



# 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.

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

### 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

## Revolutionizing Additive Manufacturing with Sustainable Biopolymers



### PARTNERS



ASSOCIATED PARTNER

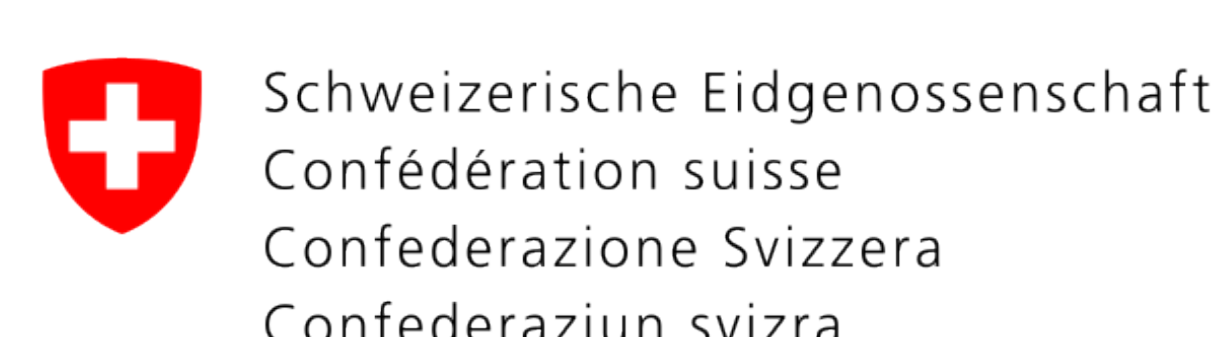


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