Castellón, Spain)<br>Towards more efficient and<br>sustainable halide<br>perovskites for photovoltaics<br>and optoelectronics | <b>Invited</b><br><i>Giorgia FRANCHIN</i><br>(University of Padova,<br>Italy)<br>Sol-Gel chemistry and<br>additive manufacturing:<br>Potential for ceramic<br>fabrication |
| 14:25-14:40 | <i>Léna Meyniel</i><br>From lanthanide oxysulfide<br>nanocrystals to the design<br>and development of<br>nanostructured thin films   | <i>Jadra Mosa</i><br>Densification of $BaZr_{0.8}Y_{0.2}O_{3-\delta}$<br>proton conductor<br>electrolytes for Solid Oxide<br>Electrolyzer Cells (SOECs) by<br>sol-gel method                          | <i>Agathe Heyraud</i><br>3D printed sol-gel hybrids<br>with calcium addition for<br>bone regeneration   |
| 14:40-14:55 | <i>Marie-Hélène Delville</i><br>Design of Metal@SCs Nano-<br>Heterodimers by Laser-Driven<br>Photodeposition: Growth<br>Mechanism and Modeling<br>(SC= Metal Oxide and QD<br>Semiconductors) | <i>Ana Marques</i><br>Insights on porous<br>microspheres generation<br>and their doping for solar-<br>light driven photocatalysis   | <i>Clement Laute</i><br>Advanced 3D ceramic-<br>based open-structures using<br>additive manufacturing and<br>sol-gel photoresins  |
| 14:55-15:10 | <i>Gunnar Westin</i><br>Synthesis and<br>characterisation of ZnO:Eu<br>nano-sponges; molecular-<br>like Eu-oxide clusters<br>enclosed in ZnO   | <i>Gulaim Seisenbaeva</i><br>Facile strategies in synthesis<br>of functional hybrid materials<br>for recycling of metals and<br>removal of organic<br>pollutants                                      | <i>Gabriel Tayama</i><br>Compositional dependency<br>of 3d printing parameters in<br>silica-aluminum-phosphate<br>hybrid material   |
| 15:10-15:25 | <i>Cynthia Cibaka Ndaya</i><br>Design of Si-based particles<br>for optical metamaterials<br>with broadband forward<br>light scattering properties  | <i>Markus Niederberger</i><br>Gas-phase nitrogen doping<br>of monolithic TiO <sub>2</sub><br>nanoparticle-based<br>aerogels for efficient visible-  | <i>Laura Piedad Chia Gomez</i><br>Two-photon direct laser<br>writing and maskless<br>projection lithography of<br>silica-based sol-gel materials                          |

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|----------------|--|--|---|
|                |  | light-driven photocatalytic H <sub>2</sub> production  |   |
| 15:25-15:40    | <b>Naoki Tarutani</b><br>Synthesis and characterization of nickel-based layered metal hydroxide nanoparticles with surface modifiers   | <b>Stéphane Daniele</b><br>Sol-gel processing of hybrid ZnO nanophosphors self-assembled in mesospheres for WLED application                       | <b>Raz Gvishi</b><br>3D-printed sol-gel based micro-scale optical devices by laser writing via 2-photon polymerization process        |
| 15:40-15:55    | <b>Diana Garcia Franco</b><br>Synthetic approaches for BaMO <sub>3</sub> and BaM <sub>2</sub> O <sub>6</sub> nanoparticles compatible with superconducting precursor solutions | <b>Ani Vardanyan</b><br>Tailoring nano adsorbent surface for recycling of rare earth based magnets   | <b>Anna Tchorzewska</b><br>3D printed large sol-gel hybrid scaffolds via rapid 3D vat stereolithography                               |
| 15:55-16:10    | <b>Ameni Dhouib</b><br>Formation mechanisms of LiNbO <sub>3</sub> nanocrystals under solvothermal conditions from alkoxide precursors  | <b>Rachel Gonzalez</b><br>PDMS coated UV sensor for continuous monitoring of BTEX in groundwater   |   |
| 16:10-16:40    | <b>Coffee break</b>  |  |   |
|                | <b>Auditorium Lumière</b><br><b>Chemistry and fundamentals of the sol-gel process</b>  | <b>Auditorium Pasteur</b><br><b>Porous materials</b>   | <b>Salon Pasteur</b><br><b>Materials for sensors, optics, nonlinear optics, photonics and optoelectronics</b>                         |
| 16:40-16:55    | <b>Guido Kickelbick</b><br>Controlled Formation of Polysilsesquioxane Structures applying Stabilized Silanol Groups  | <b>Martin Kejik</b><br>A unified synthetic approach to porous hybrid single-site metallosilicates  | <b>Lisa C. Klein</b><br>Wearable Acetone Monitor Incorporating PANI/CA Sensor in Melting Gel Package                                  |
| 16:55-17:10    | <b>Masafumi Unno</b><br>Versatile Monomers from Cyclic and Double-Decker Silanols  | <b>Zahra Mazrouei</b><br>Silica aerogel-based composites for sound absorption  | <b>Harry Dawson</b><br>Novel optofluidic modules in silica aerogel  |
| 17:10-17:25    | <b>Bernd Smarsly</b><br>Peering into the low-temperature synthesis of Ti(OH)OF: elucidating the molecular reaction steps by NMR spectroscopy                                   | <b>Samantha L. Flores Lopez</b><br>Graphene aerogels: a simultaneous blend of high porosity and large electrical conductivity in a single material | <b>Yves Jurlin</b><br>TiN thin film made by nitridation of TiO <sub>2</sub> sol-gel layer and rapid thermal nitridation process (RTN) |
| 17:25-17:40    | <b>Georg Garnweitner</b><br>Numerical Modelling of the Nonaqueous Sol-Gel Synthesis of Metal Oxide Nanoparticles via Population Balances                                       | <b>Galit Bar</b><br>Synthesis of silica aerogel films in liquid molds  | <b>Laurent Mugerli</b><br>Toxic gas sensing within microsystems made by in-situ generation of porous beads microarray                 |
| 17:40-17:55    | <b>Iana Sudreau</b><br>Shear-induced memory effect in boehmite gels  | <b>Ales Styskalik</b><br>Ethanol dehydration over hybrid aluminosilicate catalysts prepared by non-hydrolytic sol-gel                              | <b>Martina Angermann</b><br>Highly Conductive RuO <sub>2</sub> Thin Films from Novel Facile Aqueous Chemical Solution Deposition      |
| 17:55-18:10    | <b>Claudio Imparato</b><br>The role of organic ligands in tuning the electronic and redox properties of hybrid titanium oxide  | <b>Guillaume Brulay</b><br>Synthesis, and studies of SBA-15 materials fonctionnalized with transient radical precursors                            | <b>Xavier Bulliard</b><br>Mesoporous sol-gel thin film with hierarchical porosity for optical sensing applications                    |
| <b>BANQUET</b> |  |  |   |

## FRIDAY

### 09:00-13:00 Parallel sessions

|             | Auditorium Lumière<br><b>Nanoparticles synthesis, self-assembly</b>   | Auditorium Pasteur<br><b>Functional &amp; hybrid materials</b>  |
|-------------|---|---|
| 09:00-09:25 | <p style="text-align: center;"><b>Invited</b><br/><b>Sophie CARENCO</b><br/>(LCMCP, France)<br/><i>Nanoparticle design: From the solution to the nanoscaled reactive metal-containing solid</i></p>   | <p style="text-align: center;"><b>Invited</b><br/><b>Kenji OKADA</b><br/>(Osaka Prefecture University, Japan)<br/><i>Organic-inorganic epitaxial interface on metal hydroxides as scaffold for oriented framework compound films with unique properties</i></p> |
| 09:25-09:50 | <p style="text-align: center;"><b>Invited</b><br/><b>Michael YU</b><br/>(University of Queensland, Australia)<br/><i>Surfactant-free silica-polymer assembly: A new paradigm</i></p>  | <p style="text-align: center;"><b>Invited</b><br/><b>Francesca TALLIA</b><br/>(Imperial College London, England)<br/><i>Bioglass-derived Sol-Gel hybrid scaffolds for bone and cartilage regeneration: from design to in vivo studies</i></p>                   |
| 09:50-10:05 | <p style="text-align: center;"><b>Etienne Duguet</b><br/><i>Patchy silica nanoparticles: sol-gel synthesis, clustering, chaining and cyclizing by solvent-induced assembly</i></p>  | <p style="text-align: center;"><b>Masahide Takahashi</b><br/><i>Polarization-dependent optical responses of metal nanoparticles in metal-organic framework films via heteroepitaxial growth</i></p>   |
| 10:05-10:20 | <p style="text-align: center;"><b>John Bartlett</b><br/><i>Sol-gel processing of new styryl-substituted cage silsesquioxanes: T<sub>8</sub>, T<sub>8</sub>-F, T<sub>10</sub>, T<sub>12</sub> and an unprecedented T<sub>18</sub> cage</i></p> | <p style="text-align: center;"><b>Liu Yujia</b><br/><i>Innovative Multifunctional Silsesquioxanes: Building Blocks for New Materials in Various Applications</i></p>  |
| 10:50-11:05 | <p style="text-align: center;"><b>Fanny Thorimbert</b><br/><i>Self-assembling cracks with light in colloidal plasmonic films</i></p>  | <p style="text-align: center;"><b>Raoul D. Brand</b><br/><i>DMAP-functionalized mesoporous silica monoliths and packed bed column reactors for continuous flow catalysis</i></p>  |
| 11:05-11:20 | <p style="text-align: center;"><b>Véronique Bounor-Legare</b><br/><i>In situ synthesis of titanium phosphonate based composite by a non-hydrolytic sol-gel by reactive extrusion</i></p>  | <p style="text-align: center;"><b>Oksana Dudarko</b><br/><i>CE/SBA-15 catalysts for dehydration of ethanol: effects of acidic promoters</i></p>   |
| 11:20-11:35 | <p style="text-align: center;"><b>Ting Shi</b><br/><i>Synthesis of ionic liquid core/silica shell nanocapsules as functional microfiller in epoxy networks</i></p>  | <p style="text-align: center;"><b>Chloé Célis</b><br/><i>Hafnium-doped silica nanotubes via sol-gel synthesis and enhanced catalytic activity in the valorization of glycerol</i></p>   |
| 11:35-12:00 | <b>Poster prizes ceremony &amp; Concluding remarks</b>  |   |

LOGO