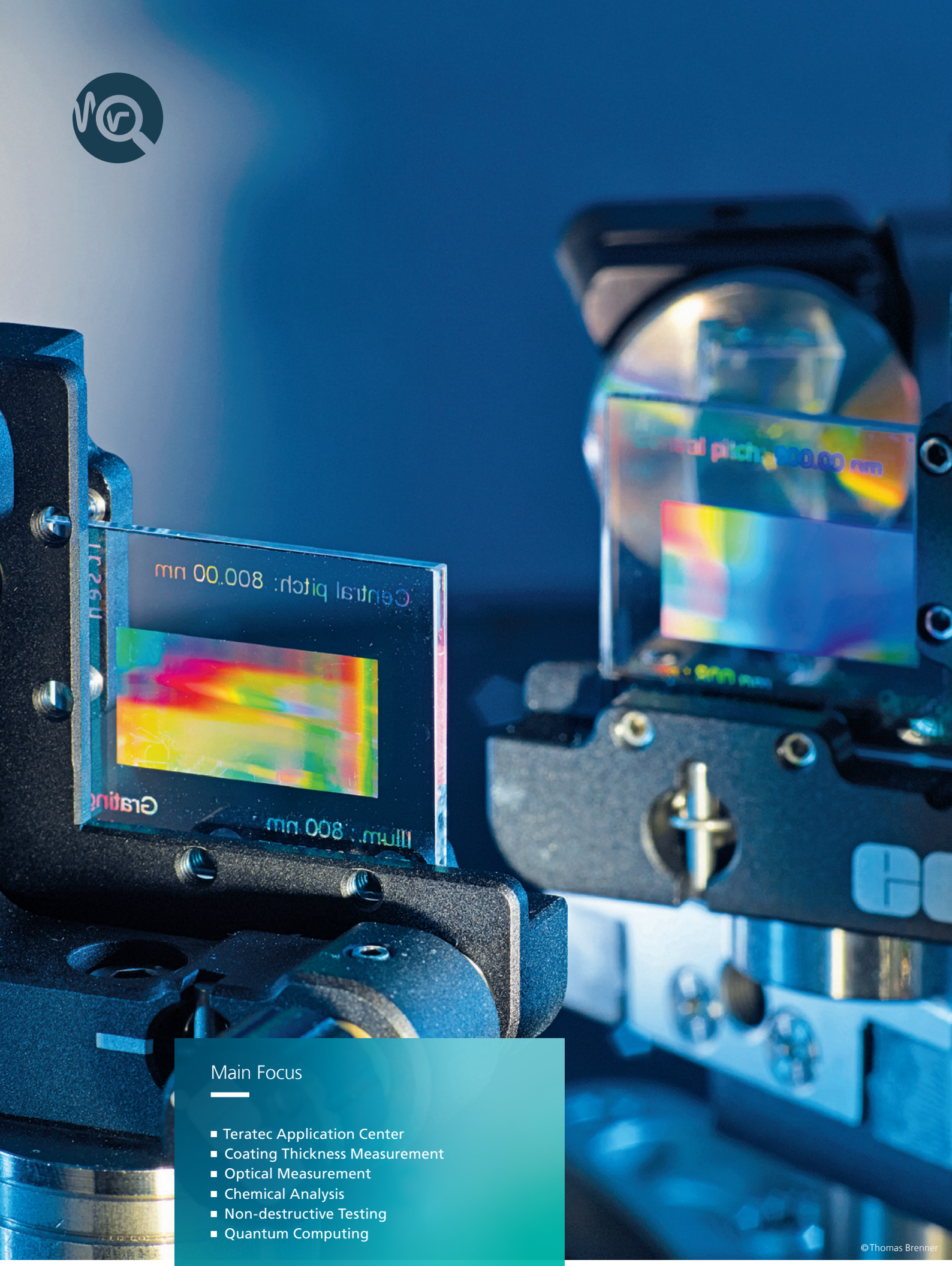


## Main Focus

- Teratec Application Center
- Coating Thickness Measurement
- Optical Measurement
- Chemical Analysis
- Non-destructive Testing
- Quantum Computing

# Materials Characterization and Testing

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

Our work focuses on non-destructive testing for quality control in the industrial manufacturing process. Our applications range from pipe wall thickness measurement to the characterization of multilayer coating systems and insulation around wires. For this purpose, we use electromagnetic waves in the entire spectral range from visible light to the terahertz wave range and use both quantum-inspired measurement technology and the possibilities of machine learning to achieve the best possible results.

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

Non-destructive testing and quality control reduces the number of defective parts. This saves companies time, money, and resources, and gives their customers the certainty of receiving products of the highest quality. Our systems are easy to operate and can be integrated into existing processes. This secures the basis for investment and jobs. Through our research, we generate innovations that guarantee the technological edge needed to survive in global competition.

## Where do you see your department in five years?

The department continues to build on its leadership position for the use of terahertz technology in nondestructive testing and will expand it to include quantum-inspired measurement technology. Testing techniques will cover the entire spectral range and be supported by machine learning in evaluation to reliably identify the widest possible variety of defects. This will allow us to open up new application scenarios that are currently not within reach.

## Which three keywords best describe your department?

- Customer-oriented – innovative – precise

**Department topics in this report:**


- Radome Application Example: Safety Thanks to Terahertz Technology . . . . . S. 24
- Rhineland-Palatinate Promotes Competence Center for Quantum Computing . . S. 31
- T-KOS: Terahertz Technology for Reliable Communications . . . . . S. 45
- Recycling Made Easy – Saving Wood From Bulky Waste With ASKIVIT . . . . . S. 62
- ViDestoP . . . . . S. 66


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