

## VDE Ring of Honor for Professor Georg Bretthauer

Association for Electrical, Electronic, and Information Technologies (VDE) Honors KIT Scientist for Research Relating to Measurement and Automation Technology



Award ceremony at the congress "Smart Cities": VDE President Dr. Joachim Schneider and Professor Georg Bretthauer with VDE legal adviser Dr. Beate Mand. (Photo: VDE)

**Professor Georg Bretthauer, Karlsruhe Institute of Technology (KIT), receives the VDE Ring of Honor, the highest award granted for merits in research and development. The VDE honors Bretthauer's extraordinary commitment to measurement and automation technology. At the KIT, the engineer and computer scientist among others developed an artificial accommodation system: Artificial lenses inserted in case of diseases, such as cataract, are to automatically focus objects at variable distances. The results are now incorporated in the current project on an intelligent contact lens.**

Professor Georg Bretthauer heads the KIT Institute of Applied Computer Science / Automation (AIA) and is Member of the Board of the Institute of Applied Computer Science (IAI). His research work focuses on mechatronics and biomechanics, learning systems, modeling, simulation, and optimization as well as on methods, processes, and tools enabling complex perceptions by technical systems. His

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central concern is the application of theoretical findings in industrial practice.

His research results in medical engineering have met with high international recognition. Apart from the artificial accommodation system, Bretthauer also developed and tested an adaptive nerve prosthesis for the regeneration of nerve lesions. Nerve lesions are injuries or malfunctions caused by traffic, work, and sports accidents or by burns, stitch damage, and tumors. A few years ago, the researchers for the first time succeeded in regenerating nerve ends separated by eight millimeters using the nerve prosthesis. Within the framework of such research projects, Georg Bretthauer interdisciplinarily cooperates with physicians and scientists of the universities of Rostock and Graz. Bretthauer was the only non-physician so far, who received the Honorary Doctorate of the Medical University of Graz for his achievements in the area of university development and cooperation of steering bodies. Moreover, Bretthauer, as a young researcher, already worked on identifying multi-parameter systems and large hierarchically structured systems and focused on the calculation of reliability and maintenance planning of large energy networks and, thus, contributed to the further development of the theory of large technical systems.

Yesterday evening (Monday, October 20, 2014), Professor Bretthauer was awarded the Ring of Honor by VDE President Dr.-Ing. Joachim Schneider at the VDE congress "Smart Cities" in Frankfurt.

### **About the Person**

Professor Georg Bretthauer completed his diploma in electrical engineering at the Technical University of Dresden in 1970. In 1977, he was awarded his doctorate in control technology. He obtained his postdoctoral lecture qualification in automation technology in 1983, also at TU Dresden. After a professorship for control technology at the TU Bergakademie Freiberg, Georg Bretthauer was appointed professor and Head of the Institute of Applied Computer Science / Automation Technology at the then University of Karlsruhe and Head of the Institute of Applied Computer Science of the then Forschungszentrum Karlsruhe in 1997. Far before the establishment of the KIT, was he active at both precursory institutions. Among his scientific awards are the Honorary Professorship of the Beijing Institute of Technology (BIT) as well as the Honorary Doctorates of the Otto von Guericke University of Magdeburg and the Medical University of Graz. In addition, he was awarded the Order of Merit of the VDI and the Otto Winkler Medal of Honor of the VDI/VDE Society for

Measurement and Automation Technology (GMA). Georg Bretthauer was and is active in a number of national and international associations and expert bodies.

**The Karlsruhe Institute of Technology (KIT) is a public corporation according to the legislation of the state of Baden-Württemberg. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. Research activities focus on energy, the natural and built environment as well as on society and technology and cover the whole range extending from fundamental aspects to application. With about 9400 employees, including more than 6000 staff members in the science and education sector, and 24500 students, KIT is one of the biggest research and education institutions in Europe. Work of KIT is based on the knowledge triangle of research, teaching, and innovation.**

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