



BUTTERFLIES

Project Bio-Polymers & Additive Manufacturing



HYBRID MANUFACTURING FOR BIO-INTELLIGENT FUTURES

The **BUTTERFLIES** project addresses the limited use of sustainable bio-polymers like chitin and chitosan in advanced additive manufacturing, due to technical and material barriers.

NOVEL BIO-BASED MATERIALS

- ChNC crosslinkers for Binder Jetting (BJT)
- Photo-curable chitosan polymers for 2PP

ADVANCED MANUFACTURING DESIGN

- Optimize AM parameters for biomaterials
- Laser & beam-shaping methods for precision

DIGITAL & SMART PROCESS CONTROL

- AI-driven parameter tuning and quality control
- Digital Biosphere Platform for process simulation

EQUIPMENT INNOVATION

- Modified AM machines for bio-materials
- New scanning systems to boost 2PP throughput

SCALABILITY & DEMONSTRATION

- Biomedical use cases, e.g., organoid scaffolds
- Techno-economic & environmental assessments

BUILDING & KNOWLEDGE TRANSFER

- Training, guidelines, and open datasets
- Support for replication and upskilling

Butterflies pioneers advanced, sustainable AM processes using **chitin** and **chitosan** to create high-performance, biocompatible products.

PARTNERS



ASSOCIATED PARTNER

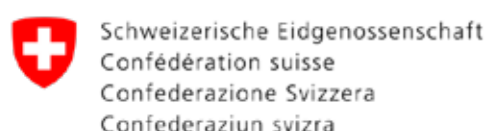


 [/company/butterflies-project/](https://www.linkedin.com/company/butterflies-project/)

 joyce.yip@the-mtc.org (Joyce Yip)

butterfliesproject.eu

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