SEA-BOARD — A MARINE-DERIVED STRUCTURAL PANEL FROM ALIGNED AND DENSIFIED SEAWEED CELLULOSE NANOFIBERS

Tech ID: 34206 / UC Case 2026-005-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

Current sustainable building materials often lack the high structural strength needed for demanding applications, limiting their use in load-bearing construction. Addressing this opportunity, UC Berkeley researchers have developed SEA-BOARD, a novel structural panel fabricated from marine-derived polysaccharides. This innovation utilizes a proprietary, stepwise process involving polysaccharide extraction, nanofiber alignment, and thermal densification to configure the macroalgal biomass into a high-strength, hot-pressed panel. This engineered material is structurally superior and potentially more environmentally sustainable than many traditional wood-based or synthetic alternatives.

SUGGESTED USES

- Structural and non-structural panels for construction and architecture
- Interior design applications like furniture, cabinetry, and flooring
- High-strength, lightweight material in automotive or aerospace industries
- A sustainable alternative to wood or plastic composites in various consumer and industrial products

ADVANTAGES

- Offers high structural strength compared to existing sustainable building materials.
- Utilizes marine-derived macroalgal biomass, providing an abundant and renewable resource.
- The manufacturing process is a stepwise fabrication that ensures controlled alignment and densification for optimal material properties.
- Provides a sustainable, bio-based alternative to petrochemical and forestry products.

RELATED MATERIALS

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Engineering**
  - Engineering
  - Other
  - Robotics and Automation
- **Materials & Chemicals**
  - Biological
  - Composites
  - Nanomaterials
  - Polymers
- **Nanotechnology**
  - Materials
  - NanoBio
  - Other

RELATED CASES

2026-005-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Probiotic-Mineral Bioformulation Embedded In Seaweed-Derived Polymers For Enhanced Inoculation Of Seaweed Culture Lines

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