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REPAIR OF IMPACTED CF/PEEK SPECIMENS AT DIFFERENT ENERGY LEVELS

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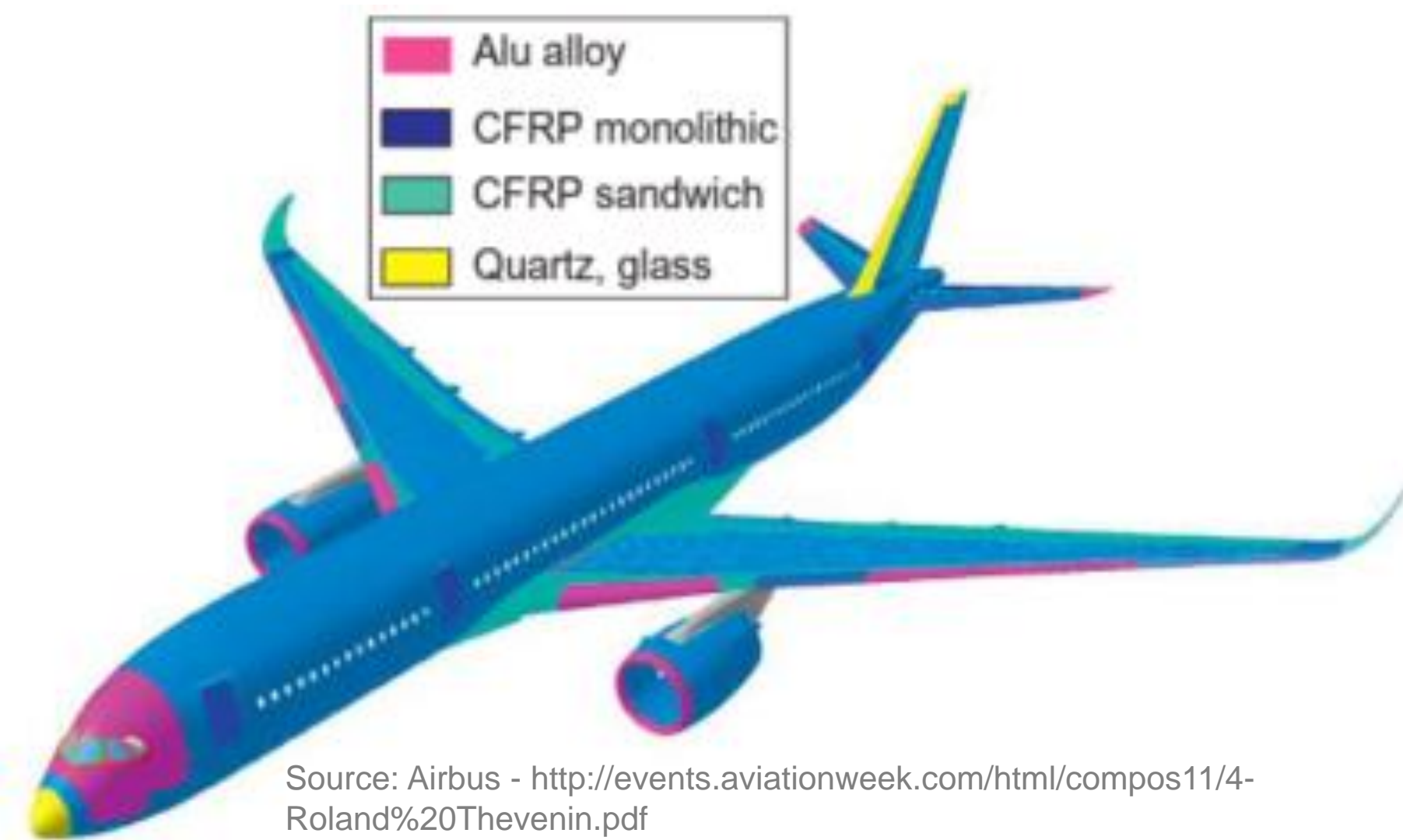
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Objective: Evaluate the residual compressive strength via Compression After Impact (CAI) tests of impacted (i.e., damaged) and repaired thermoplastic composites at two different energy levels to simulate Barely Visible Impact Damage (BVID) and Visible Impact Damage (VID)

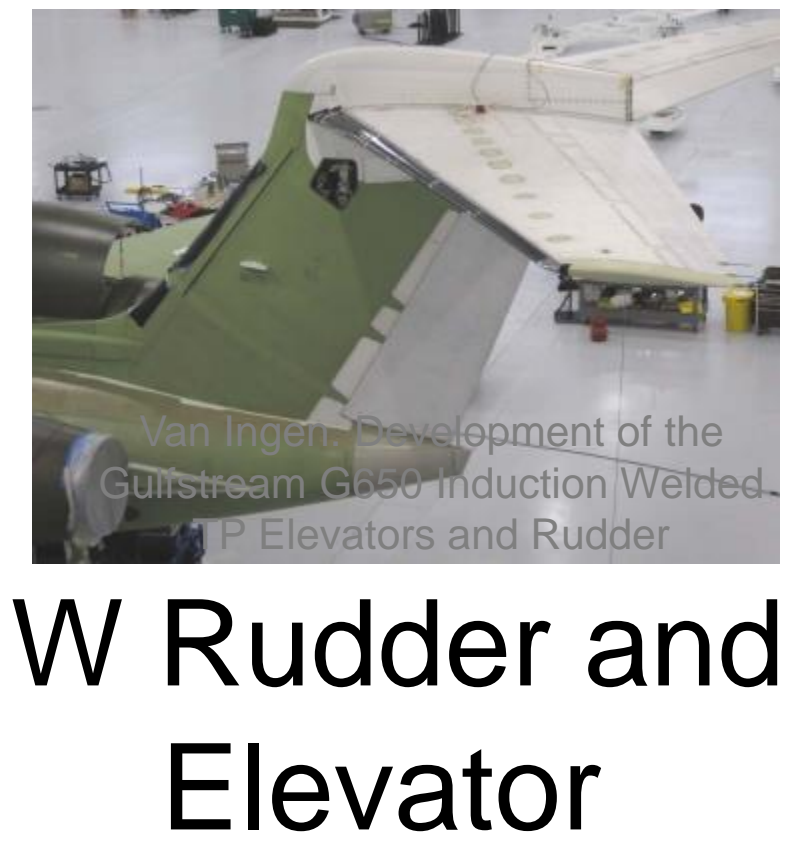
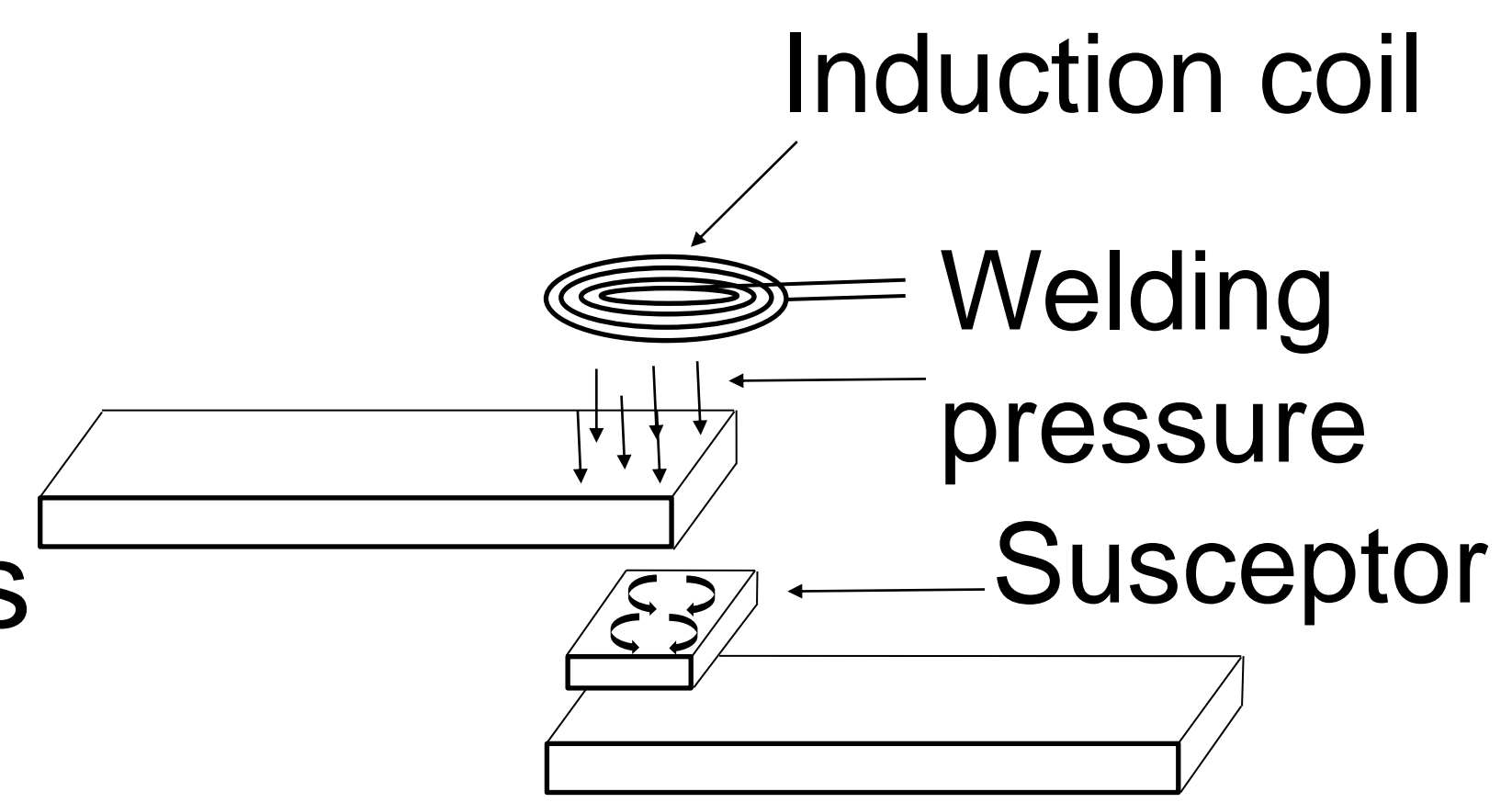
BACKGROUND



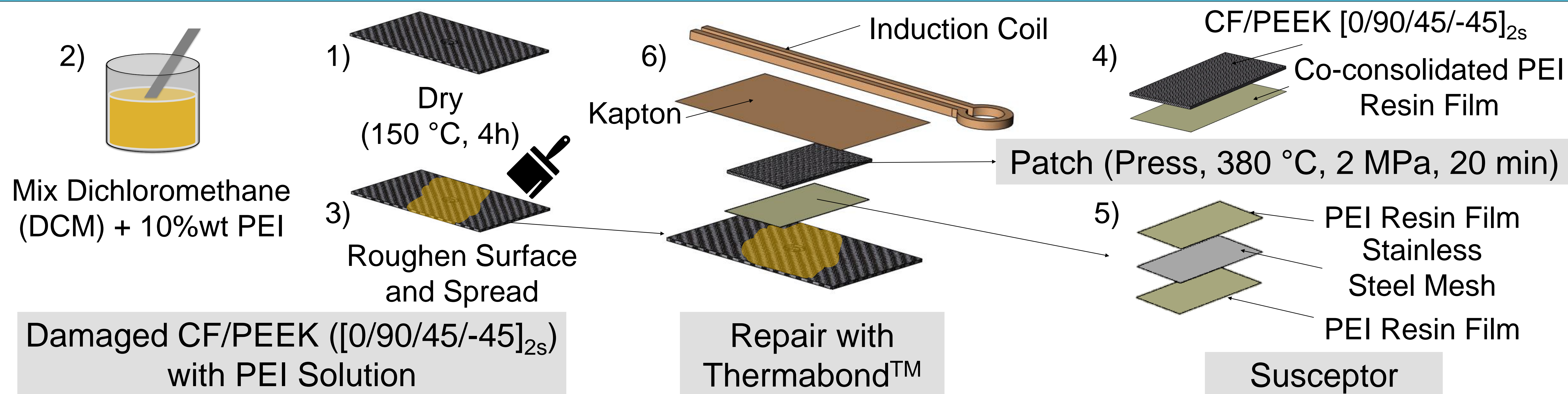
Thermoplastic Composites

- ✓ Fatigue Performance
- ✓ Impact Resistance
- ✓ High Fracture Toughness
- ✓ High Strength-to-Weight Ratios
- ✓ Possible to repair

Induction Welding (IW)



REPAIR STRATEGY: THERMABOND™

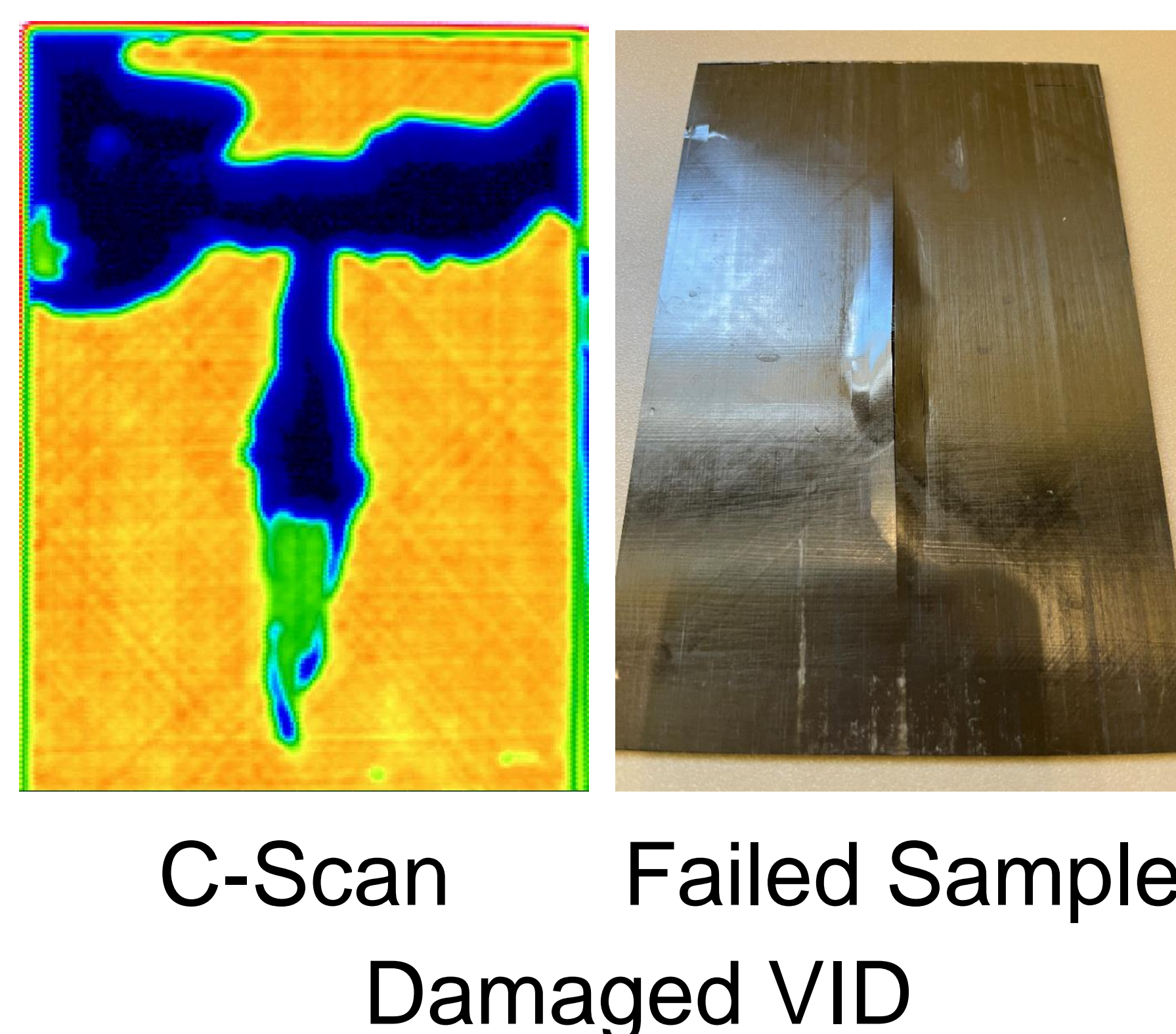
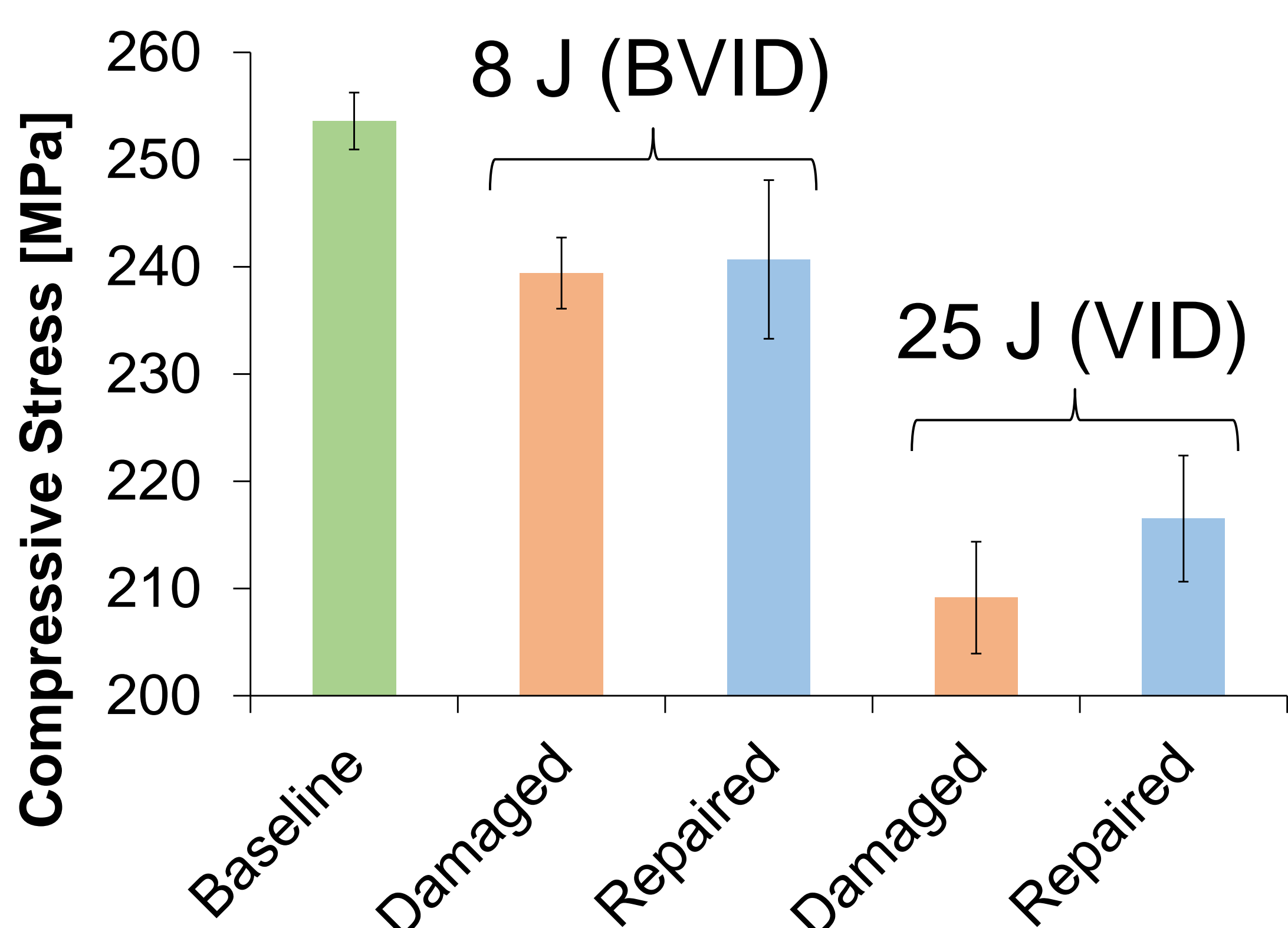


REPAIR EVALUATION

Impact: 8 J (BVID) and 25 J (VID) (ASTM D7136)

CAI (ASTM D7137)

RESULTS



Conclusion

- Impact at 8 J (BVID): decrease in compressive strength of 6%
- Repair of BVID did not improve the performance significantly
- Impact at 25 J (VID): decrease in compressive strength of 18%
- Repaired samples recovered 17% of the strength lost due to VID

PARTNERS