



THERMOFIRE Newsletter #4

Bio-based fire-retardant thermoplastic composites reinforced with natural fibres

Dear readers,

As we begin 2026, the THERMOFIRE consortium would like to extend its warmest wishes to all our readers, partners, and stakeholders. We wish you a year filled with success, innovation, and impactful collaboration. This new year marks an **important turning point** for the THERMOFIRE project. In January, the consortium gathered for a dedicated meeting to review the significant progress achieved so far and to align on the priorities for the **final 16 months of the project**. This meeting confirmed a clear and ambitious roadmap for the coming period.

The project is now entering a **demonstrator-driven phase**, with major efforts focused on the development and validation of **automotive, aerospace, and textile demonstrators**. In parallel, strong attention will be given to the **end-of-life assessment** of the materials and products developed, ensuring that performance, safety, and sustainability are addressed throughout the entire value chain.

Beyond technical development, the coming months will also be key for **exploitation and dissemination activities**, aiming to maximise the impact of THERMOFIRE's results, strengthen links with industry, and support the uptake of bio-based, fire-resistant composite solutions.

We look forward to sharing these next steps with you and to continuing this journey together toward **safer, lighter, and more sustainable materials**.

Warm regards,
The THERMOFIRE Team

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Survey: Standardisation Challenges for Advanced Bio-Based Composites

As part of the THERMOFIRE project and its collaboration with several EU-funded initiatives, we have launched an online survey to collect feedback from across the value chain on standardisation challenges related to advanced bio-based composites.

The survey builds on discussions held during our recent joint webinar and aims to:

- identify key gaps and barriers in existing standards,
- prioritise areas where standardisation is most urgently needed,
- better understand the support required by industry and R&D actors to accelerate market uptake.

We warmly invite industrial stakeholders, SMEs, researchers, technology providers and standardisation bodies to share their perspectives.

🕒 Estimated completion time: ~5 minutes

📊 Use of results: responses will be analysed in an aggregated and anonymised manner and will support cross-project recommendations and dialogue with European standardisation bodies.

👉 [Take the survey here](#)

Your contribution will help shape future standardisation efforts and foster the adoption of safe, sustainable and competitive bio-based composite materials in Europe.

THERMOFIRE in Videos

Over the past months, the **Thermofire project** has captured key moments of its journey through a series of short video capsules, now available on the project's **YouTube channel**.

These videos highlight the people, the challenges and the achievements behind the development of **bio-based, flame-retardant thermoplastic composites**. From formulation and scale-up, to sector-focused demonstrators in aerospace, automotive and textiles, the capsules give a concrete and accessible overview of the project's progress and ambitions.

You will also find interviews with consortium partners sharing what they have learned, the technical challenges they are addressing, and the next steps ahead as Thermofire enters its second half.

In addition, the YouTube channel hosts the **replay of the latest Thermofire webinar**, offering deeper insights into the project's results, technical developments and perspectives for industry and stakeholders.

We invite you to explore the full video collection and watch the webinar replay to better understand how Thermofire is contributing to a more sustainable, high-performance composites industry.

Discover the Thermofire YouTube channel and latest videos here:

www.youtube.com/@THERMOFIRE-CBE-JU

Looking Back: Key Event

30M Consortium meeting

Torino, Italy

21 January 2026

The THERMOFIRE consortium met for its M30 project meeting, generously hosted by our partner Centro Ricerche Fiat Stellantis. This gathering was a valuable opportunity to bring all partners together in a friendly and collaborative atmosphere, while marking an important milestone in the life of the project.

We are very grateful to CRF for the excellent welcome, the high-quality organization of the meeting, and the insightful visit of their research facilities, which fostered rich and constructive exchanges. The meeting also gave us the chance to celebrate the retirement of Enrico Mangino. We would like to warmly thank him for his strong commitment to THERMOFIRE and for his remarkable contribution, both from a technical and human perspective.

Discussions were mainly focused on the prototyping phase, with targeted applications in the aeronautics, automotive, and textile sectors. As the project enters its final stretch, the implementation and qualification of prototypes will be at the core of the work planned for the remaining 18 months. In parallel, chemical and mechanical recycling solutions for the materials developed within THERMOFIRE will also be explored.

THERMOFIRE is now reaching a key turning point, progressively moving towards the exploitation of its results.





Online Workshop: Towards Advanced Bio-Based Composites for a Sustainable Industry: Stakeholder Engagement and Standardisation Challenges

Online

10 December 2025

The THERMOFIRE project, together with FURIOUS project, AlChemiSSts, BIO-UPTAKE and BIOntier, organised a joint webinar: “Towards Advanced Bio-Based Composites for a Sustainable Industry: Stakeholder Engagement and Standardisation Challenges.”

The event gathered more than 30 participants from industry, research organisations, SMEs and standardisation bodies, leading to rich discussions on: standardisation gaps for bio-based composites, durability and sustainability assessment, certification, market uptake and EU-level coordination.

Missed the webinar or would like to watch it again?

[Replay available here](#)

Partner Contributions: Progress Updates

ENSATEC: Leading Fire Testing and Certification of Bio-Based Materials

Within the THERMOFIRE project, ENSATEC is responsible for leading the **fire resistance and reaction-to-fire testing activities**, playing a crucial role in validating the safety performance of the newly developed bio-based materials.

ENSATEC operates a **dedicated fire-testing laboratory**, equipped to assess innovative materials according to a wide range of international standards. The team is currently receiving and characterising samples corresponding to the three main use cases of the project—automotive, aerospace, and textile applications—using reference standards such as UL94 and SBI.

Key Activities and Recent Progress:

Over the past months, ENSATEC has successfully carried out the **initial fire characterisation of composite panels** intended for the **building and automotive sectors**. These panels, produced by GEOPANNEL, are based on **bio-based polymers, halogen-free flame-retardant additives, and natural fibres**.

The achieved **fire classification results** confirm that these materials meet the requirements for **automotive interior applications**, representing a significant step toward their industrial validation. Additional testing campaigns are ongoing to extend classification to other standards, including SBI, broadening the potential application scope.

Beyond Standard Testing:

In parallel with conventional certification procedures, ENSATEC is actively contributing to reflections on the **development of adapted testing methodologies for emerging bio-based composites**. This work addresses the specific behaviour of these new materials and supports the evolution of fire-testing practices in line with sustainable material innovation.

ENSATEC's contribution is essential to ensuring that THERMOFIRE's bio-based solutions combine **high fire safety performance with regulatory compliance**, paving the way for their adoption across multiple industrial sectors.



CTME: Advancing Bio-Based Fire-Resistant Composites for Automotive Battery Casings

The automotive demonstrator of the **THERMOFIRE** project is reaching a significant milestone, with **CTME (Technological Centre of Miranda de Ebro)** leading the development of innovative **bio-based composites for electric vehicle battery casings**.

CTME has successfully designed and developed **two promising material formulations** tailored for this demanding application. Both are based on **bio-based PA11 Rilsan® FMNO from ARKEMA**, combined with the **bio-based flame retardant VP2366**, developed by **AVANZARE** within the project, and reinforced with natural fibres.

Key Innovation:

Two complementary reinforcement strategies have been explored:

- A formulation reinforced with **short flax fibres**, fully aligned with the project's bio-based ambition
- A formulation reinforced with **short basalt fibres**, offering an alternative approach to optimize performance

Highlights of Recent Progress:

- Both formulations achieved **excellent fire performance**, reaching a **UL-94 V-0 classification**, a key requirement for battery casing applications.
- **Good mechanical properties** were also demonstrated, confirming the strong potential of these materials for use in electric vehicle components.

Next Steps:

The upcoming phase will focus on **upscaling the selected formulations**, led by **NATUREPLAST**, to produce sufficient quantities for demonstrator manufacturing. Within **WP4, CRF** will be responsible for producing and characterising the final **battery casing prototype**.

In parallel, CTME—leader of the **Life Cycle Assessment (LCA)** activities in THERMOFIRE—is compiling data from all partners to quantify the **environmental benefits** of the developed bio-based solutions compared to conventional fossil-based materials.

Dissemination and Outreach:

In February March, THERMOFIRE presented its latest advances on the automotive demonstrator during an **online workshop jointly organised with the FURIOUS and POLYMEER projects**. CTME shared key results, with particular emphasis on the **outstanding fire resistance** achieved by the bio-based composites.

UPCOMING EVENT

JEC World 2026

Date: 10 March 2026

Location: Paris-Nord Villepinte, France

Let's connect at JEC World 2026!

Meet the Polymeris team at Booth 5F97 to discuss use cases, performance challenges and integration of fire-safe solutions into advanced materials systems.

Join us for a European Projects Networking Cocktail held during JEC World 2026, bringing together clusters, industrial partners and EU project representatives.

Why join?

- Connect with European clusters and industry players
- Exchange on innovation, materials and collaborative opportunities
- Explore synergies across EU-funded projects



Stay connected

Stay updated with the latest news from THERMOFIRE:

Website: <https://www.thermofire-project.eu>

Email: elvira@avanzarematerials.com

LinkedIn: <https://www.linkedin.com/company/thermofire-cbe-ju/>

Register to our newsletter: <https://www.thermofire-project.eu/newsletter.html>

We welcome your questions, feedback, and ideas. Let's work together to revolutionize fire safety!

Thank you for your interest and support of the THERMOFIRE project. Stay tuned for more updates in the next edition of our newsletter.

Warm regards,

The THERMOFIRE Team

[Register to our newsletter](#)



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