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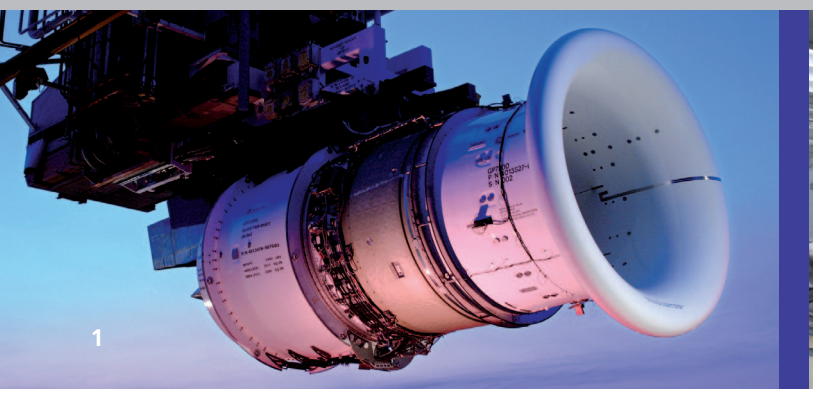

1 *Inspection of coated parts for aircraft engines.*
2 *Coating control in painting processes.*

LAYER CONTROL
WITH TERAHERTZ TECHNIQUES

Similar to all other electromagnetic waves, terahertz waves are also partially reflected at any interface where there is a sudden change in refractive index. This effect can be employed to determine layer thickness using terahertz waves. Simultaneously, the good transmission characteristics of terahertz waves through materials which are opaque in the visible area can be exploited.

The system

- Robust design with long-term stability
- Fiber-coupled terahertz systems
- Simple integration of compact measurement modules into existing production and quality systems
- User-friendly operator and analysis interface

Applications

- **Paint coating:** Single or mulit-layer, wet or dry
- **Ceramic coatings:** PVD or thermally sprayed
- **Plastic layers:** soft or solid
- **Component thickness:** single layer or multi-layer

The benefits

- **Controlling processes:** detecting and correcting deviations in an early stage
- **Increasing quality:** avoiding faulty coatings and component thicknesses
- **Saving material:** reduce safety margins

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TeraTec
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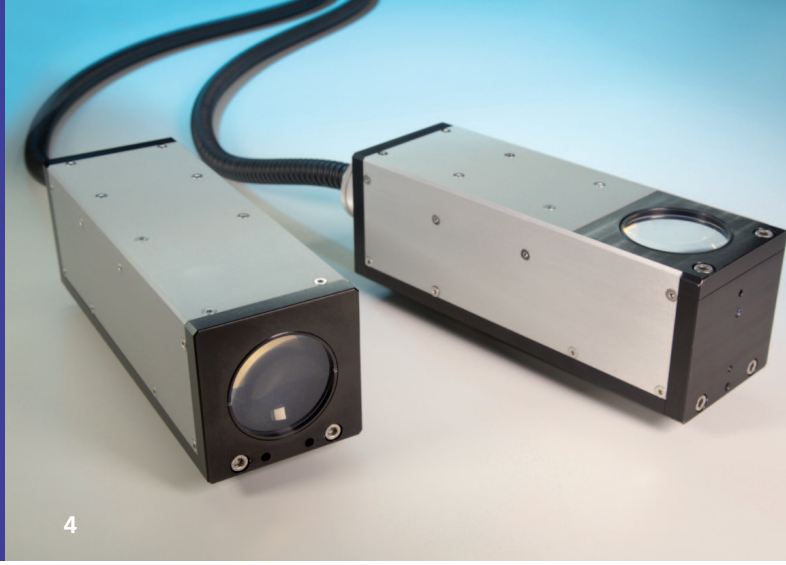

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System properties

- contact-free and non-destructive measurement of layer systems
- Resolution of multilayer systems
- Measuring range from 10 µm to several mm, depending on the material
- Accuracy of up to 1 µm
- Measuring time below 1 sec.

Simple calibration

- Use of reference samples

Radiation protection

- Terahertz waves are harmless to health

Our offer

- Consultation: on technology and application aspects
- Initial tests: free measurements in our application lab
- Feasibility studies: technically and economically
- Contract measurement: for industry and research
- Development: from single components to tailor-made complete systems
- Equipment rent: for limited-period tasks
- Measurements on customer's site: with mobile systems on any large objects

3 *Supply unit of the fiber-coupled terahertz system.*

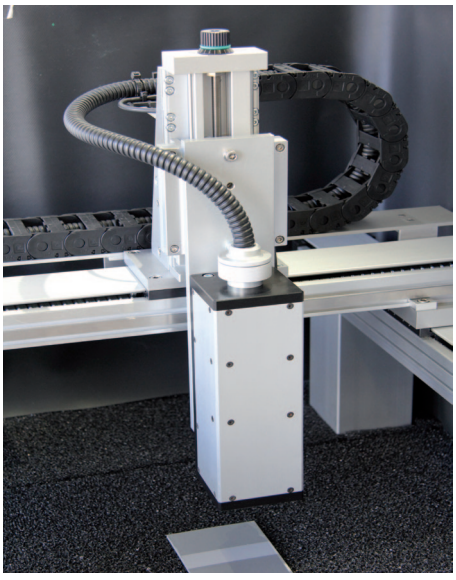
4 *Terahertz transceiver modules.*

Measurement early on in the process

Suitable for wet, soft or sticky layers.

Contact-free and non-destructive

adjustable working distance between 50 and 200 mm.



Complex shaped parts

Measurements possible on curved surfaces, cases, and edges.

Various materials

Measurements of layer thickness on metal, plastic, CFK, glass or ceramics.