INTERNATIONAL SOL-GEL SOCIETY

ISGS

materials through chemistry

Candidate application to the ISGS Board of Directors

Prof./Dr. Galo J. A. A. Soler-Illia

Age: 52

Affiliation: Instituto de Nanosistemas, Escuela de Bio y Nanotenologías, Universidad Nacional de General San Martín

Address: Av 25 de Mayo 1021, 1650, San Martín, Buenos Aires, Argentina.

Education

• 1999-2002 **Post-doctoral researcher,** Université Paris VI, France (C. Sanchez group).
• 1993-1998 **Ph. D. Chemistry,** University of Buenos Aires (UBA), Advisor: M. A. Blesa.
• 1989-1993 **Lic. Ciencias Químicas.** School of Science, UBA.

Appointments

2015- present: **Dean**, Instituto de Nanosistemas, Universidad Nacional de General San Martín
2003-present: **Staff Researcher,** CONICET. **Superior Researcher** (since 2019)
2004- present: **Professor** (Univ. Buenos Aires, FCEN), **Associate Professor** (since 2012)

Summary of Scientific production

195+ peer-reviewed papers (h=51 Scopus), 12500+ citations, i100>30, i10>119, 1 international and 4 national patents. Around 100 invited lectures in national and international meetings. Industrial projects: hybrid materials (RheinChemie, 2009-2013; LANXESS, 2013-2017), surface modification (TECHINT, 2007-2010; PPG, 2010-2011, Laring 2012-2016), nanoparticle production (TECSAN, 2013-2019, Tort Valls 2019-ongoing), Photoactive Thin Films (Y-TEC, 2016-2020), Antibacterial Coatings (ADOX, 2017-ongoing). Founder of Hybridon, a start-up dedicated to the synthesis of hybrid materials for health applications.

Interests and Collaborative Research Projects:

Current Interests: *Hybrid and nanocomposite mesoporous materials, Sol-gel synthesis of complex matter, self-assembly, thin films, synchrotron techniques, hierarchical materials, surface modification, metal nanoparticles, nano-optics. Dissemination of chemistry and nanotechnology.*
HR formation: *Assistant Researchers: 8, postdocs: 23; completed PhD Thesis: 14; ongoing PhD Thesis: 4; Completed MSc Thesis: 1; other student projects: 10; foreign students: 9.*
International collaborations: C. Sanchez (Sorbonne), P. Innocenzi and L. Malfatti (Sassari), H. Míguez (CSIC Sevilla), S. Bilmes (UBA), S. Moya (BiomaGUNE), M. Müller (Göttingen), M. Takahashi (Osaka), M. Murugesu (Ottawa), L. D Carlos (Aveiro), A. Lobnik (Maribor).
Editorial Activity. Editorial Advisory Board Member of *Chem Mater* (ACS), Chemical Science (RSC) and *Journal of Sol-Gel Science and Technology* (Springer).
Outreach Activities: Three books (EUDEBA, 2007 and 2010, Paidós-Planeta, 2015), 80+ spots on nanotechnology in open national TV (2006-2015), around 100 dissemination conferences.

5 representative publications

Chemical Strategies to Design Textured Silica and Metal Oxide-Based Organised Networks: From Nanostructured Networks to Hierarchical Structures
G. J. de A. A. Soler-Illia, C. Sanchez, B. Lebeau, J. Patarin.
Chemical Reviews, **2002**, 102 (11), 4093-4138.

Photonic Crystals from Ordered Mesoporous Thin Film Functional Building Blocks
M. C. Fuertes, F. J. López-Alcaraz, M.C. Marchi, H. Troiani, V.Luca, H. Míguez, G. J. A. A. Soler-Illia
Advanced Functional Materials, **2007**, 17, 1247-1254.

Mesoporous Hybrid Thin Film Membranes with PMETAC@Silica Architectures: Controlling Ionic Gating Through the Tuning of Polyelectrolyte Density
A. Brunsen, S. Micoureau, M. Tagliazucchi, I. Szleifer, O. Azzaroni, G. J. A. A. Soler-Illia
Chem. Mater. **2015**, *27*, 808–821.

Highly Ordered Mesoporous Oxide Thin Films through Self-Assembly of Size-Tailored Nanobuilding Blocks: a theoretical-experimental approach
N. Tarutani, Y. Tokudome, M. Jobbágy, G. J. A. A. Soler-Illia, Q. Tang, M. Müller, M. Takahashi.
Chem. Mater., **2019**, *31*, 322-330.

Light-induced Polymer Response Through Thermoplasmonics Transduction in Highly Monodisperse Core-Shell-Brush Nanosystems
M. J. Penelas, C. B. Contreras, P. C. Angelomé, A. Wolosiuk, O. Azzaroni, G. J. A. A. Soler-Illia
Langmuir, **2020**, 36, 1965-1974.

Statement of interest

I have worked in the Sol-Gel field since my PhD in the late nineties. My research is focused in synthesizing highly controlled hybrid nanomaterials with multiscale structures by combining sol-gel processing and self-assembly. I was lucky to witness the birth of ISGS while I was working as a postdoc at C. Sanchez's group at LCMC-Paris, one of the most relevant laboratories in the development of "chimie douce" processes. I am proud of the growth of this thriving, international community which I belong to. In my view, promoting connectivity and exchanges is a crucial role of a scientific society, and I believe ISGS can contribute to enhance networking, particularly South-South, in partnership with other institutions (such as TWAS or local academies).

As a researcher I am interested in studying and developing the chemical and physical aspects beneath the synthetic processes that lead to advanced nanomaterials. These aspects are often overlooked, although they are of extreme importance in the reproducibility of synthetic procedures, which are the sound basis for modern technologies. I firmly believe that ISGS has a central role in developing a community oriented to the paradigm of "understanding the basis to create new technologies", and that JSST can be a central tool to consolidate this concept.

As a university lecturer, I have contributed to generate several courses and programs to expand the teaching in sol-gel synthesis and characterization. In particular, in the last 20 years I have contributed to create the biennial Buenos Aires Sol-Gel School with distinguished colleagues that has contributed to form more than 500 graduate students, opening the gates of Sol-Gel Science to Latin American young scientists. This unique course has inspired initiatives such as NanoAndes and European Sol-Gel courses, and has been strongly supported by ISGS. I believe that this role of the Society in educating our future generations is essential.

As a member of the JSST Editorial Advisory Board, I believe that one important task is to promote the excellent Sol-Gel science performed by all members of the community, encouraging a higher diversity. In particular, I look forward to promoting gender balance and higher participation of authors from non-central countries. As an example, I can cite the inspiring experience of being Guest Editor of a high quality Topical Collection "Sol-Gel Research in Latin America" (https://link.springer.com/article/10.1007/s10971-022-05769-1).

At this point of my career, I want to serve the Sol-Gel community through innovative academic, educational and dissemination initiatives. I will be thrilled to endeavor novel pathways to expand our community worldwide, but especially attracting new colleagues from less represented regions. We have exciting times ahead, and I am confident that my previous experience in the art and knowledge of the community will contribute to the growth of our ISGS.