

Expression of Interest

HORIZON-NEB-2025-01-REGEN-02- Bio-fabricated materials for sustainable and beautiful construction

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VTT Overview

VTT Technical Research Centre of Finland Ltd is one of Europe's leading research, development, and innovation organizations. VTT operates across **three core business areas**:

- 1. Sustainable Products and Materials:** Developing bio-based alternatives to plastics, novel fibre products, and textiles.
- 2. Carbon Neutral Solutions:** Advancing technologies that support climate goals.
- 3. Digital Technologies:** Innovating in AI, data, and connectivity



284 M€
turnover and other
operating income

2,355
employees

45%
of the net turnover
from abroad

32%
a doctorate or a
licentiate's degree

Established in
1942

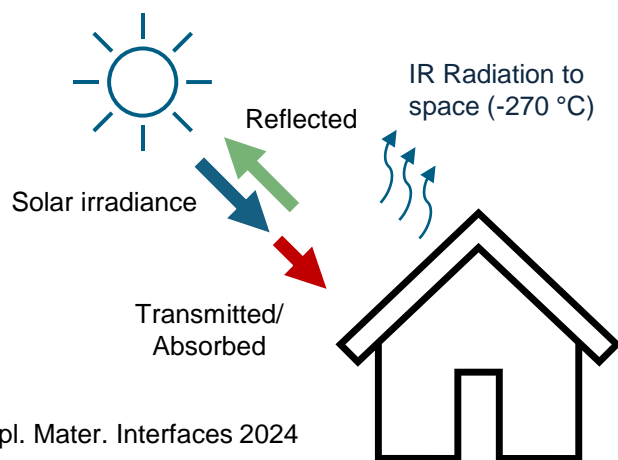
Steered by Ministry
of Economic Affairs
and Employment

VTT offers expertise

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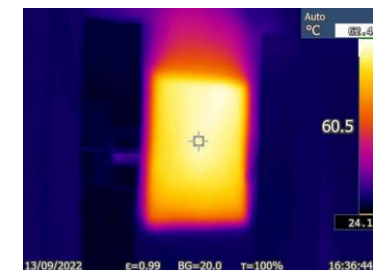
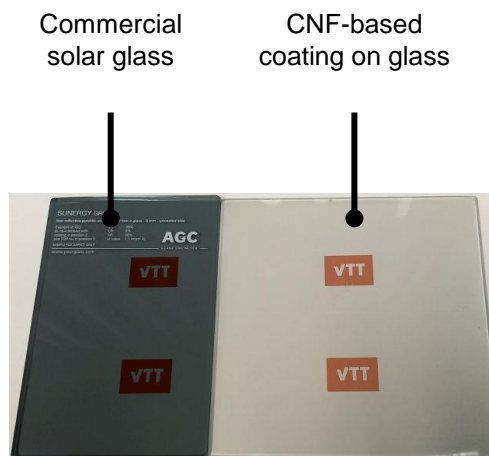
Biomaterial - based adaptive cooling or heating layers in buildings

Nanocellulose-based films and glass coatings for passive (powerless) cooling



Jaiswal, A.K. et al. ACS Appl. Mater. Interfaces 2024

<https://www.vttresearch.com/en/news-and-ideas/cooling-building-weather-adaptive-plant-derived-nanomaterials>



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VTT Coordinating EU-CIRCBUILT- CIRCULAR biobased materials for the Built environment (granted under HORIZON-MISS-2024-NEB-01-01)

Read more - <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/projects-details/43108390/101212747/HORIZON>

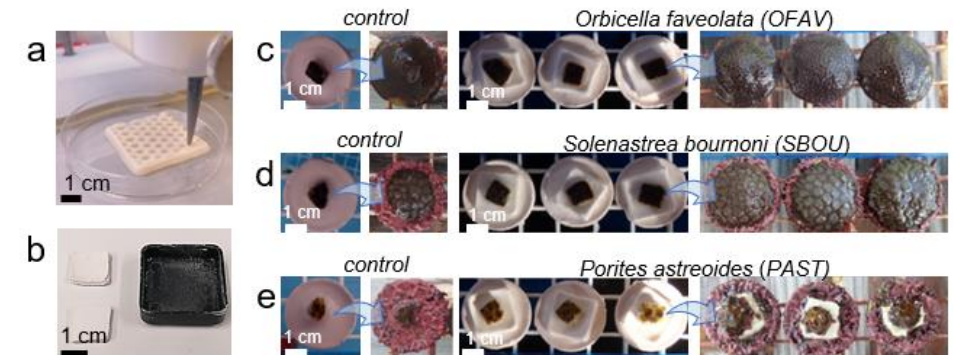
Cellulose based construction & textile materials from biogenic and captured CO₂

STRUCTURES AND FOAMS Hybrid living biobased living materials for long life CO₂ capture, using renewable lignocellulose waste ensuring biodegradability and safety for industrial, urban and coastal area. Optional composites with concrete, cement, ceramics, also 3D-printed ones

SPUN SIDE STREAM TEXTILES. Agriculture and marine side streams for low reflectance and energy harvesting/Temperature regulation textiles



MARINE ECOSYSTEM RESTORATION Coral attachment and growth in seawater with no signs of toxicity, as observed for approximately 8 months in the Pacific coastal location in California.



Refereces: Reyes, G. et. al.

(1) ACS Appl. Polym. Mater. 2022, 4, 4, 2908–2916 ; (2) Adv. Mater. 2023, 35, 2209327; (3) Green. Chem., 2002, 24, 3794

Biomaterial Processing and Products at VTT offer expertise



In research and development areas of sustainable construction materials, packaging, coatings, and components of electronic & energy storage devices. With pilot-scale processing, manufacturing of biobased materials, and their advanced characterization infrastructure, we're open to impactful partnerships for proposal preparation as Coordinator/Partner for this call.

Link-<https://www.vttresearch.com/en>

Ongoing **EU-Projects** – **CIRCBUILT** (VTT is Coordinator), 2025 ->

Bio-LUSH (VTT is Partner) 2023 -> <https://biolush.eu/>

CBE JU ECOFUNC (VTT is coordinator) 2025 ->

CIRCULAR-C (VTT is partner) 2025 ->