

RETROSPECTIVE



Due to the worldwide COVID-19 pandemic, numerous trade fairs and events were cancelled in 2020. Fraunhofer IKTS presented itself to a broad scientific public in the context of virtual trade fairs, digital conferences and own virtual event formats.

January 22–23 / February 12 / May 13, 2020 1 Young researchers at Fraunhofer IKTS

The positions available to young scientists at the Dresden-Klotzsche site in 2020 were once again in great demand. At the pre-school children's program traditionally held in January, children from Lisa Kindergarden and from Pirna Protestant Children's House playfully learned about methods used in condition monitoring. In February, students from Dresden Martin-Andersen-Nexö-Gymnasium spent a week doing projects at IKTS. They examined bone replacement structures using optical coherence tomography (OCT) under real conditions and then successfully presented their results to a larger audience. In February and May, the budding junior doctors once again inspired IKTS researchers with their curiosity and creativity in workshops on the topic of ultrasound and effortlessly earned their stamp of approval on their way to the Junior Doctor's hat.



January 24, 2020 Prof. Michael Stelter chairs joint committee on advanced ceramics of DKG and DGM

Since January 2020, Prof. Michael Stelter, Deputy Institute Director of Fraunhofer IKTS, has chaired the Joint Committee on Advanced Ceramics of the German Ceramic Society (DKG) and the German Society for Materials Science (DGM). The Advanced Ceramics Joint Committee is concerned with the manufacture, properties and applications of advanced ceramics as well as their scientific fundamentals. The promotion of cooperation and networking, the initiation of new R&D fields as well as education and training are other objectives.

February 18–19, 2020 2 Plastic-free gardening – Franziska Saft wins first prize in Fraunhofer "Netzwerk" symposium ideas competition

In Germany, three billion plant pots made of plastic are used every year, mainly as disposables. Engineer Franziska Saft proves that gardening can work without having to resort to plastics.



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The IKTS researcher received an award at the Fraunhofer Symposium "Netzwerk" in the ideas competition "For sustainable value creation" for her development of completely biodegradable plant pots made of 100 % natural fibers. Together with her team, she developed a technology to purify fiber material from organic residues and make it available again for material production.

March 1, 2020

Major challenges for the trade show industry

The emergence of the Corona pandemic in March 2020 has led to major uncertainties for trade fair organizers, as well as exhibitors and service providers internationally. In order to protect employees while at the same time providing good opportunities for interested parties to get in touch with researchers, IKTS presented research and product highlights digitally in the form of selected replacement formats, in addition to numerous conference presentations: For example, Dr. Juliane Spohn presented, for the first time, ClickKit-Well, a revolutionary tool for the standardized and resource-efficient testing of biomaterials, at the analytica virtual trade fair. Together with the Fraunhofer High-Performance Center "Smart Production and Materials", Dr. Peter Neumeister presented cooperation opportunities and training courses for automation industry players at SPS Connect. At the Fraunhofer Solution Days, shaping expert Uwe Scheithauer provided insight into the additive manufacturing technology of Multi Material Jetting (MMJ), developed at IKTS. And the team from the Environmental and Process Engineering department was available for participants at the IFAT Partnering Event. In 2021, further online participation is scheduled for events such as Sensor+Test, AICHEM Pulse and Hannover Messe. In the fall of 2021, visitors will probably once again have the opportunity to meet IKTS scientists live at Productronica or IDS, among others.

June 3, 2020

1

Saxon workshop for the development of a strong hydrogen economy

Saxony's State Minister for Sciences, Culture and the Arts, Sebastian Gemkow, and Saxony's State Minister for Regional Development, Thomas Schmidt, as well as other representatives of the Saxon State Ministries for Energy, Climate Protection, Environment and Agriculture, and for Economic Affairs, Labor and Transportation, met at IKTS for a workshop discussing hydrogen strategies and how to develop a hydrogen economy in the Free State. Saxony already has competences in all components of the hydrogen value chain and in all parts of the state. What is now needed is a concept of how to turn this into a new industry for Saxony. The declared aim is to establish a hydrogen competence center, which is to prepare for the production of green hydrogen by means of electrolysis for industrial production. This could sustainably reduce or even completely eliminate CO₂ emissions in industrial processes and thus lay the foundation for an emission-free industrial sector.

July 10, 2020 / October 7, 2020

2

Battery Innovation and Technology Center BITC in Arnstadt opening, with grant money presented for the first CATL project

With a grant of 13.5 million euros from the Free State of Thuringia, the Battery Innovation and Technology Center (BITC) started operations on July 10, 2020 in the Erfurter Kreuz industrial park. The opening, attended by Prof. Reimund Neugebauer, President of the Fraunhofer-Gesellschaft, Marco Wanderwitz, Federal Government Commissioner for the New Laender, Thuringia's Minister of Economics Wolfgang Tiefensee and other guests from the spheres of politics, business and



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media, marked an important step in the expansion and networking of activities in battery and energy storage technology in Thuringia.

Only few months later, in early October 2020, the initial project, “BattLife”, was launched at the new IKTS site in Arnstadt. In collaboration with the Chinese battery manufacturer CATL, a digitized test center for batteries and battery components is being established at BITC. The aim is to analyze and extend the service life of batteries on an industrial scale. Minister Tiefensee personally presented the 5 million euros in funding to Dr. Roland Weidl, head of BITC, and Jason Chen, plant manager at CATT, the Thuringia branch of CATL.

September 16–17, 2020

3

AM ceramics meets ceramitec virtual conference

Around 500 international participants followed the first virtual “AM Ceramics & ceramitec conference” live on their screens. During the two-day event, experts from research and industry, invited by Lithoz GmbH, Fraunhofer IKTS and Messe München, presented advances they made in 3D printing, novel ceramic additive manufacturing technologies and innovations in the ceramic process chain. A virtual tour provided hands-on insights into the know-how and infrastructure of Fraunhofer IKTS – along four additive process chains from feedstock to component. The processes Binder Jetting, Fused Filament Fabrication, Multi Material Jetting and Vat Photopolymerization were also on display.

September 29, 2020

Media breakfast | Early Morning Science

The four Dresden Fraunhofer Institutes at the Winterbergstrasse site frequently present current research highlights on site and via livestreams. Once again, numerous journalists from the regional, national and trade press accepted the invitation to the sixth Early Morning Science media breakfast. In their presentations, Fraunhofer researchers presented, among other things, novel radar sensors for headlights as well as interesting material developments for more powerful hydrogen cars and more efficient hydrogen production. The concept presentation by Dr. Matthias Jahn from IKTS for reducing carbon dioxide emissions by up to 95 % in the production of crude steel was met with particularly strong interest from the media.

October 10, 2020

4

20 years of DRESDEN-concept – science exhibition opens on the forecourt of the Dresden Kulturpalast

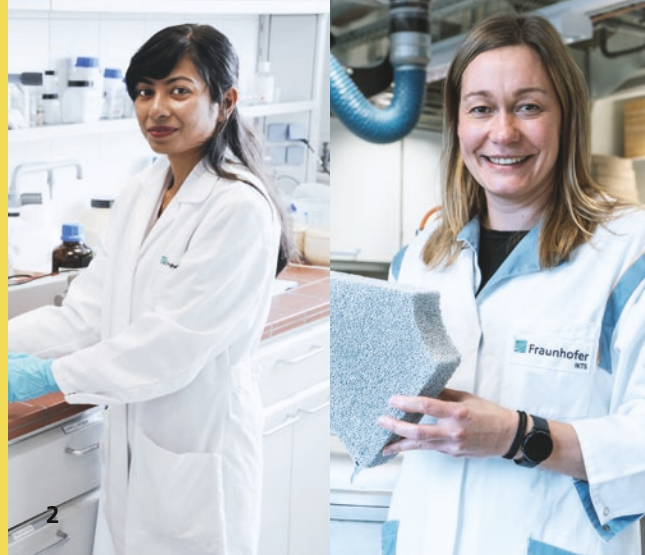
To make science tangible for the population and transfer results into society: With this goal in mind, the regional research network DRESDEN-concept (DDc) initiated an interactive exhibition for the whole family. Under the title “How will we live in the future? Research from Dresden finds answers.”, the exhibition shows current cooperative projects of the DDc partners and addresses topics, such as climate change, a healthy life, the new materials of the future and artificial intelligence. As a long-standing DDc partner, IKTS contributes to several project examples and, above all, results. In the meantime, the exhibition can be visited in Dresden’s city hall.

Seminar series **NDT4** **INDUSTRY**

Recent developments in
advanced NDT

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Fraunhofer
IKTS



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October 14, 2020

NDT4INDUSTRY – new online seminar series showcases NDT developments

Inspired by the idea of networking industry and science even in times of a pandemic and transferring developments into applications to benefit the industry, IKTS has developed the NDT4INDUSTRY online seminar series. Since its kick-off event in October 2020, users from industry and other interested parties have been able to learn about testing solutions developed at the IKTS site in Dresden-Klotzsche. The topics, mainly from the field of non-destructive test methods, are presented in lectures and laboratory tours and then discussed with the participants. The NDT4INDUSTRY online seminar series takes place at regular intervals. Current dates and topics can be found at www.ndt4industry.com.

November 16–17, 2020

Honoring the best trainees of the Fraunhofer-Gesellschaft

At the annual ceremony for the best trainees of the Fraunhofer-Gesellschaft in 2020, IKTS was once again strongly represented. Three physics laboratory technicians were honored this year: Carsten Kruska and Christoph Lehmann (both from the Dresden-Klotzsche site) as well as Franz Müller (now at BITC in Arnstadt). In addition, Dr. Beatrice Bendjus and Dr. Norman Reger-Wagner were recognized for their outstanding work as instructors. Due to the Coronavirus pandemic, the award ceremony took place in a virtual format. Fraunhofer Executive Board member Prof. Alexander Kurz presented the awards to a total of 14 prize winners. It is gratifying to know that all three IKTS award winners will remain employed at IKTS after their training.

1 November 24, 2020

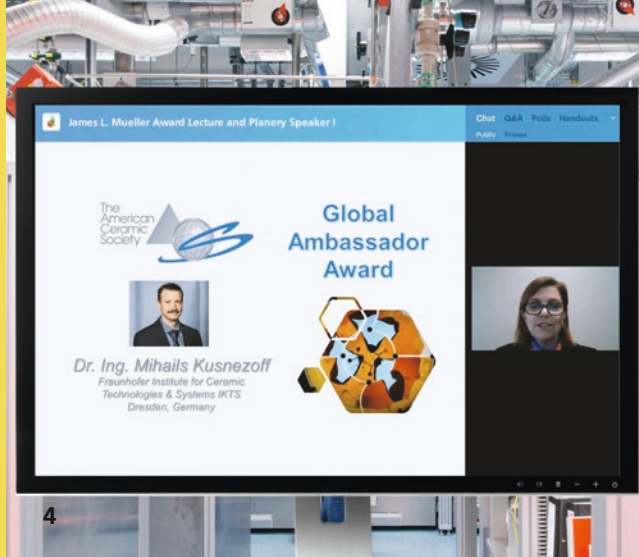
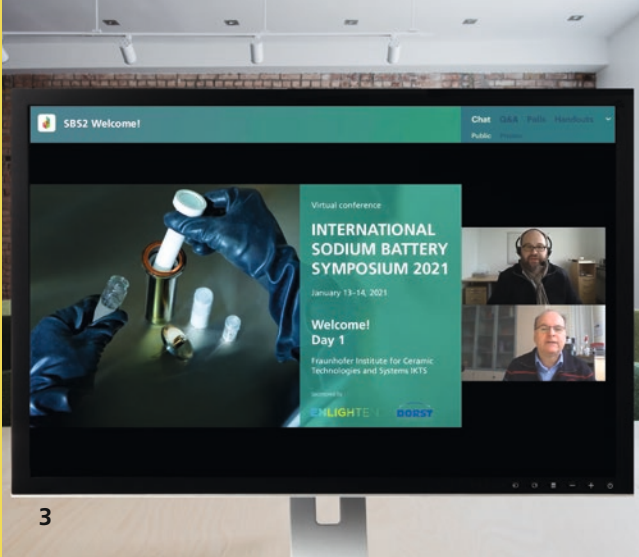
Communication award for mobile series #diensttalk

Every year, the Fraunhofer-Gesellschaft, together with a jury from industry and politics, honors the best examples of successful science communication. The 2nd place was awarded to Fanny Pohontsch, PR employee at IKTS, for the concept and implementation of the #diensttalk series. Since 2019, both scientific and technical staff as well as the group, department and institute management have been giving insights into their work, revealing in the process what drives them – including brief peeks into their private lives. The #diensttalk, consisting of a video clip and blog article, is designed for social media and has already led several interest groups to connect with IKTS directly.

December 10, 2020

Digital networking workshop “Thermoelectric applications in industry”

With the development of new products and components for thermoelectric applications, especially in the fields of sensor technology, process safety, temperature control and waste heat utilization, markets with high potential for the future have emerged – dynamic and attractive at the same time. In a networking workshop, researchers from Fraunhofer IKTS and other Saxon research institutes discussed promising project concepts with industry representatives. The aim was to highlight local competences and application potentials, to initiate cooperation and launch an active Saxon competence network for thermoelectrics.



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January 1, 2021 **2**
Fraunhofer TALENTA funding for two IKTS scientist

“Fraunhofer TALENTA” is a funding and development program to attract and develop female scientists. Since 2013, TALENTA has offered female scientists at Fraunhofer the opportunity to strategically advance their careers through partial financing of their employment, tailored qualification and career-oriented networking. At the beginning of 2021, two female IKTS scientists were accepted into the program: Dr. Daniela Haase intends to use the TALENTA funding to pursue her goal of becoming a group manager in the field of cellular ceramics. Tashneem Ara Islam will receive support in the program during her PhD project in the group “Functional Materials for Hybrid Microsystems”.

February 8, 2021 **4**
ACerS Global Ambassador Award for Mihails Kusnezoff

The American Ceramic Society (ACerS) presented Dr. Mihails Kusnezoff, head of department “Materials and Components” at Fraunhofer IKTS with the ACerS Global Ambassador Award 2021 on February 8, 2021 during the virtual 45th International Conference and Expo on Advanced Ceramics and Composites (ICACC). Each year, this award honors individuals whose leadership and commitment have made a special contribution to ACerS and the global ceramics and glass community.

January 13–14, 2021 **3**
SBS2 | International Sodium Battery Symposium

Sodium batteries are a promising and cost-effective alternative to Li-ion cells. The exchange of ideas in this field is crucial for joint progress and public awareness. This year’s second edition of the International Sodium Battery Symposium was held as a digital event for the first time. More than 100 international experts from eight nations discussed current research and development trends of sodium-based batteries, their market requirements and future prospects, as well as manufacturing issues. Digital laboratory tours also provided in-depth insights into the extensive equipment and capabilities of IKTS. In 2022, the experts will meet in Berlin.

March 19, 2021
Prof. Alexander Michaelis is member of the Battery Research Advisory Board Germany

Fraunhofer IKTS institute director Prof. Alexander Michaelis has been confirmed as a member of the Battery Research Advisory Board Germany. The board with more than 40 high-ranking representatives from industrial companies and research institutions advises the German Federal Ministry of Education and Research (BMBF) on strategic research planning for electrochemical energy storage systems, independent of applications. The advisory board’s tasks include recommendations on funding programs and topic clusters and the critical evaluation of study results.