

FOREWORD

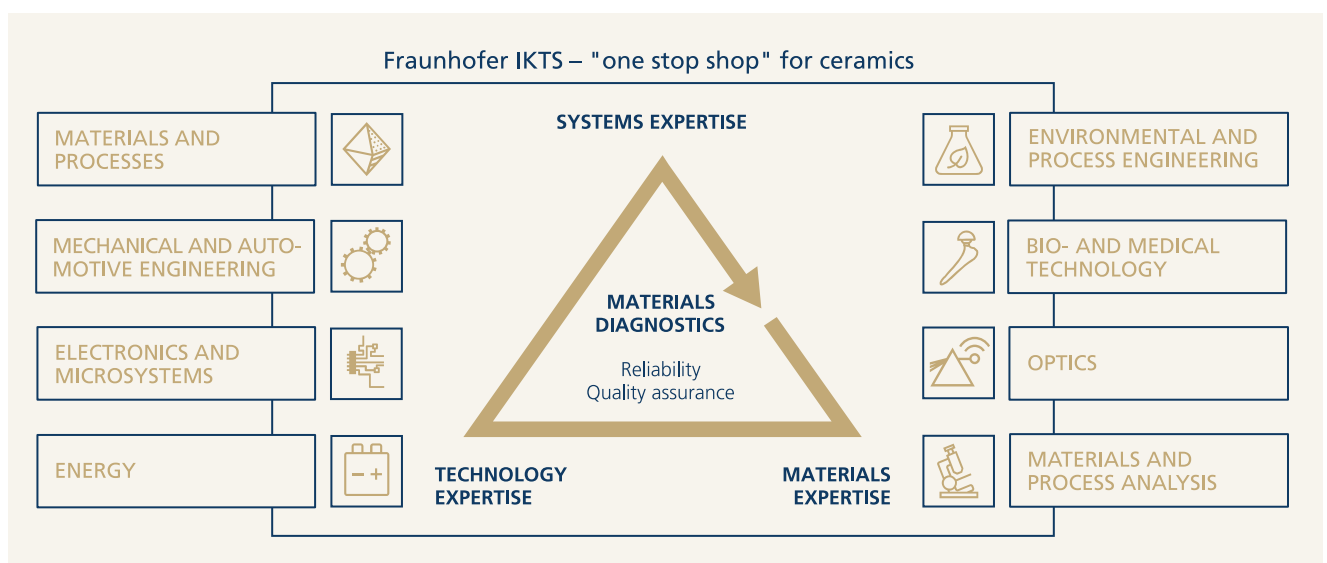
ANNUAL REPORT 2018/19

Dear friends and partners of IKTS,

As we look back on another successful and eventful year, we are pleased to present our annual report. In the reporting year 2018 our total budget was, for the first time, slightly above 60 million euros. Compared with the previous year, this is an increase of approx. 5 million euros. While the number of staff has grown to now 700 at our three sites, a major share of the budget growth was invested to boost many of our areas in structural and functional ceramics. Chief among these are the continued development of our powder preparation facilities, new kiln equipment, shaping technology – specifically in the field of additive manufacturing – and a newly equipped technical center for solid-state battery development. Now as ever, we are ideally equipped to fulfill the mission of Fraunhofer and meet the challenges of applied research to support our partners from the public sector, but also – and especially – from the industry. We would like to thank the Free States of Saxony and Thuringia, as well as the federal government, for their continued support. Our team of scientists, engineers and lab tech-

nicians continues to be at your service to talk with you about ideas for projects and make them reality. I would like to take the opportunity to thank the entire IKTS team for their outstanding efforts.

As mentioned in our previous report, together with Fraunhofer IFAM we have founded a Project Center for Energy Storage and Systems (“ZESS” or “ProZESS”) in Braunschweig, which now receives support from our colleagues at Fraunhofer IST and collaborates closely with Technische Universität Braunschweig. Thanks to this initiative, we are able to develop our know-how in electrochemistry and storage technologies for stationary and mobile applications. We are grateful to the State of Lower Saxony and the Fraunhofer-Gesellschaft for granting the considerable financial funds for this initiative. In addition to our materials know-how, our competence in materials and process diagnostics also plays a major role in this context: It allows us to offer our partners from the industry our





full support in planning novel, fully digitized production facilities. In the Free State of Thuringia in particular, further efforts to expand are being planned; they are currently being coordinated with the state's governing institutions. In this context, our new research group "Cognitive Material Diagnostics" in Cottbus cannot go unmentioned. It is part of the effort to further develop the IKTS competencies in the field of machine learning and data analysis, especially with regard to questions of material diagnostics and non-destructive testing. The research group works closely with the neighboring research cluster "Cognitive Systems" at the Brandenburg University of Technology Cottbus-Senftenberg. This cluster conducts research in technical systems that have the ability to sense, interpret, think and act; it integrates the work of various technical departments, such as information technology, electrical engineering, mathematics and media sciences.

All this means that the subject of digitization in ceramics is ever more important for IKTS: It is incorporated in all our business divisions. In this regard, we have found the business environment of IKTS at its Dresden-Klotzsche site to be very helpful. Another fine success was achieved in our Environmental Engineering business division, where together with other Fraunhofer partners we were able to acquire the new lighthouse project "Cognitive Agriculture" (Cognac). We plan to intensify our efforts in smart agriculture and water technologies – topics we want to develop into a business division of its own. For instance, we have already founded a Fraunhofer Center in Portugal which is dedicated to this area of research, and we are involved in various projects within the framework of the "SIMUL future initiative" hosted by the Environmental Ministry of Saxony.

You can find more highlights from our business divisions in our report. I hope you will enjoy leafing through this edition. As ever, our offer to make use of our outstanding equipment and our formidable team here at IKTS stands. We are looking forward to collaborative projects and are always open to your suggestions with new ideas and topics.

Yours,

Alexander Michaelis

April 2019