

Composite Damage Detection System

Accellent Technologies, Inc. provides complete Structural Health Monitoring solutions with our innovative technology. We have designed an active monitoring system for engineers and researchers who are working on piezoelectric-based sensing and structural integrity diagnostic systems for composite structures.

The System Components



Features of the Sensors

- Customized, pre-networked & pre-positioned layer design
- Reliability for delamination & disbond detection
- Compatibility with other types of sensors
- Sustainability under hostile conditions



Features of the ScanGenie Hardware



- Multi-channel actuation & sensing - "64 channels"
- Two active scan modes: through transmission and pulse-echo
- Data acquisition: up to 48MS/s in dual channel mode, 12-bit resolution
- Transmission signal: 10 kHz to 700 kHz, up to 150V pk-pk
- Adjustable band-pass filter and gain amplifier

Features of the SmartComposite Software

- Automated calibration & diagnostic imaging capability
- Built-in sensor self-diagnostics
- Environmental compensation for reliable damage detection
- Automated damage detection and sizing
- Model-based probability of detection (POD) curves for any sensor arrangement
- Standardized output data formats



The System Allows – And Monitors – Advantages –

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| <ul style="list-style-type: none">• Evaluation of impact & usage damage & growth (delaminations & disbonds)• Quantification of damage size | <ul style="list-style-type: none">• Aircraft fuselage/wings• Rocket motor cases & fuel tanks• Windmill blades | <ul style="list-style-type: none">• Detection and quantification of "hidden" damage• Precise identification of damage location• Ease of use in the field• Significant time-savings for inspection of large composite structures• Cost-effective inspection of inaccessible structures |
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About: Acellent Technologies, Inc.

Founded:

Acellent Technologies, Inc. was founded in 1999 to develop and commercialize *structural health monitoring* (SHM) technology emerging from Stanford University's research labs. Acellent is located in the heart of Silicon Valley, with hardware and software R & D, manufacturing, administrative, sales and marketing in-house.

Markets:

Acellent's SMART technology can be applied to many industries: aerospace, automotive, civil structures, energy and utility companies, defense, space and transportation.

Services:

Often a unique situation requires a custom solution. Acellent works with customers to customize SHM systems to meet all monitoring and diagnosis requirements.

Expertise:

Our knowledgeable staff has more than 90 years combined experience in the SHM field. With our expertise in structural design and algorithm programming, we provide detailed easy-to-read diagnostic results to check the integrity of a structure

Quality:

Acellent manufactures all of the hardware and sensors and we write our own software modules. This ensures the quality of our products and gives our customers reliable high-quality systems.

Support:

Acellent provides our customers with comprehensive training for sensor network installation and instructions for using the system. We work closely with our customers to ensure they have a complete understanding of our systems and their benefits.



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