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DESIGN AND MANUFACTURING OF BIOCOMPOSITES FROM RAPID CURING TECHNOLOGIES

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Development Areas



MATERIALS

New advanced bio-based and recycled high-performance materials with inherent recyclability properties



PRODUCTION TECHNOLOGIES

Efficient processing techniques combined with recycling technologies



METHODS & TOOLS

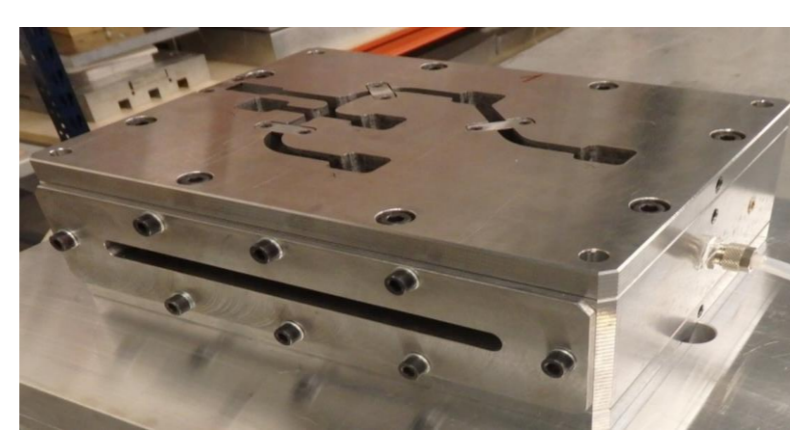
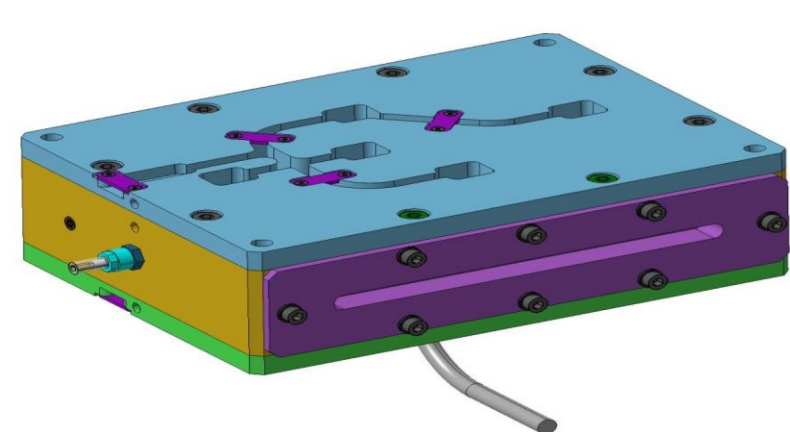
for a standardised, holistic sustainable high-performance composite design, modelling and systematic optimisation

r-lightbiocomp project aims to reducing environmental impact of new lightweight high performance composites, not only during their production but also during their operational life and after achieving their final lifetime due to inherent recyclability properties, while providing improved mechanical properties, weight reduction and new functionalities.

New fast curing technologies for r-LightBioCom family of HPC

Two Out of autoclave (OOA) curing techniques

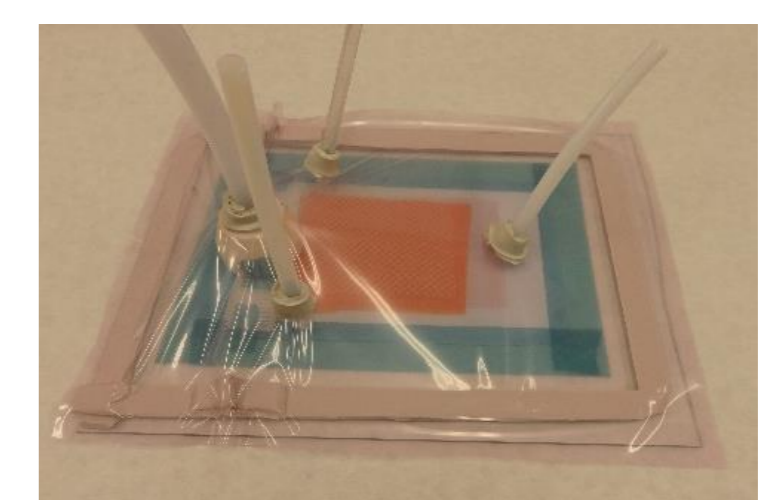
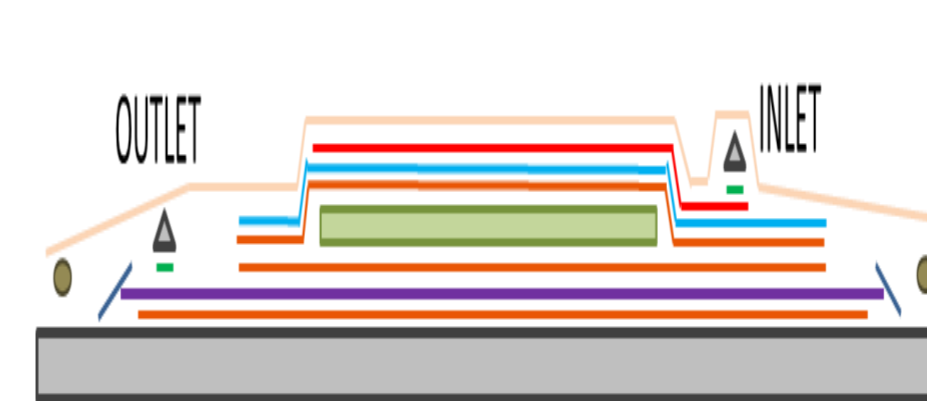
- For optimising curing technologies to reduce time, energy consumption and emissions
- For testing new bio based and recycled materials



Resin Transfer Moulding (RTM)



Frontal photopolymerization



Vacuum Infusion



Microwave (Mw)

REFERENCES

- [1] Ekuase, O.A. et Al., "A Review on the Out-of-Autoclave Process for Composite Manufacturing", *J. Compos. Sci.*, **6**, 172, (2022). <https://doi.org/10.3390/jcs6060172>
- [2] Chinedum O. M., et Al., "Accelerated microwave curing of fibre-reinforced thermoset polymer composites for structural applications: A review of scientific challenges", *Composites Part A: Applied Science and Manufacturing*, **115**, 88-103, (2018) <https://doi.org/10.1016/j.compositesa.2018.09.012>.



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