

PRESS RELEASE

PRESS RELEASE

June 14, 2019 || Page 1 | 2

Winning team from “Hacking Engineering” chooses Fraunhofer IST technology

The “Hacking Engineering” Hackathon is a new format which was initiated by the Fraunhofer-Gesellschaft and the VDMA, Europe’s largest industry association for mechanical engineering, and which took place in Berlin from 17th to 19th May 2019. The idea is to bring together companies from the fields of mechanical engineering and systems engineering with startups from research and interested students in order to collaboratively develop innovative future-oriented technologies. The teams of participants had 48 hours in which to solve one of four specified challenges. One of the winning teams chose for its solution the multifunctional thin-film sensor system developed at the Fraunhofer Institute for Surface Engineering and Thin Films IST – and thereby won “Kill the valve”.

In Challenge 4, “Kill the valve”, the objective was the development of a sensor system which can be integrated into the rubber of KBS butterfly valves in order to measure, for example, the media temperature or the flow rate. The aim is to apply the acquired data to extend the replacement intervals of the butterfly valves. Dr. Saskia Biehl, Manager of the “Micro and Sensor Technologies” group at the Fraunhofer IST, participated in the Hackathon as a mentor. “The fourth challenge simply screamed out its suitability for the utilization of the sensors which we developed at the Institute as a solution approach for smart butterfly valves.” The multisensory thin film system can be deposited and structured on differing materials in order to measure mechanical pressures, temperatures, abrasion or clearances.

A group of four students – “Absperklappen” – chose the IST technology in order to develop their machine-learning approach for the condition monitoring and maintenance of butterfly valves. With the support of Dr. Biehl, they worked for 48 hours on their solution approach and its practical implementation. In the subsequent presentation in front of the expert jury, they asserted themselves against the other teams and won the boot camp in the field of the fourth challenge.

“Explaining our technology to the students and startups and then seeing what they produced with it and what creative ideas and solution approaches they developed was incredibly exciting,” stated Dr. Saskia Biehl. “And to then receive direct on-site feedback from industry partners is very helpful and fascinating. I would definitely participate in such a format again at any time.”

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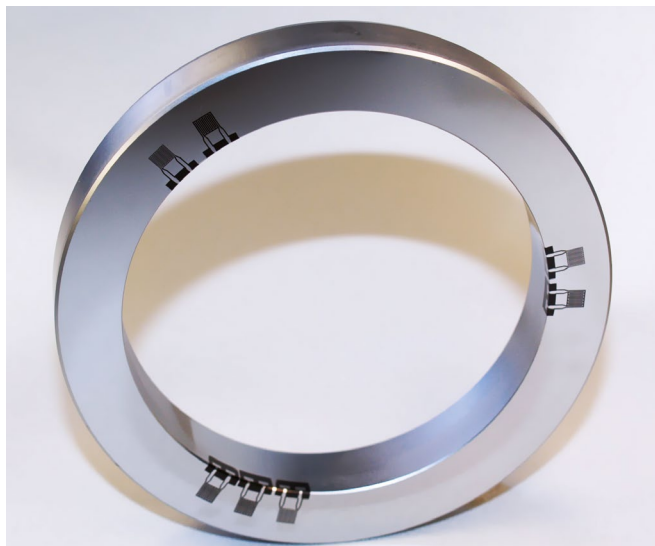
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PRESS RELEASE

June 14, 2019 || Page 2 | 2

The winning team "Absperklappen". ©Fraunhofer /VDMA



Meander structures for temperature detection at the axial bearing ring surface of KSB AG. ©Fraunhofer IST, Manuela Lingnau

The Fraunhofer Institute for Surface Engineering and Thin Films IST is an innovative partner for research and development in surface technology, with expertise in the associated product and production systems. The aim is to develop customized and sustainable solutions: from prototypes, through economic production scenarios, to upscaling to industrial magnitudes – and all this whilst maintaining closed material and substance cycles. The Fraunhofer IST is one of the seventy-two institutes of the Fraunhofer Society, Europe’s leading research organization, and with its about 120 employees has an operating budget of 12 million euros.