Are you familiar with our accredited industrial testing services?

- Test laboratory accredited according to DIN EN ISO / IEC 17025 and competent to issue certificates for qualifying and validating (new) non-destructive testing (NDT) processes for industrial testing.
- Accelerated time-to-market and opportunity for qualified, standard-compliant deployment in industrial applications both for new in-house developments and for custom adaptations of innovative NDT technologies in fields where standards have not yet been established.
- Certification of the corresponding quality management system in accordance with DIN EN ISO 9001.

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Fraunhofer IZFP Saarbrücken

NONDESTRUCTIVE MONITORING ALONG THE PRODUCT LIFE CYCLE

Developing sensors and methods, understanding materials and constructing prototype systems – covering all NDT modalities.

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FRAUNHOFER INSTITUTE FOR NONDESTRUCTIVE TESTING IZFP

"Digitizing Industry, © Nataliya Hora – Fotolia"
Mission
Fraunhofer IZFP

- is an internationally renowned R&D center for nondestructive testing methods,
- researches and develops technologies for nondestructive monitoring for material, component and product characterization, and
- develops industrial-grade system solutions to prototype and series maturity, covering the entire range of nondestructive testing methods.

Vision
We align our activities with industry-specific product life cycles from which we derive the current challenges our customers and partners face (“Industry 4.0”).

As a result, the institute operates and supports the paradigm shift away from classical NDT towards comprehensive digitization, monitoring and process control: Quality to-be will no longer be tested into a product, instead, it will be built in. Thus, nondestructive testing must be geared to the demand for under-control processes and must address all aspects of nondestructive monitoring with all of its options for process control.

Competencies and System Solutions
As part of its methodic and technological expertise, Fraunhofer IZFP provides a wide range of competencies for generating sensor-based data, such as:

- Electromagnetics
- Optics
- X-ray
- Thermography
- Ultrasound

Based on these, the institute develops technologies and system solutions for:

- Identification, analysis, and assessment of raw materials and other materials
- Definition of parameters for product design
- Monitoring and control of production processes
- Quality control of products
- Condition monitoring of products during operation / distribution
- Sorting materials in recycling processes

Industrial Sectors

- Automotive
- Railroad
- Energy / Plants
- Semifinished products
- Infrastructure / construction

Crosslinked Data
From the accumulated application data, digital metadata on materials can be provided across enterprises and along the entire value chain. This cross-linking allows shorter development phases, intelligent manufacturing procedures, and new business models. In addition, this results in significant potentials for material / production efficiency and recycling. The related research activities are considered a part of the Federal government’s big data strategy and are integrated into the “Materials Data Space” initiative of the Fraunhofer Materials Group.

Material Changes along the Product Life Cycle

Raw Materials
- Sorting, identification, or assessment of raw materials
- Analysis of static or dynamic properties of materials

Product Development
- Definition of the production process or product parameters
- Monitoring of the production process

Product
- Testing the quality of products or components
- Tracking goods and securing the movement of goods

Operation
- Inspection or condition monitoring of products during the utilization phase
- Identification, assessment, or sorting of scrap

Distribution

Recycling