

## NEO 2015 for KIT Team: New Method for Early Detection of Breast Cancer

Team of KIT Scientists Is Granted Innovation Prize by the Karlsruhe Technology Region. Funding Phase on KIT's Crowdfunding Platform to Start in October 2015



Scientists of KIT and physicians of the university hospital of Mannheim with the prototype 3D ultrasonic computer tomograph (from left to right: Nicole Rüter, Elisa Walker, Clemens Kaiser, Torsten Hopp, Julia Knaut, Michael Zapf). (Photo: Markus Mertens)

The “3D Ultrasonic Computer Tomography” (3D-USCT) project of Karlsruhe Institute of Technology (KIT) is granted the NEO 2015 Innovation Prize in the amount of EUR 20,000 by the Karlsruhe Technology Region. The new imaging method for early detection of breast cancer promises to produce images of very high quality. It is the defined goal to reliably detect tumors of five millimeters in size or smaller for early diagnosis and improved chances of cure.

“Granting of NEO 2015 to a KIT project once again reflects the innovative power of our research,” the President of KIT, Professor Holger Hanselka, says. “For years, we have been supporting our employees by innovation funds for the commercialization of promising ideas of benefit to society. The NEO-winning project is an excellent example.”

The process developed by the team of Nicole Rüter of the KIT Institute of Data Processing and Electronics is based on ultrasound and,

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hence, has many advantages. Uncomfortable compression of the breast, for instance, is no longer required. The USCT process is not associated with any radiation exposure, such that taking any number of images is no problem. 3D imaging of the freely suspended breast additionally facilitates comparison of images made at various times.

The process yields three different images of various physical properties of the tissue: Reflectivity, sonic speed, and attenuation. All properties are affected by breast cancer. The more image information is available, the better can benign be distinguished from malignant. For this reason, the process promises to reach a high hit rate even in difficult cases. 3D ultrasonic computer tomographs are planned to be much cheaper in procurement and operation than 3D magnetic resonance scanners.

To demonstrate the efficiency and reproducibility of the new process, a study is presently being carried out with 200 patients at the university hospital of Mannheim.

### **Support 3D Ultrasonic CT by Crowdfunding**

The crowdfunding platform [www.kitcrowd.de](http://www.kitcrowd.de) of KIT will continue to support the project “Früher erkennen was wichtig ist – 3-D Ultraschall-Computer-Tomographie” (detecting earlier what is important – 3D ultrasonic computer tomography) in the next phase. When the study will start in October, the project will present itself to the public.

Information on the project and on ways of supporting it via the KIT crowdfunding platform: <http://www.kitcrowd.de/home/projekte-entdecken/technologie-gruenden/3d-usct/>.

### **About NEO 2015**

With the NEO Innovation Prize, the Karlsruhe Technology Region seeks to reward innovative solutions affecting future life. Every year, the prize is granted by the Karlsruhe Technology Region in another field. The field in the focus of NEO 2015 was health technology. Innovative solutions in the areas of diagnostics, therapy, rehabilitation, prevention, health care, and telemedicine were searched for.

**Karlsruhe Institute of Technology (KIT) is a public corporation pursuing the tasks of a Baden-Wuerttemberg state university**

**and of a national research center of the Helmholtz Association. The KIT mission combines the three core tasks of research, higher education, and innovation. With about 9,400 employees and 24,500 students, KIT is one of the big institutions of research and higher education in natural sciences and engineering in Europe.**

*Since 2010, the KIT has been certified as a family-friendly university.*

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