



PLEIADES

NEWSLETTER
01 | 2025

PLEIADES has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement no. 101192721.



**Funded by
the European Union**

ABOUT PLEIADES

WHAT WE DO

PLEIADES – Advancing Aerospace Composites through Induction Welding and New Vitrimeric Formulations Enhanced by Integrated Photonic Sensors, Providing Data to Digital Supply Chain, SHM, Maintenance – is an EU-funded project bringing together different disciplines and key technologies that will contribute to advancing further composite aerostructures and promote the digital transformation in aviation.

Aviation must remain a safe, reliable, cost-effective and efficient means of transportation while successfully transitioning to climate neutrality.

The composites aerostructures market is projected to grow to US\$116 billion by 2030, attributed to the increasing demand for advanced materials in aircraft manufacturing, which exhibit lightweight properties and can withstand harsh environments, ultimately improving the aircraft performance and cost savings.

The PLEIADES project aims to address these needs, making significant steps

towards meeting the industry's requirements through its proposed solution.

PLEIADES multiple disciplines extend across a wide variety such as formulations and characterisation of new composite materials, automation of induction welding processes for composites leveraging integrated sensing, disassembly of composites joints, healing and maintenance schedules. These will be complemented by the development of passive PIC based multi sensors, the development of a unified QA-SHM methodology, the extensive modelling for induction welding and the development of material, healing, damage propagation, and de-icing models.

All of these disciplines will be pursued within PLEIADES and with tangible use cases by the aerospace industry, in synergy with the Clean Aviation partnership to ensure its innovations are aligned with it.

OUR KEY GOALS

- Promote sustainability and circularity
- Cost savings 30-40 %
- Development of maintenance and repair protocols
- Development of innovative SHM methodology

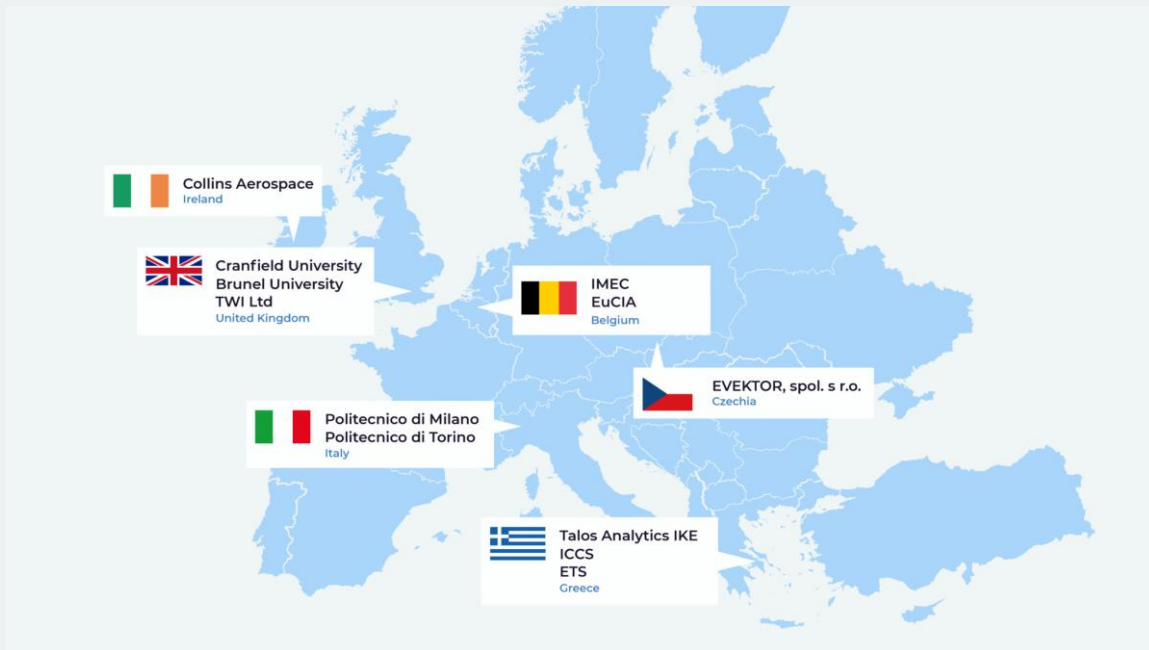
READ MORE ABOUT THE PROJECT ON OUR [WEBSITE](#)



OUR PARTNERS

Bringing together a team of 12 partners coming from 6 countries, the PLEIADES consortium has been strategically selected to include the entire technology development chain, comprising a high-quality blend of strong industrial and

academic partners satisfying all technological requirements. It provides a clear path towards transforming the project objectives into exploitable know-how with strong impact potential.



[LEARN MORE ABOUT OUR PARTNERS HERE](#)



MEET OUR PROJECT COORDINATOR – TWI

TWI is a world leading research and technology organisation, providing technical excellence and support, spanning innovation, knowledge transfer and problem resolution across all aspects of welding, joining, surface engineering, inspection and whole-life integrity management. As a membership-based organisation, TWI supports both individuals and companies

alike, delivering authoritative and impartial expert advice, knowhow and safety assurance – helping its members design, create and operate the best products possible and solving problems at any stage, from initial design, materials selection, production and quality assurance, through to service, performance, and repair.

PLEIADES ONLINE

WEBSITE LAUNCH

The PLEIADES website was launched in February 2025.

We welcome the opportunity to present the project's objectives, results and technologies in the media.

Over the coming months we'll be sharing much more information about the

project's objectives, our partners and activities.

In our repository, you can find research papers, conference presentations and publications for download. The media center contains press releases, news and exciting background information.

VISIT OUR WEBSITE: [HTTPS://PLEIADES-PROJECT.EU/](https://pleiades-project.eu/)

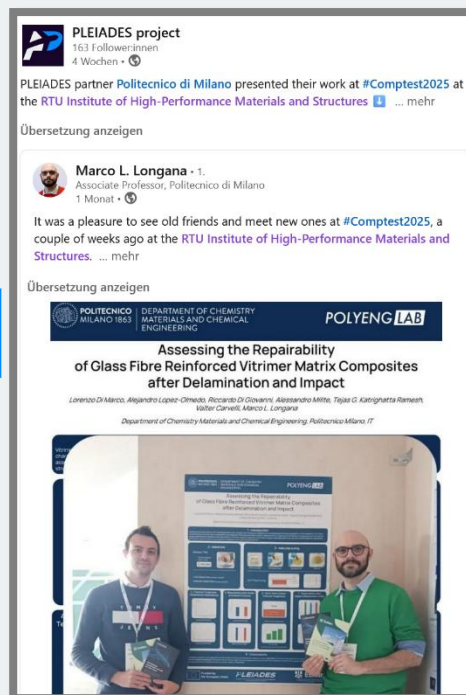


LINKEDIN

PLEIADES project is on LinkedIn!

The account has been online since the start of the project and accompanies us on our journey. We keep you informed

about all the latest news and events in short posts. You can also find behind-the-scenes insights such as photos and information from project meetings here.



FOLLOW US AND STAY UP TO DATE!



PUBLICATIONS

FIRST PLEIADES LEAFLET PUBLISHED

Our first leaflet about PLEIADES was published in February 2025, providing a concise introduction to the project and its objectives.

Find out how our partners are collaborating to develop innovative technologies for composite aircraft structures.

[DOWNLOAD THE PLEIADES LEAFLET HERE](#)



PROJECT DELIVERABLES

Three deliverables on the topic of communication have been published. The first document, **D12.1**, showcases the communication kit for the PLEIADES project such as logo, templates, fact-sheet, website, social media channels, document storage & access.

D12.5 provides an Initial plan for dissemination and exploitation, including communication activities, standardization activities, and market analysis. Deliverable **D12.3** is a dissemination action plan and communication plan for the project.

[DOWNLOAD THE DELIVERABLES HERE](#)



ARTICLE IN "WELDING AND JOINING MATTERS"

An article about PLEIADES project was published in 'Welding and Joining Matters' issue 11 (April 2025):

"TWI-led PLEIADES project launches – Advanced Composites for Aerospace

[READ THE ARTICLE HERE](#)



PUBLICATION: MINIATURE PHOTONIC INTEGRATED PRESSURE SENSOR

A new paper by researchers from UGent and NTUA presents a miniature photonic integrated pressure sensor based on a suspended waveguide Bragg grating. This ultra-compact, fiber-coupled sensor uses advanced microfabrication to enable precise, passive pressure

sensing in environments where conventional electrical sensors are not suitable. The technology supports the broader vision of photonic multi-parameter sensing for real-time monitoring in advanced manufacturing - a key objective of the PLEIADES project.

[READ THE ARTICLE HERE](#)



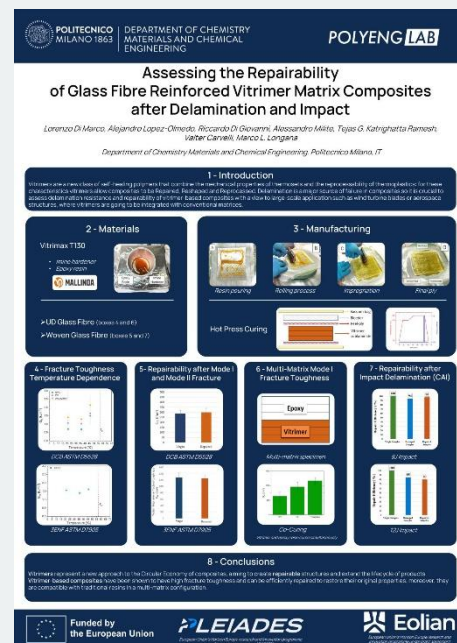
EVENTS

POSTER PRESENTATION ON VITRIMER MATRIX COMPOSITES

PLEIADES partner Polymer Engineering Lab (PolyEngLab) from Politecnico di Milano presented their work on vitrimer matrix composites at Comptest2025 at the RTU Institute of High-Performance Materials and Structures.

Within PLEIADES, PolyEngLab focuses on the development and testing of healing and maintenance schedules for vitrimer based composite materials.

They are responsible for researching and implementing methodologies for the rheological and mechanical characterization of these advanced materials, as well as contributing to the development of a healing model.



[YOU CAN FIND THE POSTER IN OUR MEDIA CENTER](#)



KICK-OFF MEETING IN BRUSSELS

On January 13th/14th, 2025, our kick-off meeting launched in Brussels, Belgium. At invitation of The European Composites Industry Association (EuCIA) and hosted by project coordinator TWI, all our partners and our Project Officer from the European Union came together to discuss the project's work packages and planned activities.



PLEIADES MID-YEAR MEETING IN CAMBRIDGE

On June 19th–20th, 2025, the PLEIADES team gathered in Cambridge for our mid-year project meeting. Together, we reflected on the progress of the past months and planned our next steps to keep advancing towards our goals. A big thank you to all partners for the valuable exchange and inspiring collaboration — we look forward to the milestones ahead!

