

# Solgel 2022

Lyon FRANCE

24 - 29 JULY 2022

The international Sol-Gel Conference SOLGEL 2022 will be held in Lyon, a 2000 years old Unesco world heritage city. The conference will bring together the best experts in the fields of materials / nanomaterials, inorganics, hybrids and polymers prepared by the soft chemistry routes. It will be the place to cross the frontiers between academy and industry, and cover all aspects of materials and nanomaterials design from fundamentals to applications, in the heart on the French Chemistry Valley.





## Topics

### Materials and properties

- Chemistry and fundamentals of the sol-gel process, molecular precursors
- Coatings
- Functional organic-inorganic hybrid materials
- Nano- and micro-structured materials
- Nanoparticles synthesis, self-assembly
- Composite materials and polymers
- Porous materials (aerogels, xerogels)
- Hierarchically structured materials
- Surfaces and interfaces
- Adhesion
- 3D printing
- Characterization techniques
- Modelling techniques for sol-gel materials

### Chair

**Prof. Stephane Parola**

Chemistry Laboratory, ENS Lyon, CNRS,  
University Lyon 1

### Co-Chairs

**Prof. Geneviève Chadeyron**

ICCF, CNRS, University of Clermont Auvergne,  
SIGMA Clermont

**Dr Xavier Cattoen**

Néel Institute, CNRS, University Grenoble Alpes

**Dr Philippe Belleville**

CEA

### Honorary Chair

**Prof. Clément Sanchez**

Collège de France, Paris Sorbonne,  
French Academy of Science

### Applications

- Materials for catalysis and photocatalysis
- Materials for energy and environment
- Materials for health applications
- Materials for electronic and magnetic applications
- Materials for sensors, optics, nonlinear optics, photonics and optoelectronics
- Industrialization of sol-gel science and technology



[www.solgel2022.fr](http://www.solgel2022.fr)

# PROGRAM

## SUNDAY

### Workshop: “Photonic glasses by sol-gel”

Conference center – Cité internationale, Lyon

08:30-08:50	<b>Introduction</b>
08:50-09:50	<i>D. Levy</i> “Sol-Gel Materials for Optical and Electrooptical Application”
09:50-10:05	<b>Coffee break</b>
10:10-11:10	<i>S. Parola</i> “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> “Sol-gel film for optical gas sensors”
12:15-13:15	<b>Lunch</b>
13:15-14:15	<i>S. Ribeiro</i> “Innovative sol-gel materials for IR light activated processes. Photocatalysis, Photodynamic Therapy and Nanothermome”
14:15-16:15	<i>Y. Messaddeq</i> “Specialty fibers for distributed optical fiber sensors”
15:15-15:30	<b>Coffee break</b>
15:35-16:35	<i>R. Almeida</i> “Up-conversion materials for solid state lighting and PV solar cells”
<b>SOLGEL2022</b>	
14:00-18:00	Registration Conference center – Cité internationale
19:00-22:00	Welcome reception Conference center – Cité internationale

## MONDAY

**09:00-09:30**

**Welcome**

**09:30 – 10:15 Amphitheater**

**Plenary lecture**

***Krzysztof MATYJASZEWSKI***

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

**10:15 – 11:00 Amphitheater**

**Plenary lecture**

***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>Amphitheatre Porous materials</b>	<b>Hall 1 Materials for energy, environment</b>	<b>Hall 3 Materials for health applications</b>
11:30-11:55	<b>Invited</b> <b><i>David Avnir</i></b> (The Hebrew University of Jerusalem, Israel) <i>Aerogels: Magnetism, sustained release, 3d-printing</i>	<b>Invited</b> <b><i>Raffaella Buonsanti</i></b> (EPFL, Switzerland) <i>Colloidal chemistry to design well-defined and tunable nanomaterials for catalysis and energy applications</i>	<b>Invited</b> <b><i>Mateus CARDOSO</i></b> (LNLS, Brazil) <i>Interaction of surface-modified silica nanoparticles and biological components: a synchrotron approach</i>
11:55-12:10	<b><i>Sidney. Ribeiro</i></b> <i>“Nanocellulose-based organic-inorganic hybrid aerogels for in-flow photocatalytic water purification</i>	<b><i>B.-K. Wakshlak Racheli</i></b> <i>Sol-gel glazes - a safe glass and ceramics coloring approach</i>	<b><i>Mathilde Laird</i></b> <i>Biodegradable organosilica nanoparticles as nanocarriers in boron neutron capture therapy</i>
12:10-12:25	<b><i>D. Cantero Martin</i></b> <i>Synthesis optimization of high performance polyurethane aerogels for thermal insulation</i>	<b><i>Janique Hupperetz</i></b> <i>Thermochromic Coatings and Laminates for Smart Windows Comprising VO<sub>2</sub> Nanopigments</i>	<b><i>Andrea Montero</i></b> <i>Design of multi-functional NPs for controlled enzyme delivery</i>
12:25-12:40	<b><i>Shanyu Zhao</i></b> <i>3D printing of silica aerogels</i>	<b><i>Ángel Triviño-Peláez</i></b> <i>Densification of BaZr<sub>0.8</sub>Y<sub>0.2</sub>O<sub>3-δ</sub> proton conductor electrolytes for Solid Oxide Electrolyzer Cells (SOECs) by sol-gel method</i>	<b><i>Alessandra Pinna</i></b> <i>Inorganic nanoparticles for Tuberculous Meningitis treatment</i>
12:40-12:55	<b><i>Salihovic Miralem</i></b> <i>Hybrid Carbon Spherogels: Incorporation of Metal Oxides</i>	<b><i>Mathieu Salaün</i></b> <i>New generation of aluminium borate phosphors for white leds lighting prepared by “chimie douce”</i>	<b><i>Charlotte Vichery</i></b> <i>Superparamagnetic and bioactive nanoparticles for bone cancer treatment</i>



**13:00-14:00**

**Lunch & Posters & Industrial expo - Hall 2**

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

	<b>Amphitheatre Porous materials</b>	<b>Hall 1 Characterization of materials</b>	<b>Hall 3 Materials for health applications</b>
14:00-14:25	<b>Invited</b> <i>Corine GÉRARDIN</i> (ICGM, France) <i>Efficient polymer templates for tailoring properties of functional ordered mesoporous materials</i>	<b>Invited</b> <i>Anne LESAGE</i> (CRMN France) <i>Decoding Structural Complexity of Supported Molecular Catalysts by DNP Surface Enhanced Solid- State NMR Spectroscopy</i>	<b>Invited</b> <i>Vadim G. KESSLER</i> (SLU, Sweden) <i>Metal oxide Sol-Gel materials as drug delivery vehicles and components of tissue scaffolds: from (OXO)Alkoxide paperbag models to applications</i>
14:25-14:40	<i>Wagner Lysander</i> <i>Synthesis of PEO-b-PHA Block Copolymers for Mesoporosity Tuning</i>	<i>Eric Besson</i> <i>SBA-15 wall embedded nitroxide as dnp polarizing matrice: application to the study of crystallization process</i>	<i>Peter Hesemann</i> <i>Ionosilica nanoparticles for drug delivery, photodynamic therapy and the photochemical internalization of siRNA</i>
14:40-14:55	<i>Mohamed Nawfal Ghazzal</i> <i>Cellulose nanocrystals: a biotemplate for highly active and mesostructured photocatalyst</i>	<i>Yurii Larichev</i> <i>In-situ SAXS study of the TiO<sub>2</sub> aggregation process in alcohol media</i>	<i>Ramirez Maria De Los Angeles</i> <i>Mesoporous silica nanoparticles used as targeted delivery systems in vivo: a dual radiolabeling approach</i>
14:55-15:10	<i>Maggie Fox</i> <i>Engineering Mesoporous Silica for Superior Optical and Thermal Properties</i>	<i>Alvin Chang</i> <i>Quantitative Measure of 3D Nanostructure and Size Dispersity of Ultrasmall Fluorescent Silica Nanorings via Small-Angle X-ray Scattering</i>	<i>Mariia Spiridonova</i> <i>Stromal stem cells in composition with deposited silica nanoparticles functionalized growth factor</i>
15:10-15:25	<i>Haibo Zhao</i> <i>Aerogel materials for potential automotive applications</i>	<i>Christian Scherdel</i> <i>Specific surface area determination of thin porous aerogel layers with SAXS</i>	<i>Monica Onrubia</i> <i>Engineering msnms from L- DOPA derivatives to overcome the limitations of conventional drug administration for parkinson's disease</i>
15:25-15:40	<i>Clémentine Bidaud</i> <i>Aerogels for thermal insulation at high temperatures</i>	<i>Gavin Mountjoy</i> <i>Ce L3 edge HERFD-XANES of in situ reduction- oxidation cycles of ceria nanocubes embedded in a silica aerogel</i>	<i>Myriam Neumann</i> <i>Differentiation and Encapsulation of <math>\beta</math>-like cells for the treatment of type 1 Diabetes mellitus</i>
15:40-15:55	<i>Leigh Peles-Strahl</i> <i>Bipyridine modified conjugated carbon aerogels as a platform for oxygen reduction reaction electrocatalysis</i>	<i>Thibaud Divoux</i> <i>Time-Resolved Mechanical Spectroscopy of sol-gel transitions via Optimally Windowed Chirp (OWCh)</i>	<i>Marc Maleval</i> <i>Innovative porous materials for enhanced glycomic analysis</i>
<b>16:00-16:30 Coffee break</b>			
	<b>Amphitheatre Porous materials Aerogels</b>	<b>Hall 1 Characterization of materials</b>	<b>Hall 3 Nano- and micro- structured materials</b>
16:30-16:45	<i>Alexander Eychmüller</i> <i>Metal aerogels and their applications</i>	<i>Amyar Hajar</i> <i>Cyclic ellipsometry: new approach to probe sorption response of nanoporous</i>	<i>David Grosso</i> <i>Nanoimprinted sol-gel materials for optics and photonics</i>

		<i>materials in out-of-equilibrium condition</i>	
16:45-17:00	<b>Michael Elsaesser</b> <i>Carbon Spherogel Monoliths – Black, Green, Hybrid and Beyond</i>	<b>Hervé Piombini</b> <i>Mechanical characterizations of elastic layers made by sol-gel</i>	<b>Glenna Drisko</b> <i>Diffuse halos in 2D monolayer surfaces thanks to disordered nano features</i>
17:00-17:15	<b>Pauline Valois</b> <i>Low density materials fabrication</i>	<b>Paul Sermon</b> <i>Analysis of laser-induced damage sites on high/low refractive index sol-gel dielectric coatings</i>	<b>Lea Marichez</b> <i>Sol-gel based microstructured luminescent coating</i>
17:15-17:30	<b>Anna Corrias</b> <i>Magnetic hydrophobic aerogels</i>	<b>Philip Schäfer</b> <i>Chemical and topographic analysis of polymeric, composite, and organic-inorganic hybrid nanomaterials with 10nm resolution</i>	<b>Maria Eugenia Cruz</b> <i>Transparent RE-doped glass ceramics produced by sol-gel from nanofluoride-crystalline suspensions</i>
17:30-17:45	<b>Toshiaki Kiso</b> <i>Transparent Polymethylsiloxane Aerogel with Polymethacrylate Crosslinks With Compressive Flexibility</i>	<b>Gabriela Zelenkova</b> <i>Is thermoporometry really a simple method for characterization of porous properties of carbon gels?</i>	<b>Maria Basso</b> <i>Laser crystallization of thermochromic VO<sub>2</sub> thin films obtained by an environmentally friendly sol gel approach</i>
17:45-18:00	<b>Seeni Meera Kamal Mohamed</b> <i>Resorcinol-formaldehyde (rf) aerogel microbeads via dropping method</i>	<b>Guillermo Cruz-Quesada</b> <i>Hybrid xerogels: study of the sol-gel process and local structure by vibrational spectroscopy</i>	

**Evening “Lyonnais”, reception at Lyon City Hall**

## TUESDAY

**09:00 – 09:45 Amphitheater**

**Plenary lecture**

***Bruce DUNN***

(University of California, Los Angeles, USA)

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

**09:45 – 10:30 Amphitheater**

**Plenary lecture**

***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>Amphitheatre Nano- and micro- structured materials</b>	<b>Hall 1 Coatings</b>	<b>Hall 3 Materials for catalysis, photocatalysis</b>
11:00-11:25	<b>Invited</b> <b><i>Atsushi SHIMOJIMA</i></b> (Waseda University, Japan) <i>Design of self-healing siloxane-based nanomaterials</i>	<b>Invited</b> <b><i>Benoît HEINRICHS</i></b> (University of Liège, Belgium) <i>Upscaling sol-gel technology to make it a competitive way for coating manufacture and process at an industrial scale</i>	<b>Invited</b> <b><i>Damien DEBECKER</i></b> (UCL, Belgium) <i>Preparation of porous catalysts by aerosol-assisted Sol-Gel</i>
11:25-11:40	<b><i>Taiki Hayashi</i></b> <i>Preparation of nanoporous materials containing cage germanoxanes with exchangeable organoammonium cations</i>	<b><i>Thierry Gacoin</i></b> <i>Amazing physico-chemical properties of alkaline silicates and applications for sol-gel functional coatings</i>	<b><i>Tim-Patrick Fellinger</i></b> <i>Activation revisited: a sol- gel process to functional carbons</i>
11:40-11:55	<b><i>Takuya Hikino</i></b> <i>Synthesis of nanoporous titanosiloxane materials for oxidation catalysis using cage siloxane as a building block</i>	<b><i>Hiromitsu Kozuka</i></b> <i>Instability of Stress in Sol- Gel-Derived Ceramic and Glass Thin Films</i>	<b><i>Francisco Gonell</i></b> <i>From clusters to functional materials: molecular design of molybdenum sulfide electrocatalysts derived from well-defined clusters</i>
11:55-12:10	<b><i>Ruohong Sui</i></b> <i>Sol-Gel Synthesis of TiO<sub>2</sub> with a Large Pore Size and High Surface Area</i>	<b><i>Christophe Boscher</i></b> <i>Contamination-resistant antireflective coatings for laser optics</i>	<b><i>Amélie Maertens</i></b> <i>Gallium-silicate catalysts: from a sustainable synthesis toward the efficient conversion of crude glycerol</i>
12:10-12:25	<b><i>Sandra Dirè</i></b> <i>Effect of titania nanoparticles addition on the structure of ladder-like polysilsequioxanes</i>	<b><i>Fredric Svensson</i></b> <i>Facile synthesis of sulfate- modified titania nanoparticles from titanil sulfate: catalytic activity and surface properties</i>	<b><i>Haddad Ryma</i></b> <i>Green synthesis of heterogenous catalysts by solvent-free reactive extrusion</i>
12:25-12:40	<b><i>Revenant Christine</i></b> <i>Self-organization in sol-gel oxide thin films</i>	<b><i>Gharzouni Ameni</i></b> <i>Geopolymer coating for different substrates and hydrophobic surface modification</i>	<b><i>Hana Adachi</i></b> <i>Development of MnO<sub>x</sub> nanocluster catalyst by using PVA-stabilized Mn colloid as a precursor</i>
12:40-12:55	<b><i>Aleksandra Falchevskaya</i></b> <i>Facile and Scalable Liquid Metal Driven Synthesis of the Hollow Metallic Nanoparticles</i>	<b><i>Juan Pablo Fernández- Hernán</i></b> <i>Influence of substrate's surface state on the thickness and integrity of sol-gel coatings deposited by dip-coating</i>	<b><i>David Skoda</i></b> <i>Homogeneous molybdenum silicate microspheres and their application as heterogeneous epoxidation catalysts</i>

**13:00-14:00**  
**Lunch & Posters & Industrial expo - Hall 2**

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

	<b>Amphitheatre</b> <b>Materials for sensors, optics, nonlinear optics, photonics and optoelectronics</b>	<b>Hall 1</b> <b>Materials for energy and environment</b>	<b>Hall 3</b> <b>Coatings</b>
14:00-14:25	<b>Invited</b> <i>Luis D CARLOS</i> (Universty of Aveiro, Portugal) <i>Light-emitting hybrid materials for temperature sensing, molecular logic and IoT applications</i>	<b>Invited</b> <i>Christel LABERTY-ROBERT</i> (LCMCP, France) <i>Combining sol-gel chemistry and electrospinning process to develop composite membrane with self-healing properties: application in li-ion battery and fuel cells</i>	<b>Invited</b> <i>Lourdes CALZADA</i> (ICMM-CSIC, Spain) <i>Low-temperature Sol-Gel methods for the integration of crystalline metal oxide thin films in flexible electronics</i>
14:25-14:40	<i>Maia Lauro June Queiroz</i> <i>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</i>	<i>Marco Faustini</i> <i>Nanostructuring noble metal-based materials by sol-gel process for electrocatalysis</i>	<i>Daniel Mandler</i> <i>Electrochemical Deposition of Sol-Gel Thin Films: Why and How?</i>
14:40-14:55	<i>Jan Mrazek</i> <i>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</i>	<i>Koceila Maouacine</i> <i>Design of lithium-ion conducting porous hybrid thin films for the development of solid lithium battery electrolytes</i>	<i>Karine Valle</i> <i>Development of high-quality coatings using an optimized spray-technique process</i>
14:55-15:10	<i>Yan Yige</i> <i>Ultra-small YPO<sub>4</sub>-YAG:Ce composite nanophosphors with a photoluminescence quantum yield exceeding 50%</i>	<i>Trang Phan</i> <i>Crosslinked single-ion silica-PEO hybrid electrolytes for lithium metal battery</i>	<i>Mari-Ann Einarsrud</i> <i>Tailoring preferential orientation in oxide films from aqueous chemical deposition</i>
15:10-15:25	<i>Lauria Alessandro</i> <i>Structure/function relationship in luminescent pure and Ti-doped HfO<sub>2</sub> nanocrystals</i>	<i>Jadra Mosa</i> <i>Cathode Materials for Zn-Oxygen Aqueous Batteries based on Titanium Compounds</i>	<i>Clément Genet</i> <i>Innovative sol-gel coating for interconnexion systems</i>
15:25-15:40	<i>Tony Maindron</i> <i>Water barrier properties of an encapsulation made from Al<sub>2</sub>O<sub>3</sub> and an organic-inorganic silica nanocomposite measured on PET and OLED</i>	<i>Kiyofumi Katagiri</i> <i>Preparation of Perovskite Oxynitrides Using Sol-Gel Derived Precursors and Solid Nitriding Agents</i>	<i>Simon Chwatal</i> <i>Cross-Linking Processes in UV-Sol-Gel Systems Initiated by Atmospheric Pressure Plasma Characterized by FTIR</i>
15:40-15:55	<i>Caroline Byun</i> <i>Porous SiO<sub>2</sub>/TiO<sub>2</sub> Graded Bragg mirror: Thermally photonic switches</i>	<i>Antoine Vardon</i> <i>Binary MyOx-SiO<sub>2</sub>/M<sup>o</sup>-SiO<sub>2</sub> porous self-standing nanostructures for environmental remediation</i>	<i>Ana Suarez Vega</i> <i>Effect of Lanthanum 4-hydroxycinnamate on the reactions of two hybrid sol-gel coating formulations</i>

**16:00-16:30 Coffee break**



	<b>Amphitheatre</b> <b>Materials for sensors,</b> <b>optics, nonlinear</b> <b>optics, photonics and</b> <b>optoelectronics</b>	<b>Hall 1</b> <b>Materials for health</b> <b>applications</b>	<b>Hall 3</b> <b>Coatings</b>
16:30-16:45	<b>Luca Malfatti</b> <i>Integration of C-dots in hybrid fluorescent nanocomposite films</i>	<b>Stephanie Lambert</b> <i>Protein encapsulation in functionalized and structured silica gel for bone reconstruction application</i>	<b>Joanna Mikolei</b> <i>Tuning of wettability and fluid flow through sol gel silica paper hybrid materials</i>
16:45-17:00	<b>Denis Chateau</b> <i>Sol-gel nanocomposite glasses for optical protection up to the short-wave infrared range</i>	<b>Bjorn Greijer</b> <i>POM as models for metal oxide nanoparticle – peptide interactions</i>	<b>Colusso Elena</b> <i>Tuned wettability of SiO<sub>2</sub> sol-gel coatings for humid air and saturated vapor condensation</i>
17:00-17:15	<b>Olivier Soppera</b> <i>Au nanoparticles/InZnO thin film prepared by laser annealing for wide range photodetector applications</i>	<b>Poologasundarampillai Gowsihan</b> <i>Sol-gel derived hydrogels for biofabrication of biological tissues</i>	<b>Emilia Merino</b> <i>An effective peo and epoxy-silane hybrid coating system to enhance the corrosion resistance of AZ31B MG alloy</i>
17:15-17:30	<b>Daniel Mann</b> <i>Phase Separation of VO<sub>2</sub> and SiO<sub>2</sub> on SiO<sub>2</sub>-Coated Float Glass Yields Robust Thermochromic Coating with Unrivalled Optical Properties</i>	<b>Toirac Beatriz</b> <i>An Antifungal-Loaded Sol-Gel Coating for the Local Prevention of Prosthetic-Joint Infections</i>	<b>Hercilio Gomes De Melo</b> <i>Duplex cerium conversion coating and sol-gel coating for corrosion protection of the WE43 MG alloy</i>
17:30-17:45	<b>Patrick Gailly</b> <i>Laser deposition of sol-gel for sensor applications</i>	<b>Imane El Moujarrad</b> <i>Size-tuning of hollow periodic mesoporous organosilica nanoparticles (HPMO-NPs) for theranostic applications</i>	<b>Andrei Jitianu</b> <i>Hybrid anticorrosive coatings for of the AZ31B magnesium alloy</i>
17:45-18:00	<b>Chi-Hwan Han</b> <i>UV-curable Gel Electrolyte for Flexible Photo-Electrochromic Device</i>	<b>Karim Dahmouche</b> <i>Siloxane-PPO hybrids for prolonged release of penicillin G: structure-release mechanisms relationships</i>	<b>Lavinia Saltarelli</b> <i>Novel class of metalorganic solutions for the preparation of high-performance superconducting films</i>

## WEDNESDAY

### 09:00 – 09:45 Amphitheater - Industrial session

#### Plenary lecture

**Delphine BLANC**

(ELKEM, FRANCE)

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

### 09:45 – 10:30

#### Plenary lecture

**Iryna GOZHYK**

(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>Amphitheatre Industrial session</b>	<b>Hall 1 Materials for catalysis and photocatalysis</b>	<b>Hall 3 Nano- and micro- structured materials</b>
11:00-11:25	<b>Invited</b> <b>Jean-Yves DELANNOY</b> <i>(Siemens technology, USA) Molecular Informed Large- Scale Simulations</i>	<b>Invited</b> <b>Valentin SMEETS</b> <i>(UCL, Belgium) Original Sol-Gel synthetic approaches to high- performance Ti-SiO<sub>2</sub> catalysts</i>	<b>Invited</b> <b>Mateusz ODZIOMEK</b> <i>(Max Planck Institute, Germany) Crack self-ordering: fabrication of nanoporous periodic arrays of metal oxides</i>
11:25-11:40	<b>Fiorentino Brice</b> <i>Silica aerogel powder impregnations of textile for the optimisation of thermal performance</i>	<b>Julien Mahy</b> <i>Crystalline ZnO photocatalysts with different morphologies prepared at ambient temperature</i>	<b>Martin Aubry</b> <i>Development of sol-gel derived ZnO nanowires (NWs) arrays for optical applications</i>
11:40-11:55	<b>Mihail Petkov</b> <i>Zeolite-loaded aerogel getters as a primary vacuum sorption pump in planetary instruments</i>	<b>Mahnaz Ghiasi</b> <i>Carbon monoxide oxidation over LaMn<sub>1-x</sub>CoxO<sub>3</sub> nano- perovskites by means of ambient pressure soft X-ray absorption spectroscopy</i>	<b>David Riassetto</b> <i>Multifunctional ZnO nanowires-based nanocomposites by capillary rise infiltration</i>
11:55-12:10	<b>Azpitarre Itziar</b> <i>Anti-soiling coating development and performance on solar reflectors for water saving in CSP plants</i>	<b>Pascal Van Der Voort</b> <i>Metal-free heterogeneous (photo)catalysis using covalent organic/triazine frameworks</i>	<b>Wonjoong Kim</b> <i>Nanocomposite printing for high-efficiency metahologram in the visible</i>
12:10-12:25	<b>Pierre-Emmanuel Doulain</b> <i>Magnetic nanohybrids for api manufacturing</i>	<b>Raul Perez Hernandez</b> <i>Sequential MgO impregnation to Al<sub>2</sub>O<sub>3</sub> supported Ni catalysts for synthetic gas production by CO<sub>2</sub> Reforming of Methane</i>	<b>Claire Förster</b> <i>Asymmetric nanopore architectures and nanolocal functionalization by visible light induced polymerizations</i>
12:25-12:40	<b>Roland Ramsch</b> <i>Diffusing wave spectroscopy (DWS) as a powerful tool for the optimization of sol-gel formulation</i>	<b>Noof Alaqeel</b> <i>Gold nanorods modified 0.8Sr-Cu-GO-TiNT nanomaterial for green selective benzaldehyde photooxidation under controlled irradiation source</i>	

12:40-12:55	<i><b>Florent Deliane</b></i> <i>Design of sol-gel polymer-derived ceramics used for 3D-printed stereolithography silicon oxycarbide</i>	<i><b>Karim Bouchmella</b></i> <i>Hydrolytic vs. non-hydrolytic sol-gel routes to prepare Si-Al-Ni mixed oxide catalysts for ethylene oligomerization</i>	
<p><b>13:00-14:00 Lunch</b></p> <p><b>14:00-18:00</b></p> <p><b>Excursion</b></p>			

## THURSDAY

**09:00 – 13:00 Amphitheater  
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 – 12:50 : Life Achievement Awards ceremony and lecture**  
*Sara Aldabe Bilmes (Argentina)*  
*Kazuki Nakanishi (Nagoya Univ., Japan)*

**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 - Hall 2**

**14:00- Parallel Sessions**

	<b>Amphitheatre Nanoparticles synthesis, self- assembly</b>	<b>Hall 1 Materials for energy and environment</b>	<b>Hall 3 3D printing</b>
14:00-14:25	<b>Invited</b> <i>Eva HEMMER</i> (University of Ottawa, Canada) Colour-tuneable lanthanide- based nanoparticles for applications from biomedicine to printing	<b>Invited</b> <i>Beatriz JULIAN-LOPEZ</i> (University Jaume I Castellón, Spain) Towards more efficient and sustainable halide perovskites for photovoltaics and optoelectronics	<b>Invited</b> <i>Giorgia FRANCHIN</i> (University of Padova, Italy) Sol-Gel chemistry and additive manufacturing: Potential for ceramic fabrication
14:25-14:40	<i>Léna Meyniel</i> From lanthanide oxysulfide nanocrystals to the design and development of nanostructured thin films	<i>Hideo Sawada</i> Preparation of Fluoroalkyl End-capped Vinyltrimethoxysilane Oligomeric Silica/Magnetite Composites – Application to Separation of Oil and Water	<i>Agathe Heyraud</i> 3D printed sol-gel hybrids with calcium addition for bone regeneration
14:40-14:55	<i>Marie-Hélène Delville</i> Design of Metal@SCs Nano- Heterodimers by Laser- Driven Photodeposition: Growth Mechanism and Modeling (SC= Metal Oxide and QD Semiconductors)	<i>Ana Marques</i> Insights on porous microspheres generation and their doping for solar- light driven photocatalysis	<i>Clement Laute</i> Advanced 3D ceramic-based open-structures using additive manufacturing and sol-gel photoresins
14:55-15:10	<i>Gunnar Westin</i> Synthesis and characterisation of ZnO:Eu nano-sponges; molecular- like Eu-oxide clusters enclosed in ZnO	<i>Gulaim Seisenbaeva</i> Facile strategies in synthesis of functional hybrid materials for recycling of metals and removal of organic pollutants	<i>Gabriel Tayama</i> Compositional dependency of 3d printing parameters in silica-aluminum-phosphate hybrid material
15:10-15:25	<i>Cynthia Cibaka Ndaya</i> Design of Si-based particles for optical metamaterials	<i>Junggou Kwon</i> Gas-phase nitrogen doping of monolithic TiO <sub>2</sub> nanoparticle-based aerogels	<i>Hajar Maleki</i> 3D Printing of Antibacterial and Biomimetic Ceramic based Hybrid Aerogel



	<i>with broadband forward light scattering properties</i>	<i>for efficient visible-light-driven photocatalytic H<sub>2</sub> production</i>	<i>Scaffolds with Hierarchical Porosities</i>
15:25-15:40	<b>Naoki Tarutani</b> <i>Synthesis and characterization of nickel-based layered metal hydroxide nanoparticles with surface modifiers</i>	<b>Stéphane Daniele</b> <i>Sol-gel processing of hybrid ZnO nanophosphors self-assembled in mesospheres for WLED application</i>	<b>Laura Piedad Chia Gomez</b> <i>Two-photon direct laser writing and maskless projection lithography of silica-based sol-gel materials</i>
15:40-15:55	<b>Diana Garcia Franco</b> <i>Synthetic approaches for BaMO<sub>3</sub> and BaM<sub>2</sub>O<sub>6</sub> nanoparticles compatible with superconducting precursor solutions</i>	<b>Ani Vardanyan</b> <i>Tailoring nano adsorbent surface for recycling of rare earth based magnets</i>	<b>Raz Gvishi</b> <i>3D-printed sol-gel based micro-scale optical devices by laser writing via 2-photon polymerization process</i>
15:55-16:10	<b>Ameni Dhouib</b> <i>Formation mechanisms of LiNbO<sub>3</sub> nanocrystals under solvothermal conditions from alkoxide precursors</i>	<b>Rachel Gonzalez</b> <i>PDMS coated UV sensor for continuous monitoring of BTEX in groundwater</i>	<b>Anna Tchorzewska</b> <i>3D printed large sol-gel hybrid scaffolds via rapid 3D vat stereolithography</i>
16:10-16:40	<b>Coffee break</b>		
	<b>Amphitheatre Chemistry and fundamentals of the sol-gel process</b>	<b>Hall 1 Porous materials Aerogels</b>	<b>Hall 3 Materials for sensors, optics, nonlinear optics, photonics and optoelectronics</b>
16:40-16:55	<b>Guido Kickelbick</b> <i>Controlled Formation of Polysilsesquioxane Structures applying Stabilized Silanol Groups</i>	<b>Martin Kejik</b> <i>A unified synthetic approach to porous hybrid single-site metallosilicates</i>	<b>Lisa C. Klein</b> <i>Wearable Acetone Monitor Incorporating PANI/CA Sensor in Melting Gel Package</i>
16:55-17:10	<b>Masafumi Unno</b> <i>Versatile Monomers from Cyclic and Double-Decker Silanols</i>	<b>Zahra Mazrouei</b> <i>Silica aerogel-based composites for sound absorption</i>	<b>Harry Dawson</b> <i>Formation of optofluidic waveguides in silica aerogel through 3d-printed supercritical extraction</i>
17:10-17:25	<b>Bernd Smarsly</b> <i>Peering into the low-temperature synthesis of Ti(OH)OF: elucidating the molecular reaction steps by NMR spectroscopy</i>	<b>Maria Casula</b> <i>Prospective catalysts based on nanocomposite aerogels</i>	<b>Yves Jourlin</b> <i>TiN thin film made by nitridation of TiO<sub>2</sub> sol-gel layer and rapid thermal nitridation process (RTN)</i>
17:25-17:40	<b>Georg Garnweitner</b> <i>Numerical Modelling of the Nonaqueous Sol-Gel Synthesis of Metal Oxide Nanoparticles via Population Balances</i>	<b>Samantha L. Flores Lopez</b> <i>Graphene aerogels: a simultaneous blend of high porosity and large electrical conductivity in a single material</i>	<b>Laurent Mugerli</b> <i>Toxic gas sensing within microsystems made by in-situ generation of porous beads microarray</i>
17:40-17:55	<b>Iana Sudreau</b> <i>Shear-induced memory effect in boehmite gels</i>	<b>Anna Corrias</b> <i>Magnetic hydrophobic aerogels</i>	<b>Martina Angermann</b> <i>Highly Conductive RuO<sub>2</sub> Thin Films from Novel Facile Aqueous Chemical Solution Deposition</i>
17:55-18:10	<b>Claudio Imparato</b> <i>The role of organic ligands in tuning the electronic and redox properties of hybrid titanium oxide</i>	<b>Galit Bar</b> <i>Synthesis of silica aerogel films in liquid molds</i>	

## FRIDAY

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

	<b>Amphitheatre</b> <b>Nanoparticles synthesis, self-assembly</b>	<b>Hall 1</b> <b>Functional &amp; hybrid materials</b>
09:00-09:25	<b>Invited</b> <i>Sophie CARENCO (LCMCP, France)</i> <i>Nanoparticle design: From the solution to the nanoscaled reactive metal-containing solid</i>	<b>Invited</b> <i>Kenji OKADA</i> <i>(Osaka Prefecture University, Japan)</i> <i>Organic-inorganic epitaxial interface on metal hydroxides as scaffold for oriented framework compound films with unique properties</i>
09:25-09:50	<b>Invited</b> <i>Michael YU</i> <i>(University of Queensland, Australia)</i> <i>Surfactant-free silica-polymer assembly: A new paradigm</i>	<b>Invited</b> <i>Francesca TALLIA</i> <i>(Imperial College London, England)</i> <i>Bioglass-derived Sol-Gel hybrid scaffolds for bone and cartilage regeneration: from design to in vivo studies</i>
09:50-10:05	<i>Etienne Duguet</i> <i>Patchy silica nanoparticles: sol-gel synthesis, clustering, chaining and cyclizing by solvent-induced assembly</i>	<i>Masahide Takahashi</i> <i>Polarization-dependent optical responses of metal nanoparticles in metal-organic framework films via heteroepitaxial growth</i>
10:05-10:20	<i>Fanny Thorimbert</i> <i>Self-assembling cracks with light in colloidal plasmonic films</i>	<i>Liu Yujia</i> <i>Innovative Multifunctional Silsesquioxanes: Building Blocks for New Materials in Various Applications</i>
10:20-10:35	<i>Doh Lee</i> <i>Growth and Long-Range Assembly of Colloidal Semiconductor Nanorods and Nanoplatelets</i>	<i>Massimiliano D'ariento</i> <i>Ladder-like polysilsesquioxanes as powerful platform for developing multifunctional polymer nanocomposites</i>
10:35-10:50	<i>Margot Van Der Verren</i> <i>Highly dispersed gold silica catalyst prepared in one step by the aerosol-assisted sol-gel process</i>	<i>Nick Gys</i> <i>Mercaptopropylphosphonic Acid Modified Titania as Selective Pd Scavenger: From Powder to 3D Printed Structure</i>
<b>10:50-11:20 Coffee break</b>		
	<b>Amphitheatre</b> <b>Composites</b>	<b>Hall 1</b> <b>Materials for catalysis and photocatalysis</b>
11:20-11:35	<i>Ting Shi</i> <i>Synthesis of ionic liquid core/silica shell nanocapsules as functional microfiller in epoxy networks</i>	<i>Oksana Dudarko</i> <i>CE/SBA-15 catalysts for dehydration of ethanol: effects of acidic promoters</i>
11:35-11:50	<i>Luis Esquivias</i> <i>In Situ Formed La-β-Al<sub>2</sub>O<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub> Composites by Sol-Gel Method: XRD Analysis and Mechanical Properties</i>	<i>Ales Styskalik</i> <i>Ethanol dehydration over hybrid aluminosilicate catalysts prepared by non-hydrolytic sol-gel</i>
11:50-12:05	<i>Herenilton P. Oliveira</i> <i>Electrochemical and magnetic properties of transition metal doped glassy polymeric carbon</i>	<i>Ana Belen Lozada</i> <i>Mesoporous titanosilicate-silica-coated cobalt ferrite core-shell Ti-SiO<sub>2</sub>@SiO<sub>2</sub>@CoFe<sub>2</sub>O<sub>4</sub> prepared by sol-gel process for the catalytic oxidation of styrene</i>
12:05-12:20	<i>Andreas Stein</i> <i>Mechanical Behavior of Hierarchical Tungsten Scaffolds and Interpenetrating Tungsten-Silicon Oxycarbide Nanocomposites</i>	<i>Carmela Aprile</i> <i>Hafnium-doped silica nanotubes via sol-gel synthesis and enhanced catalytic activity in the valorization of glycerol</i>
12:20-12:30	<b>Concluding remarks</b>	