

Are you already familiar with our industry-standard services?

- Accredited testing laboratory in accordance with DIN EN ISO/IEC 17025 for various NDT methods
- Certificate of competence of the accredited laboratory to qualify and validate (new) nondestructive testing methods for industrial testing practice in the field of ultrasonic testing
- Rapid transfer to market readiness for qualified, standard-compliant use in industrial applications, both for new developments (in-house developments) or for adaptations
- Our associated quality management system is certified in accordance with DIN EN ISO 9001

Contact

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Sensor and Data Systems for
Safety, Sustainability and Efficiency



Fraunhofer IZFP

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AloX: Sensor system for the detection of non-metallic inclusions in aluminum melts



3D-SmartInspect: Augmented reality assistance system used to support manual testing of components or large surfaces

Sensor and Data Systems for Safety, Sustainability and Efficiency

Fraunhofer IZFP is an internationally renowned research and development institute for applied industrial research located in Saarbrücken and Ilmenau.

Its activities center around the *development of smart sensor and data systems for safety, sustainability and efficiency*. The scientific and technological solutions support research and industry and help to shape our society and our future.

Based on our 50 years of tradition and excellence, we continue to advance and expand our existing research and development portfolio. The associated strategic research program comprises four performance fields:

- Unconventional sensor systems for volume and surface properties,
- Software and services for sensor data management along the data value chain,
- Software and services for data analysis as well as data value creation using artificial intelligence (AI) and machine learning (ML) methods,
- Consulting and holistic services covering all aspects of measuring, testing, data value creation and standardization.

These performance fields are at the core of our long-standing expertise in technical testing and sensor physics. We are continuously expanding and updating our understanding in these fields through

technologies and concepts from the areas of data management and data analysis, including AI and ML methods. This allows us to act as a single-source developer and supplier of technological solutions along the entire data value chain, which are aimed at optimizing safety, sustainability and efficiency in a wide range of applications.

Our decades of experience in applications and processes for materials and their finished products are both a solid base and the impetus for the future research mission of Fraunhofer IZFP. By expanding our scope to include aspects of digital signal processing as well as data processing and analysis we are strengthening our classic application fields, such as critical infrastructures, materials and their production processes. At the same time, we are developing and advancing new markets, such as the food industry, a sustainable circular economy, resource efficiency or independence and self-determined living.

Classic, nondestructive testing is currently undergoing transformation towards cognitive, sometimes multi-modal sensor systems with integrated AI or ML technologies. These types of systems then become networked elements of the industrial internet of things and important pillars for modern Industry 4.0 environments.

As part of the digitalization process, our focus is on the ever-growing share of solutions for modern sensor systems, which combine aspects of pure sensor technology with data management and analysis functions (NDE4.0). In the context of NDE4.0, Fraunhofer IZFP also researches and develops pioneering technologies for industrial and research applications.