

## Press release

### "Young Engineer Award" and "Innovation Award" awarded by SEMİKRON-Stiftung on Wednesday, 8th March 2017



**Photo:** (f.l.t.r) Prof. Leo Lorenz (ECPE), Johannes Kolb (Karlsruhe Institute of Technology), Mario Gommeringer (Karlsruhe Institute of Technology), Alexander Schmitt (Karlsruhe Institute of Technology), Pierrick Ausseresse (Infineon Technologies), Marco Schilling (Ilmenau Technical University), Bettina Martin (SEMİKRON-Stiftung)  
Source: TILMAN WEISHART PHOTOGRAPHY

#### **Nuremberg, Germany, 13.03.2017**

SEMİKRON Innovation Award 2017 goes to team of **engineers from the Karlsruhe Institute of Technology** for their new power electronic circuit for increased solar power output, while the 2017 Young Engineer Award goes **to two deserving winners** in recognition of their work on the development of a new digital IC for PC power supply systems, as well as a new design tool for automotive power systems.

This year's SEMİKRON Innovation Award went to a team of three engineers: **Mario Gommeringer, Alexander Schmitt and Johannes Kolb from KIT Karlsruhe**. The award-winning team has developed a new innovative power electronic circuit at the Institute of Electrical Engineering of KIT Karlsruhe that will help maximize power output in solar power generators. The new circuit known as the HILEM circuit or "High Efficiency Low Effort MPP Tracking Circuit" can be connected between any number of photovoltaic strings and a common inverter. The circuit maximizes the energy yield of solar generators by enabling individual maximum power point (MPP) tracking for each cell string. This is crucial in cases where strings have different MPP voltages due to partial shading of PV modules or different string orientation. The HILEM circuit boasts significant advantages over conventional DC/DC converters when it comes to costs and efficiency. It uses low voltage/ low cost components and boasts a very high conversion ratio of up to 99.83% measured on a prototype.

This year's Young Engineer Award has gone to **two young researchers**. The first award winner **Pierrick Ausseresse from Infineon Technologies** was selected for his work on the development of a **new digital IC for use in PC power supplies**. This innovation is very much in line with the trend towards developing firmware for a digital CPU based controller specifically for switch mode power supplies (SMPS). At the heart of this innovation is a digital LLC control featuring a low-cost controller that meets the tight dynamic load step requirements. The digital approach also allows for the integration of flexible protection features that make the power supply system more robust than with analog systems. What's more, this approach eliminates the need for auxiliary power supply for standby operation. The other joint winner of the Young Engineer Award is **Marco Schilling from Ilmenau Technical University**. Mr Schilling's award-winning **development Opti-PAC** is a new, versatile tool for optimum active and passive component selection in automotive power systems such as electric drivetrains or DC/DC converters. Opti-PAC is a flexible design tool based on an expandable database for components, PCB arrangements and load profiles, and generates results in a matter of seconds, enabling fast technology and system comparison and optimizing system efficiency, space utilization and costs at the same time. This tool is also perfect for smaller companies that don't have access to complex and expensive design tools or for graduates and young engineers who are still learning the ropes.

#### **About the SEMİKRON Foundation:**

The SEMİKRON Foundation was founded on December 4, 2010, by owners of the SEMİKRON Group. Equal founders are the daughters of Peter Martin, the SEMİKRON 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 SEMİKRON Foundation is to bundle and extend the charitable activities operated by the owners of the SEMİKRON 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](http://www.semikron-stiftung.com).

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