PROJECT

EMOTION

Enhanced Mould for Thermoplastic Fuselage in and out of Autoclave Consolidation

Funding: European (Horizon 2020)

Duration: Sep 2019 - Feb 2022

Status: Ongoing

Total project cost: €1,938,832

EU contribution: €1,419,057

CORDIS RCN : 224919

Objectives:

This project aims to develop our innovative mould for efficient high-volume production of thermoplastic fuselage skin. Within the work of this project, first a process and mould will be developed for in autoclave consolidation, including automated layup, assembly, and transport.

Second a mould usable for out of autoclave consolidation e.g. in situ consolidation with enhanced functionality for heating and cooling will be developed. Consolidation of thermoplastics at process temperatures of 400°C new challenges, such as large thermal expansion, temperature stability of sealings and cables. However, it offers opportunities to reduce significantly the cycle time and energy consumption, thereby improving the competitiveness.

To overcome these challenges the consortium proposes to manufacture two moulds, one for in autoclave consolidation with limited functionality due to the high environment temperature and an enhanced mould for out of autoclave consolidation. A new temperature profile for the consolidation process is also proposed to be developed.

For out of autoclave consolidation adequate surface structures will be investigated.

Parent Programmes:

H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Technische Universitaet Muenchen

Address:
Arcisstrasse 21
80333 MUENCHEN
Germany

Organisation Website:
http://www.tu-muenchen.de

EU Contribution: €206,250

Partner Organisations:

Alpex Technologies Gmbh

Address:
Gewerbepark
6068 Mils
Austria

EU Contribution: €417,813

Ostseestaal Gmbh & Co Kg

Address:
AN DER WERFT 17
18439 STRALSUND
Germany

EU Contribution: €794,995

Technologies:

Cabin and cockpit design
Innovative vehicle heating (fabrics with a heating coating in a thermoset resin/rigid multilayer sheets in a thermoplastic matrix)

Development phase: Research/Invention

STRIA Roadmaps: Vehicle design and manufacturing

Transport mode: Multimodal transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other