'25 MANUFUTURE CONFERENCE

MANUFUTURE CONFERENCE

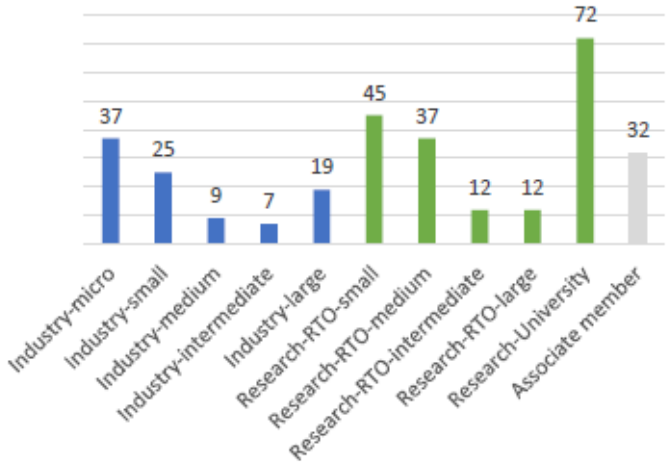
The role of public policies

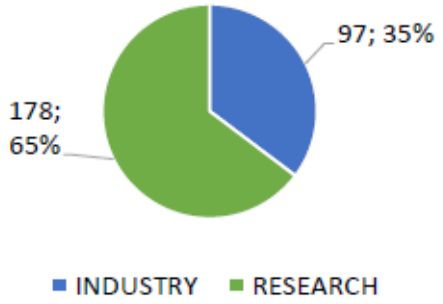
Ciro Rocco, IAM-I

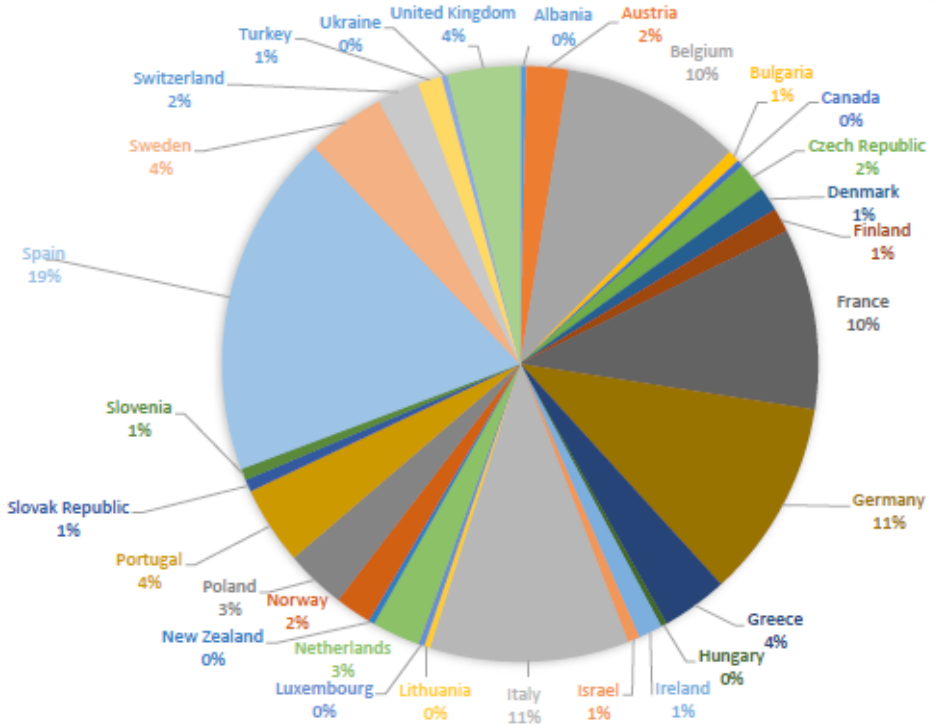
MANUFUTURE-EU

Título ponencia > **IAM-I...Who we are**

IAM-I membership (October '25)







- 307 members
- 30 Countries (7 EU13; 8 AC)

MANUFUTURE CONFERENCE ‘25

Título ponencia > **IAM-I…Who we are**

Members

INDUSTRY

RESEARCH

ASSOCIATE

Título ponencia > **Innovation Drivers & Technology Trends**

Sustainability & Circularity

Industrial R&T must lead research in fundamental understanding of materials sourcing (e.g. bio-based building blocks), low energy green process chains, advanced recycling routes, reuse of materials, …
Industrial R&T must be source of corporate expertise in new upcoming materials (e.g., GRMs, 2DMs, advanced materials)

Digital Materials

Industrial R&T must lead research in digitising materials science & technology - from substance design & definition, analytics, testing, processing and optimization; must pave the way for the application of AI along the full materials life-cycle.
Industrial R&T must source key expertise to analyse, model, simulate and optimize materials properties and behaviour

Functional Materials

Industrial R&T must lead research in advanced functional materials solutions, like structure integrated sensors, electronics & batteries, morphing materials, acoustic/thermal insulation solutions, smart coatings: icephobic, easy-to-clean, scratch resistant, aerodynamic efficient, …

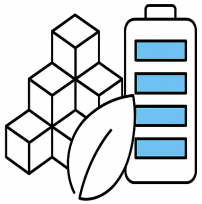
Performance Materials

Industrial R&T must lead research in materials for electrification, fuel cell materials, materials for enabling liquid H2 systems (H2 collection, H2 storage, H2 sensing, cryo materials), high performance hybrid ceramic materials, high performance composites and polymers, CO2 capturing, …

Título ponencia > **Strategic objectives**

1. Secure Europe’s leadership in Advanced Materials by closing the gap between laboratory innovation and industrial deployment.

2. Ensure materials sustainability and circularity while safeguarding competitiveness and timely market access.



3. Enable resilient, diversified, and efficient use of critical raw materials through material substitution, improved recyclability, and recovery infrastructures.

4. Mobilize public funding and private investment into scale-up, demonstration, and first of a kind plants across all TRLs.

Título ponencia > **IAM-I & EFFRA**

IAM-I
INNOVATIVE
ADVANCED
MATERIALS
INITIATIVE

EFFRA
EUROPEAN FACTORIES OF THE FUTURE
RESEARCH ASSOCIATION

Título ponencia > **Key Common Areas**

Area	IAM-I	EFFRA	Shared Focus
Strategic Objective	Promotes innovative, sustainable, and digital materials for Europe's green and digital transition.	Promotes advanced manufacturing technologies to boost industrial competitiveness.	Both aim at Europe's industrial transformation based on sustainability and digitalization.
R&I Ecosystem	Covers materials, digital tools, methods, and value chains.	Covers manufacturing processes, supply chains, and digital production.	Strong overlap: advanced materials enable innovative manufacturing processes.
Policy & Industry Dimension	Shapes the Strategic Research & Innovation Agenda (SRIA) for materials.	Acts as the private side of the 'Made in Europe' partnership.	Both bridge industry, research, and EU policy frameworks.
Cross-cutting Topics	Safe-and-sustainable-by-design materials, digitalization, resilience.	Digital manufacturing, human-centric factories, circular economy.	Shared priorities: sustainability, circularity, and digital innovation.
Value for Stakeholders	Independent network for materials innovation and EU project opportunities.	Network supporting technology transfer and manufacturing innovation.	Membership in both networks maximizes impact and visibility.

Título ponencia > **Opportunities**

- IAM-I and EFFRA are complementary platforms: one focuses on advanced materials, the other on manufacturing technologies.

- Their collaboration creates added value for European industries.

- Joining both networks allows organizations to:
  - Build stronger EU project proposals
  - Access advanced manufacturing and materials ecosystems
  - Increase visibility across complete value chains.

The problem

Production scraps

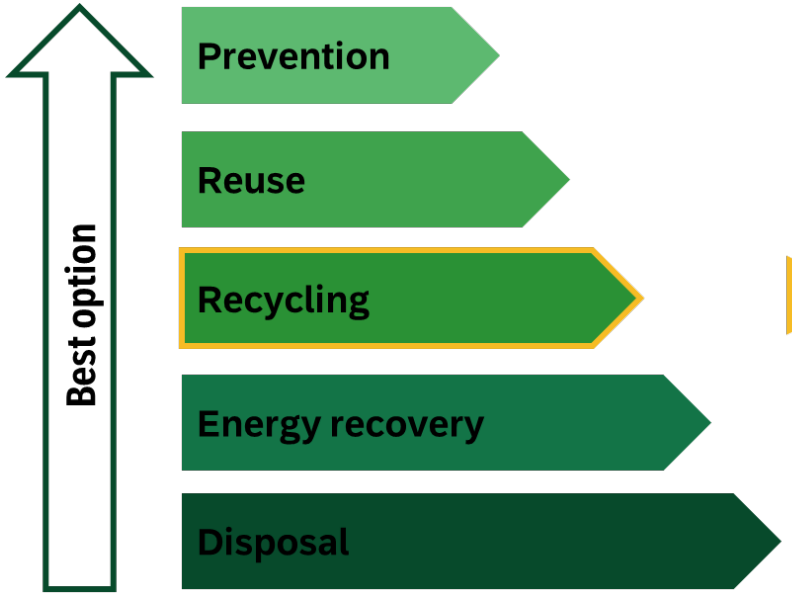
Leonardo is a leader in the production of aerospace components made of composite material. The use of large quantities of CFRP (Carbon Fiber Reinforced Polymer) generates significant amounts of waste (>500 tons/year).

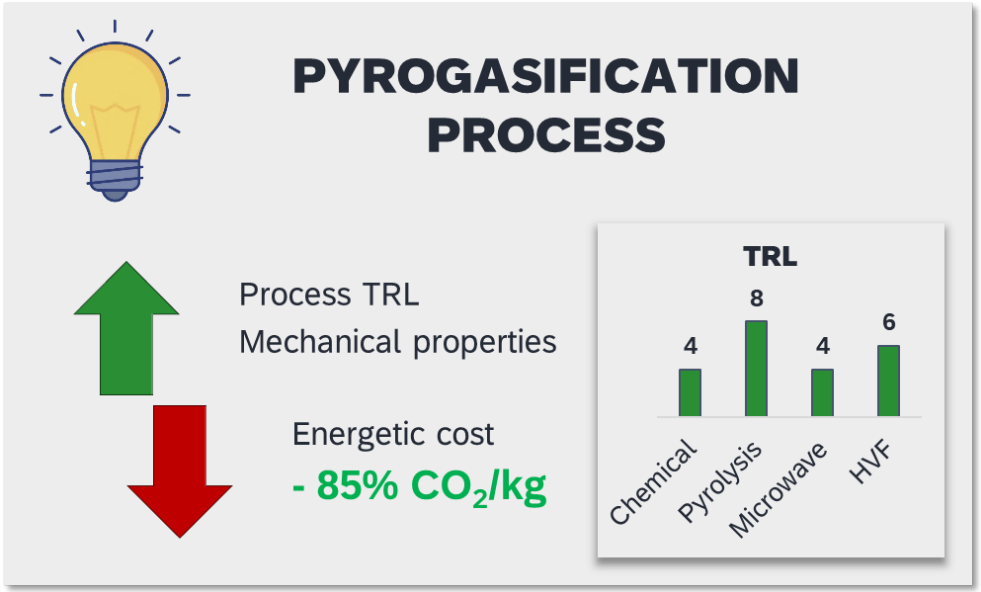
Courtesy of Leonardo SpA

The solution

Recycling

The development of an efficient process for composite recycling to reduce the environmental impact of carbon fibers, while providing economic benefits for manufacturers.





The R&D project

MoU with HERA

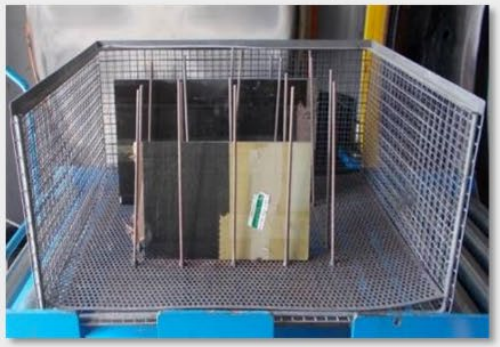
Lab-scale testing

Defining a lab procedure to optimize the process

2022

Mid-scale testing

Scale up to pilot plant and definition of possible applications



CURTI INDUSTRIES · SYENSQO ADVANCING HUMANITY

2023

Industrial-scale solution

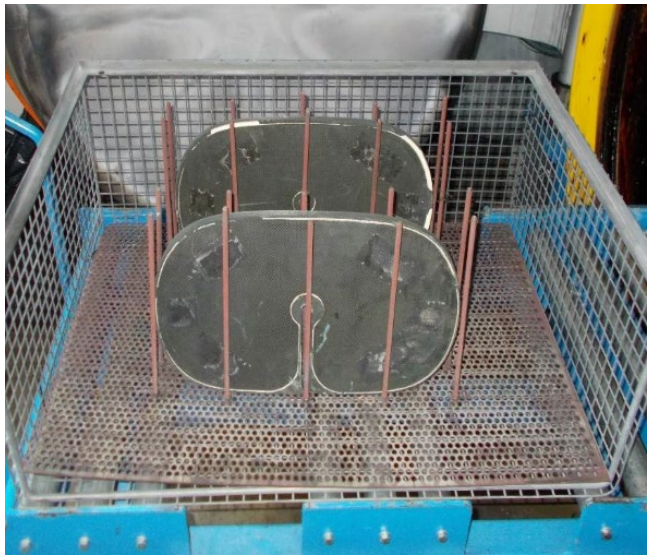
Industrial process optimization and reuse of rCF

GRUPPO HERA · SYENSQO ADVANCING HUMANITY

2024

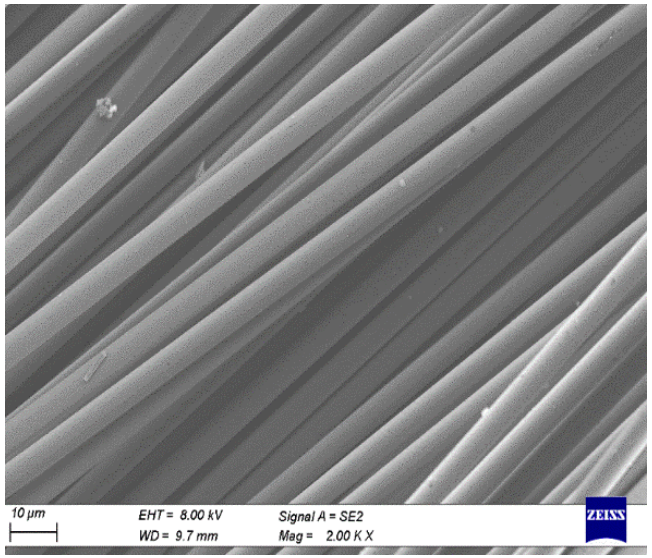
The R&D project

The Process



Untreated scraps

Recovered fibers



SEM analysis

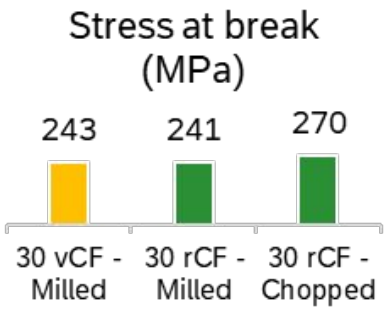
Some results

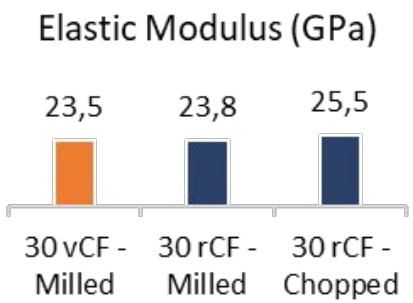
- Recycled carbon fiber integrated into thermoplastic pellets

PEEK-vCF 30% milled

PEEK-rCF 30% milled

PEEK-rCF 30% chopped





Fibre	Elastic modulus (MPa)	Stress at break (MPa)	Strain at break (%)
30 vCF* - Milled	23500	243	1,5
30 rCF - Milled**	23800	241	1,5
30 rCF - Chopped	25500	270	1,8

The mechanical properties are equivalent

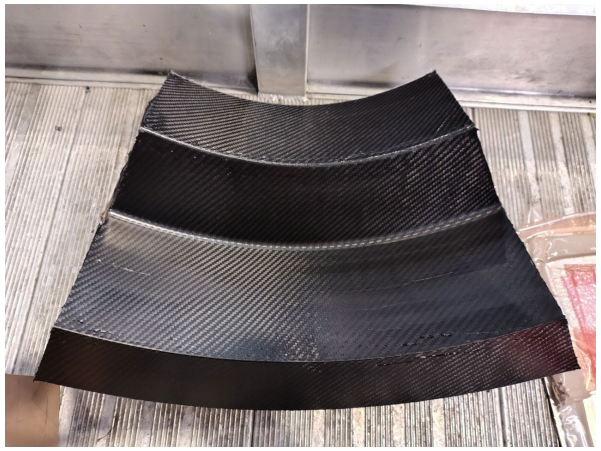
Further experimenta test with other thermoplastic polymers

** virgin carbon fiber (vCF)*
*** recycled carbon fiber (rCF)*

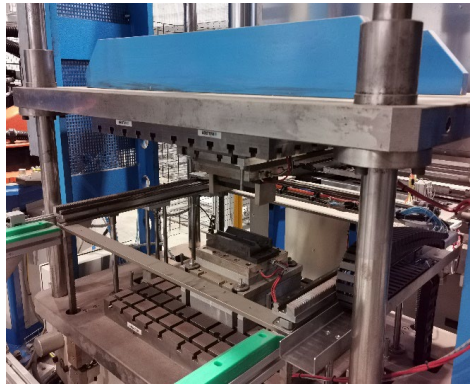
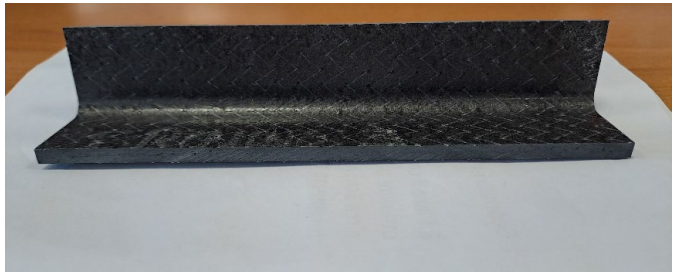
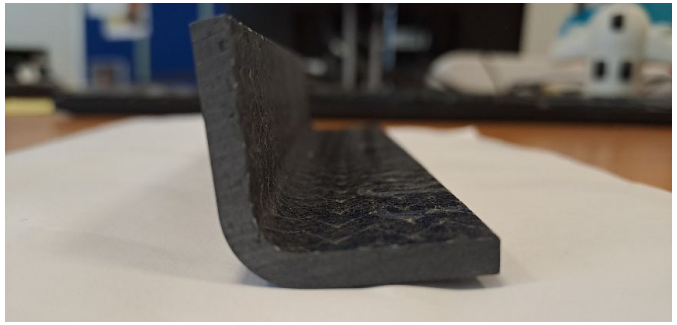
Some results

- Integration of recycled fibers into resin for tooling





- Integration of recycled fibers into fast curing resin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HR

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