

FOREWORD

ANNUAL REPORT 2020/21

Dear friends and partners of IKTS,

what a strange year it has been! Many workflows had to be changed; mobile and digital work has become the norm. The Fraunhofer IKTS team has mastered these transformative steps very well. We were able to continue our work efficiently and to a high standard. Astonishingly, we managed not just to keep up our R&D efforts at the previous year's level, but to even increase them. Our budget has increased by a staggering 11.5 million euros and now totals approx. 76 million euros. Relative to our operating budget of 64 million euros, we have achieved an outstanding total rate of return of more than 86 %, meaning we were able to increase our external income significantly. Income from public funds has increased disproportionately, more than compensating for the shortfalls in our direct industry income. With our industry income rate of approx. 33 %, we remain fully within the target range set by Fraunhofer and have proven once again that we continue to accomplish our mission: research that is targeted towards transfer. Naturally, we will remain at your side as your trusted partner. In these tough times more than ever, research partnerships are particularly important and will always be paramount for us.

Based on our excellent economic result, we were able to invest more than 10 million euros in our technical equipment, of which all sites and business divisions have benefited. This time around, one focus of investment was on characterization tech-

nology. For instance, our new site in Forchheim received more than 3 million euros for correlative microscopy through an EU project we were able to secure (ERC grant). Also, we procured a new scanning electron microscope (Fib-SEM) for our Dresden site. This will enable us to further improve our workflows for sample testing and accelerate development efforts. Furthermore, we have expanded our shaping capabilities and created new floor space. A new technical center should be mentioned in this regard. It consolidates our activities with regard to additive manufacturing. In Hermsdorf, we have rented another building in direct vicinity of our institute, which we will use to expand our water technology research. We are very pleased that this location also houses our new Fraunhofer Attract group, focused on water technologies and headed by Dr. Patrick Bräutigam. The topic of water in all its aspects, from the circular economy to subsea technologies, has thus become an important focal point across all IKTS sites. Recycling is another key topic when it comes to the circular economy. We continue to develop this topic at our new research site, the Fraunhofer Technology Center High-Performance Materials THM in Freiberg. There, we focus specially on battery recycling under the umbrella concept "Research Fab Battery" by the Federal Ministry of Education and Research (BMBF), completing our developments in mobile (Li-ion and solid-state) as well as stationary (Na/NiCl₂) batteries.



We are grateful to the Saxon State Ministry for the Sciences, Culture and the Arts (SMWK) and the Free State of Saxony for their great support in this endeavor. With the recently opened Battery Innovation and Technology Center (BITC) in Arnstadt, the expansion of our production-adjacent battery activities is also going well. On more than 5300 square meters (approx. 57,000 square feet), new battery research opportunities are created here in close collaboration with partners from the industry. We thank the Free State of Thuringia – specifically the Thuringian Ministry for the Economy, Sciences and Digital Society (TMWWDG) – for its outstanding support. In addition to battery research, we also intend to expand our hydrogen technology competencies in the BITC. Based on our decades of experience in fuel cells and electrolysis systems, we want to build demonstration plants at the BITC for the production and use of green hydrogen, which will also be relevant for the ceramics industry. These activities are also meant to support a study on the subject of CO₂-neutral ceramic products, which we conduct together with the German Ceramic Society (DKG) and the Federal Association for the Ceramics Industry (BVKI). We intend to use that study to emphasize the funding needs of the ceramics industry vis-à-vis the federal ministries.

You can find more highlights and developing trends from our business divisions in our report. I hope you will enjoy perusing this edition and find it a source of inspiration for new project ideas. We are always available for discussions, so please do not hesitate to make use of our outstanding equipment. The whole IKTS team is looking forward to our collaboration.

Yours,

Alexander Michaelis

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