

Project Objectives

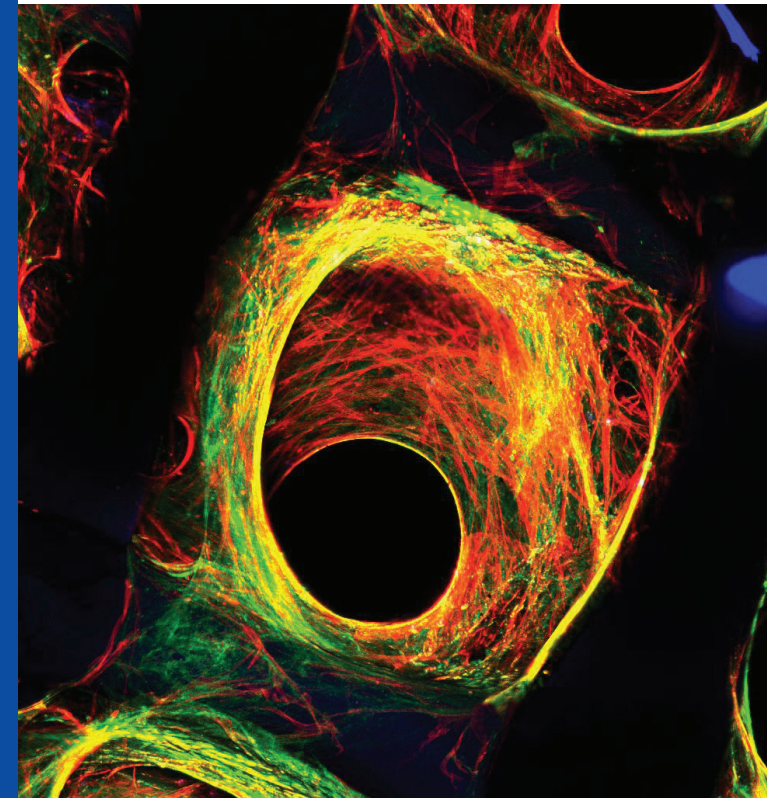
1. Demonstration of Melt Electrospinning technology
2. Structural and mechanical characterization of 3D smart implants for bone regeneration
3. Validation of 3D smart implant for bone regeneration

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BioFabrication of Orthopedics in a New Era

Amount of ERDF received from NWE:
€2.04 million



Project Summary

A distinctive problem for NWE is the high occurrence of osteoporosis, leading to the highest rates of bone fractures of all EU regions. The number of hip replacements per 100k population is 214 in the NWE region versus the EU28 average of 153 (OECD 2016). The economic and societal burden of bone fractures is enormous and could be reduced by the implementation of affordable, curative healthcare solutions that ensure a faster recovery with lower health care costs.

The emerging field of regenerative medicine offers potential solutions: smart implants, such as 3D scaffolds created through an innovative technology called electrospinning (ESP) holds the promise to support the regeneration of skeletal bone and replace the need for tissue donors, repeat operations or ongoing medication. However only local ESP technology R&D driven initiatives currently exist in NWE.

The objective of BONE is therefore to accelerate the valorisation of cost-effective 3D smart implants fabricated by electrospinning technology (reaching TRL8) by collaboration between 4 research institutes, 4 business support organisations and 5 industry organisations.

As such, BONE enables new jobs (15) to be created, two new products to be developed and tested in real life conditions (ESP technology and 3D smart implants) and intensive collaboration between Innovation leaders (Westphalia, London, Paris) strong innovators (Vlaams-Brabant, Southern-Limburg, Ireland) and moderate innovators (Nord-pas-de-Calais) in order to increase the regions' innovation capacity in the area of regenerative medicine based on ESP technology.

KEY INFORMATION

LEAD PARTNER ORGANISATION:
Maastricht University

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EU FUNDING:
€2.04 million EUROTOTAL

BUDGET:
€3.41 million EURO

TIMELINE:
2017-2021

PARTNER ORGANISATIONS:

- Fraunhofer Institut für Lasertechnik
- The Electrospinning Company Limited
- Spraybase
- Fianium Ltd
- Katholieke Universiteit Leuven, ver-tegenwoordigd door (KU Leuven Re-search & Development)
- Université de Lille
- Medicen Paris Region

COUNTRIES:

| NL | DE | UK | IE | BE | FR |