Biomaterials start-up develops sustainable composite materials made from mycelium, the root structure of mushrooms, alternative to plastic materials, focusing on acoustic panels for interior design and architecture.

Summary

Profile type
Technology offer

Company's country
Türkiye

POD reference
TOTR20250908014

Profile status
PUBLISHED

Type of partnership
Research and development cooperation agreement
Commercial agreement with technical assistance
Investment agreement

Targeted countries
• World

Contact Person
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Term of validity
8 Sep 2025
8 Sep 2026

Last update
8 Sep 2025

General Information

Short summary

Biomaterials start-up from Türkiye specializing in the development of sustainable composite materials made from mycelium—the root structure of mushrooms—and upcycled agricultural and textile waste. We create biodegradable, and VOC-free (volatile organic compounds) alternatives to traditional petroleum-based and plastic materials, primarily focusing on acoustic panels for interior design and architecture.

Full description

We design and develop sustainable acoustic materials using mushroom mycelium and agricultural/textile waste, offering an eco-friendly alternative to petroleum-based products in interior architecture. Our materials are free from petrochemical binders and harmful chemicals, yet they match the mechanical and physical performance of conventional acoustic panels while significantly reducing environmental impact.

The construction industry is one of the largest contributors to global waste and carbon emissions, accounting for 30% of EU waste, 40% of energy consumption, and 36% of energy-related greenhouse gas emissions, making it a key focus under the EU Green Deal. According to the UN Environment Program, the sector generates 39% of global

annual carbon emissions, spanning material production, operational energy use, and embedded emissions (World Economic Forum, 2022).
Our solution leverages the natural growth process of fungal mycelium to create 100% bio-based and biodegradable materials—produced without petrochemicals, synthetic additives, or intensive chemical processes. By embracing regenerative design, we aim to transform material production and reduce the construction sector's environmental footprint.

Operating on a B2B business model, we generate revenue through direct sales, custom design services, and collaborative pilot projects with architects, designers, and manufacturers and R&D projects focused on mycelium composites. Our products support circular economy principles and comply with global green building certifications, offering low-carbon, non-toxic, healthy material solutions throughout their lifecycle. Our materials biodegrade naturally at the end of their life cycle without generating waste, requiring no collection or industrial composting, as they safely return to soil as nutrients.

Advantages and innovations

Our innovation combines advanced biology, material science, and sustainability to create mycelium-based composites from just two ingredients: upcycled cellulosic waste and fungal mycelium. Without petroleum inputs, chemicals, or synthetic binders, mycelium naturally binds substrates through enzymatic action, entanglement, and self-assembly. The biologically driven process eliminates high heat or chemical curing, using up to 6 times less energy than conventional materials like PU foam or fiberglass. Fully biodegradable under natural conditions, our materials carry 50% lower carbon emissions than plastics, emit no VOCs, and match the performance of EPS, PU, and glass wool—delivering safe, low-carbon, and non-toxic solutions for construction.

Technical specification or expertise sought

Stage of development

Available for demonstration

Sustainable Development goals

- **Goal 11: Sustainable Cities and Communities**

IPR Status

Secret know-how

IPR Notes

Partner Sought

Expected role of the partner

We are looking for a partner that can complement and strengthen our expertise in mycelium-based materials by

bringing in capabilities along the value chain. Specifically, the partner is expected to:

* Application & Demonstration: Integrate our mycelium composites into real-world use cases (e.g., architecture, construction, packaging, automotive, or interior design) through pilot projects, demonstration sites, or prototyping.

* Scale-Up & Manufacturing Capacity: Contribute knowledge or facilities for industrial-scale processing, engineering integration, or hybrid material systems that accelerate market readiness.

* Cross-Disciplinary Collaboration: Provide insights from related domains (e.g., circular construction, bio-based composites) to co-develop innovative solutions with high societal and environmental impact.

We are also looking for consortiums to apply:

HORIZON-NEB-2025-01-REGEN-01 Applying regenerative design to the built environment in neighbourhoods
HORIZON-NEB-2025-01-BUSINESS-01 Renovating the built environment through design for adaptability and disassembly.
HORIZON-NEB-2025-01-BUSINESS-03 Reverse local construction supply chains for the beautiful re-assembly of reclaimed construction products

Type of partnership

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Investment agreement

Type and size of the partner

- **R&D Institution**
- **SME 11-49**
- **Big company**
- **University**
- **SME 50 - 249**

Dissemination

Technology keywords

- **02006001 - Materials, components and systems for construction**

Market keywords

- **09007002 - Manufacture of construction materials, components and systems**
- **06001006 - Chemicals and materials**

Targeted countries

- **World**

Sector groups involved

- **Construction**