

2nd Aerogel Industry-Academia Forum

Processes, products,
applications & markets



31 May – 2 June 2023
Empa, Überlandstrasse 129
CH-8600 Dübendorf

aia-forum.empa.ch
aerogel@empa.ch

Topic

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, fight for market share, or aim to develop new applications and markets. In the meantime, traditional manufacturers are also innovating. Silica aerogel remains the important product, but polymer and biopolymer aerogels are becoming available as well. Other companies focus on developing process technologies or aerogel based product development. 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, new precursors and sustainable raw materials, new aerogel synthesis routes and new potential applications.

Target audience

Representatives from industry (aerogel producers, technology providers, raw material suppliers, formulators, end-users), policy-makers (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 fields)

Aims

To strengthen and extend your network in the area of 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 hottest and most recent research and developments on aerogels.

To keep yourself updated with the newest information on product standardization, LCA, toxicological evaluation, and about European research funding programs.

To meet to a pool of newcomer and established specialists in the field as well as potential recruits for your institution or company.

Program

WEDNESDAY, 31 MAY 2023

13:30 Registration opens

14:00 Workshop: Aerogels in real life

Aerogel 3D printing
Empa aerogel pilot facility
NEST building demonstrator
Aerogel glass brick
Aerogel product displays

16:00 Welcome reception

THURSDAY, 1 JUNE 2023

08:00 Registration

08:30 Opening remarks

08:40 Aerogel processing & production

08:40 Continuous production of

bioaerogels particles
Irina Smirnova (TUHH)

09:00 Aerogel Launch Factory – future perspectives

Barbara Milow (DLR)

09:20 Cost-effective aerogel-based
thermal insulation

Sam Cryer & Alyne Lamy (Thermulon)

09:40 To be announced

Francisco Ruiz (KEEY Aerogel)

10:00 Insulating Translucent Aerogel Glass

Brick for Building Envelopes

Michal Ganobjak (Empa)

10:20 Coffee break

10:40 Aerogel applications in high-tech

10:40 Aerogel from research labs to industry –
IBIH's practice and contribution

Yunhong Wang (IBIH)

11:00 3D Freeze Printing of Aerogel

Dong Lin (Oregon State U.)

11:20 Aerogels for the Hydrogen Economy:
Applications in Fuel Cells and Electrolyzers

Erkey Can (Koç U.)

11:40 Polyimide aerogel for thermal management
and patch antenna

Tingting Wu (Empa)

12:00 Lunch

13:00–13:45 AERoGELS Cost Action

WG4 meeting: Process Engineering,
Development and Scale-up for
Industrial Applications (open to all)

13:20–14:20 Poster session and
Aerogel Architecture Award posters

14:20 Biomedical applications,
Safety & Aerogel characterization

14:20 Advanced Processing of Aerogels
for Drug Delivery

Carlos García González (USC)

14:40 Alternative Sustainable Materials
for SLA and Extrusion Printing:

Carrier System Design

for Antioxidants

Sevil Çikrikci (Konya U.)

15:00 **Assessing the dust released from commercially relevant inorganic aerogel mats: occupational release scenarios simulation and hazard implications**

Veronica Di Battista (BASF)

15:20 **Hysteresis effects in moisture sorption on silica gel materials**

Connor Hewson (SurfaceMeasurementSystems)

15:40 **Recent developments in structural characterization of aerogels**

Christian Scherdel (CAE)

16:00 **Coffee break**

16:20 **Biopolymer aerogels**

16:20 **Nanocellulose Based Aerogels: Challenges and Opportunities**

Gustav Nyström (Empa)

16:40 **To be announced**

Marc Fricke (Aerogel-It)

17:00 **To be announced**

Zuzanna Sediva (Groam)

17:20 **Technological development of biodegradable aerogels in AeroFybers Technologies**

Isaac Benito Gonzalez (AeroFybers)

17:40 **To be announced**

Deeptanshu Sivaraman (Siloxene/Empa)

18:30 **Conference dinner**

FRIDAY, 2 JUNE 2023

08:00 **Registration**

08:40 **Markets and applications**

08:40 **EV Batteries – the Key to Aerogels Commercial Success**

Reso Ibrahim (IDTech)

09:00 **Several Chinese noteworthy progress in the application of aerogels**

Jun Shen (Tongji U.)

09:20 **Challenges in the up-scaling of Resorcinol-Formaldehyde aerogel micro-beads production by jet-cutting**

Kamal M. Seeni Meera (DLR)

09:40 **Rapid-Rise Fire Protection of structural Steel: advanced Aerogel Insulation Material and Heat-Flow Simulations**

Stephan Möller & Jayson Zheng (Armacell)

10:00 **Tailoring silica aerogels for cleaning water: prospects and challenges**

Luisa Durães (U. Coimbra)

10:20 **Ambient-Dried Hybrid Silica Aerogels with Enhanced Mechanical Properties as Efficient Oil Sorbent**

Zeineb Ben Rejeb (U. Toronto)

10:40 **Coffee break**

11:00 **Round table**

12:00 **Lunch**

- 12:45–13:30 AEROGELS Cost Action**
Core Group meeting (invitation only)
- 13:30 Aerogels for buildings**
- 13:30 Silica aerogels for vibration damping and structure-borne sound insulation**
Zahra Mazrouei (Empa)
- 13:50 Aerogel as part of a holistic energetical renovation**
Beat Kämpfen (KZ+partner)
- 14:10 10 years of successful market experience and applications**
Riccardo Grandi (Fixit)
- 14:30 Sumfoam – first applications of a new class of nanoporous material**
Alexander Müller (SUMTEQ) and
Sebastian von Stauffenberg (AGITEC)
- 15:10 To be announced**
Genevieve Foray (INSA)
- 15:30 Closing remarks & End of AIA Forum**
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- 16:00 AEROGEL ARCHITECTURE AWARD 2023**
- 16:00 Welcome speech**
- 16:15 Presentations of winning projects**
- 17:30 Summary of Jury and announcement of the winners**
- 18:00 Nest tours, 2 groups**
- 19:00 Reception**

General Information

Meeting type

In person on-site

Location

Empa-Akademie
Überlandstrasse 129
8600 Dübendorf

Costs

Regular participation CHF 350.–
Students CHF 250.–

Registration

Registration is open.

Please register before 24 May 2023.

Visit our website for more information:
aia-forum.empa.ch

Call for abstracts

Email your abstract to aerogel@empa.ch
A word template can be found on our website:
aia-forum.empa.ch

Deadline

The deadline for abstract submission
is 15 April 2023

Contact

aia-forum.empa.ch
aerogel@empa.ch

COST CA18125 – AERoGELS

AERoGELS explores aerogels for environmental and life sciences applications in a multidisciplinary approach to tackle two of the current main European challenges: circular economy and active ageing. The aim is to advance the state-of-the art on the topic by joining the knowledge and efforts of the experts on cutting-edge aerogel technology, on advanced characterization of materials as well as on biomedical and environmental research. Aerogels will be assessed from a materials performance point of view but also regarding health and environmental implications. AERoGELS disseminates knowledge to society, boosts industry-academia interactions and trains European young researchers on research, innovation and entrepreneurial skills via technical schools, publications and exchanges. Interdisciplinary collaborations will yield innovative and integrated solutions for environment and for life sciences. The long-term scope is to develop aerogel technology to improve welfare and move towards cleaner and smarter production.

<https://cost-aerogels.eu/>

Aerogel Architecture Award 2023 (3rd edition)

We are delighted to invite you to submit your examples of aerogel use in architecture, construction, refurbishment and monument preservation as built solutions or student projects. We are searching for the top realized projects internationally to showcase the best projects of architects, civil engineers or top project ideas of students from these fields. The best projects selected by our jury will be shortlisted for our Aerogel Architecture Awards ceremony hosted near Zurich at NEST Empa campus, which will give broad recognition to the projects. The projects will be published in relevant international magazines and portals. The award celebrates the best examples with regards to energy efficiency, unconventional solutions, translucent daylighting, high performing buildings solutions with use of superinsulating aerogel materials.

<https://www.empa.ch/web/aaa>