FRAUNHOFER INSTITUTE FOR SILICATE RESEARCH ISC
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PRESS RELEASE

International online conference on “green batteries” generates great interest

The Green Batteries Conference 2021 assembles experts from all parts of the battery value chain and achieve a common understanding of the different aspects of sustainable batteries – from raw materials and storage sites to battery concepts, design for recycling, sustainable manufacturing and use, recycling technologies and closing the loop. The conference will be held online on Tuesday afternoons in October 2021, and the response is already very promising.

As electric-powered vehicles become more widespread, the question of electromobility's sustainability is also coming up louder and louder. Where do the raw materials come from, how are they processed, which battery concepts are available and which are particularly promising for the future in terms of resource conservation, safety, the longest possible service life and good recyclability. Which recycling technologies should ensure the best possible, economically and ecologically efficient recycling of battery materials in the future? How can the battery condition be reliably measured to enable secondary use, and what other aspects play an important role, such as logistics and regulation.

The Green Batteries Conference aims to address this entire field in order to cover as many aspects as possible. The conference is organized by the Fraunhofer Institute for Silicate Research ISC in cooperation with the European Lithium Institute eLi and the EU's BATTERY 2030+ initiative. "We were able to attract international experts to design the various sessions and put together an interesting and comprehensive conference program," reports Dr. Henning Lorrmann, head of the Fraunhofer R&D Center for Electromobility at Fraunhofer ISC for the conference organizing committee. And Dr. Andreas Bittner, CEO of the European Lithium Institute eLi, is also convinced by the concept: "The need for such a forum is great, as shown by the response to participant registration." At the start of the Green Batteries Conference on October 5, more than 900 participants from industry and research registered for the online event, which takes place every Tuesday in October.

For Prof. Dr. Gerhard Sextl, Director of the Fraunhofer ISC and a prominent driver of sustainable resource use, the conference creates precisely the framework that has been lacking so far to link the various technological aspects along the battery value chain. What's interesting about the Green Batteries Conference, is precisely that cutting edge research is just as much a part of it as industrial users who need application-oriented solutions - and also present solutions for industrial practice themselves. "This promises to be a really exciting exchange," Prof. Sextl is pleased to say.

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The thematic conference sessions at a glance:

Ressources & Raw Materials
This session is dedicated to the global distribution of battery raw materials, state-of-the-art and latest developments towards low-footprint mining and processing technologies.

Alternative Green Battery Technologies
Undoubtedly, the Lithium-Ion-Technology does and will dominate electrochemical energy storage in the foreseeable future. Here we'll try to take a look behind the plate. What technologies do have the potential to step in as substitute for some applications? Do all sectors and all regions in the world speak "Lithium", or are there alternatives on the technology roadmaps or even available as existing products.

Sustainability and the Sociological, Economical and Ecological Impacts of Batteries
Even though widely accepted that batteries will be a cornerstone for the transition towards renewable energies, the mining, processing and use of batteries and battery raw materials do have a substantial impact on the society, the nature and the economy. This session will try to give an insight and overview about the many positive and negative implications of a battery-propelled future.

Recyclability of Battery Cells, Design for Recycling, Manufacturing for Recycling
What makes a battery system or cell to be better recycled then another? How can the systems be designed and manufactured towards the recycling at the End of life? And what implications do these considerations have on the efficiency, safety and cost-competiveness of the production?

Second Life, Testing, Classification and Logistics
The reuse of depreciated battery systems in the so called second life is considered to be an important puzzle piece towards a circular economy simply be leaving the resources longer in the materials loop. Here, well talk about related issues, e. g. standardized tests for the classification of batteries, logistics to ensure a safe and efficient distribution of aged and second life batteries.

Battery Recycling Technologies
The session on recycling technologies will discuss the most prominent technologies for battery recycling as well as innovative processes under the concept of direct recycling.

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EU Battery Regulation

The EU's new battery regulation will include many suggestions for greater sustainability, resource conservation and careful handling of critical raw materials. The draft currently on the table is designed to modernize existing regulations related to batteries and introduce mandatory requirements for sustainability (e.g. carbon footprint rules, minimum recycled content, performance and durability criteria), safety and labeling for placing batteries on the market and putting them into service, and End of life management requirements. In the context of a "round table" questions around the new battery regulation are to be addressed, e.g. which research contents will be linked to it and how a sustainable implementation can also become economically successful.

BATTERY 2030+ Excellence Seminar

The Battery 2030+ initiative, led by Prof. Kristina Edström, is launching a series of expert seminars as part of the Green Batteries Conference. To kick things off, the topic of sodium-ion batteries will be addressed with presentations and a panel discussion.

Green Batteries Conference 2021
(Online conference)
October 5/12/19/26, 2021, from 1:00 p.m. - 5:00 p.m. (each Tuesday afternoon).
Program and registration at: www.green-batteries-conference.eu

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Footage

Online conference on the state of research and implementation on the road to greener batteries © Fraunhofer ISC

The **Fraunhofer-Gesellschaft**, headquartered in Germany, is the world's leading applied research organization. With its focus on developing key technologies that are vital for the future and enabling the commercial exploitation of this work by business and industry, Fraunhofer plays a central role in the innovation process. As a pioneer and catalyst for groundbreaking developments and scientific excellence, Fraunhofer helps shape society now and in the future. Founded in 1949, the Fraunhofer-Gesellschaft currently operates 75 institutes and research institutions throughout Germany. The majority of the organization's 29,000 employees are qualified scientists and engineers, who work with an annual research budget of 2.8 billion euros. Of this sum, 2.4 billion euros are generated through contract research.

The **Fraunhofer Institute for Silicate Research ISC** (director Prof. Dr. Gerhard Sextl) is one of the leading R&D centers for material-based research and development in the fields of resource efficiency, energy, environment and health. With a permanent staff of about 370 scientists and technicians the Institute works to develop innovative functional materials and technologies for more sustainable products with less resource input and make essential contributions to solving the major global issues and challenges of the future. With its parent Institute and the Translational Center in Wuerzburg, and its Center for High-Temperature Materials and Design HTL at Bayreuth Fraunhofer ISC combines first-rate expertise in materials science with long-standing experience in materials processing, industrial application and the upscaling of production

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and process technologies to pilot scale as well as in materials analysis and characterization. With a clear focus on sustainability, the Institute is a strong R&D partner for industrial partners and supports with its developments less resource consumption and responsible production.

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