

3D-printed polymer materials with enhanced mechanical properties

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Transforming european industry

2.1. Factories of the Future

DT-NMBP-19-2019: Advanced materials for additive manufacturing

INTERNATIONALLY RECOGNISED EXPERTISE

- Polymer controlled synthesis for biomedical application
- Macromolecular engineering
- Polymer blends and (nano)composite materials
- Biopolymers and reactive extrusion: reactive melt-processing for producing filaments dedicated for 3D printing

PAST EXPERIENCE IN EU-FUNDED PROJECTS

- ECLIPSE - FP7
- POCO

- Cornets
- Bewares
- SUSPOL - H2020

- INNOREX
- CAPDESIGN

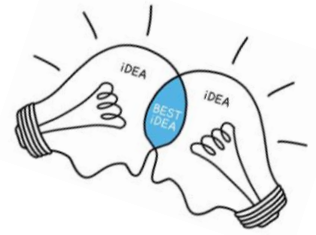
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Wallonie

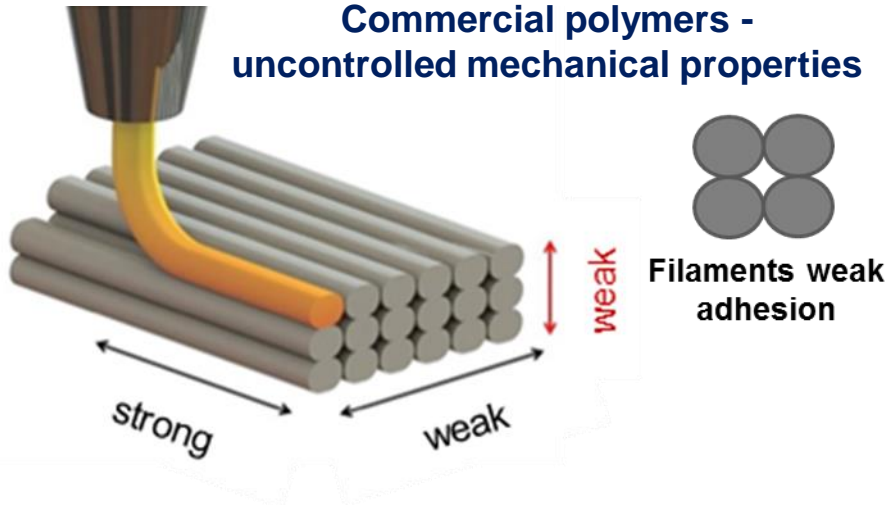


PROJECT IDEA

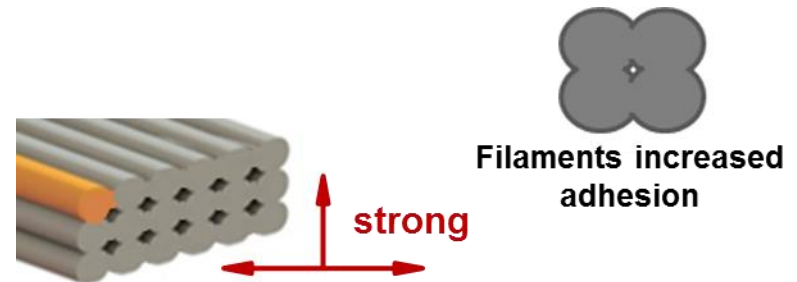


- Production of new polymer materials with enhanced mechanical properties *via* 3D printing (fused filament deposition)
 - Use of thermally active (pre-)polymers for increased individual filaments adhesion

**Commercial polymers -
uncontrolled mechanical properties**






**Thermally active polymers -
enhanced mechanical properties in all directions**



- Relationship between the fibers morphology and the materials physico-mechanical properties (improved compared to the commercial polymers)
 - Application: biocompatible polymer materials with desired design and enhanced mechanical properties for personalized implants or daily life used materials

Consortium

Known partners / Competence offer

Name	Type	Country	Role in the project
	Univeristy	Belgium	Labscale synthesis and characterization of thermo-active polymers
	R&D center	Belgium	3D printed material optimisation and characterisation, post-process surface treatment
	End user	Belgium	Plastic parts producer 3D printer devices

Partner search

Profile	Type	Country	Role in the project
Coordinator			
	End users		Upscaling, modelisation, biomedical, aeronitics, automotive, packaging, sports...

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Thank you for the attention!

Development of biodegradable mulching films containing biobased fertilizers

2.2 CE-BIOTEC-05-2019

Contact person: Emmanuel Duquesne

Energy Management with Functional Surfaces

3.1. SUSTAINABLE PROCESS INDUSTRY (SPIRE): CE-SPIRE-02-2018 and CE-SPIRE-03-2018

Contact person: Fabrizio Maseri

*Other
proposals*