

The Amazing Field of Science: Bioeconomy to End the Ecological Crisis

Population growth and the increasing standard of living make our society face big ecological challenges: Climate change, littering of the seas, dwindling agricultural areas, resource scarcity. Bioeconomy aims at replacing fossil by regenerative resources and at using advanced and sustainable technologies based on biological knowledge and principles. Visions and questions relating to bioeconomy, the subject of the current science year, were in the focus of the first digital annual celebration of Karlsruhe Institute of Technology (KIT).

“Many people are very concerned about the future of our planet – and unfortunately, there are many reasons justifying this concern,” said the President of KIT, Professor Holger Hanselka, at the annual celebration. “Climate change, water crises, dwindling agricultural areas and resources – many of our global problems are human-made. Transformation of our economy into a sustainable and science-based bioeconomy is the logical consequence. At KIT, we feel responsible for supporting the development of necessary technologies and strategies and for analyzing the risks and effects of solutions proposed. In this way, we wish to support decision-makers in politics, industry, and society.”

KIT is in an excellent position to cope with these challenges and connected closely to strong partners in industry, Hanselka said: “KIT’s innovations and expertise are in high demand today, among others, in the areas of bioenergy, renewable fuels, innovative recycling, or sustainable construction,” Hanselka continued. Scientists of KIT develop novel algal polymers or cultivation methods for crops of increased resistance, for instance. “We are working on a sustainable future - our thinking extends from fundamental research to application.”

Highlights of the Years 2019 and 2020

The President’s review of the past two years did not only focus on cutting-edge science, but also on a very recent milestone. In February 2021, the Federation and State agreed on further steps towards completing KIT’s merger that is unique in the Federal Republic of Germany. “For a long time, we have been working for reaching this goal. We hope that better use of our unique synergies will give us more flexibility and agility in excellent research,” Hanselka said. Good acting of KIT as an entity is reflected by the success in the Excellence Strategy competition and by the very good results of the evaluations made for program-oriented funding by the Helmholtz Association, he added.

In her video address, Federal Minister of Education and Research Anja Karliczek thanked the staff members of KIT for their continued high commitment to research and education under the difficult conditions of the pandemic: “We need excellent academic education and top-level research to be well prepared for the future. Future scientific strength will lie in strong networks of different partners. In this respect, KIT is a pioneer and supports prosperity and competition.”

“As ‘The Research University in the Helmholtz Association’, Karlsruhe Institute of Technology can offer research, education, and innovation from one source. It is this capability of KIT of bringing things together that will be urgently needed in future,” said Theresia Bauer, Minister for Science, Research, and the Arts of the State of Baden-Württemberg. “We rely on KIT when it comes to global challenges and key technologies for the future, because KIT is doing pioneer work and always at the cutting edge when studying autonomous driving, establishing the Innovation Campus “Future Mobility” in cooperation with Stuttgart University, or conducting research relating to energy storage systems or regenerative energy production.”

“Adoption of the second KIT Further Development Act was an important milestone. KIT can now continue to establish itself as a unique and excellent science institution, also far beyond the borders of Germany,” said the Chairman of KIT’s Supervisory Board, Professor Michael Kaschke. “Supporting young scientists, increasing transfer activities, and enhancing international visibility are important issues. All this will only be successful, if KIT will be given high autonomy. Supporting these efforts is a big motivation for me as Chairman of KIT’s Supervisory Board.”

Panel Discussion: Bioeconomy and the Climate

During the annual celebration, scientists of KIT discussed the potential of bioeconomy to lead us out of the climate crisis. The participants were Dr. Christine Rösch, Head of the “Sustainable Bioeconomy” Research Group of the Institute for Technology Assessment and Systems Analysis; Professor Jörg Sauer, Head of the Institute of Catalysis Research and Technology and one of the persons responsible for research at KIT’s bioliq® pilot plant; and Professor Almut Arneht from the Institute of Meteorology and Climate Research, who also is leading author of the special report on climate change and land systems of the World Climate Council.

Application- and Research-oriented Teaching: KIT Department Teaching Awards 2021

Professor Alexander Wanner, Vice-President for Higher Education and Academic Affairs of KIT, said that the pandemic also was associated with big challenges for KIT’s academic education. In a big effort, study courses were implemented online within shortest periods of time. “It is highly impressive to see how determined, creative, and committed our teachers are. They do everything possible to enable studies during the lockdown phases and to ensure that this time will not be lost by our students,” Wanner said.

At the annual celebration, KIT honored the high commitment of its teachers by granting Department Teaching Awards. The 22 awardees had been nominated by the eleven KIT Departments in agreement with the student representations and studies commissions.

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 9,600 employees cooperate in a broad range of disciplines in natural sciences, engineering sciences, economics, and the humanities and social sciences. KIT prepares its 23,300 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. KIT is one of the German universities of excellence.

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