KARL HEINZ BECKURTS-STIFTUNG

PRESS RELEASE

Berlin, Dezember 9th 2015

Karl Heinz Beckurts Award 2015 for the development of energy-efficient wireless communication technology

Berlin, 08/12/2015. This year's Karl Heinz Beckurts Award goes to Professor Oliver Ambacher, Head of the Fraunhofer Institute for Applied Solid State Physics, IAF, in Freiburg. The physicist is awarded the 30,000 Euro prize for his contribution to developing high-efficiency power amplifiers made from the innovative semiconductor gallium nitride for use in the latest generation of mobile communication base stations. The award ceremony is being held today 8 December at 7:00 p.m. at the Red Town Hall in Berlin as part of the Innovation Days.

The new technology is an important prerequisite for the 5G mobile communications standard the European Union is planning for 2020. "For the LTE and future 5G standard, we need extremely fast and energy-efficient transmission amplifiers. The novel semiconductor material gallium nitride (GaN) is perfectly suited to this with its interesting physical properties," explains Oliver Ambacher, who also teaches as Professor for Compound Semiconductors at the Department of Microsystems Engineering of the University of Freiburg. He successfully demonstrated that GaN-based transistors and amplifiers can be operated at significantly higher voltages, currents and frequencies than silicon-based components. With his research group and partners from industry, he was able to develop GaN integrated circuits and power amplifiers ready for mobile communication base stations. These innovative components can reduce the power requirements of base stations by as much as 75% compared to conventional technologies. Employing GaN power amplifiers in the mobile telecommunications networks in Germany alone could save around 1.5 million tonnes of CO_2 per year.

"Oliver Ambacher arrived at major innovations through excellent basic research on gallium nitride semiconductors. Together with partners from industry, he and his group have developed the next generation of high-efficiency components for mobile communications electronics that require far less energy. It is for this achievement that he is receiving the Karl Heinz Beckurts Award," says Prof. Anke Kaysser-Pyzalla, Scientific Director of the Helmholtz-Zentrum Berlin and chairperson of the Karl Heinz Beckurts Foundation.

Each year, the Karl Heinz Beckurts Foundation awards its prize to those who have made outstanding scientific and engineering achievements that help to spur on new waves of innovation in Germany. The award ceremony has been held during the Innovation Days since 2011.

The Karl Heinz Beckurts Foundation was founded in 1987 by the Helmholtz Association in memory of the researcher and manager Prof. Dr. Karl Heinz Beckurts. From 1973 to 1976, Beckurts was Chairman of the Syndicate of Large-Scale Research Institutes (the precursor to the Helmholtz Association). From 1976, he was Executive Board Chairman of the former Atomic Research Facility Jülich and, from 1980, he was on the Siemens AG Executive Board. In 1986, Beckurts became the tragic victim of a terrorist attack. The Foundation's annual award honours outstanding scientific and engineering achievements that are also of industrial importance.

Additional information:

Prof. Dr. Oliver Ambacher
Fraunhofer Institute for Applied Solid State Physics
Fon: +49 761 5159-0
oliver.ambacher@iaf.fraunhofer.de

Press Office
Dr. Antonia Rötger
Fon: +49 (0)30-8062-43733
antonia.roetger@helmholtz-berlin.de

Prof. Dr. Oliver Ambacher is this year's recipient of the Karl Heinz Beckurts Award.