# POLYBIOSKIN: HIGH PERFORMANCE FUNCTIONAL BIO-BASED POLYMERS FOR SKIN CONTACT PRODUCTS

*Dr. Simona Neri*

*Gosselies 8th May 2019*

IRIS is an Advanced Engineering Company specialised in product development and creating solutions for the Digital transformation contributing to the **Industry 4.0**:

## IRIS MONITORING


**CYBER-PHYSICAL SYSTEMS**
Integration and definition of ad-hoc projects based on **photonic solutions** for process monitoring and in/on-line quality control.

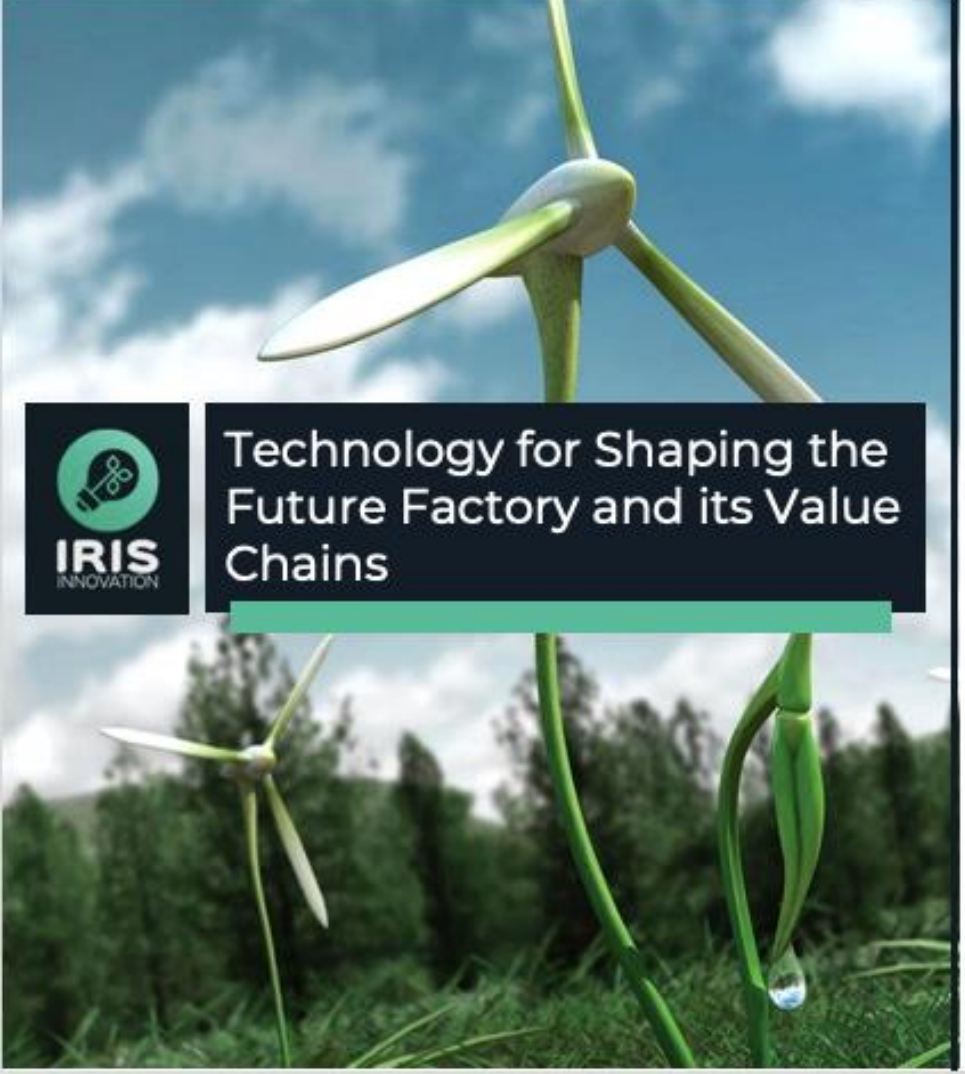
## IRIS SMAC


**CONNECTIVITY**
Implementation and design of Cloud Solutions to gather information and connect systems.

**ANALYTICS**
Development of advanced solutions for data mining and **artificial intelligence**.

## IRIS INNOVATION


**R&D PROJECTS:**
The definition of R&D projects let us link our research to the market needs, to extend our know-how and keeps us on the top European research level.




## IRIS INNOVATION

Our Innovation Division performs top-level R&D for generating new knowledge, knowhow, and technological advancements for shaping product and process improvements and market innovations in:

- **Applied Photonics**

Spectroscopy technology for production process optimization

- **ICT & Digitisation**

Latest advancements in computing for enabling smart manufacturing

- **Circular & Bio- Economy**

Waste valorisation and new bio-based compounds applications


This project has received funding from the Bio Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No. **790157**.

# GENERAL OVERVIEW


MONTHS

36

BUDGET

4 M€

PARTNERS

12

COUNTRIES

7

# GENERAL OVERVIEW

## SANITARY

### DIAPER

Flat die extrusion of topsheet

SAP production by polysaccharide modification

Topsheet surface texturing and antimicrobial modification

Advanced in vitro testing

## COSMETICS

### BEAUTY MASK

Bacterial fermentation (PHA)

Film extrusion / casting

Non woven production via electrospinning

Impregnation with natural anti oxidant nanoparticles

Advanced in vitro testing

## WOUND CARE

### WOUND DRESSING

Bacterial fermentation (PHA)

Non woven production via electrospinning

Fibre modification

Impregnation with natural anti oxidant nanoparticles

Advanced in vitro testing

IRIS TECHNOLOGY GROUP

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# GENERAL OVERVIEW

**BBI-2016-R06: Bio-based alternatives to improve protection of human health and the environment**

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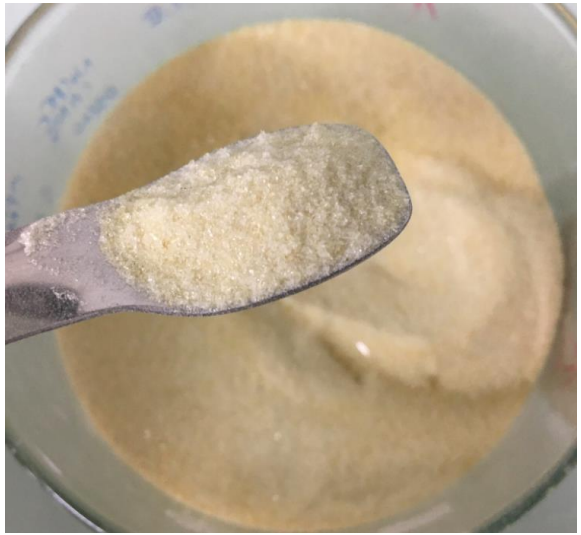
# OBJECTIVES

To develop and validate a fully biodegradable diaper provided with a skin-compatible surface enriched with anti-microbial and anti-oxidant functionalities to prevent skin reddening and inflammation, and with a biopolymer-based superabsorbent



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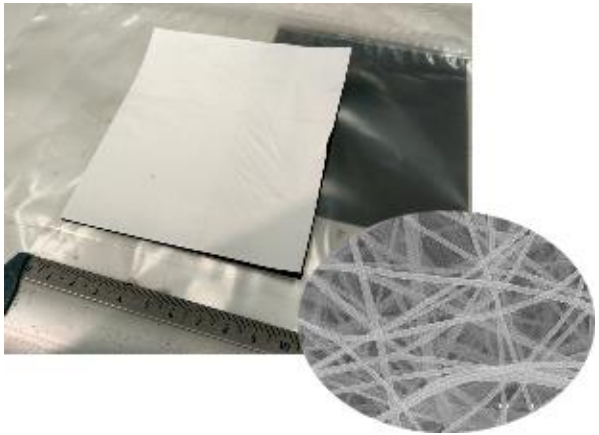
# OBJECTIVES

To develop and validate fully biodegradable and bioactive facial beauty masks based on biopolymers in the form of a film or a nonwoven tissue impregnated with formulations based on natural compounds beneficial for the skin (Linked to WP6, with intermediate results coming from WP2-WP4; milestones: MS4, MS7, MS11)



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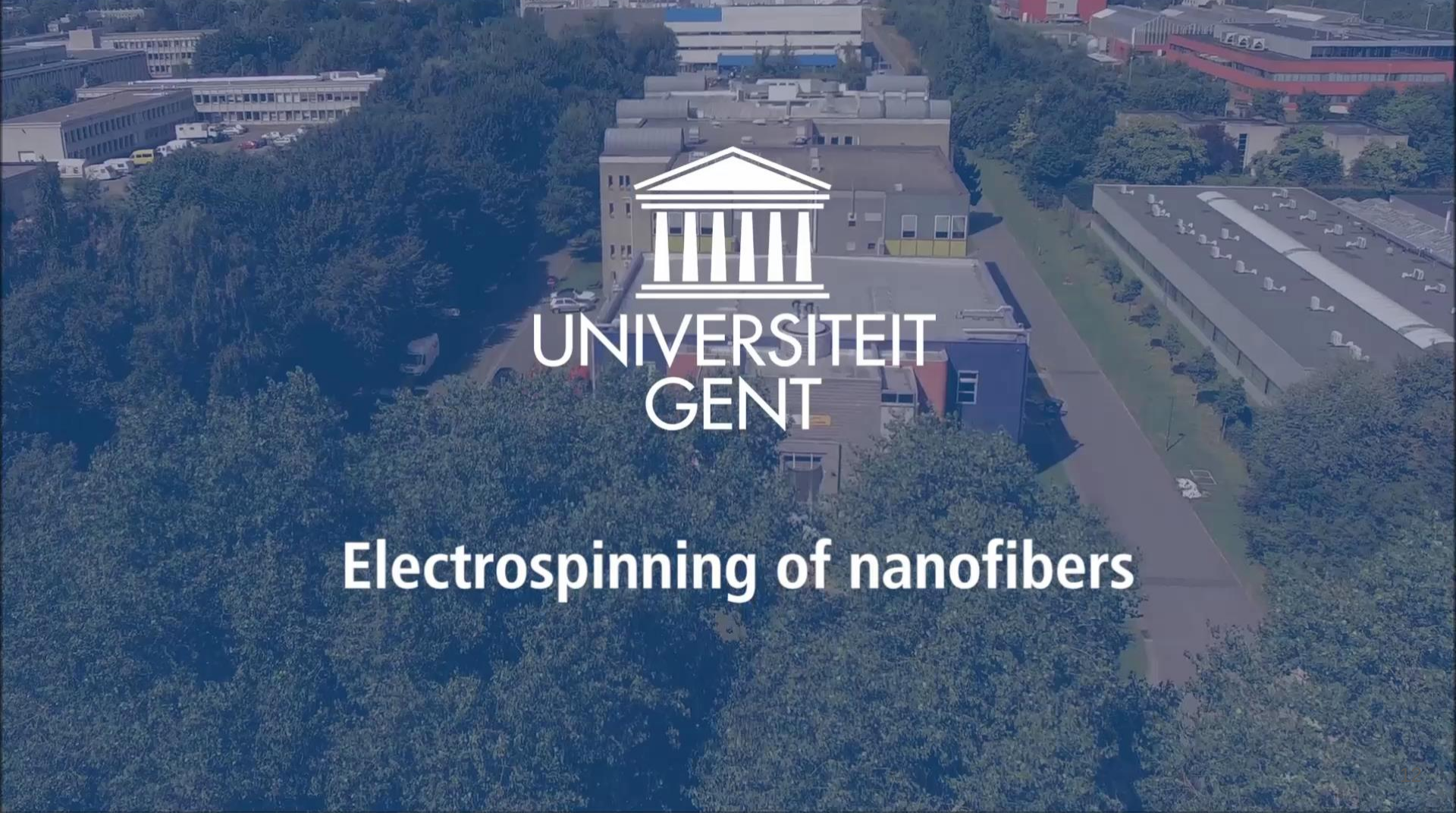
UNIVERSITEIT
GENT
Electrospinning of nanofibers


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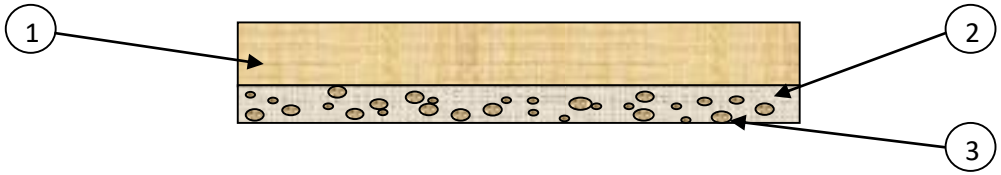
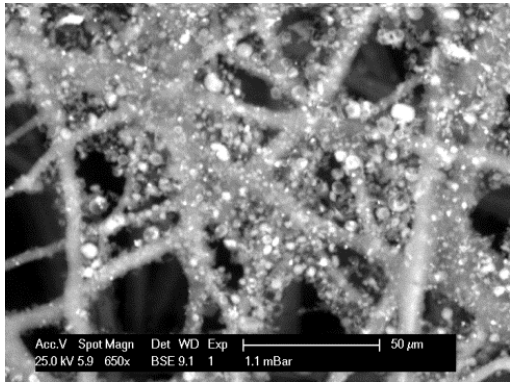
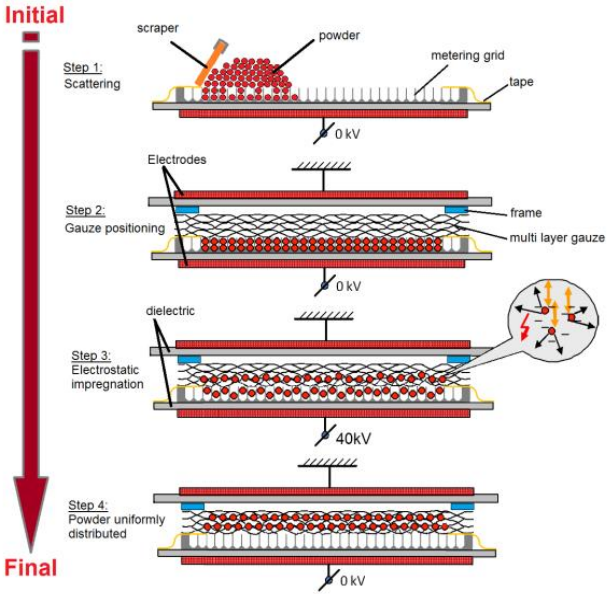
# OBJECTIVES

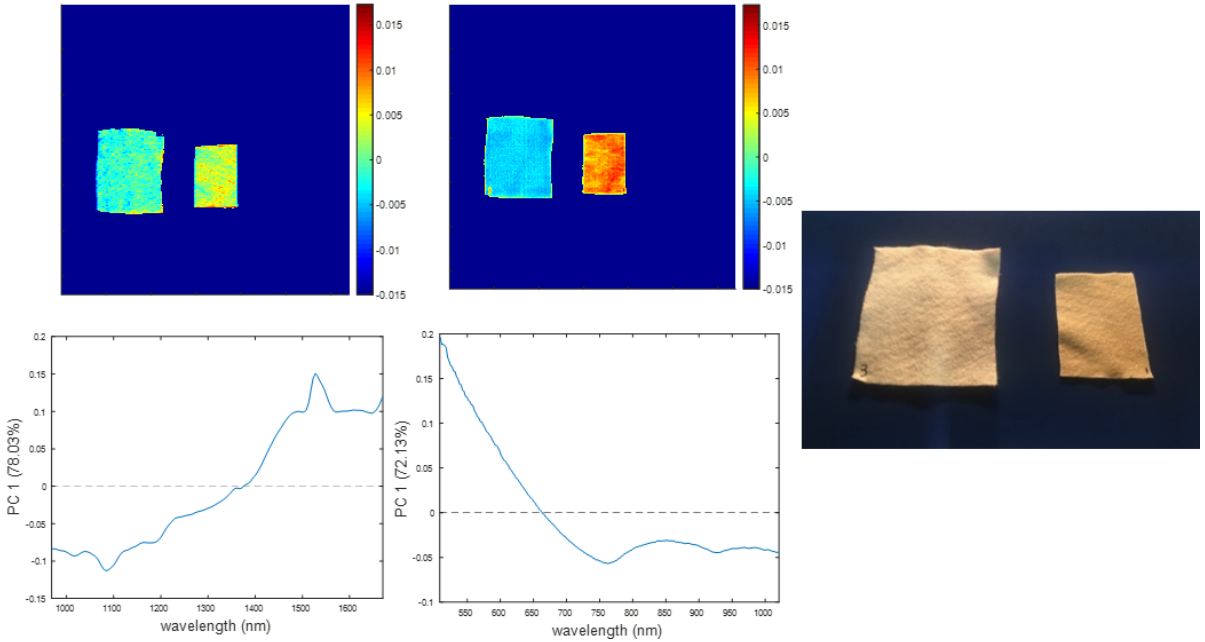
To develop a nanostructured biocompatible non-woven tissue to be used in wound dressing (Linked to WP7, with intermediate results coming from WP2-WP4; milestones: MS5, MS9, MS12).



# Hyperspectral imaging

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