

The Nanoscience Cooperative Research Center, CIC nanoGUNE, located in Donostia / San Sebastian, Basque Country (Spain), is currently looking for a

## PRE-DOCTORAL RESEARCHER

to work in

**ESR n. 05 - Synthesis and hyperspectral imaging of electro-spun composite fibres**

**(Horizon Europe programme - NanoReMedi)**

NanoGUNE is a research center devoted to conducting world-class nanoscience research for a competitive growth of the Basque Country. NanoGUNE is a member of the Basque Research and Technology Alliance ([BRTA](#)) and is recognized by the Spanish Research Agency as a *María de Maeztu* Unit of Excellence.

The **Horizon Europe MSCA-Doctoral Network NanoReMedi** (“Functional *Nano-Scaffolds for Regenerative Medicine*”) is run by a Consortium of Universities in cooperation with Companies and offers an innovative PhD level training in Nanomaterials for regenerative medicine to 13 Doctoral Candidates (DCs). CIC nanoGUNE is one of the six beneficiaries of this program ([NanoReMedi beneficiaries](#) & [associated partners](#)).

The **mission** of NanoReMedi is to define a **joint doctorate** educational training model in **Functional Nano-Scaffolds for Regenerative Medicine** where Academia and Industry join their forces to:

- create a highly innovative research network for training a new generation of researchers who will enter the area of nanoscience from adjacent disciplines (such as chemistry, material sciences and bioinformatics)
- establish a solid framework for long-term research cooperation between a pool of leading Universities and Enterprises
- build a solid foundation for long-term European excellence in medical nanotechnology

NanoReMedi **main tasks** are:

- to train 13 ESRs in a joint academic / industrial programme of cutting-edge training-by-research, high quality supervision, complementary and transferable skills, inter-network secondments, and workshops or Summer Schools
- to pursue an innovative research project on regenerative medicine that will tackle highly relevant case studies: “Tissue engineered vascular grafts to replace damaged peripheral arteries”, “Stem-cell based regenerative medicine for bone and cartilage

repair” and “Facing with implantation failure”, this last addressed to overcome bacterial severe infection

- to transfer expertise/know-how among the Consortium participants and to external groups via networking activities, intersectoral exposure, secondments, workshops, sharing of learning material, public engagement and outreach activities

NanoReMedi **research topics** are:

- cgeneration of tissue engineered vascular grafts (VGs) to replace damaged peripheral arteries
- stem-cell based regenerative medicine for bone and cartilage repair
- understanding and propose solutions toward implantation failure

**Upon completion** of the programme, graduates will become highly skilled researchers and professionals in the field of nanomaterials applied to regenerative nanomedicine, matching the requirements of both public and private sectors.

The breadth and depth of the programme will prepare PhD students for a wide range of career opportunities. Graduates will find opportunities in universities, public and private research centers, hospitals, public administration, government agencies and international organizations. They could join dynamic positions in pharmaceutical and biotechnology engineering companies.

### **ESR n. 05 - Synthesis and hyperspectral imaging of electro-spun composite fibres**

**Project offer** description:

- Main research field: Chemistry.
- Sub research field: Organic Chemistry, Materials Chemistry.
- Required educational level: Master Degree or equivalent in: Chemistry / Pharmaceutical Chemistry / Materials science.
- Supervisors: Alexander Bittner, CIC nanoGUNE ([a.bittner@nanogune.eu](mailto:a.bittner@nanogune.eu)) and Maria Luisa Gelmi, Univerisy of Milan ([marialuisa.gelmi@unimi.it](mailto:marialuisa.gelmi@unimi.it)).
- Objectives:
  1. Electrospun fibres from selected peptides and peptide/polymer mixtures synthesized at UMIL, UM and HUJI
  2. They will be imaged by spectroscopic methods in scanning modes, specifically FTIR, Raman, and (E)SEM (if required, wetSTEM)
  3. Flat grafts will be prepared by combining 3D printing of biocompatible polymers with thin matrices of electrospun peptides, proteins or polymers. The latter are selected towards application in TEVGs
- Secondment:
  - Beneficiary: UMIL (9 Months)?Synthesis/spectroscopic conformational analysis of peptides and peptidomimetics to be used for electrospinning
  - Company: Bayer (3 Months)?Acquisitions of skills on quality related to production and registration

We offer an international and competitive environment, state-of-the-art equipment, and the possibility to perform research at the highest level.

**We promote** teamwork in a diverse and inclusive environment and welcome all kinds of applicants regardless of age, disability, gender, nationality, race, religion, or sexual orientation.

For **information** on the other 12 available NanoReMedi research projects and to apply visit the project website <https://www.nanoremedi.eu/>!

- Open call general information: [https://www.nanoremedi.eu/wp-content/uploads/2022/09/Nanoremedi\\_Opencall.pdf](https://www.nanoremedi.eu/wp-content/uploads/2022/09/Nanoremedi_Opencall.pdf)
- Study program structure: <https://www.nanoremedi.eu/study-programme-structure/>
- Eligibility requirements: <https://www.nanoremedi.eu/eligibility-requirements/>
- Required documents: <https://www.nanoremedi.eu/required-documents/>

Candidates should **apply** by following the steps indicated at the link below:

- <https://www.nanoremedi.eu/submit-application/>

The **deadline** for application is **28/10/2022**.

*NOTES:*

*(i) All applicants will receive an answer after the end of the selection process; but please note that due to the large number of submissions that are expected, we cannot provide individual feedback.*

*(ii) Additional information about nanoGUNE's commitment towards HR excellence in Research and Gender Equality are available on our website.*

*(iii) We encourage you to subscribe to our HR mailing list to receive information related to nanoGUNE's open positions and open calls for different training and talent attraction programs.*

