Signal Processing Without Limits

New Helmholtz International Research School for Teratronics Links Photonics with Electronics/ Opening on May 03

High-performance computing center: In the future, teratronic systems will allow for the real-time processing of large data flows of several terabits per second. (Photo: Markus Breig, KIT)

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Boundaries between electronic and optical signal processing are fluid and open up new opportunities. This requires a new approach in research and education: Teratronics links electronics with photonics and nanotechnologies. It allows for the transmission of signals at high frequencies and attractive data transmission rates. The corresponding new Helmholtz International Research School for Teratronics (HIRST) at KIT will be opened officially on Thursday, May 3, 14 hrs. Representatives of the media are cordially invited.

The Helmholtz International Research School for Teratronics will combine the disciplines of physics, electrical engineering, informatics, and mechanical engineering. Teratronics covers the complete electromagnetic spectrum from gamma radiation to terahertz and millimeter waves for the further processing of three-dimensional, nano- and microtechnological structures. New photonic-electronic components working at highest bit rates and frequencies in the terabit/second or terahertz range can be developed.

The graduate school and its education concept meet the growing needs of science and industry. There is a considerable demand for experts who are able to conduct research in the fields of medical engineering, sensor and security technologies, communications, and energy technology.

Education of PhD students at the Helmholtz School will focus on basic physical principles of teratronic components, materials sciences for the fabrication of these components, engineering and systems integration, and application-specific medical engineering and information technology. HIRST is a joint education platform of several institutes of KIT. It is managed by the International Department.

Opening Ceremony
Thursday, May 3, 2012
14.00 hrs
KIT Campus South, lecture hall NTI (building 30.10)

14.00 **Welcome & Coordinator Speech**
Professor Jürg Leuthold, Institute of Photonics and Quantum Electronics/Institute for Microstructure Technology, KIT

14.20 **Scientific Talk I:**
Integrated Circuits for Industrial Wireless Sensing Applications
Professor Robert Weigel, Friedrich-Alexander University of Erlangen-Nurnberg, Chair for Technical Electronics

15.00 **Scientific Talk II:**
Terahertz Sensors for Space and Sub-orbital Radio Observatories
Dr. Alexander Karpov, California Institute of Technology

16.00 **Reception**

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