

Wet lay-up - vacuum bag process optimization sought for lightweight aircraft structures

Summary

Profile type	Company's country	POD reference
Research & Development Request	Hungary	RDRHU20220608011
Profile status	Type of partnership	Targeted countries
PUBLISHED	Research and development cooperation agreement	
Contact Person	Term of validity	Last update
Gergely CSÁSZÁR	8/6/2022 8/6/2024	06/08/2022

General Information

Short summary

A Hungarian aircraft producer company is looking for wet lay-up/vacuum bag process optimization for lightweight aircraft structures, comparing different carbon fiber fabrics and core materials regarding weight and mechanical properties. This research and development request is part of an AMULET innovation challenge.

Full description

The Hungarian company is present in almost all of the continents. Based on acknowledged Hungarian aeronautical expertise and modern technologies they create attractive and economic aircraft to enable the widest range of people to find their personalized joy in flying.

Within the framework of this research and development request the company is searching for the followings.

Scope:

- Production optimization of carbon fiber reinforced epoxy parts for light-weight air-craft by wet lay-up/vacuum bag process to achieve maximal mechanical performance (tensile-, compressive-, flexural strength, modulus etc.)

Objectives:

- Objective 1: Producing test panels (monolithic and sandwich) for mechanical testing with wet lay-up technology, materials to be used:

- o 200 gsm carbon fiber woven fabric (aero grade)
- o 160 gsm carbon fiber woven fabric (aero grade)
- o 200 gsm carbon fiber biaxial non-woven fabric
- o 80 gsm UD carbon fiber fabric
- o 300 gsm UD carbon fiber fabric
- o Airex C-70 PVC foam (or equivalent) with 5 mm thickness
- o AHC-Hex-48 aramid paper honeycomb, 48 kg/m³ – 3,2 mm cell size, 8 mm thickness
- o MGS LR285 + MGS LH287 resin system
- Objective 2: Tests to be performed
 - o ASTM D3039, ASTM D6641, ASTM D3518, ASTM D5379, ASTM D790, ASTM D7249
- Objective 3: Comparing fiber volume fraction, mechanical properties according to standards above.
- Objective 4: Based on results, define optimal process parameters and lay-up.

IMPORTANT: This technical cooperation request refers to an innovation challenge published within the AMULET project (financed within the Horizon 2020 INNOSUP-01-2018-2020 call). If an organization (only SMEs are eligible) expresses interest before the closing date, it will be guided towards the AMULET project website (<https://amulet-h2020.eu/>), where all additional information and guidelines for submission are published. With the support of AMULET matchmaking activities (or on their own) interested SMEs have to form micro-consortia of 2 or 3 SMEs, to prepare the solution to the specific innovation challenge and submit it through the AMULET application form.

Advantages and innovations

Stage of development

Concept stage

IPR Status

Secret know-how

Sustainable Development goals

• **Goal 9: Industry, Innovation and Infrastructure**

Partner Sought

Expected role of the partner

With the support of AMULET partners' matchmaking activities or on their own, interested SMEs have to form micro-consortia of 2 or 3 SMEs, to prepare the solution to the specific innovation challenge and submit it through the AMULET application form.

Type of partnership

Type and size of the partner

**Research and development cooperation
agreement**

- **SME 11-49**
- **SME 50 - 249**
- **SME <=10**

Dissemination

Technology keywords

- **02001 - Design and Modelling / Prototypes**
- **02011001 - Aeronautical technology / Avionics**
- **02011002 - Aircraft**

Targeted countries

Market keywords

- **08001001 - Plastic fabricators**
- **08001004 - Fibre-reinforced (plastic) composites**
- **08001018 - Polymer (plastics) materials**

Sector groups involved