

# FOREWORD

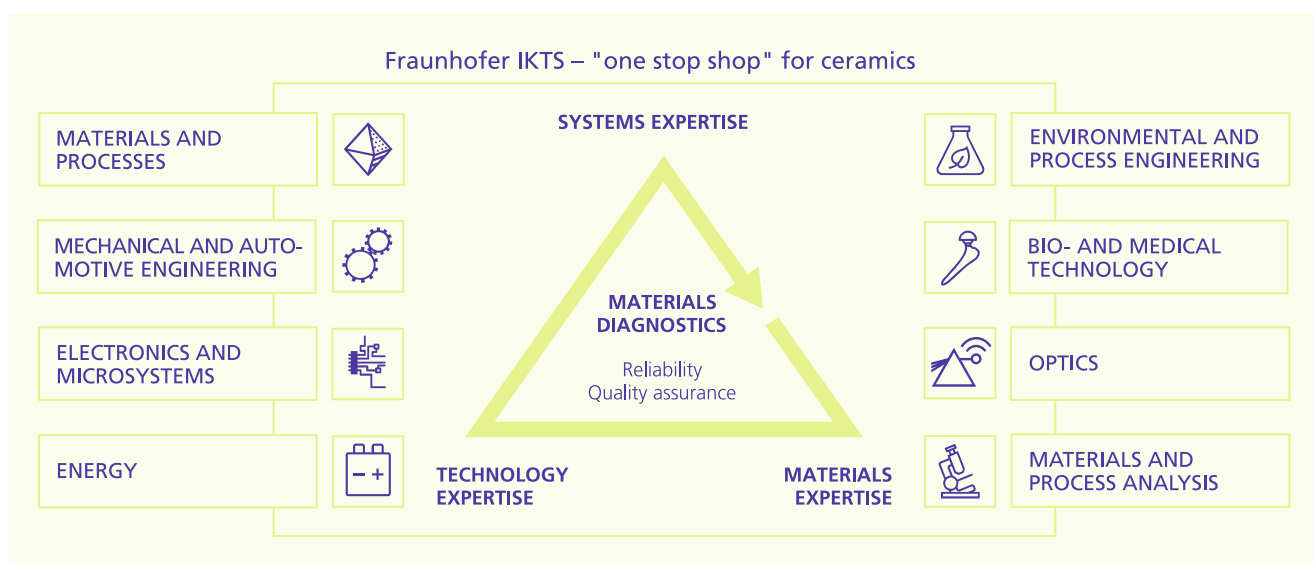


ANNUAL REPORT 2017/18

## Dear partners and friends of IKTS,

We are pleased to present our new annual report. 2017 has been another very successful year, and our economic figures bear this out: our number of staff has increased to now 680. Our total budget for 2017 has slightly exceeded the 55-million-euro mark. This includes 3 million euros for investment used to strengthen our infrastructure in the various areas of structural and functional ceramics. We have earned more than 42 million euros from industry-oriented third-party-funded projects, of which almost 50 % are directly from industry. This is confirmation that we are doing well in meeting our research goals, which are geared toward knowledge transfer, in line with Fraunhofer's mission. We are determined not to let up in these efforts and remain at your disposal at any time for future collaboration. I would like to say a big thank you to all our partners for their cooperation. We would also like to thank the states of Saxony and Thuringia, as well as the federal government, for their continued support.

We will continue to cover the field of applied ceramics research in all its breadth, as evidenced in the pages of this report. The areas of additive manufacturing, environmental process engineering and energy storage technologies have seen particularly dynamic development. For instance, we founded a battery research project center in Lower Saxony in 2017, in collaboration with our colleagues of Fraunhofer IFAM and Technische Universität Braunschweig. This center is to house research activities not just on Li-ion batteries for mobile-, but also on storage solutions for stationary applications. This includes electrochemical storage systems such as high-temperature  $\text{NaNiCl}_2$  batteries as well as electrolytic processes such as SOEC for hydrogen technology. Since manufacturing processes are a big factor in this regard, we benefit in particular from our capabilities in non-destructive testing and process monitoring, which are available in our IKTS site in Dresden-Klotzsche.





We have also strengthened our position from an organizational perspective, thanks to our newly founded battery research department. We will continue to develop our numerous activities in environmental process engineering with the new core area "Closed-loop economy for smart agriculture". In addition to membrane technology, sensors and actuators also play an important part in this area. In this regard, we are now able to use our know-how on systems used in particularly harsh environments, won through our role in the Fraunhofer lighthouse project "eHarsh". This subject is also especially relevant for the area of security research, which we intend to develop further. It should also be mentioned that we have repositioned our center in the US to the field of environmental technology, and membrane technology in particular. Our impact in the region can be seen, for instance, in the work done by TRIDELTA CAMPUS HERMSDORF e. V., an association we have founded together with 23 companies from the region around Hermsdorf in Thuringia. As part of this initiative, we want to help to make the high-tech location of Hermsdorf more attractive and visible for clients, skilled workers and investors alike.

Finally, I would like to report that we celebrated the 25th anniversary of IKTS in the reporting period 2017. We may look back proudly on the very successful evolution of our institute. IKTS was founded in January 1992 with a staff of 80 and an operating budget of just under 8 million deutschmarks. Our founding director, Prof. Waldemar Hermel, was able to set the institute on a very promising path and assembled an outstanding team – achievements that have propelled us forward ever since.

It was that team that started the IKTS success story. We want to do everything we can to make this success go on. I thank the whole IKTS team for its efforts. In particular, I would like to express our gratitude to our founding director, Prof. Hermel, who incidentally had another reason to celebrate in January 2018 – his 80<sup>th</sup> birthday. Therefore, on behalf of all our staff at IKTS, I dedicate this year's issue of our annual report to Prof. Hermel.

Lastly, as always, I hereby repeat my offer to make use of our outstanding equipment and our formidable team here at IKTS. We are looking forward to our mutual cooperation.

Sincerely,

Alexander Michaelis

April 2018

**1** Reception on the occasion of the 80<sup>th</sup> birthday of IKTS founding director Prof. Waldemar Hermel. In the picture f.l.t.r.: his wife Gisela Hermel, Dr. Michael Zins, Dr. Christian Schubert, Prof. Alexander Michaelis, Dr. Gert Leitner, Claus Richter and Dr. Udo Gerlach.