



# PRESS RELEASE

Dresden, 14<sup>th</sup> April 2016

## Saxon Companies Present Innovative Energy Technologies at the Hannover Fair 2016

Visit the joint ENERGY SAXONY stand B40 in Hall 27 within the Group Exhibit  
Hydrogen + Fuel Cells + Batteries

From April 25 to 29, companies and research institutes from Saxony present their latest developments in the field of energy storage and fuel cell technologies at the Hannover Fair 2016 at **the joint stand of the energy cluster ENERGY SAXONY located in hall 27, stand B40**. The members of the leading East German energy technology network ENERGY SAXONY are amongst the world's most innovative companies in the sector.

The **Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM**, which carries out applied research and develops technologies and materials for increasing energy efficiency and reducing carbon dioxide emissions, demonstrates its prototype of the patent pending "PowerPaste – Electricity always and everywhere". Working on a fuel cell basis, this technology uses hydrogen as an energy carrier, which is stored in solid form in a paste with a very high initial power density and an extremely long durability. The technology will be commercially available in exchangeable cartridges and will be used for drones, e-bikes, and medical rehabilitation appliances.

Dubbed „Electricity from Ceramics“, the **Fraunhofer Institute for Ceramic Technologies and Systems IKTS** presents energy and storage technologies based on ceramics, which will be available on the market in the near future. Apart from their use as industrial off-grid energy supply solutions, the ceramic high-temperature fuel cells (SOFC) – from micro fuel cells to megawatt systems – are also of interest for residential energy supply and decentralized CHP systems, as they require only minimum maintenance and have a high efficiency rate. Also the cerenergy® batteries developed at the Fraunhofer IKTS are suitable for a wide range of applications in energy grids in Europe and even globally, particularly in countries with hot climate zones. In the future, the IKTS fuel cells and cerenergy® batteries are intended to ensure a reliable and affordable energy supply in India, for example, as combined SOFC/battery hybrid systems.

Moreover, the Fraunhofer IKTS in Dresden develops the next generation of the world's largest fuel cell power plants together with the American parent company of **FuelCell Energy Solutions GmbH (FCES)**, FuelCell Energy, Inc. (USA) as part of a joint German/American research project. With the further development of the molten carbonate fuel cell technology (MCFC), the cell performance shall be improved and the life time of the fuel cell is expected to be prolonged, allowing a more cost-effective and highly efficient production of clean power. The portfolio of FCES includes R&D, the production, distribution and installation, as well as the operation of fuel cell power plants under a long-term full-service agreement.

**NOVUM engineerING GmbH** presents compact diagnostic power electronics with integrated automatic defect detection. This technology allows, for the first time, a permanent and cost-saving performance monitoring of fuel cells and storage batteries. As a result, fuel cell systems become far more reliable, will have a longer service life, and additional diagnostic tools will no longer be necessary. The NOVUM Power Inverter is used in CHP, power-to-gas and photovoltaic systems as well as in auxiliary power units (APUs), for home storage devices and lithium-ion batteries. Further potential exists for applications in the automotive sector as well as in the aerospace and aviation industry.

**FLEXIVA automation & Robotik GmbH** is your specialist for the integration of fuel cells into hybrid energy solutions. These include the connection of fuel cells to diverse types of electric storage systems, to other controllable and renewable energy sources as well as to local grids. With the ZEMIS® Energy Building Set, FLEXIVA offers a modular system concept with DC/DC and DC/AC converters with integrated system control for an efficient energy supply management of the different system components which is highly dynamic and convenient regarding its operation.

Apart from the on-site hydrogen production from renewable and fossil energy sources, the **DBI Group** primarily specializes in the use of hydrogen in the natural gas grid. Further business activities include research into power-to-chemicals and fuel cells for households and small businesses as well as system analysis regarding the convergence of electricity and gas grids. The *DBI Gas- und Umwelttechnik GmbH* and the *DBI - Gasthechnologisches Institut gGmbH Freiberg* are the only companies in Germany serving the entire gas supply value chain – from production/generation to storage and grid transport, and even the efficient, environmentally-friendly use of renewable energy sources.

**EBZ Entwicklungs- und Vertriebsgesellschaft Brennstoffzelle mbH** is a specialized manufacturer of components and test systems for high temperature fuel cells – including single cells, stacks and stack modules. The test systems are available for fuel cells generating electricity (SOFC) as well as for elektrolyzers producing gas on the basis of electric power (SOEC). They can be combined in one device and are used by manufacturers of fuel cells and research institutes. Aiming at the improvement of the technology's maturity, EBZ has been involved in the development of fuel cells systems and their components in numerous research projects.

**ENERGY SAXONY invites its visitors for a welcome drink on 25<sup>th</sup> April 2016 at 5 pm.**

All customers and business partners of our exhibiting member companies as well as guests of the Energy Saxony network are cordially invited to take a welcome drink at the joint stand B40 in hall 27 on the first day of the fair at 5 pm. Take the opportunity for a personal meeting with high-level representatives of our member companies or with the ENERGY SAXONY Cluster Management.

***For detailed information, please visit our exhibitors at the joint ENERGY SAXONY stand B40 in hall 27.***



**FuelCell Energy Solutions**  
Ultra-Clean, Efficient, Reliable Power



**Fraunhofer**  
IFAM



**Entwicklungs- und  
Vertriebsgesellschaft  
Brennstoffzelle mbH**



**NOVUM**

**FLEXIVA**



**Fraunhofer**  
IKTS



**DBI GUT**  
Gas- und Umwelttechnik GmbH

The energy cluster ENERGY SAXONY brings together relevant actors from industry and science which are bundling their capacities and know-how to promote the development and marketing of innovative solutions for sustainable energy technologies. Together with its members, the association Energy Saxony e.V. aims to enhance the competitiveness and export strength of the Saxon energy sector and to promote the development of a sustainable energy system in Germany.

[www.energy-saxony.net](http://www.energy-saxony.net)

## Further exhibitors from Saxony at the Hannover Fair

Additionally, **FuelCell Energy Solutions GmbH** presents, on a separate exhibition site in **hall 27 at stand J50/8**, the first industrial megawatt fuel cell power plant in Europe developed in Dresden in cooperation with E.ON Connecting Energies. The power station is being built at the premises of a manufacturing company in Mannheim and generates 11.2 GWh of electricity and about 6,000 MWh of heat energy with a rated output of 1.4 megawatts (MW) on the basis of natural gas. As of summer 2016, the plant can be visited in Mannheim. Moreover, FCES will exhibit at stand J50/8 the world's longest fuel cell stack measuring 4.50 meters in height with a nominal output of 400 kWel.

In **hall 27, at stand 024**, **Sunfire GmbH** demonstrates, with their concept ENERGY EVERYWHERE, the practical use of fuel cells in VAILLANT heating systems on the basis of natural gas or biogas allowing an environmentally-friendly, all-year energy supply for single and multi-family homes. But also for larger power ranges, the solid oxide fuel cells (SOFC) delivered by sunfire are a high-performance technology with an overall efficiency exceeding 90% used for CHP heating systems in cooperation with the partner ThyssenKrupp Marine Systems. In keeping with the partner country USA, sunfire also presents the world's largest commercial reversible electrolyser, which has been jointly developed with Boeing. When visiting the sunfire stand, you will learn more about the use of this technology for the production of climate-friendly, renewable hydrogen.

## Technical and Public Forum within the Group Exhibit Hydrogen + Fuel Cells + Batteries

The Public Forum (centrally located in hall 27) and Technical Forum (right next to the joint stand of ENERGY SAXONY) will moreover provide interesting expert contributions of our members about innovative solutions for a sustainable energy supply:

Public Forum	
Monday, 25/04/2016 12:20 p.m.	<b>ENERGY SAXONY – Bundled Expertise for Shaping the Future Energy System</b> Lukas Rohleder, Energy Saxony e.V.; Nils Aldag, sunfire GmbH; Chip Bottone, FuelCell Energy Solutions GmbH
Tuesday, 26/04/2016 10:20 a.m.	<b>Commercialization of the CFY stack technology</b> Prof. Alexander Michaelis, Fraunhofer IKTS; Prof. Lorenz Sigl, Plansee SE; Siddharth R Mayur, MPower GmbH
Tuesday, 26/04/2016 12:20 p.m.	<b>Fuel cell technology for grid support, on-site power, storage and hydrogen infrastructure</b> Andreas Frömmel, FuelCell Energy Solutions GmbH
Wednesday, 27/04/2016 12:20 p.m.	<b>Diagnose inverter for fuel cells and batteries with integrated realtime-monitoring</b> Mandy Schipke, NOVUM engineerING GmbH
Technical Forum	
Tuesday, 26/04/2016 01:40 p.m.	<b>Status and prospects of cerenergy® sodium batteries</b> Dr. Matthias Schulz, Fraunhofer IKTS
Tuesday, 26/04/2016 02:40 p.m.	<b>High-dynamic metal hydrides for advanced fuel cell technology</b> Dr. Lars Röntzsch, Fraunhofer IFAM
Wednesday, 27/04/2016 11:40 a.m.	<b>Industrial heat supplied by an integrated 1.4 MW fuel cell CHP plant</b> Martin Ohmer, FuelCell Energy Solutions GmbH
Wednesday, 27/04/2016 12:40 p.m.	<b>PowerPaste – High dynamic and safe hydrogen-on-demand solution for fuel cell applications</b> Dr. Marcus Tegel, Fraunhofer IFAM
Wednesday, 27/04/2016 01:00 p.m.	<b>Powermanagement of hybrid systems and potential approaches of Flexiva's next developments</b> Christopher Lange, FLEXIVA automation & Robotik GmbH
Wednesday, 27/04/2016 03:20 p.m.	<b>Flexible solutions for fuel cell and electrolyser testing and system development</b> Dr. Sandro Ruhland, EBZ Entwicklung- und Vertriebsgesellschaft Brennstoffzelle mbH