



VillalInno – Felted Futures

## The Project

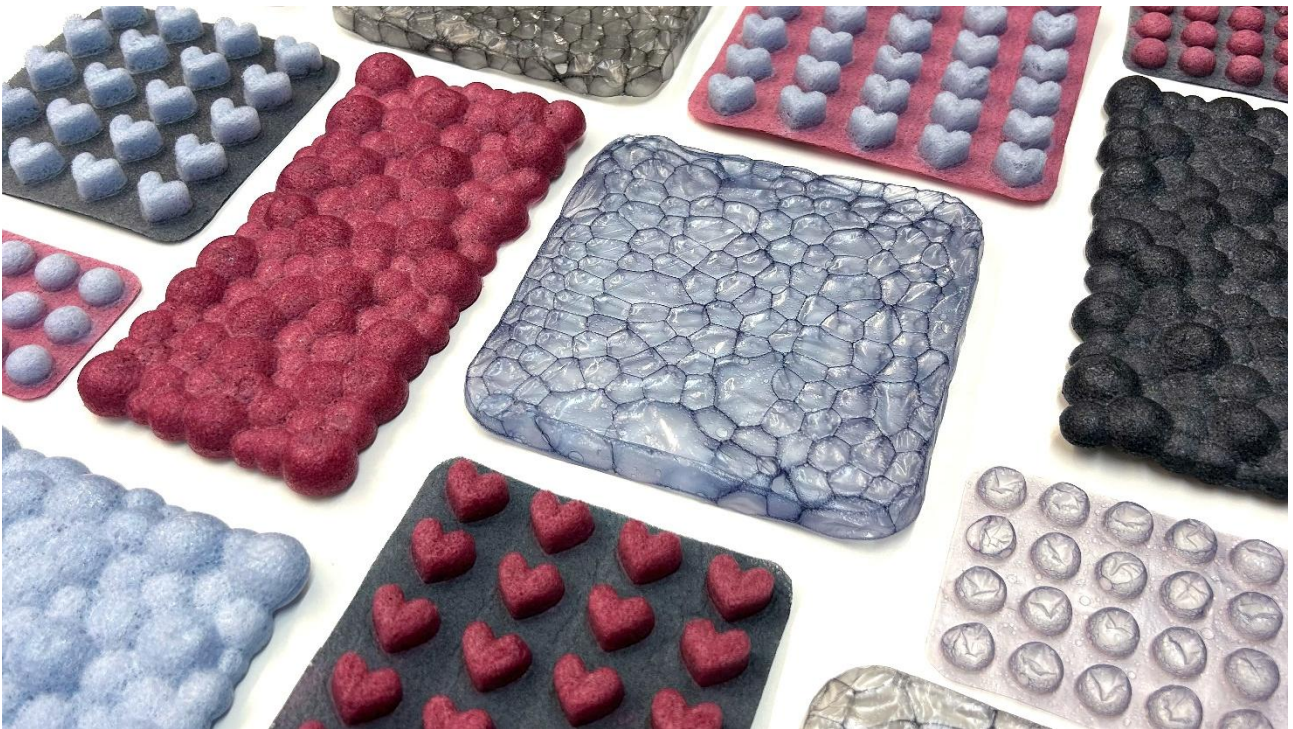
*Plastic-free, biodegradable packaging for a sustainable future*

- Develops bio-based bubble wrap, packing foams, and puffs
- Made entirely from cellulose – plastic-free, biodegradable, and recyclable
- Incorporates sealed air bubbles for cushioning and product protection
- Materials are customizable in color and design for branding needs
- Offers sustainable alternatives without sacrificing performance
- Enables businesses to reduce carbon footprint and material waste
- Originated as the first fully bio-based bubble wrap created by design students
- Expanded with chemical engineering collaborators to develop foams and scalable methods
- Focused on creating a production process to bring materials to market
- Conducted jointly at Aalto University and Xamk (South-Eastern Finland University of Applied Sciences)
- Bridges biodesign, innovation, and industry needs in eco-packaging

## Team Members

- Satu Paavonsalo – B.A. Design student and biologist (creative + scientific insight)
- Valentin Schwarz – M.A. Fashion Design graduate (aesthetic and branding focus)
- Dr. Ziba Fathi – Postdoctoral researcher in bio-based materials (technical R&D lead)
- Jenni Roivas – M.Sc. student in Biotechnology and Biomedical Engineering (materials science)
- Team combines design, engineering, and sustainability expertise
- United by the mission to combat plastic pollution through biodegradable innovation
- Focused on scalability, functionality, and real-world industry impact









“ Multi-stakeholder  
engagement to strengthen  
regional bioeconomy  
value-chains ”

### Consortium :



Bay Zoltán  
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