40 years of experience in the field of nondestructive testing:
The automotive industry R&D center at Fraunhofer IZFP

By the way, you already know our industrial grade accredited inspection services?

- Accredited laboratory in line with DIN EN ISO / IEC 17025, to qualify and validate new non-destructive testing (NDT) processes for industrial applications
- Accelerated time-to-market and opportunity for qualified, norm-compliant deployment in industrial applications as well as for complete new in-house developments or custom adaptation of innovative NDT technologies, even in fields where norms have not been established
- Certification of the corresponding quality management system in accordance with DIN EN ISO 9001

Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren IZFP
Campus E3 1
66123 Saarbrücken
+49 681 9302 0
info@izfp.fraunhofer.de
www.izfp.fraunhofer.de

Prof. Dr.-Ing. Bernd Valeske
Director, Fraunhofer Innovation Cluster AQS
+49 681 9302 3610
bernd.valeske@izfp.fraunhofer.de

“Fraunhofer” and “IZFP” are registered trademarks.
“Automotive Quality Saar” AQS, an R&D center that belongs to the Fraunhofer Institute for Nondestructive Testing IZFP, targets the special needs of the automotive manufacturing and supplier industries by offering innovative nondestructive testing (NDT) solutions from a single source to ensure material and component quality.

The activities of the center are focused on material-intensive, quality-critical automotive primary modules, as well as on solutions for efficient material utilization and streamlined production processes. Apart from certifying new NDT processes, AQS features a training center that offers engineers, technical specialists and managers a variety of certification courses.

The technical center, which includes an 850-square-meter laboratory facility, comprises the entire range of NDT processes and technologies. Utilizing the center’s state-of-the-art equipment and flexible robotics test stations, engineers can adapt, validate and demonstrate automotive-specific automated test solutions.

**Fields of activity**

The complex demands that the automobile industry places on NDT processes stem from the complicated interplay of various production chain requirements, which can sometimes collide. Key aspects include:

- Efforts to deploy semi- or fully-automated systems
- The need for short inspection intervals in series manufacturing systems
- Complex components that are accessible on only one side for testing
- The flexibility to deal with a wealth of new materials and joining processes used in lightweight and composite construction

**Training**

Together with regional partners, AQS has been offering certified training courses in line with the quality standards of the Fraunhofer Academy since 2011. The courses, which are designed for technical specialists and managers in the automotive industry, contribute to the concept of “life-long learning” as a concrete measure for addressing the threat of skilled labor shortages in Germany.

The "Quality Engineering Automotive Materials & Processes" training series was created in close cooperation with personnel development specialists. The center also developed special training programs covering the use of NDT processes for the quality assurance of fiber-reinforced composite materials (development, production and repair), which play a key role in modern lightweight construction concepts.

Hence, the services portfolio covers numerous fields of application such as:

- Development, selection, manufacture, processing and utilization of modern materials
  - High-strength steel
  - Fiber-reinforced composite materials
  - Aluminum and magnesium alloys
- Development and deployment of state-of-the-art joining processes
  - Adhesive and bonding technologies
  - Welding and soldering technologies
  - Mechanical joining processes
  - Hybrid joining processes
- Design and manufacture of components and assemblies for lightweight and composite construction
- Development and deployment of test and quality assurance systems
- Characterization of system reliability, operational stability and life span
- Development and deployment of repair concepts
- Recycling

“Automotive Quality Saar” AQS, an R&D center that belongs to the Fraunhofer Institute for Nondestructive Testing IZFP, targets the special needs of the automotive manufacturing and supplier industries by offering innovative nondestructive testing (NDT) solutions from a single source to ensure material and component quality.

The activities of the center are focused on material-intensive, quality-critical automotive primary modules, as well as on solutions for efficient material utilization and streamlined production processes. Apart from certifying new NDT processes, AQS features a training center that offers engineers, technical specialists and managers a variety of certification courses.

The technical center, which includes an 850-square-meter laboratory facility, comprises the entire range of NDT processes and technologies. Utilizing the center’s state-of-the-art equipment and flexible robotics test stations, engineers can adapt, validate and demonstrate automotive-specific automated test solutions.

**Fields of activity**

The complex demands that the automobile industry places on NDT processes stem from the complicated interplay of various production chain requirements, which can sometimes collide. Key aspects include:

- Efforts to deploy semi- or fully-automated systems
- The need for short inspection intervals in series manufacturing systems
- Complex components that are accessible on only one side for testing
- The flexibility to deal with a wealth of new materials and joining processes used in lightweight and composite construction

**Training**

Together with regional partners, AQS has been offering certified training courses in line with the quality standards of the Fraunhofer Academy since 2011. The courses, which are designed for technical specialists and managers in the automotive industry, contribute to the concept of “life-long learning” as a concrete measure for addressing the threat of skilled labor shortages in Germany.

The “Quality Engineering Automotive Materials & Processes” training series was created in close cooperation with personnel development specialists. The center also developed special training programs covering the use of NDT processes for the quality assurance of fiber-reinforced composite materials (development, production and repair), which play a key role in modern lightweight construction concepts.