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High-Resolution Ultrasound to Quantify Sub-Surface Wrinkles in a Woven Carbon Fiber Reinforced Thermoset

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Introduction

Carbon Fiber Reinforced Thermoset

Advantages

- Lightweight
- High strength to weight ratio
- Corrosion resistance
- Fatigue Resistance

Disadvantages

- Higher Cost
- Low Electric and Thermal Conductivity
- Anisotropy

Carbon Fiber Reinforced Thermoset

Application

- Aerospace
- Automotive
- Energy Sectors
- Construction
- Sports Equipments

Non-Destructive Testing (NDT) Methods

Types of NDT Methods

- Ultrasonic Testing (UT)
- X-ray CT
- Eddy Current
- Radiography
- Thermography
- Shearography

Why UT?

- Affordability
- Portability
- Ease of Training

Why not others?

- X-ray CT/ Radiography/Thermography
- Expensive
- Requires trained Personnel
- Time consuming
- Eddy Current/Shearography
- Limited to surface defects
- Difficulty in thicker parts

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