

Faculty of Engineering

Summer Research Program 2023-2024

Project Title: Novel Hybrid Repair Methods for Advanced Aerospace Structures

Supervisor(s): W.K. Chiu

Department: Mechanical & Aerospace Engineering

Email: wing.kong.chiu@monash.edu

Website profile of project supervisor: <https://www.monash.edu/engineering/wingchiu>

Objective

To develop novel and robust hybrid repair methods able to sufficiently enhance the residual strength of damaged structures with loss of adhesive bond integrity) and safeguard the repairs against any possible faulty bond. This may enable bonded repairs of damaged structures with lower residual strength to be certified under the current certification regulation.

Project Details

The hybrid repair research completed at Monash University and DSTG is a series of fundamental studies with coupon test specimens, including overlap joint and step joint specimens (both composite and metallic adherend materials were used). The results form an excellent basis upon which the hybrid repair methodology can be further developed to progress towards its practical application in aircraft repairs. The work proposed will also demonstrate the efficacies of this repair technique for primary structure applications.

Prerequisites

MEC3455