

## Excellence Strategy: KIT Reaches Final of Clusters of Excellence Funding Line with Four Initiatives

Full Proposals on Projects in Informatics, Materials Science, Elementary Particle and Astroparticle Physics, as well as Energy Research – President Hanselka: “Big Success for KIT”



*KIT is invited to submit four full proposals for Clusters of Excellence. (Photo: Manuel Balzer, KIT)*

**With four full proposals, Karlsruhe Institute of Technology (KIT) will enter the final round of the funding line “Clusters of Excellence” in the Excellence Strategy launched by the federal and the state governments. KIT convinced the international Committee of Experts with its draft proposals on algorithms for large data volumes, additive manufacturing in 3D, dark matter, and new materials and technologies for energy storage. The results of the first round were announced by the German Research Foundation (DFG) in Bonn today.**

“Submission of four convincing draft proposals in the first round is a big success for KIT,” says the President of KIT, Professor Holger Hanselka. “This clearly reflects that we are very well-prepared with our research profile. The Excellence Strategy is a hard competition with strong competitors – we accept this challenge with determination and high motivation.”

“With today’s decision, we have very successfully taken the first hurdle in this selection process. This mainly is the result of the highly

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committed and interdisciplinary cooperation of our scientists and supporting service units at KIT,” says Professor Oliver Kraft, KIT Vice President for Research. “The success in the first selection round is a motivation for us all. We are looking forward to presenting our projects in detail in the full proposals, also together with our partners in Heidelberg and Ulm.”

In total, 195 initiatives from all over Germany submitted draft proposals for Clusters of Excellence. 88 of them are now invited by the experts to submit full proposals. KIT will enter the final round with full proposals on the following topics:

### **Algorithms as a Driver of Information Society – Algorithm Engineering for the Scalability Challenge (AESC)**

Algorithms are crucial to many computer applications and have an increasing influence on science, engineering, and our daily life. It will be important to handle a strongly increasing amount of data to be processed (Big Data) in spite of a stagnating capacity of single processors. The “Algorithm Engineering for the Scalability Challenge (AESC)” initiative accepts this challenge. The interdisciplinary research program of the KIT Information – Systems – Technologies Center focuses on pushing algorithms development in a cycle of design, analysis, implementation, and experimental evaluation of key applications and, thus, closing the gap between required and available computing capacities.

### **3D Designer Materials – 3D Matter Made to Order**

The “3D Matter Made to Order” initiative of KIT and the University of Heidelberg pursues a highly interdisciplinary approach combining natural and engineering sciences. The planned research cluster concentrates on three-dimensional additive manufacturing techniques, from the molecular level to macroscopic dimensions. These methods are to be used to produce components and systems by nano printing at maximum process speed and resolution for novel applications in materials and life sciences.

### **Exploring Dark Matter – Properties and Interactions of an Invisible World**

The “Exploring Dark Matter” initiative of the University of Heidelberg and KIT covers the exploration of dark matter that makes up 85% of matter in the universe, is invisible, and presently can be identified by its gravitative interaction only. The research cluster specifically brings

together particle and astroparticle physicists, astrophysicists, cosmologists, and engineers, the objective being to come closer to solving this puzzle of the universe.

### **Energy Storage beyond Lithium: New Concepts for a Sustainable Future**

Successful implementation of the energy transition requires new materials and technologies for the storage of electric energy. The “Energy Storage beyond Lithium” initiative of KIT and Ulm University pursues a multidisciplinary approach with electrochemists, material scientists, theoretical modelists, and engineers being involved. The central objective of the planned research cluster is to develop fundamental understanding of electrochemical energy storage in novel systems, to combine fundamental material properties with critical performance parameters, and to establish the basis for practical application of post-lithium technologies.

In the first round, KIT submitted eight draft proposals in total.

### **Initiatives for Clusters of Excellence – Information on Selection**

The draft proposals submitted were reviewed by 21 international expert panels according to scientific quality criteria in summer 2017. On September 28, 2017, the Committee of Experts decided on the initiatives to be invited to submit full proposals.

The selected consortia now have to finalize and submit their full proposals by February 21, 2018. After panel reviews from April to July 2018, the Excellence Commission consisting of members of the Committee of Experts and the Federal and State Ministries of Science will make its final funding decision for Clusters of Excellence in September 2018. Funding will begin on January 01, 2019. In total, about EUR 385 million annually will be available for this funding line.

### **The Excellence Strategy of the Federal and State Governments**

The aim of the Excellence Strategy is to strengthen Germany's position as an outstanding place of research in the long term and further improve its international competitiveness. It is designed to continue

the development of German universities successfully begun with the Excellence Initiative in 2005 by supporting research of the highest standard, enhancing research profiles, and facilitating cooperation in the science system. The program covers two funding lines. "Clusters of Excellence" cover project-based funding in internationally competitive fields of research at universities or university consortia. The funding line "Universities of Excellence" is to strengthen universities as individual institutions or as university consortia in the long term and further develop their leading international role on the basis of successful Clusters of Excellence. The funding decision for the funding line "Universities of Excellence" will be made in July 2019. Submission of proposals in the funding line "Universities of Excellence" requires funding of two Clusters of Excellence at least.

**More information:**

[http://www.dfg.de/en/research\\_funding/programmes/excellence\\_strategy/index.html](http://www.dfg.de/en/research_funding/programmes/excellence_strategy/index.html) and [https://www.wissenschaftsrat.de/en/fields-of-activity/excellence\\_strategy.html](https://www.wissenschaftsrat.de/en/fields-of-activity/excellence_strategy.html)

**Being "The Research University in the Helmholtz Association," KIT creates and imparts knowledge for the society and the environment. It is the objective to make significant contributions to the global challenges in the fields of energy, mobility and information. For this, about 9,300 employees cooperate in a broad range of disciplines in natural sciences, engineering sciences, economics, and the humanities and social sciences. KIT prepares its 26,000 students for responsible tasks in society, industry, and science by offering research-based study programs. Innovation efforts at KIT build a bridge between important scientific findings and their application for the benefit of society, economic prosperity, and the preservation of our natural basis of life.**

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

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