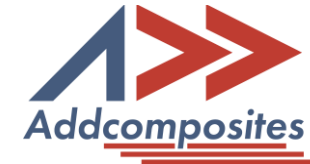


SEARCH FOR CONSORTIUM PARTNERS

1. **Institute of Fluid Flow Machinery, Polish Academy of Sciences** (expertise: damage detection, structural health monitoring)
2. **Institute for Polymers, Composites and Biomaterials, National Research Council of Italy** (expertise: material testing, new material desing)
3. **Addcomposites, Finland** (expertise: Advanced Composite Manufacturing Solutions)



SEEK FOR OTHER PARTNERS INTERESTED IN THE CALL:

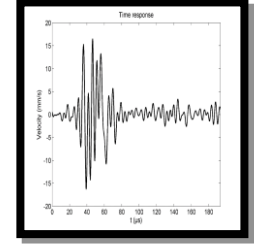
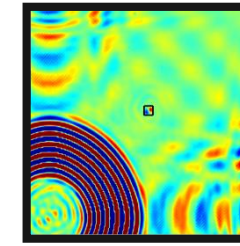
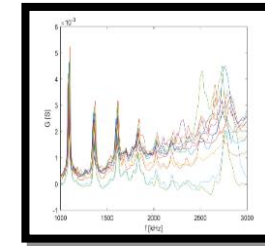
[COMPETITIVENESS AND DIGITAL TRANSFORMATION IN AVIATION – ADVANCING FURTHER COMPOSITE AEROSTRUCTURES](#)

[TOPIC ID: HORIZON-CL5-2024-D5-01-08](#) with the following expected outcomes:

- Advanced composite technologies, with emphasis on new designs, high-volume sustainable manufacturing with integrated inspection, sustainable and free of toxic substances, recycling and circularity, structures safety requirements (EMC/lighting protection, ice formation, fire, fatigue, crashworthiness and ditching) and additive manufacturing of the new generation of composites - for aerostructures and propulsion.
- Breakthrough technologies in coupled aerostructures-systems-propulsion integration.
- Cost-competitive maintenance and repair of composite aerostructures, including Structural Health Monitoring (SHM).
- Advancements in physical and digital research infrastructures, with emphasis on aerostructures for all aircraft configurations with emphasis on synergies with the three Clean Aviation (CA) Strategic Research and Innovation Agenda (SRIA) thrusts, with an eye towards virtual certification.

MAIN AREAS OF EXPERTISE OF THE INSTITUTE IN THE CONTEXT OF THE CALL:

- various nondestructive testing/evaluation (NDT/NDE) and structural health monitoring (SHM) methods
- damage assessment, composite structures, 3D printed structures
- Ultrasonic guided waves
- Ultrasonic waves
- Scanning Doppler Laser Vibrometry
- Electromechanical impedance
- Piezoelectric sensors



Contact person: Paweł Malinowski, PhD, DSc, associate professor [pmalinowski@imp.gda.pl]



ABOUT THE INSTITUTE

IMP PAN is a technical Research & Development institute of Polish Academy of Sciences working on fundamental and applied research in mechanical engineering and other related areas. It conducts research in several well-equipped laboratories, including: Micro-Cogeneration Plants and Ecological Boilers Laboratory, Solar Technology Laboratory, Wind Energy Laboratory, Safety Engineering Laboratory for Energy Generation, Integrated Plus-Energy Laboratory., laser laboratory, Vibrodiagnostics Laboratory, SHM Laboratory, Laboratories of water and wind turbines.

IMP PAN has been participating in European projects from 2008 – FP7, HORIZON 2020, INTERREG and EEA programmes, as a project consortium partner as well as a coordinator. PIC number: 999489650



MAIN AREAS OF EXPERTISE OF INSTITUTE IN THE CONTEXT OF THE CALL:

- Expertise on lightweight and ultra-lightweight low density materials
- High performance thermal insulating lightweight materials
- Polymer processing by lab scale and pilot scale mixing and extruding facilities
- Expertise on low environmental footprint, sustainable, free of toxic substances and bio-based polymers and additives
- Multifunctional materials (coupling of EMI shielding, sound absorption, thermal/structural properties)
- Production of materials and composite structures based on thermosets and thermoplastics
- Damage inspection by optical and electronic microscopy
- Mechanical (static and impact) characterization of composites
- Chemical-physical testing of materials and composite structures
- Development of cost-competitive maintenance and repair technologies of new composite aerostructures by exploiting real-time Structural Health Monitoring (SHM).

Contact person: **Luigi Sorrentino, PhD** [luigi.sorrentino@cnr.it]



ABOUT THE INSTITUTE

The Institute (IPCB) is the main research institute of the National Research Council (CNR) dedicated to the development of polymeric materials, composites and biomaterials, as well as biomacromolecules, green chemistry and chemistry for life sciences. Through a multidisciplinary approach, transversal skills are integrated, from synthesis to processing up to the validation in the relevant environment of innovative materials that are able to respond to the technological, economic, and environmental challenges in modern society.

IPCB - CNR has been participating in several European projects within FP5, FP6, FP7, HORIZON 2020. PIC number: 999979500

Addcomposites (Finland)



MAIN AREAS OF EXPERTISE OF ADDCOMPOSITES IN THE CONTEXT OF THE CALL:

- Advanced Composite Manufacturing Solutions like Additive manufacturing, Fiber placement
- 3d printing solution that can do either continuous filament or the traditional polymer deposition (additive manufacturing)
- Composite material-based Thermoplastics (end of life recyclability)
- High volume manufacturing with integrated inspection technologies
- Lightweight structures, aerospace, green tech

Contact person: **James Kuligoski** [james.kuligoski@addcomposites.com]



ABOUT THE COMPANY

Addcomposites specializes in providing advanced automation for composite production, with a focus on fibre placement (AFP), additive manufacturing and software for common industrial robots. The target industries include lightweight structures, aerospace, space, military, and green tech. The market reach is Global with a focus on Europe and North America's premier universities and Technical centers in all industries, in 3 spaces: Research & Development, Educational Purposes and EU-funded Projects.

Addcomposites has participated in H2020/Horizon Europe and AMULET projects, as well as locally funded projects. PIC number: 910645604

