Joint News Release

Tailored superconductors for energy technology

- **Karlsruhe Institute of Technology (KIT) and Deutsche Nanoschicht GmbH establish joint laboratory**
- **Research institute and BASF subsidiary cooperating to further develop thin film superconductors**

Karlsruhe and Rheinbach, October 29th, 2014 – The Karlsruhe Institute of Technology (KIT) and Deutsche Nanoschicht GmbH have made it their goal to develop tailored high-temperature superconductors for energy technology applications. The research institute and the BASF subsidiary New Business GmbH have signed relevant cooperation agreements.

As part of the collaboration, the partners will open a laboratory at the Institute for Technical Physics of KIT in early 2015. Here, the scientists from Karlsruhe together with the experts of Deutsche Nanoschicht will optimize and customize superconducting thin film conductors for individual applications. Potential areas of use for the high temperature superconductors produced by Deutsche Nanoschicht are current limiters and transformers for public power grids, power cables for urban supply networks and coils for generators and electric motors. Depending on the application, the scientists have, for example, to adapt the properties of the superconductors for alternating current, very high current and in strong magnetic fields.

"KIT has extensive knowledge about the synthesis and use of superconductors. Cooperation with KIT therefore ideally complements our activities in building up our growth field E-Power Management," says Dr. Stefan Blank, Managing Director, BASF New Business GmbH.

"Our unique coating technology will make it possible in future to manufacture superconductors with the price-performance ratio necessary for them to be introduced broadly throughout the energy sector," adds Dr. Michael Bäcker, Managing Director of Deutsche Nanoschicht GmbH.

Prof. Dr. Bernhard Holzapfel of the Institute of Technical Physics at KIT will supervise the new laboratory. "The variable coating technology of Deutsche Nanoschicht enables the superconductors to be optimally adapted to the market requirements. We are looking forward to jointly further developing these superconductors for a wide variety of electrotechnical applications", adds Holzapfel.

Deutsche Nanoschicht has developed an innovative process for producing thin films by means of chemical solution deposition. This process allows high-temperature superconductors to be manufactured in a much more efficient and resource-conserving manner. These superconductors carry current virtually without loss, thereby allowing significant savings in generating and transporting electricity.

BASF's E-Power Management growth field includes technology developments, materials and solutions for the entire electricity value chain. It focuses on resource-conserving and efficient electricity generation, transmission, storage and the more efficient use of electrical energy.

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About Deutsche Nanoschicht

As a specialist in high-temperature superconductors and chemical coatings, Deutsche Nanoschicht GmbH was founded by Dr. Michael Bäcker in Rheinbach, Germany, in 2011. The highly qualified team of 40 employees has many years of expertise in the fields of chemical coating technology, electroceramic coatings and plant engineering. In June 2013, BASF New Business GmbH acquired all the shares of the technology company Deutsche Nanoschicht GmbH. Further information about Deutsche Nanoschicht is available on the internet at www.d-nano.com.

About BASF New Business GmbH

BASF New Business GmbH, a 100 percent subsidiary of BASF SE, was founded in April 2001. It aims to open up business areas with above-average growth rates that lie outside BASF's current activities. BASF New Business GmbH commissions research from BASF's R&D units and cooperates with startup companies, industrial partners, universities and potential customers. Further activities include acquisition of direct stakes, initiation of joint ventures and provision of venture capital via the subsidiary BASF Venture Capital GmbH. Further information on BASF New Business is available on the Internet at www.basf-new-business.com.

About KIT

The Karlsruhe Institute of Technology (KIT) is a Corporation governed by public law pursuant to the laws of the Federal State of Baden-Württemberg. It fulfils the mission of a university and the mission of a national research center within the Helmholtz Association. Main research topics are energy, natural and built environment as well as society and technology, from fundamental questions to application. With about 9,400 employees, including more than 6,000 in science and teaching, as well as 24,500 students the KIT is one of Europe's largest research and teaching institutions. KIT pursues its tasks in the knowledge triangle of research, teaching and innovation.

About BASF

At BASF, we create chemistry – and have been doing so for 150 years. Our portfolio ranges from chemicals, plastics, performance products and crop protection products to oil and gas. As the world's leading chemical company, we combine economic success with environmental protection and social responsibility. Through science and innovation, we enable our customers in nearly every industry to meet the current and future needs of society. Our products and solutions contribute to conserving resources, ensuring nutrition and improving quality of life. We have summed up this contribution in our corporate purpose: We create chemistry for a sustainable future. BASF had sales of about €74 billion in 2013 and over 112,000 employees as of the end of the year. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the Internet at www.basf.com.