

3D-printed polymer materials with enhanced mechanical properties

Antoniya Toncheva

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

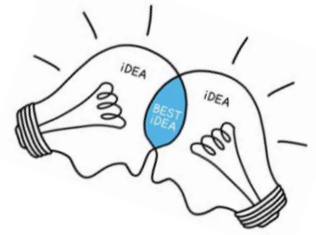
Inno**REX**



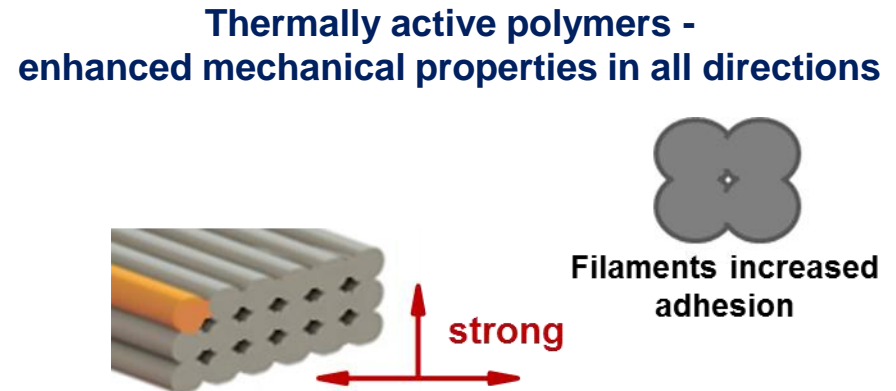
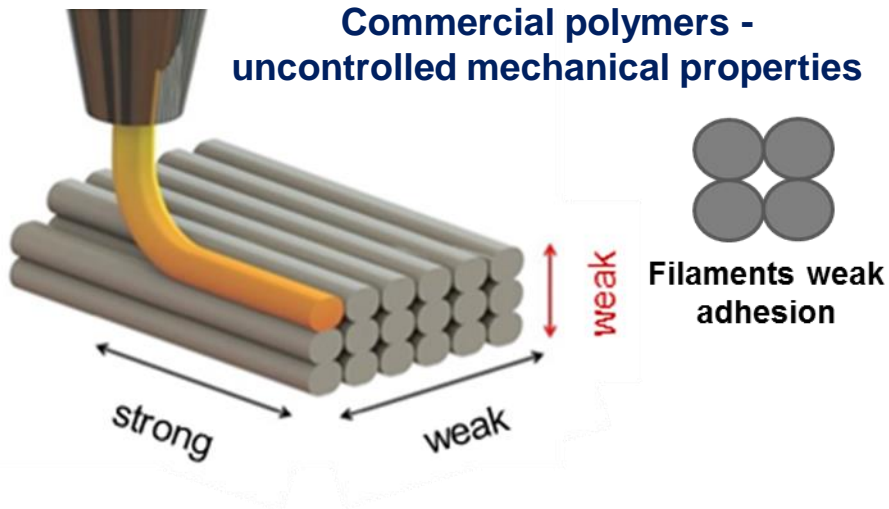
Wallonie



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



- 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
 UMONS Université de Mons	Univeristy	Belgium	Labscale synthesis and characterization of thermo-active polymers
 MateriaNova MATERIALS R&D CENTRE	R&D center	Belgium	3D printed material optimisation and characterisation, post-process surface treatment
 ADDIPARTS	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...

Contact person	Antoniya Toncheva
Organisation	University of Mons
Adress	Place du Parc 21, 7000 Mons, Belgium
Phone nr	+32.68.27.34.77
E-mail	antoniya.toncheva@umons.ac.be

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**