

Contact-free

# Inspection of Adhesive Bonds



hear with light - see with sound

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laser acoustics

# Automated Bond Quality Inspection

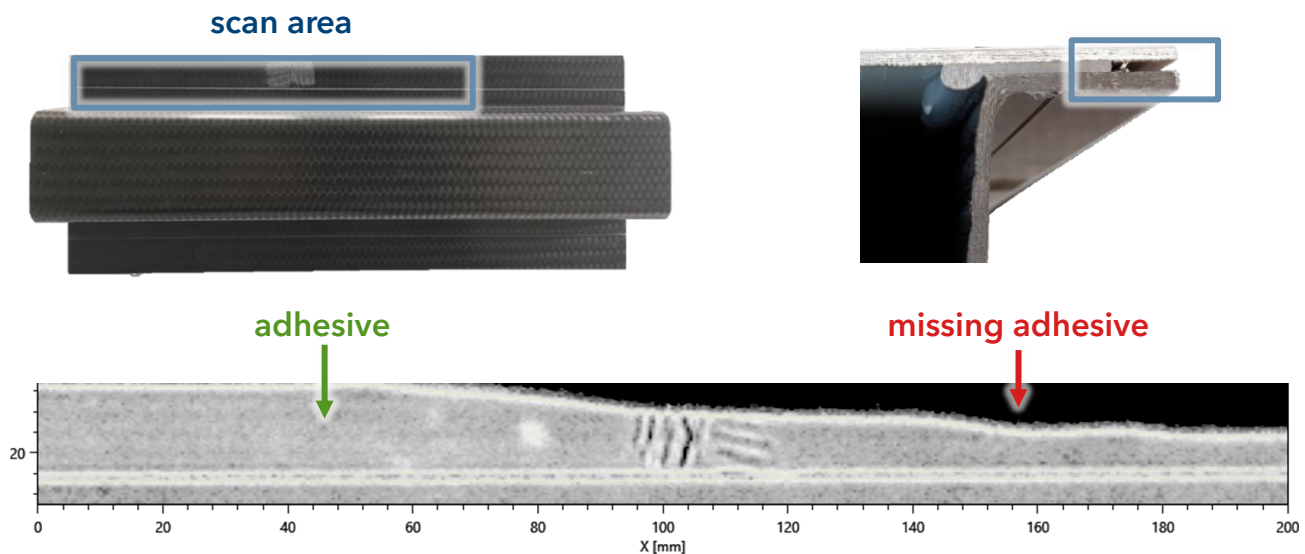
In lightweight and multi-material manufacturing, adhesive bonding is critical. Traditional inspection methods like conventional ultrasonic testing or manual tap testing fall short: they struggle with thin skins, require liquid couplants, and are difficult to automate on complex 3D geometries.

XARION solves this with a contact-free, laser-based ultrasonic inspection solution. Engineered for seamless robotic and gantry integration, it delivers fully automated testing that reliably detects critical flaws: from adhesive distribution defects like lack of bonding, to structural defects such as voids, porosity, and contamination, down to adhesion defects like partial delaminations at the bonding interface.

## Key Applications

- **Aerospace:** Bonded stringers on fuselages and skin-to-core composite bonding
- **Automotive:** Metal-to-metal sheet joints and hybrid structures
- **E-Mobility:** Battery modules filled with thermal interface material or paste

Sample: CFRP stringer bonded onto aluminum structure



Ultrasonic inspection result with missing adhesive

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