

# Press Release

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## Making Cancer visible through pictures

**IHP-scientist receives Microwave Prize 2017 for his achievements**

**Frankfurt (Oder).** The Microwave Prize 2017 of the IEEE Microwave Theory and Techniques Society was awarded to the team in which Dr. Bernd Heinemann, scientist at IHP innovations for high performance microelectronics in Frankfurt (Oder), was part of. Together with Konstantin Statnikov, Janusz Grzyb, and Ullrich R. Pfeiffer of Bergische Universität Wuppertal he worked on a paper\* about an imaging system that operates up to one Terahertz.

In this publication, a tunable multi-color imager employing a highly integrated chip-set with silicon-germanium heterojunction bipolar transistors is presented. The obtained image quality provide a proof-of-concept that this imaging system that works in the range from 160 GHz to 1 THz can be efficiently realized in a low-cost SiGe HBT technology. "Combining spectroscopic methods with classical imaging, both provided by this system, may be of special interest for multiple applications", explains the IHP-scientist. Forming an image at different frequencies may help to isolate the samples surrounded by confusing materials. "An example would be to reveal healthy from cancerous regions of tissue, or cracks and delaminations", adds Dr. Bernd Heinemann.

The renowned Microwave Prize recognizes the authors in any official IEEE publication during the calendar year that is judged the most significant in the field of interest of the Microwave Theory and Techniques Society. The ceremony this year took place in Hawaii.



Got awarded: Dr. Bernd Heinemann received the Microwave Prize 2017 in Hawaii.

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## About IHP:

The IHP is an institute of the Leibniz Association and conducts research and development of silicon-based systems and ultra high-frequency circuits and technologies including new materials. It develops innovative solutions for application areas such as wireless and broadband communication, security, medical technology, industry 4.0, automotive industry, and aerospace. The IHP employs approximately 300 people. It operates a pilot line for technological developments and the preparation of high-speed circuits with 0.13/0.25  $\mu\text{m}$  BiCMOS technologies, located in a 1000 m<sup>2</sup> class 1 cleanroom.

[www.ihp-microelectronics.com](http://www.ihp-microelectronics.com)

\*The paper was published in February 2015 under the title "160-GHz to 1-THz Multi-Color Active Imaging With a Lens-Coupled SiGe HBT Chip-Set" in the journal "IEEE Transactions on Microwave Theory and Techniques".

