

SELF-POWERED BIOACTIVE 3D-NANOFIBROUS DEVICE

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ZENIT 

Successful R & I in Europe 2026
13th European Networking Event



The proposed research is aiming to establish a platform for a new generation of multifunctional, clinically validated devices based on a biomimetic 3D nanofibrous scaffold that integrates bioactive moieties, smart biosensors, and triboelectric nanogenerator (TENG) technology for innovative sustainable wound-healing devices.

The consortium seeks partners with expertise in

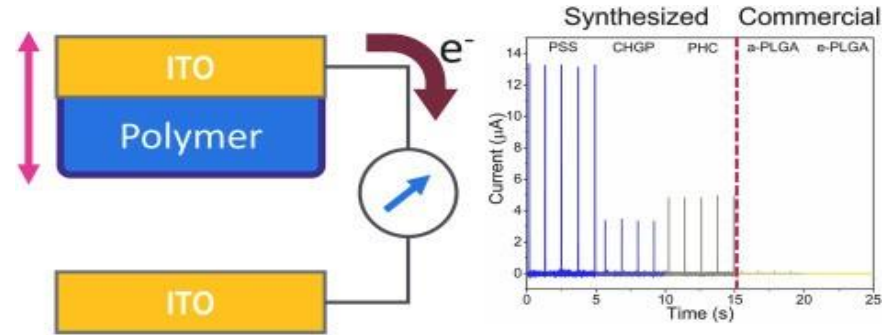
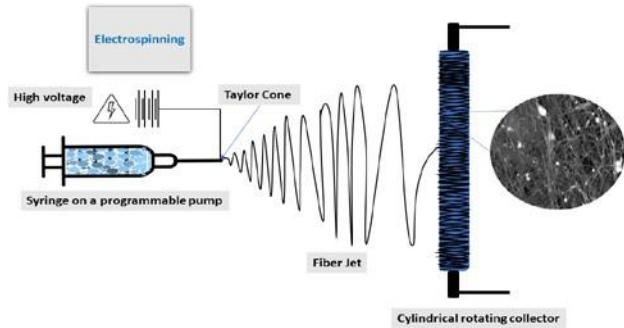
- **regenerative energy harvesting: Laboratory experienced in Triboelectric and Piezoelectric devices for flexible electronics.**
- **Biological testing: in vitro cytotoxicity test and cell adhesion.**
- **Research groups in polymer chemistry (Biopolymers and dendrimers)**
- **Laboratory for sensor parts of medical devices**
- **Modeling and simulation of functional hybrid materials**
- **preclinical validation, regulatory pathways, to develop a clinically relevant self-sufficient smart medical device for chronic wounds.**

RECENT Successful story

Triboelectric Nanogenerators (BIOTENG)

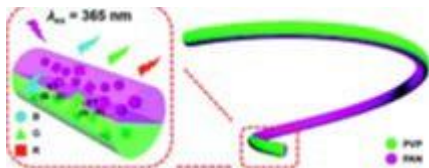
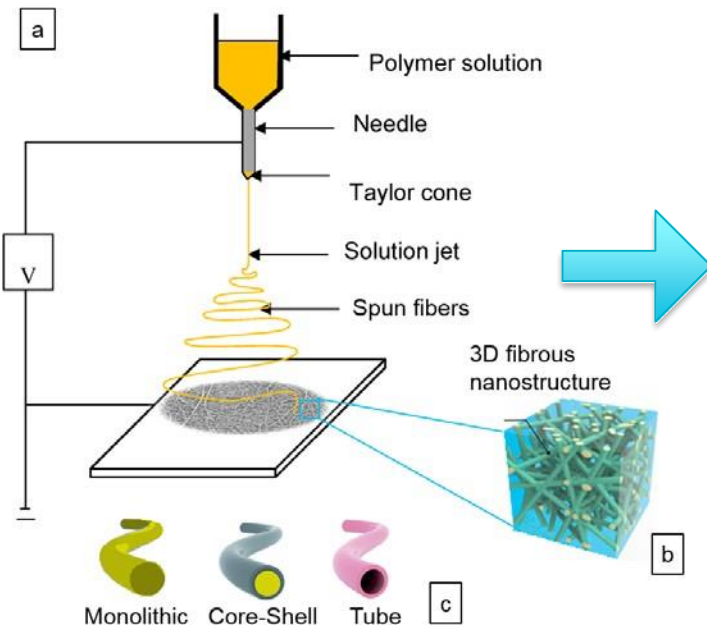


M-era.Net



Electrospinning

Topics for future Horizon Europe projects



CHRONIC WOUND

Scientific and technological expertise in EU-Projects

- **Nanoshield (DEFENCE-EU)**
- **BIOTENG (ENERGY-ERA-NET)**
- **MINRVA (CANCER- ERA-NET)**
- **HYNANODEND (HEALTH-EU)**
- **IP-OSTEO (EU-Horzion 2020-RICE)**
- **FABIOCOM (ENVIRONMENT-ENRGY)**

Rheology

Thermal analysis

Electrospinning

Spectroscopy

Microscopy

Targeted EU-Call: DESTINATION - DEVELOPING AND USING NEW TOOLS, TECHNOLOGIES AND DIGITAL SOLUTIONS FOR A HEALTHY SOCIETY

HORIZON-HLTH-2026-01-TOOL-03: Integrating New Approach Methodologies (NAMs) to advance biomedical research and regulatory testing

•HORIZON-HLTH-2026-01-TOOL-05: Pilot actions for follow-on funding: Leveraging EU-funded collaborative research in regenerative medicine

•HORIZON-HLTH-2026-01-TOOL-06: Support to European Research Area (ERA) action on accelerating New Approach Methodologies (NAMs) to advance biomedical research and testing of medicinal products and medical devices

•HORIZON-HLTH-2026-01-TOOL-07: Establishing a European network of Centres of Excellence (CoEs) for Advanced Therapies Medicinal Products (ATMPs)

Our expertise as partners in EU Project:

- **Biomaterials (scaffolds for implants)**
- **Environments (Hybrid Membranes Decontamination of hazardous substances from liquid, solid and gas).**
- **Hybrid nanostructures for Nanoelectronic and optoelectronic applications**
- **Functional hybrid materials for Energy harvesting and nanogenerators**
- **Smart Materials for wearable devices and packaging**
- **Hybrid Catalysts nanomaterials for hydrogenation**

Thanks For Your Attention

and

ZENIT For the Kind INVITATION

ZENIT 



Ministerium für
Kultur und Wissenschaft
des Landes Nordrhein-Westfalen

