

PRESS RELEASE

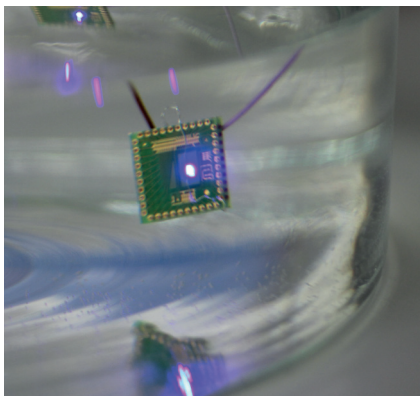
PRESS RELEASE

March 24, 2015 || page 1 | 2

Fraunhofer ENAS introduces surface technologies for the functionalization of sensors and smart systems at the Hannover Messe 2015

The Fraunhofer Institute for Electronic Nano Systems ENAS in Chemnitz develops and applies surface technologies for advanced sensors and systems. The technologies enable more functionalities, protect the systems against external effects and enable a cost-efficient manufacturing. The researchers design novel sensors and microsystems by using various technologies like Parylene® coating, printing of conductive nano particle inks or nano structuring of surfaces. Another research topic at the institute is the integration of functionalities in surfaces.

On the one hand, medical systems and implants have to be protected against the effects of the body and on the other hand, the body has to be protected against materials emerging from the implants. The Fraunhofer ENAS researchers use a Parylene® coating process to encapsulate the sensor systems and implants. Therefore, different material combination are investigated within this new technology at the Fraunhofer ENAS. The coating has to be biocompatible, very stable and reliable. Further processes as plasma pre-treatment and silanization are integrated into the technology during the encapsulating process to enhance the layer adhesion. Fraunhofer ENAS introduces samples of packaged systems at the Hannover Messe 2015. Beside of medical implants also sensors for industrial applications, printed circuit boards and electronic devices such as LEDs can be protected from harsh environments by Parylene® coating.



Fraunhofer ENAS researchers use Parylene® coating to protect sensor chips and systems from harsh environments and to give them a biocompatible coating. At the Hannover Messe 2015, they show the functions of this coating by the example of electronic chips – here with integrated LED – underwater.

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Editorial notes

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FRAUNHOFER INSTITUTE FOR ELECTRONIC NANO SYSTEMS ENAS

The WiTech GmbH introduces a technology solution for wireless energy and data transmission. The technology can be integrated in various surfaces. Jörg Euskirchen, the CEO of WiTech GmbH, explains: "The WiTech system is an infrastructure solution for wireless power and data transmission to mobile devices and can substitute the power socket." The WiTech system finishes the cable spaghetti in offices and industrial environments. In cooperation with Fraunhofer ENAS, the WiTech GmbH develops a system of smart receiver and transmitter antennas. The transmitter is integrated invisibly into work surfaces in industrial, public or private environments. If a mobile device with integrated receiver unit is placed on such a state or mobile surface, the two parts of the systems start the communication and transmit energy and data. The antenna array of the transmitter enables a free positioning of the devices on the surface, a good efficiency and high security. The WiTech GmbH shows a wireless monitor as one possible application and offers evaluation kits of the technology at the Hannover Messe.

PRESS RELEASE

March 24, 2015 || page 2 | 2



The monitor is sponsored by Fujitsu and is equipped with a WiTech receiver. It receives power and data directly by the desktop. The WiTech system enables a free positioning of the monitor on the desk. Photo © Fraunhofer ENAS | Download: www.enas.fraunhofer.de/presse.

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Fraunhofer ENAS shows together with the Center for Microtechnologies of the TU Chemnitz applications for high-precision sensors, autonomous sensor systems for condition monitoring of machines as well as deposition and structuring surface technologies at the Hannover Messe. The institute exhibits on IVAM product market "Micro, Nano & Materials" at booth E 06.6 in hall 3 from April 13 to 17, 2015. Dr. Mario Baum from Fraunhofer ENAS will talk about "Coating, encapsulation and packaging technologies for smart integrated systems" at the Surface Technology Forum in hall 3 on Tuesday, April 14, at 3 pm.

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 66 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of nearly 24,000, who work with an annual research budget totaling more than 2 billion euros. Of this sum, around 1.7 billion euros is generated through contract research. More than 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

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