Australian Composites Manufacturing CRC

PROJECT FACTSHEET

PROJECT HPN002

Achieving sustainable waste management in the composites industry

Project Overview

The global push towards sustainable materials management and circular economies poses challenges for the composites industry.

This project is addressing a critical unmet need in Australia's industry, namely, the sustainable recycling of Fibre-Reinforced Polymer (FRP) composites.

FRP composites are seeing an increased use by several industries including aerospace, automotive, construction, and renewable energy, due to their high strength-to-weight ratio, corrosion resistance, and durability. Great as this is for Australia's composites manufacturing industry, it also poses a potential environmental and economic challenge – sustainable waste management.

This project is conducting a comprehensive market analysis of the recycling potential of FRP composite materials in Australia, in the hope the research will pave the way for viable FRP composite recycling solutions.

The project outputs are expected to benefit composite manufacturers, environmental agencies, and end-users by offering valuable insights into recycling processes, circular design and reuse, waste reduction, and the shift toward environmentally responsible practices, contributing to a greener and more sustainable future.

Notably, its aims align with the United Nations (UN) Sustainable Development Goals, and reinforce Australia's Net Zero emission targets.

This project is supported by the Australian Government Department of Industry, Science and Resources through the Cooperative Research Centres Program.

"Together with ACM CRC partners HERA, Deakin University, and Rux Energy, we are investigating industry needs and future directions through market analysis, waste production mapping, recycling pathways assessment, cost-benefit analysis, and lifecycle analysis, to identify sustainable recycling approaches that can be adopted by Australian industries, and mitigate the imminent problem posed by FRP waste.

Dr Ali Hadigheh
Associate Head for Research Education,
School of Civil Engineering, The University of Sydney

ACM CRC Research Programs:

- RP1: Composite Materials
- RP2: Manufacturing Processes
- RP3: Simulation and Performance Prediction
- RP4: Design and Integration

Project Partners:

- The University of Sydney
- HERA
- Deakin University
- Rux Energy

Project Leader:

- Dr Ali Hadigheh, The University of Sydney

Year commenced:

- 2024

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Cooperative Research Centres Program