



ADVANCED COMPOSITE MATERIALS AND STRUCTURES

PROGRAM INFORMATION

DMTC Limited is a not-for-profit public company that operates in the Australian defence and national security context. DMTC specialises in industrial research & development (mid to high-level TRL technology development) and the industrial application of innovation.

A strong focus for DMTC is technology transfer, and work on platform technologies that have potential application across more than one of Defence's operating domains.

DMTC works with a broad range of capable industry and research partners, large and small, to build Australian industrial supply chain capacity, underpinned by leading-edge research. Detailed guidance and direction is given by a range of Defence stakeholders.

DMTC's work on advanced composites and alternate material compounds is providing vital performance data

and understanding of the suitability of a range of hybrid composites. This work directly informs decisions with regard to their potential application on current and future Defence platforms.

DMTC also seeks to identify opportunities to develop and upskill Australian supply chains for hybrid composite materials. Limitations in supply chain integration are one of the main cost drivers inhibiting the take-up of these materials in Defence projects, along with the low volume of parts typically required for the production of specialist military equipment.

DMTC is actively seeking opportunities to extend or expand its programs. Engagement with prospective partners on areas of existing or new work is welcomed.



Pictured: Kelli Thomas testing composite materials at the University of Queensland using a digital image correlation measurement system.

PROJECTS UNDERWAY



Hybrid Composites

Research into hybrid composites, including laminates and nano-composites, is focused on advancing the understanding of their functional and structural performance, and cost-effectiveness. Compounds identified must be lighter in weight while offering comparable or enhanced levels of strength, functionality and durability. This work currently has two key themes: the low-cost production of laminates; and multifunctional performance of materials including electrical and thermal conductivity, as well as signature control.

DMTC Partners

Thales Australia, Imagine Intelligent Materials, Penguin Composites, Swinburne University of Technology, RMIT, Deakin University, University of Queensland, DST Group



Digitised small-arms technologies

Development of the next generation of soldier systems is a sovereign industrial capability identified by Defence. This collaboration on the Networked Future Augmented Small-arms Technologies (N-FAST) program includes opportunities for improved networking of sensors and materials selection studies to deliver improved thermal management and lightweighting of mission systems.

DMTC Partners

Thales Australia, RMIT, University of Queensland



Alternative vehicle components

Lightweighting is a priority for militaries worldwide, to ensure that forces are both deployable, agile and energy-efficient. Every alternate component – and every new material compound – must be comprehensively tested against a complex set of scenarios including threat survivability, mobility, functionality and durability in a variety of terrains and harsh operating environments.

DMTC Partners

Thales Australia, University of Queensland

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