

Automated Fibre Placement (AFP) for High-performance Composites

ARC Training Centre for Automated Manufacture of Advanced Composites (AMAC)

Competitive advantage

AMAC's state of the art manufacturing, testing and analytical facilities makes it truly a one-stop shop for research and industry.

- Automated Fibre Placement facility (only one in the southern hemisphere)
- In-situ and Ex-situ sensing expertise using distributed fibre-optics sensors, fibre Bragg gratings for temperature, strain and acoustic emission

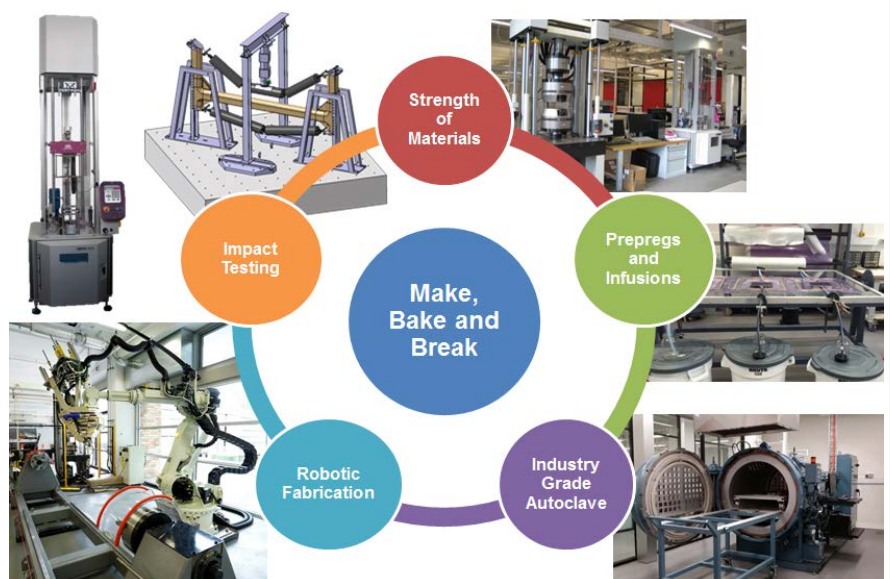
Recent research projects

- Shape-adaptive composite hydrofoil manufacture using AFP with embedded distributed sensing using fibre optics
- AFP manufacture of metal-composite hybrids
- Impact damage assessment of AFP manufactured composite components using multiple smart materials; fibre-optic sensors & piezo sensors

Successful applications

- Shape-adaptive composite hydrofoil – DST Group
- Retrofittable composite solutions for helicopter crashworthiness– DST Group
- Robust Composite Design of composite cylinders for space applications

Facilities and infrastructure



AMAC features a multi-axis robot and spindle system for maximum control over fibre trajectories and part geometry. The facility includes a head for laying parallel thermoset prepreg composite tows as well as a specialist thermoplastic composite head for in-situ melding for one-shot part fabrication of bespoke high-performance composites.



Image Caption Example

More information

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