

INFRARED THERMOGRAPHY

INFRARED THERMOGRAPHY (IRT)

Advanced thermographic system (FLIR - EDEVIS) :

- Excitation options:
 - Pulsed thermography: flash lamps 6 kJ
 - Lock-in thermography: halogen lamps 4 kW
 - Thermoelastic stress analysis: tensile bench 100 kN
 - Vibro-thermography: ultrasound generator 1 kW
- FLIR A6750sc cooled InSb camera (1-5 μm)
- Fully integrated system \rightarrow no trigger delays !
- Various data-analysis approaches: FFT, TSR, PCA ...



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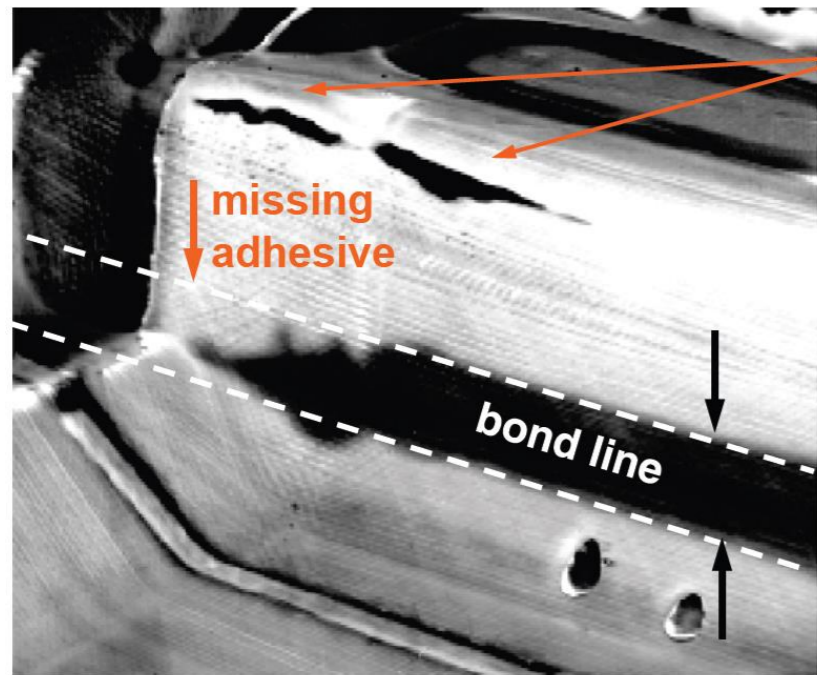
Advanced thermographic system (FLIR - EDEVIS) :

FLIR A6750sc cooled InSb camera (1-5 μm)

- 640x512 pixels
- 125 Hz, up to 4 kHz (window mode)
- Genicam interface
- A/D 14 bit depth
- F/2.5
- NETD < 20 mK
- Small (1 cm^2) to large (5 m^2) structures



INFRARED THERMOGRAPHY – EXAMPLES



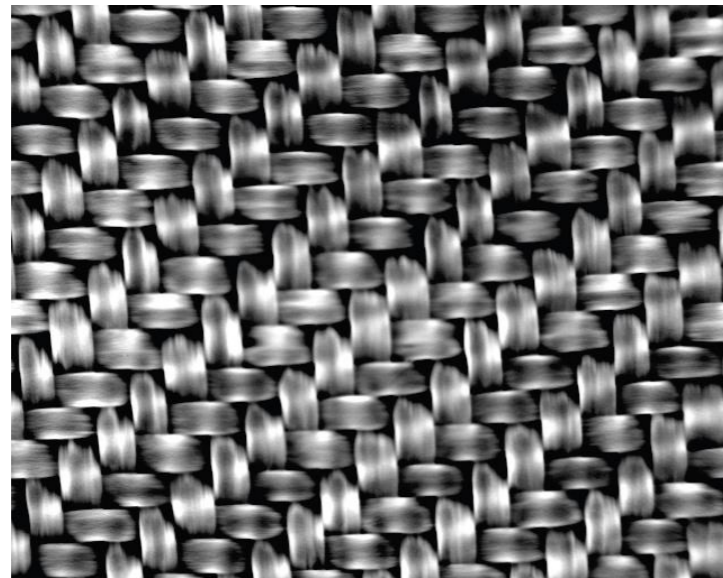
dry fibers – absence of resin

missing adhesive

bond line

Debonding
and dry spots

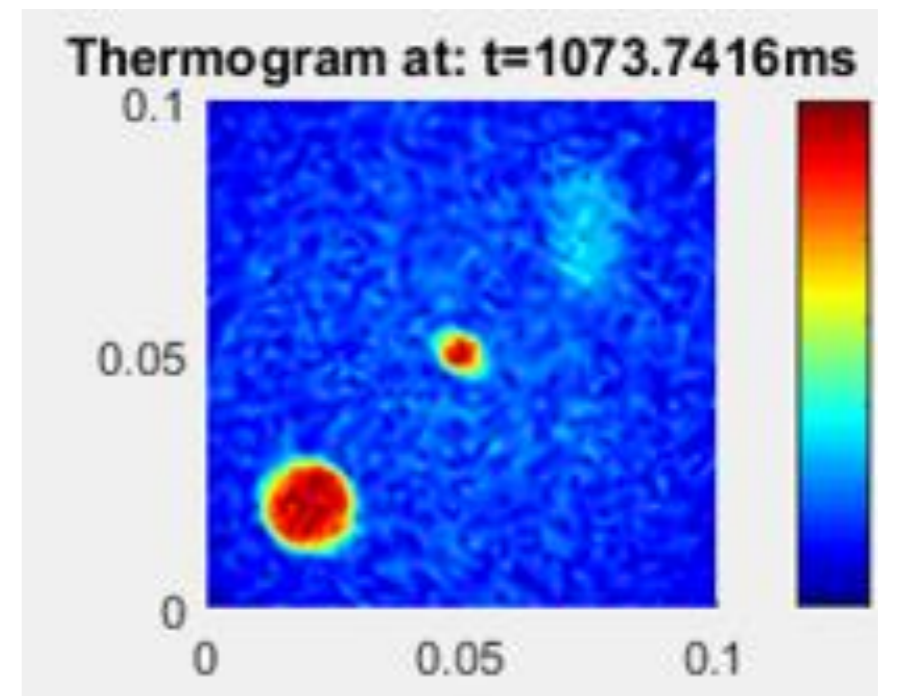
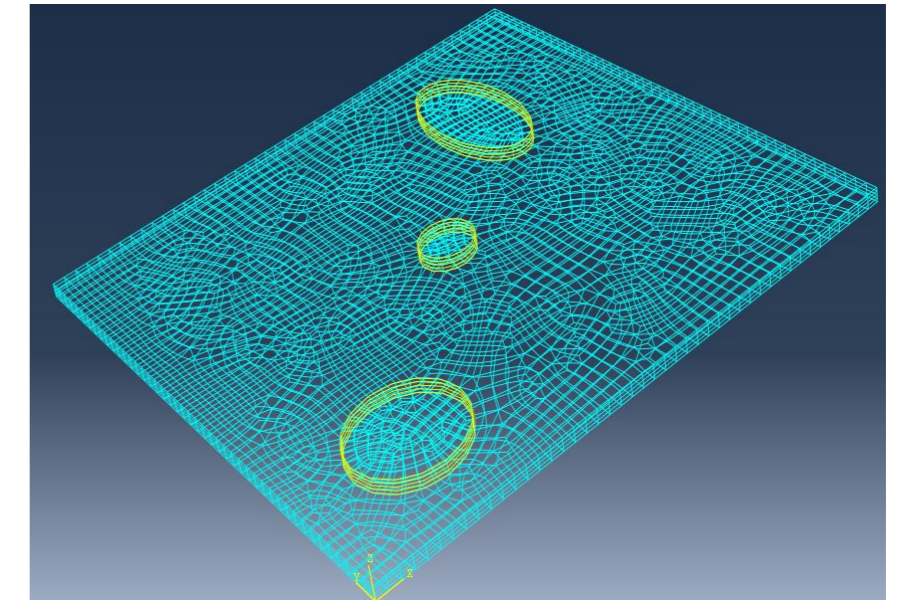
CFRP car body (foot space)
OLT Phase image at 0.01 Hz



Fiber architecture

Fiber wrinkling
Porosities
Cracks
Foreign objects

...



Delamination