Main Focus

- Surface and Material Characterization
- Quality Assurance and Optimization
- Virtual Image Processing
- Industrial Image Learning
- Quantum Image Processing
- Condition Monitoring and Predictive Maintenance

Image Processing

What does your department deal with and what constitutes its research work?

Our department develops image analysis algorithms and converts them into industrial-grade software in production. The application areas include sophisticated surface inspection and analysis of microstructures. We develop both new methods and domain-specific machine learning algorithms.

What potential does your department's research have for a better future?

Many methods, especially AI processes, enable savings in resources and energy in production. These topics are becoming increasingly important. But also tasks related to nature conservation and sustainability are solvable by our algorithms.

Where do you see your department in five years?

In five years, AI algorithms will be used in all industrial projects of our department, but also linked to model-based approaches. Many complex quality tests will only become possible in the next few years as a result of developments in AI and hardware. Sustainability issues will become as important as other industry goals, such as cost savings, higher production speed or less waste.

Which three keywords best describe your department?

- Industry-oriented – pragmatic – goal-oriented

Department topics in this report:

www.itwm.fraunhofer.de/en/bv

Contact

Dipl.-Inf. Markus Rauhut
Head of Department
"Image Processing"
Phone +49 631 31600-4595
markus.rauhut@itwm.fraunhofer.de