

EVENTS AND HIGHLIGHTS

RETROSPECTIVE





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March 22, 2014

International World Water Day – exhibition and join-in experiments at Schloss Wackerbarth

Water is life. It is the essential element of the human being. On March 22 and 23, 2014, everything revolved around the topic “water and energy” at Schloss Wackerbarth. Alongside numerous research institutions, Fraunhofer IKTS presented exhibits, lectures and experiments, and thus answered current questions of the visitors in a practical way.

Even small visitors found entertainment, for example in the Aqualino creative workshop or in a flood protection vehicle of the fire department. The accompanying water photography exhibition by Dr. Gabriele Neugebauer showed water in its finest form.

March 28, 2014

Visit of South Korean President Park Geun-hye at Fraunhofer IKTS

As part of her official state visit, the president of the Republic of Korea, Park Geun-hye, was a guest at the IKTS in Dresden. The Fraunhofer President Professor Reimund Neugebauer and Professor Alexander Michaelis, Institute Director of Fraunhofer IKTS, met the distinguished guest for a brief exchange and guided the president through the IKTS. Park Geun-hye was accompanied by a delegation from politics, economy and science as well as representatives of the Korean press. On the German side, Saxon Prime Minister Stanislaw Tillich as well as the former Saxon Minister of Science Professor Sabine Freifrau von Schorlemer and the First Mayor of Dresden Dirk Hilbert attended the meeting, among others.

Subject of the meeting was the improvement of the scope for cooperation. For this purpose, the presidents of Fraunhofer and the South Korean research institute ETRI signed a Memorandum of Understanding regarding the cooperation. ETRI is considered to be the best public research institute for information and communication technology in South Korea and was listed 1st place by the patent board of the USA in 2011. The talks with the South Korean president also served the purpose

of fixing the meaning of this cooperation on the highest level in order to prospectively raise funds more easily.

March 31, 2014

Aerospace workshop in São Paulo

The non-destructive testing as key element of aerospace was topic of the symposium called “NDT in aviation”. More than 30 participants from economy and research assembled at the Centro de Convenções ABIMAQ in order to discuss current developments and future challenges. With this event, Fraunhofer IKTS contributed to the “German Year” in Brazil 2013/2014, which is an initiative of the Federal Foreign Office aiming at the intensification of the strategic relationship between the two countries.

April 24, 2014

Fraunhofer IKTS and Mayur REnergy Solutions Inc. (MRE) sign a Memorandum of Understanding and announce a joint venture

With the establishment of a joint venture for the development and distribution of cost-effective fuel cell devices, efficient and environmentally friendly systems are provided in the future, with which the tense power situation in India and other developing countries can be solved sustainably. The agreement to

1 Korean President Park Geun-hye visiting Fraunhofer IKTS, f.l.t.r.

President Park Geun-hye,
Prof. Alexander Michaelis,
Prof. Reimund Neugebauer,
Prof. Sabine Freifrau von Schorlemer,
Saxon Prime Minister Stanislaw Tillich.

2 Tour in the IKTS showroom during the Korean state visit.

3 Exhibition opening at Schloss Wackerbarth on the occasion of the World Water Day.



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establish this promising joint venture was made as part of a business trip of the former Thuringian Minister of Economy, Labour and Technology Uwe Höhn.

May 7, 2014

Inauguration of the new IKTS research building in Hermsdorf

Two years after the corner stone ceremony, the new three-storey research building of Fraunhofer IKTS in Hermsdorf, was ceremoniously inaugurated in the presence of the former Thuringian Minister of Science Christoph Matschie as well as 150 participants from politics, economy and research. The created capacities allow for an expansion of the industry-relevant research in the area of environmental technologies and promise the development of new applications for high-performance ceramics. The strategic research focuses on the leading markets of recycling and sustainable water management, raw materials efficiency, as well as environmentally friendly energies and energy storage.

With the construction of new laboratory, office and technology facilities on 2,775 m², Fraunhofer IKTS further extends the procedural bases through to upscaling. From here, the institute contributes nationally and internationally to the promotion, development and expansion of energy- and environmentally friendly solutions.

For the construction and new scientific equipment, the European Union provided 13.5 million euros out of the "Operationelles Programm Thüringen 2007–2013". Further 4.5 million euros are funds of the Free State of Thuringia and the German Federal Ministry of Education and Research (BMBF) in equal shares. For the local industrial network, the new developments of Fraunhofer IKTS play an important role.



May 20–21, 2014

Workshop "Additive manufacturing of ceramic materials"

Additive Manufacturing is an industrially established process for plastics and metals. For ceramics, additive manufacturing methods become more important as well.

The workshop "Additive Manufacturing of Ceramics", which was organized in the name of the Fraunhofer Additive Manufacturing Alliance, presented current research activities and promising applications of different additive manufacturing methods for ceramic materials. Nearly 80 participants from industry and research made this event very successful.

In the Fraunhofer Additive Manufacturing Alliance, eleven Fraunhofer institutes joined their forces to enhance the development and application of additive manufacturing methods. Together, they represent the entire technology chain and materials diversity of additive manufacturing.

June 5–6, 2014

Industry day "Electrically conducting ceramics"

The high economic viability and efficiency of electrical heating elements, ceramic sensors or electrodes generate competitive advantages in plant and mechanical engineering, energy generation, chemical technologies, and environmental and process engineering.

The industry day "Ceramic materials for electrical applications" was concerned with current developments of Fraunhofer IKTS in the areas of ceramic conductors, component manufacturing and processing of electrically conducting ceramics as well as the simulation of the operating behavior of ceramic components. 50 participants from industry and research accepted the invitation. The successful event was topped off with an accompanying industrial exhibition regarding commercially available ceramic products for electrical applications.



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July 4, 2014

Researchers' Night

For the 12th time already, the network "Dresden – Science City" organized the Researchers' Night. On the premises of the Fraunhofer Institute Center, about 1,500 visitors informed themselves about current research highlights and took part in exciting experiments and presentations regarding issues, such as energy, environment, health, nanotechnology and specialized materials, in the four Fraunhofer institutes.

At Fraunhofer IKTS, novel product developments and experiments of all three sites were presented this time. Children and research-interested adolescents, for example, visualized their fingerprints electrochemically and were able to listen to chewing grain weevils with highly sensitive measurement technology. A glassy sewage plant demonstrated the treatment of waste waters via microorganisms. Furthermore, the visitors could inform themselves about the functional principle of ceramic injection molding and learned how energy is produced from straw.

August 8, 2014

Federal Minister of Economy Sigmar Gabriel visits CEEC in Jena

"Energy research is an important strategic key for the Energy Transition. This applies in particular to system-oriented research projects, such as the development of new storage technologies", says Federal Minister of Economy Sigmar Gabriel in the context of a visit at the Center for Energy and Environmental Chemistry CEEC in Jena. Sodium nickel chloride batteries are perfectly suitable for stationary energy storage from an economical and ecological point of view. A core component of this battery is a ceramic electrolyte made of β -alumina, which is developed at Fraunhofer IKTS with special regard to materials selection, manufacturing methods and quality assurance.

September 2014

Foundation of Bio-Nanotechnology Application Lab

Supported by the Free State of Saxony, Fraunhofer IZI and Fraunhofer IKTS founded a joint application lab regarding the research in the area of bio- and nanotechnology in Leipzig.

With its Dresden-Klotzsche site, Fraunhofer IKTS possesses extensive know-how in the areas of applied microelectronics, sensor systems, nanoanalytics and materials characterization. This know-how is combined with the biological competencies of Fraunhofer IZI in Leipzig, particularly in the fields of cellular and molecular biology. The cooperation is aimed at developing innovative, minimally invasive analysis technology and sensor concepts as well as optimizing the process and quality control in biotechnology.

- 1 *Signing of a term sheet with Mayur REnergy Solutions Inc. (MRE) in Pune, India, for the foundation of a joint CFY stack company. f.l.t.r. Uwe Höhn, former Thuringian Minister of Economy, Labour and Technology, Siddharth R. Mayur, Mayur REnergy Solutions Inc. (MRE), Prof. Alexander Michaelis, Fraunhofer IKTS, Dr. Narendra Jadhav, Member of Planning Commission of National Advisory Council India.*
- 2 *Inauguration of new Fraunhofer research building in Hermsdorf.*
- 3 *Researchers' Night at Fraunhofer IKTS.*
- 4 *Federal Minister of Economy Sigmar Gabriel at the IKTS booth while visiting the CEEC in Jena.*



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November 11, 2014

OptoNet cluster meeting at Hermsdorf

The IKTS in Hermsdorf, as a young member of the Photonics Network Thuringia OptoNet, invited to a cluster meeting for the first time.

This productive meeting aimed at promoting the professional exchange between the cluster members, informing about the competencies and novel research results of Fraunhofer IKTS as well as generating prospective synergy effects.

Accompanying the lecture program, a tour through the laboratories and pilot plants offered insights into the practical research of Fraunhofer IKTS in greater depth to the approximately 50 participants.

December 4–5, 2014

Symposium “Electrochemical methods in battery research. Well done. But accurately interpreted?”

This year, the conference series, established in 2005, focused on electrochemical and complementary analytical methods for materials applied in energy storage systems. Thus, the symposium established a connection between basic and application-oriented research regarding the understanding of mechanisms and materials behavior of electrochemical storage systems.

The accompanying industrial exhibition offered device manufacturers an efficient contact platform and opportunity to learn about the latest developments.

About 80 participants from industry and research accepted the invitation of Fraunhofer IKTS and made the event very successful.

January 15, 2015

Ceramics Vision

For the 9th time, Fraunhofer IKTS invited to the symposium series “Ceramics Vision”. In the high-quality program with invited lectures from industry and science, new developments and innovation in the field of high-performance ceramics were presented. This time, structural and functional ceramic materials development particularly in the areas of oxide ceramics and smart materials was focused. Since the institute’s foundation, these research fields have been core competencies of Fraunhofer IKTS and were shaped by Dr. Andreas Krell und Dr. Andreas Schönecker, who both will retire in 2015. As part of the symposium, both department heads talked about prospective challenges and visions regarding their traditional fields of activity.

January 20, 2015

CIO campus with the topic “Water and materials”

For the first time, Fraunhofer IKTS in Hermsdorf organized the CIO campus regarding the topic “Water and materials”, in collaboration with the Cleantech Initiative Ostdeutschland (CIO).

More than 100 participants from politics, economy and research gained an insight into novel approaches for the closure of resource cycles, practical experiences from a business’ perspective and possibilities for supporting resource-efficient technologies in their own companies.

Furthermore, representatives of the Federal Ministry of Economy, the Thuringian Ministry of Economy, Science and the Digital Society as well as the Federal Environment Agency showed current political framework conditions and chances for companies in the cleantech sector.



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Awards

Coating experts awarded with “Betonwerksteinpreis” in the category innovation

As part of the international ashlar days 2014, the German Federal Working Group Artificial Stone, Finished Parts, Terrazzo and Natural Stone BF BFTN awarded a prize to Dr. Thomas Hoyer and Anett Heyer, Fraunhofer IKTS, for their extraordinary engagement and their revolutionizing results in the German artificial stone sector.

Advanced surface treatment for artificial stone and natural stone was developed, with which properties like solidification, stain resistance, non-slip safety and splendor of the rock can be achieved in simultaneously in contrast to conventional coatings. These coatings are based on novel nanocomposite technology.

Fraunhofer Medal for Dr. Andreas Schönecker

Within the frame of the 9th “Ceramics Vision”, Dr. Andreas Schönecker was honored with the coveted Fraunhofer Medal. This award is given to individuals who rendered outstanding services to the Fraunhofer-Gesellschaft.

For 40 years, Dr. Andreas Schönecker has worked as a physicist with PhD in the field of applied materials research. Under his guidance, the department “Functional Ceramics” of the former Central Institute for Solid Body Physics and Materials Research of the GDR Academy of Science developed into one of the main pillars of Fraunhofer IKTS. Central research fields of his scientific specialty are the synthesis, technology and component development as well as the functional verification of multifunctional materials on the basis of dielectric, ferroelectric and piezoelectric high-performance ceramics. The application spectrum of these materials is diverse and was processed in numerous R&D projects from industrial and public principals. Focal research points of the last years include developments regarding multilayer capacitors, filters, sensors, actuators, ultrasonic transducers and generators.

First worldwide energy efficiency award for scientist of Fraunhofer IKTS

On September 30, 2014, the “Cool Award” was assigned for the first time in the context of the Cool Silicon Day 2014. With this award, the top cluster Cool Silicon honors outstanding solutions for energy-efficient information and communication technologies. Altogether seven individual projects were awarded with this prize in three categories.

In the category “Scientific work”, the prize was awarded to Uwe Lieske, André Dietrich, Dr. Lars Schubert and Bernd Frankenstein of Fraunhofer IKTS for their contribution “Wireless System for Structural Health Monitoring Based on Lamb Waves”, which was developed within the project CoolSensorNet. The IKTS scientists Bernd Frankenstein and Dr. Andreas Schönecker belong to the award winners in the category “Energy-efficient solutions”. They were honored for their contribution “Structure monitoring with wireless sensors” made in the project CoolMaintenance.

The award is assigned to realized projects in the Cool Silicon research association, which have made a globally unique contribution to the resource-conserving efficiency increase of information and communication technologies (ICT).

- 1 Glimpse of the lecture room during the symposium “Electrochemical methods in battery research. Well done. But accurately interpreted?”.
- 2 Dr. Andreas Krell in discussion with participants of the “Ceramics Vision”.
- 3 Dr. Andreas Schönecker received the Fraunhofer Medal by Prof. Alexander Michaelis during the “Ceramics Vision”.
- 4 Uwe Lieske (l.) is one of the IKTS award winners of the Cool Awards 2014 in the category “Scientific work”.