

Press release

SEMIKRON Foundation and ECPE honour researcher team from Erlangen with the Innovation Award 2016 and Mr. Erik Lemmen for his work with the Young Engineer Award

Nuremberg, Germany, March 08th 2016

The jury has decided to give the SEMIKRON Innovation Award 2016 to a **researcher team from Erlangen** for its innovation on **'Zero Tolerance - Silicon Carbide Device Technology for the Smart Grid of the Future'**.

The researcher team includes **Dr. Michael Schütz (Intego GmbH), Larissa Wehrhahn-Kilian (Infineon Technologies AG), Dr. Patrick Berwian (Fraunhofer IISB) and Dr. Michael Krieger (Friedrich-Alexander University)**. They have developed and evaluated a new technology for quality assurance during SiC device manufacturing using UV photoluminescence imaging in order to detect harmful material defects in SiC on a full wafer scale. This novel inspection technique detects material defects which are the root cause for later device degradation at an early stage in a fast, contactless and non-destructive way. This innovation significantly contributes to SiC device reliability which is an important topic in industry. The method has been successfully proven and it is on the way to be adopted by industry. The economic impact and societal benefit of the innovation is related to the energy efficient power electronics based on SiC power devices. The innovation was developed within the SiC-WinS joint project funded by the Bavarian Research Foundation.

The SEMIKRON Young Engineer Award 2016 is given to **Mr Erik Lemmen from University of Technology Eindhoven, The Netherlands** for his contributions to the development of an **'Extended Commutation Cell - A Path Towards Flexible and Reliable Multilevel Power Conversion'**.

The new modular commutating circuit leads to converter topologies for high voltage-ratio power conversion and multilevel conversion offering more flexibility in electric power applications. The functionality and flexibility of the extended commutation cell has been demonstrated for very relevant conditions with a 4.4kW eight-level inverter prototype using off-the-shelf half-bridge IGBT modules and drivers. The innovation offers high quality waveform, flexibility in control and the possibility for step-up and step-down conversion. The economic impact and societal benefit of the innovation is related to the addressed renewable energy applications as well as to more cost effective and reliable motor drives.

Photo: (f.l.t.r) Bettina Martin (SEMIKRON Stiftung), Prof. Leo Lorenz (ECPE), Dr. Patrick Berwian (Fraunhofer IISB), Larissa Wehrhahn-Kilian (Infineon Technologies AG), Dr. Michael Krieger (Friedrich-Alexander-University Erlangen-Nürnberg), Dr. Steffen Opiel representing Dr. Michael Schütz (Intego GmbH), Prof. Dr. Elena Lomonova representing Erik Lemmen

About the SEMIKRON Foundation:

The SEMIKRON Foundation was founded on December 4, 2010, by owners of the SEMIKRON Group. Equal founders are the daughters of Peter Martin, the SEMIKRON owner and managing director of many years, who passed away in 2008. With the founding act, the founders intended to live up to their responsibility being the owners of a family-owned



medium industry business and to contribute to their company's "Corporate Social Responsibility".

The purpose of the SEMIKRON Foundation is to bundle and extend the charitable activities operated by the owners of the SEMIKRON Group. In particular, the humanitarian projects initiated by Mr. Peter Martin, and supported by the Mali Martin Care e.V. charity are to be continued. These projects support children and people in need all over the world. Over the past 10 years, Mali Martin Care e.V. has donated more than one million Euro to humanitarian projects for children and young adults, mostly in Brazil (projects "Centro Social" and "Lar do Menor"). In addition, the foundation supports research projects and innovations in the field of power electronics. For more information, please visit: www.semikron-stiftung.com.

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