

# EFFICIENT CFRP-MANUFACTURING USING MULTIPLE INDUSTRIAL ROBOTS

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To increase the competitiveness and efficiency of next generation transportation systems, the production costs and the time of production of large structures made of carbon fiber reinforced plastics (CFRP) need to be reduced. This can be achieved by using highly industrialized layup technologies as well as improved layup strategies.

For this purpose, within the project GroFi, the German Aerospace Center (DLR) in Stade developed an innovative plant concept for a fully automated fiber placement (AFP) process using multiple robot units working simultaneously on one or more parts. Within the scope of the project "Efficient Wing Cover Manufacturing" (EWiMa) the functional capability of the research platform GroFi could be demonstrated by realizing the first multihead AFP-process worldwide. For the demonstration a generic wing cover with a span of 8 m was manufactured using two layup units working simultaneously. In addition, efficiency improvements of a fiber placement process using multiple industrial robots were investigated.

Within the scope of the presentation the multihead approach and the results of the EWiMa project will be demonstrated.



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