

Automated Resin Transfer Moulding of Carbon Phenolic Composites

Authors : Zhenyu Du, Ed Collings, James Meredith

Abstract : The high cost of composite materials versus conventional materials remains a major barrier to uptake in the transport sector. This is exacerbated by a shortage of skilled labour which makes the labour content of a hand laid composite component (~40 % of total cost) an obvious target for reduction. Automation is a method to remove labour cost and improve quality. This work focuses on the challenges and benefits to automating the manufacturing process from raw fibre to trimmed component. It will detail the experimental work required to complete an automation cell, the control strategy used to integrate all machines and the final benefits in terms of throughput and cost.

Keywords : automation, low cost technologies, processing and manufacturing technologies, resin transfer moulding

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