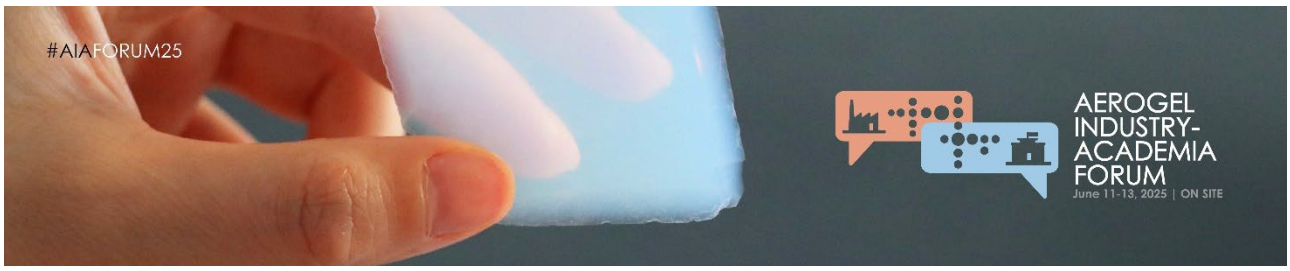


3rd Aerogel Industry-Academia Forum
Processes, Products, Applications & Markets

The aerogel world is undergoing rapid development. On the industry side, new players are entering the market. New aerogel producers, including start-ups but also established materials manufacturers, introduce their products, compete for market share, or aim to develop new applications and markets. In the meantime, traditional manufacturers keep innovating. Silica aerogel remains the most important product, but polymer and biopolymer aerogels are becoming available as well. Other companies focus on developing process technologies or aerogel-based products. On the academic side, there has been a veritable explosion of research into understanding traditional aerogel materials and applications, as well as new aerogel materials combinations, precursors and sustainable raw materials, new aerogel synthesis routes and new potential applications.

5th International Conference on Aerogels for Biomedical and Environmental Applications

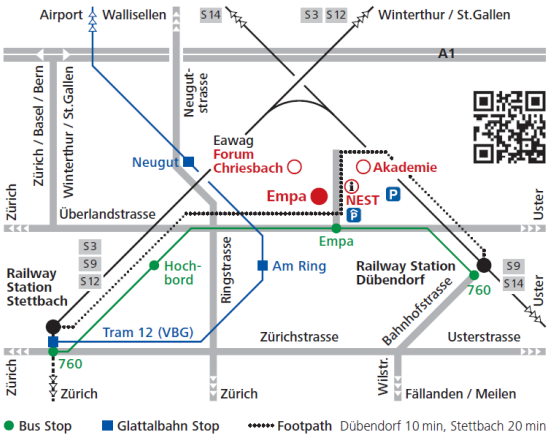
Aerogels are advanced, highly porous materials designed to meet the criteria of biomedical or environmental applications. They can be used as drug carriers, bone grafts, or wound dressings in biomedical applications and as insulators, absorbents, sensors, and catalysts in environmental applications.

Objectives

To strengthen and extend your network in aerogel-related materials, technologies and markets.
To introduce your products and services to the aerogel community through talks, posters or booths.
To learn about the most current research and developments on aerogels.
To meet a pool of newcomers and established specialists in the field as well as potential recruits for your institution.

Who will be there?

Representatives from the aerogel industry (aerogel producers, technology providers, raw material suppliers, formulators), end-users (industrial and building insulation, car industry, pharmaceutical industry), policymakers (NGOs, EC-representatives, funding agencies), regulatory entities and academia (aerogel process engineering field, as well as from application-oriented research in the biomedical, toxicological, environmental remediation, catalysis and thermal insulation).



Practical Information

In-person, on-site event at the Empa Akademie – June 11-13.

Ueberlandstrasse 129, 8600 Dübendorf, Switzerland.

More information and registration details at the event website https://aia-forum.empa.ch/.

Regular participation 570 CHF – Student participation 470 CHF (includes all catering: coffee breaks, 3 lunches, 2 dinners and invitation to the 2025 Aerogel Architecture Award ceremony https://www.empa.ch/web/aaa).

Opportunity to display samples and materials in the Foyer free of charge. Please contact aerogel@empa.ch if this is of interest to you.

Wednesday June 11, 2025

08.15 Registration

09.00 Aerogels for Biomedical Applications (01-07)

09.00 Wim Malfait (Empa)
Opening Remarks

09.10 Stella Plazzotta (University of Udine)
Turning food residues into bioaerogels for fat replacement (Invited)

09.30 Patrina Paraskevopoulou (University of Athens)
AiryBerry: Ready-to-eat snacks based on aerogel and xerogel technology

09.50 Carlos García-González (Universidade de Santiago de Compostela)
Towards novel biomedical uses of aerogels in a sustainable and personalized context (Invited)

10.10 Coffee break

10.40 Tamara Athamneh (Jordan University of Science and Technology)
Preparation and Characterization of Copper-Crosslinked Alginate-Hyaluronic Acid Aerogels as Potential Wound Dressing Materials with Enhanced Antibacterial Properties

11.20 Ana Iglesias-Mejuto (Universidade de Santiago de Compostela, ICMAB-CSIC)
In vivo monitorable aerogel implants for tissue engineering

11.20 Umair Ashraf (Polytechnic of Turin)
pH-Dependent Morphology and Characteristics of Whey Protein Isolate Aerogel: Implications for Biomedical Application

11.40 Clara López-Iglesias (Universidade de Santiago de Compostela)
Green sterilization and disinfection services for aerogels and other sensitive products (Invited)

12.00 Lunch

13.30 Environment and sustainability (08-16)

13.30 Erkey Can (Koç University)
Metal Organic Framework Aerogel Composites (MOFACs) for CO_2 Capture

13.50 Pawel Ziemiański (Empa)
Pushing the hydrophobicity of silica aerogels for direct air capture of CO_2 (Invited)

14.10 Markus Niederberger (ETH Zurich)
Self-Assembly of Nanoparticles into Aerogels (Invited)

14.30 David Kiwic (ETH Zurich)
Palladium-Impregnated Aerogels for Sustainable Chemical Production

14.50 İlkay Turhan Kara (Istanbul Arel University)
Incorporating Environmental Burdens into the Optimization of Mesoporous Material Production Processes

15.10 Coffee break

15.40 Željko Tomović (Eindhoven University of Technology)
Closed-loop recyclable high-performance organic aerogels (Invited)

16.00 Mengmeng Li (Empa)
Recyclable Polyimide Aerogel- Challenges and Opportunities (Invited)

16.20 Eleni Effraimopoulou (MINES Paris, PERSEE)
Next-generation thermal superinsulation with pectin composite aerogels (Invited)

16.40 Ioannis Michaloudis (American University of Cyprus)
Silica Aerogel in Luxury Design: The AirSwipe *bag (Invited)*

17.00 Welcome reception

Thursday June 12, 2025

08.30 Registration

09.00 Batteries, Technology and Processes (17-24)

09.00 Ruben-Simon Kühnel (Empa)
Thermal runaway in lithium-ion and post-lithium-ion batteries (Invited)

09.20 Yunhong Wang (IBIH Advanced Materials)
IBIH Aerogels: From Commercialized Uses to Upcoming Industrial Deployments (Invited)

09.40 Steve Devine (Graphene Composites Ltd)
Evolution in Inherent Vibration-Suppressive Materials (Invited)

10.00 Barbara Milow (German Aerospace Center DLR)
Aerogel Launch Factory – Feasibility Study and Next Steps (Invited)

10.20 Coffee break

10.40 Marcus Worsley (Lawrence Livermore National Laboratory LLNL)
Advances in Aerogels and Additive Manufacturing (Invited)

11.00 Gilberto Siqueira (Empa)
Nanocellulose aerogels – tailored processes for advanced properties (Invited)

11.20 Satoru Takeshita (National Institute of Advanced Industrial Science and Technology AIST)
Recent progress in biopolymer-based aerogels: Microstructure formation (Invited)

11.40 Barbara Milow (German Aerospace Center DLR)
What can complex three dimensional aerogel components achieve and how are they manufactured?

12.00 Lunch

13.00 Poster session

P01 – Harun Venkatesan (IIT Delhi) *Sustainable Aerogel Liners for Thermal Insulation*
P02 - Atelšek Hozjan (U. Maribor) *Exploring the properties of agar aerogels for potential biomedical applications*
P03 – Alberto Saitta (U. Udine) *Conversion of fruit/vegetable waste into bioaerogels for active food packaging solutions*
P04 – Marina Borzova (TU Eindhoven) *Impact of sodium and synthesis parameters on silica aerogel from waterglass*
P05 – Aamir Iqbal (KIST, Empa) *Ultralight, Conductive & Robust $Ti_3C_2T_x$ MXene-CNTs Aerogels for EMI Shielding*
P06 – María Blanco-Vales (USC) *Sustainable production of reprocessed starch aerogels*
P07 – Shanyu Zhao (Empa) *3D printing of aerogels*
P08 – Jaime Lledó (U. Valladolid) *Methodologies to enhance the performance of thermally insulating PLA aerogels*
P09 – Mitchell Barrett (UBC) *Organic Aerogels Containing Chitosan Bio-Polymer From European Green Crab (EGC) Shells*
P10 – Wim Malfait (Empa) *Stable Graphitic Networks on Ultra-porous Polyimide Aerogels via Solvent-Guided Structuring*
P11 – Jessica Kroener (DLR) *Lab-scale and continuous industrial sulfur infiltration methods for metal-sulphur batteries*

14.30 Product development and simulations (25-32)

14.30 Alyne Lamy (Thermulon)
Characterisation Challenges in Aerogel Scale-Up: from Lab to Commercial Scale Manufacturing (Invited)

14.50 Laurens Snels (KU Leuven)
Surface Secrets: Characterizing the Hydrophobicity of Silica Aerogel Granules

15.10 Matthias Koebel (siloxene AG)
QT-polysiloxanes – enabler technology for hybrid nano-materials and sol-gel chemistry (Invited)

15.30 Steve de Pooter (Aerobel BV)
Aerobel: Innovative insulation materials and adhesives (Invited)

15.50 Coffee break

16.20 Stephen A. Steiner III (Aerogel Technologies)
Commercializing Aerogels is Hard. Here's Why. (Invited)

16.40 Nicholas Leventis (Aspen Aerogels Inc.)
Carbon and Graphite Aerogels: Morphology, Properties, Applications (Invited)

17.00 Sandra Galmarini (Empa)
New insights into the 3D structure of colloidal aerogels (Invited)

17.20 Prakul Pandit (German Aerospace Center DLR)
PoreX: Digital Materials Development

18.00 Conference Dinner

Friday June 13, 2025

08.30 Registration

09.00 Insulation (33-37)

09.00 Andreas Gürtler (European Industrial Insulation Foundation)
Understanding and Using the EN 17956 Standard for Technical Insulation – and the Case for Mandating Energy Class C (Invited)

09.20 Stephan Möller (Ultima, Armacell)
From Furnace to Cold Space: Aerogel Insulation System Tests in Extreme Conditions (Invited)

09.40 Beatriz Merillas (University of Burgos, University of Valladolid)
Breaking Down Heat Transfer Mechanisms in Aerogels and Strategies for their Minimization

10.00 Frank Lotter (Center for Applied Energy Research CAE)
Reinforced Carbon xerogels for high temperature insulation applications

10.20 Luisa Durães (University of Coimbra)
Aramid-reinforced silica-cork aerogels for thermoacoustic barriers

10.40 Coffee break

11.00 Round table

12.00 Lunch

13.30 Aerogels for buildings (38-40)

13.30 Amanda Stubbs-Perry (AeroShield Materials Inc.)
Scaling Monolithic Aerogel Sheets for Window Applications (Invited)

14.10 Beat Kämpfen (Kämpfen zinke + partner)
Aerogel: all-rounder for conservation (Invited)

14.20 Mike O'Connor (Keey Aerogel) & Sebastian von Stauffenberg (Agitec AG)
SNUG: EU project to develop sustainable insulation solutions for the building industry - Aerogel-Based Innovations in Residential Retrofitting: Monitoring and Material Development (Invited)

14.50 Wim Malfait (Empa)
Closing remarks

15.30 AAA 2025: Aerogel Architecture Award Ceremony
Optional Tours of NEST