



New generation of nanoporous organic and hybrid aerogels for industrial applications: from laboratory to pilot scale production

24 September 2018

Press information

International researchers meet in Hamburg to discuss aerogels, the materials of the future

“Fourth International Seminar on AEROGELS 2018” at Hamburg University of Technology

Aerogels are highly porous and the lightest solids in the world. Their unique properties and broad range of potential applications promise to make them the basis for exciting innovations. International researchers in the field will be meeting on 24-26 September 2018 at Hamburg University of Technology (TUHH) to share the latest research and developments on the subject.

With 52 lectures, 82 poster presentations and more than 200 participants from all over the world, this year’s conference sees more contributions and is more international than ever before. The lectures will cover characterisation and production of aerogels as well as already known and novel application areas of the highly porous materials. Scientists involved in the EU-funded project NanoHybrids will also be presenting their latest results.

Marcus A. Worsley, PhD, a chemist in the Advanced Materials Synthesis Group of Lawrence Livermore National Laboratory, who has recently been recognised in the annual “40 Under 40” list of inspiring young figures in San Francisco’s East Bay area, will give a keynote lecture on the potential of nanomaterials in electrochemical energy storage and transformation.

On the first afternoon, industrial speakers will especially highlight superinsulating building materials and circular economy business models of aerogels. The second



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day will be devoted to novel application potential in electrochemistry and catalysis. The companies BASF, Uhde and Aerogel Technologies as well as the association Advapor are supporting the conference.

Chairing the conference is Professor Irina Smirnova (Institute of Thermal Separation Processes at TUHH). The International Seminar on AEROGELS is organised every two years by ISASF, the International Society for Advancement of Supercritical Fluids (<http://www.isasf.net/>).

For the first time the Advapor PhD Award will be presented during the Fourth International Seminar on AEROGELS 2018 to the author of the best PhD thesis in the aerogels field.

The goal of the EU project "NanoHybrids - New generation of nanoporous organic and hybrid aerogels for industrial applications: from the lab to pilot scale production" is to develop a pilot-scale production system for novel aerogels and test potential industrial applications. It is funded under Horizon 2020, the biggest EU research and innovation programme, as one of a series of projects charged with bridging the gap between nanotechnology research, pilot-scale production and markets. The Institute of Thermal Separation Processes led by Professor Smirnova coordinates the project with the support of Tutech Innovation GmbH, a TUHH subsidiary."

Web: <http://www.aerogel.org/community/seminar2018/>

Pictures: <http://tute.ch/7b>

Picture credit: Tutech / Remmersmann

(Pictures from the event will be made available in the evening on 24-26 September)



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ATTACHMENTS

Background information:

The Institute of Thermal Separation Processes is part of the "Process and Chemical Engineering" school of study at Hamburg University of Technology. The institute's research includes experimental and theoretical work on the following topics:

- High-pressure engineering
- Supercritical fluids
- Thermodynamics of biologically relevant systems
- Downstream processes

Prof. Smirnova has been head of the institute since 2008. In the course of her scientific career she has worked at the University of St Petersburg, TU Berlin, University of Erlangen-Nuremberg and Sogang University in South Korea.

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In addition to TUHH (Institute of Thermal Separation Processes), the project involves well-known industry partners and research institutes, in particular BASF Polyurethanes GmbH, Dräger Safety AG & Co. KGaA, Nestlé and the German Aerospace Center (DLR Cologne). The project brings together a total of 12 international partners.



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Horizon 2020 is the EU Framework Programme for Research and Innovation. The goal of the funding programme is to build a science and innovation-based society and a competitive economy throughout the EU while contributing to sustainable development.

Aerogels - highly porous Nanoparticles: Aerogels are a fascinating class of nanoporous materials that exhibit a wide array of extreme and unique materials properties. Aerogels have traditionally been obtained through a combination of sol-gel technology and (mainly) supercritical drying. However, in recent years numerous new compositions and processes have made possible a wide range of amazing new materials and applications. As a result aerogels are now the focus of significant development efforts worldwide, with uses in many fields including insulation for buildings and oil pipelines, lightweight structural materials, aerospace, adsorbents and catalysts, capacitors, batteries, and desalination, optics, high-energy particle physics, drug delivery systems, and so much more.

International Seminar on AEROGELS is the premier international conference on aerogels. It is aimed at scientists, engineers, students, and industrial partners working with or interested in learning more about aerogels.

Contributions are welcome on any and all topics related to aerogels including synthesis, characterisation, and applications in various fields. 2018 sees the fourth conference in the series, and interest from those in the field continues to grow.

ISASF, International Society for Advancement of Supercritical Fluids (<http://www.isasf.net>), is a non-profit society that aims to promote knowledge and applications of supercritical fluids. The International Seminar on Aerogels is one of the biennial events that ISASF organises. It is being held this year for the fourth time.

Advapor, The Advanced Porous Materials Association, was founded in 2017 to foster the development of advanced porous materials (APMs) and build a network across all aspects of the APM industry: from rewarding students studying in the field to developing international standards to supporting the commercial use of



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APMs. Advapor is sponsoring AEROGELS 2018 and will be announcing the winner of the Advapor PhD Award 2018 for the best PhD thesis completed in the field of advanced porous materials. (www.Advapor.org)

Dr Marcus A Worsley is a chemical engineer at the Lawrence Livermore National Laboratory, USA. The Stanford graduate holds 11 patents and is currently researching graphene aerogels and their electrochemical properties. In 2018 he was one of the "40 under 40" in San Francisco's East Bay area honouring forty of the area's most influential innovators, philanthropists, artists and entrepreneurs under the age of forty.

<https://www.llnl.gov/news/five-researchers-named-40-under-40-list>
<https://people.llnl.gov/worsley1>



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