Non-destructive testing and fractography

- Infrared and thermal testing
- Mid-infrared spectroscopy
- Macroscopic and microscopic analysis
- 3D surface analysis
- Scanning Electron Microscopy (SEM)

Fiber composite laboratory

- Hand lay-up and vacuum pressing
- Vacuum infusion
- Prepreg processing
- Hydraulic press
- Laboratory filament winding system
- Tempering oven
- Laboratory reactor
- Composite CNC milling machine
- Strain gauge application

Adhesive laboratory

- Tempering oven
- Ultrasonic bath
- Plasma pretreatment
- Flame impingement
- Flame pyrolysis
- Bating
- Application tests under different climatic conditions

Services

- Quality control
- Specimen preparation
- Material qualification
- Climate simulation
- Test method development
- Consultancy

DAkkS
Deutsche Akkreditierungsstelle
D-PL-11140-01-00

Anlagen Akkreditierungsurkunde

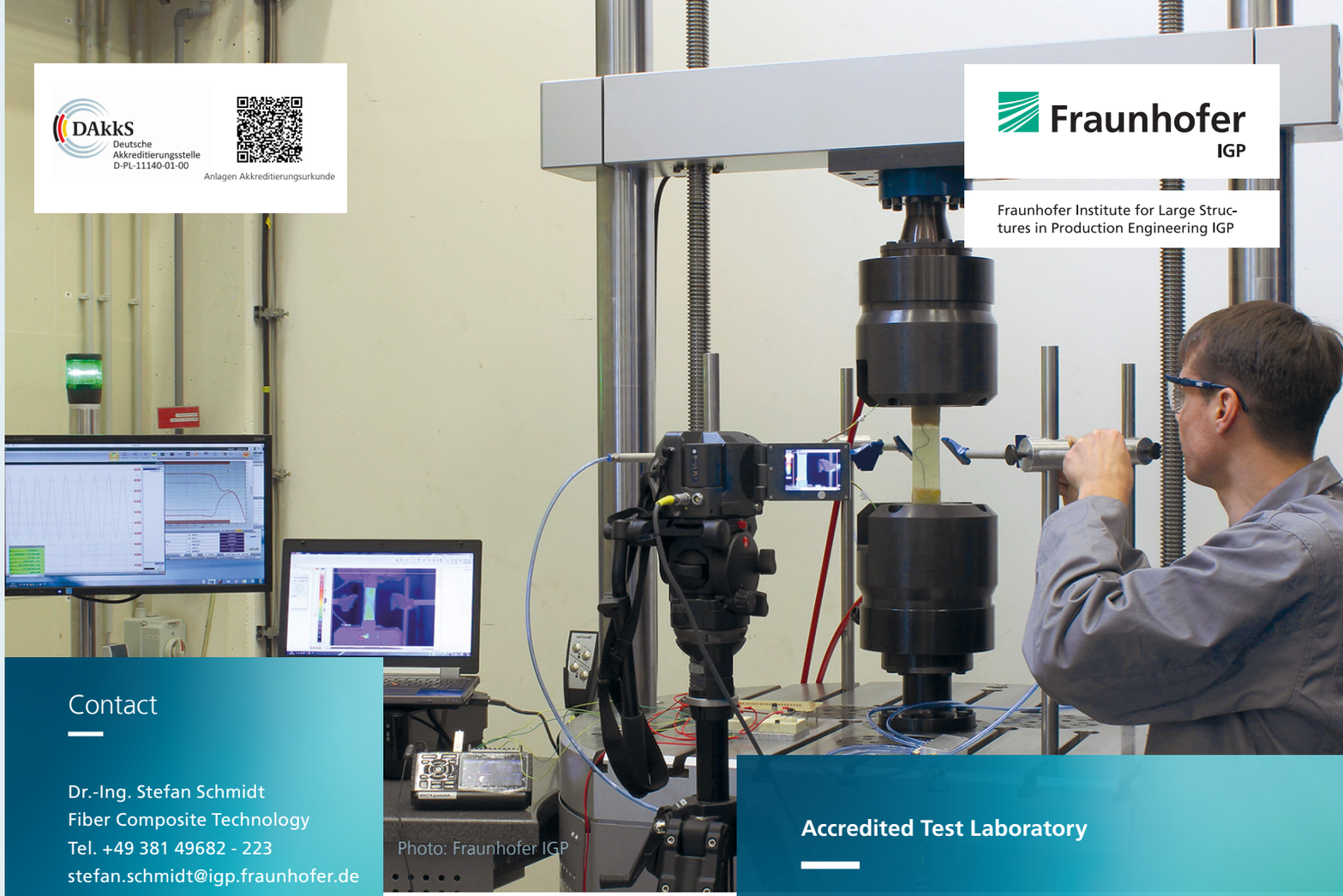


Photo: Fraunhofer IGP

Fraunhofer IGP

Fraunhofer Institute for Large Structures in Production Engineering IGP

Contact

Dr.-Ing. Stefan Schmidt
Fiber Composite Technology
Tel. +49 381 49682 - 223
stefan.schmidt@igp.fraunhofer.de

M.Sc. (EAE) Linda Fröck
Adhesive Bonding Technology
Tel. +49 381 49682 - 140
linda.froeck@igp.fraunhofer.de

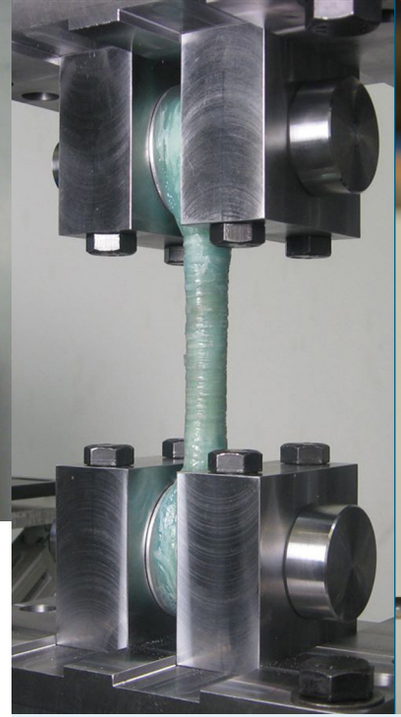
Fraunhofer Institute for
Large Structures in
Production Engineering IGP
Albert-Einstein-Str. 30
18059 Rostock

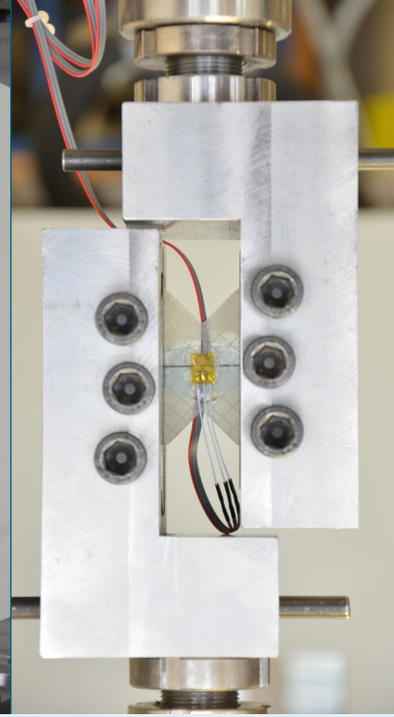
Accredited Test Laboratory

Testing of fiber composites, adhesives and joints

www.igp.fraunhofer.de

Photos: Fraunhofer IGP





Testing of fiber composites, adhesives and joints

Accredited Test Laboratory

The test laboratory of the Fraunhofer IGP has more than 15 years of experience in testing various materials. There is an accreditation by the German accreditation body DAkkS in accordance with DIN EN ISO/IEC 17025:2005 for a wide range of standards. These include, among others

- Fiber composites,
- Plastics,
- Sandwich materials,
- Adhesives and
- Adhesive joints.

The Fraunhofer IGP also develops new test methods in close cooperation with their customers. Instrumented component and part testing of large structures serve sectors such as wind energy, shipbuilding, or construction.

Mechanical testing

- Quasi-static testing from -80 to +250°C
- Tensile testing
- Compressive testing
- Flexure testing
- Shear testing
- Fracture toughness testing (GIC, GIIC)
- Tension torsion testing
- Peel testing
- Creep testing
- Impact testing
- Fatigue testing

Thermal testing

- Dynamic Mechanical Analysis (DMA)
- Differential Scanning Calorimetry (DSC)

Physical testing

- Density
- Fiber and resin mass contents
- Fiber, resin and void volume contents
- Contact angle measurement
- Rheology

Test equipment

- Static test machines (up to 1000 kN)
- Temperature chamber for quasi-static testing (-80 to +250 °C)
- Dynamic test machines (up to 2000 kN)
- High frequency pulsators (up to 100 kN)
- Tension torsion machine (up to 10 kN/100 Nm)
- Dynamic 4-point bending test station (up to 30 kN)
- Low temperature cooling system (up to -180°C)
- Strain measurement with
  - contact extensometers
  - optical extensometers
  - strain gauges
  - fiber-optic sensors
- Digital Image Correlation (DIC)
- Impact tester (up to 405 J)
- Nanoindenter (0,05 mN to 20 N)
- Climatic test cabinets (-70 to +180°C, 10 to 98% RH)
- Climatic chamber (32 m², -50 to +60°C, 10 to 95% RH)
- Salt spray cabinets
- Accelerated weathering tester