

High-performance biopolymers from fish waste for biodegradable and compostable packaging

Sector: Other - Circular blue economy

Short description of the needs:

2Pack is developing an innovative biomaterial derived from fish waste, designed to replace conventional plastic polymers in packaging applications. The company is tackling the technological challenge of developing a compostable bioplastic that complies with the EN 13432 standard, with a biodegradability level of over 90%, while ensuring mechanical and barrier properties comparable to traditional plastic materials. The material must achieve an elastic modulus between 0.3 and 1.5 GPa, an elongation at break of $\geq 60\%$ and adequate barrier performance ($WVTR \leq 9 \text{ g/m}^2\cdot\text{day}$; $OTR \leq 8 \text{ cm}^3/\text{m}^2\cdot\text{day}\cdot\text{bar}$). At the same time, it is a priority to ensure the economic sustainability of the process through the use of readily available raw materials and scalable production processes, with a target cost of approximately €5/kg.

Collaborations with research institutions and industrial partners are required for the optimisation of the formulation, mechanical and functional characterisation, and pilot-scale validation.

More info: For more information apply to eccentric@imast.it

Company: 2 Pack S.r.l.s.

Point of contact for the brief/challenge: IMAST - Distretto Tecnologico per l'Ingegneria dei Materiali Polimerici e Compositi e Strutture

Company position in the value chain: Tier 2