

Teaching

Courses

Our courses encompass the entire field of NDT and a wide range of courses including engineering science, physics, geophysics, architecture and medical engineering.

Our courses can be found under the following link:



Disciplines

- Civil engineering
- Mechanical engineering
- Aerospace engineering

Student projects

- Master theses
- Bachelor theses
- Term projects
- Research assistantships (Hiwi)



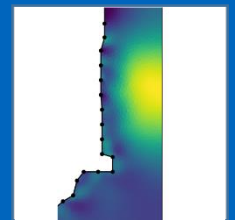
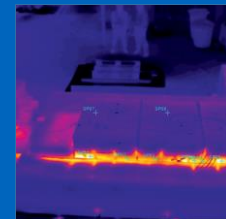
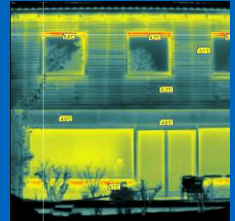
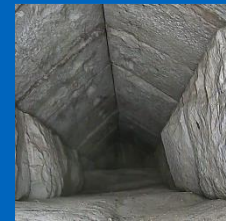
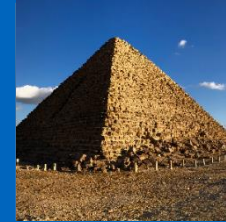
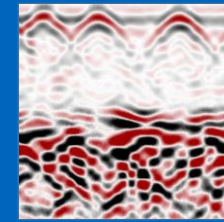
Research

Methods

- Ultrasound
- Air-coupled ultrasound
- Acoustic emissions
- Ground penetrating radar
- Microwave techniques
- Infrared thermography (active/passive)
- Vibration analysis
- Modal analysis
- Resonance spectroscopy
- Radiography
- X-rays computed tomography
- Eddy current testing
- Video endoscopy
- Numerical simulation
- Machine learning
- Data processing techniques

Fields

- Inspection of civil engineering structures
- Structural health monitoring
- Mechanical and aerospace engineering
- Biomedical engineering
- Additive manufacturing
- Quality control
- Preservation of cultural heritage
- Archeological forensics



Chair of Non-destructive Testing

Services

You have a problem but you don't know the right analysis method? Have a look at this page to find out more.

Material characterization

- E-modulus
- Shear modulus
- Bulk modulus
- Porosity
- Density

Delamination detection

- CFPR composites

Crack detection

- Metal
- Concrete
- Synthetic materials

Modal testing

- Natural frequencies
- Damping ratios
- Mode shapes

Void detection

- Inclusions in metals
- Gravel pockets in concrete

Reinforcement localization

- Rebar detection
- Prestressing tendons

Hidden object detection

- Cables
- Pipelines

Heat flow analysis

- Process heat
- Building insulation

Moisture detection

- Water damages

Internal imaging

- Medical examinations
- Exhibits in museums
- Historic cars, airplanes
- Batteries

Visual inspections

- Video endoscopy

Sediment inspection

- Pipelines
- Tanks

Archeological examinations

- Buried objects
- Hidden internal structures
- Ditches, dams, walls

Structural health monitoring

- Wind turbine monitoring
- Bridge monitoring
- Hydro dam monitoring

Numerical modelling

- Finite element modelling
- Wave propagation
- Digital twins
- 2D and 3D electrical resistivity tomography

Pricing

Our prices are calculated based on the service specifications of the materials testing department.
www.ed.tum.de/mpa-bau/leistungsverzeichnis

Consulting

If you haven't found what you were looking for, write us an email to inquire about it.

About us

Our research and teaching activities focus on the material characterization based on non-destructive testing (NDT). NDT is an interdisciplinary field and our staff members have backgrounds in civil, mechanical, medical, and aerospace engineering, as well as physics, and geophysics. We specialize in the testing of newly developed materials and the automated evaluation of large amounts of data based on machine learning and other numerical methods. Many of our research projects are in cooperation with well-known companies from the automotive, aviation and energy technology sectors. Our main location is in Garching, with branches in Pasing and Garching-Hochbrück.

Career

We are constantly searching for Hiwis, PhD Candidates, Technicians, and administrative staff. Get in touch to find out more!

Contact



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