



Directional Composites through Manufacturing Innovation

Marie Skłodowska-Curie Action - RISE

- ❖ The Directional Composites through Manufacturing Innovation (DiCoMI) project has been funded under the Marie Skłodowska-Curie Action call RISE-2017:
 - ◆ *Research and Innovation Staff Exchange*
- ❖ The project will finance the secondments of staff between:
 - ◆ *Academic and industrial partners, and*
 - ◆ *EU and international partners.*



Marie Skłodowska-Curie
Actions

Key numbers

4 years

March 2018 – February 2022

€ 1,426,500

To finance a total of 317 secondments

16 partners

From 11 countries

DiCoMI consortium



Project objectives

- ❖ The Directional Composites through Manufacturing Innovation (DiCoMI) project aims to bring together leading innovators from across Europe, and beyond, to develop a new method of producing composite material parts with optimised fibre directionality.
- ❖ The DiCoMI outcome will be a truly novel composites manufacturing system capable of producing parts with increased accuracy, reduced cost and enhanced functionality.

Project Structure

**WP1 -
Performance
specifications**

**WP2 -
Composite
materials
studies**

**WP3 -
Design of
hybrid
manufacturing
system**

**WP4 -
Prototyping
and
demonstration**

**WP5 –
Project
Management**

WP1 - Performance specifications

❖ WP1 will identify the performance specifications of applications that could be improved with directional composite materials.

- ◆ *Identify appropriate applications for directional composites*
- ◆ *Determine typical material properties required*
- ◆ *Evaluate current composite materials manufacturing processes*
- ◆ *Specify key performance indicators for the DiCoMI process*



WP2 - Composite materials studies

- ❖ WP2 focuses on the characterisation of existing and novel composite materials that may be used in the DiCoMI manufacturing process.
 - ◆ *Select a range of existing composite materials suitable for the chosen applications*
 - ◆ *Develop new polymer/fibre combinations*
 - ◆ *Test the manufacturability of existing and new composite materials*
 - ◆ *Select the final range of composite materials*
 - ◆ *Test the developed material specimens*



WP3 - Design of hybrid manufacturing system

- ❖ WP3 concentrates on the design of the innovative hybrid manufacturing system with regards to the established performance specifications.
 - ◆ *Determine the additive process parameters*
 - ◆ *Determine the subtractive process parameters*
 - ◆ *Develop the DiCoMI system architecture*
 - ◆ *Detail design of DiCoMI hybrid manufacturing system*
 - ◆ *Benchmarking of DiCoMI hybrid manufacturing system*



WP4 - Prototyping and demonstration

❖ WP4 involves the building and validation of the hybrid system via the production of directional composite material, functional parts.

- ◆ *Build and test the DiCoMI system prototype*
- ◆ *Develop a control software*
- ◆ *Develop design for hybrid manufacturing guidelines*
- ◆ *Design and build demonstration components*
- ◆ *Evaluate component performances*





Thank you for your
attention

www.dicomi.eu