

AMULET: Clean and high-performance machining of composite and light metal alloy stacks

Summary

Profile type	Company's country	POD reference
Research & Development Request	Slovenia	RDRSI2022060610
Profile status	Type of partnership	Targeted countries
PUBLISHED	Research and development cooperation agreement	• World
Contact Person	Term of validity	Last update
Tomaz Lutman	6/6/2022 6/6/2024	06/06/2022

General Information

Short summary

Slovenian university active in machining processes is looking for SMEs to apply to AMULET call and provide solution to the following challenge. The new carbon fibers reinforced plastics, ceramic matrix composites and Ti/Mg alloys are bringing with also challenges how they can be more sustainably machined. The solution has to meet higher performance, higher quality in combination with more health and environmental acceptable solutions – no oil-based emulsion usage.

Full description

The new carbon fibers reinforced plastics (CRFP), ceramic matrix composites (CMC) and Ti/Mg alloys are bringing with also challenges how they can be more sustainably machined, in individual or stack applications. The solution has to meet higher performance, higher quality in combination with more health and environmental acceptable solutions – no oil-based emulsion usage.

Research group at the Slovenian university is specialized in dynamic behaviour of machining processes, cryogenic machining, sustainable development, diagnostics and control in machining. They are looking for two or three SMEs which would address the following scopes and objectives.

Scope:

- Higher productivity
- Lower machining/manufacturing costs

- Substitution of oil-based emulsion
- Clean and dry machining process (especially in CRFP materials this improves the functionality of the produced parts)

Objectives:

- Find the solution for novel machining/processing of light weigh metals (Ti alloys, Mg alloys, Al alloys)
- Find the solution for novel machining/processing of CMC materials (C/C–SiC) and stuck structures with metals (i.e. Ti)
- Find the solution for novel machining/processing of CFRP materials and stuck structures with metals (i.e. Ti)

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 (eligible are SMEs only) 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

Sustainable Development goals

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

IPR Status

No IPR applied

Partner Sought

Expected role of the partner

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.

Type of partnership

Research and development cooperation agreement

Type and size of the partner

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

Dissemination

Technology keywords

- **02007003 - Ceramic Materials and Powders**
- **02007005 - Composite materials**
- **02007010 - Metals and Alloys**

Targeted countries

- **World**

Market keywords

- **08001004 - Fibre-reinforced (plastic) composites**
- **08001006 - Processes for working with plastics**
- **08001015 - Other speciality materials**
- **08001013 - Ceramics**

Sector groups involved

- **Materials**