

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

POSTDOCTORAL RESEARCHER
to work on
Data analysis and machine learning for spectroscopic data

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 position is offered in the Nanoengineering Group under the direction of Prof. Andreas Seifert (a.seifert@nanogune.eu). The Nanoengineering Group focuses on research in the fields of optics and photonics, with a special focus on new methods for medical diagnostics. We combine photonic approaches with nanotechnology and artificial intelligence to further advance technological maturity for biomedical applications.

The candidate will join a highly multidisciplinary research line that focuses on Raman spectroscopy for in vivo applications supported by chemometrics. More information can be found at <https://www.nanogune.eu/nanoengineering>

The **aim of the research project** is to identify in utero physiological risks such as perinatal asphyxia. A particular focus is on data analysis using chemometric methods, the simulation of data, and the transfer of knowledge gained to hardware components. An understanding of biocompatibility and regulatory matters is a great advantage for the position.

Important **tasks** of the work plan

- Development of machine learning models for the classification of in vivo Raman spectra, applying chemometric methods.
- Simulations and modification of data, advanced data analysis
- Carrying out Raman measurements in vitro and in vivo
- Hardware/software interface: communication with devices such as lasers and spectrometers

The **successful candidate** will preferably have a PhD in Physics, Chemometrics, Informatics, Chemistry, or related Engineering field and experience in the following **skills**:

- Machine learning and data analysis based on Chemometrics
- Laboratory experience
- Experience with Python and its main libraries for machine learning
- Ability to create graphical user interfaces
- Fluent in written and spoken English, knowledge of Spanish is desirable, knowledge of Basque is valuable

Although not compulsory, the following points will be considered:

- Knowledge in optics, photonics, spectroscopic techniques
- Biomedical engineering
- Experience in modeling languages (Simulink, Labview, Open Modelica...) and HIL tools (dSpace, Speadgoat, National Instruments ...)
- Experience with interdisciplinary research
- Self-motivated and able to work in a team, coordination of research work

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.?

Earliest **starting date** for this position is the 15th of June, 2024, for a total duration of up to 24 months. After this period, the candidate may strategically be transferred to a spin-off company working in the field of perinatal monitoring.

Candidates should **apply** by completing the **form below** and attaching the following documents:

A complete CV, motivation letter, certificates and 2 reference contacts, all grouped **in a single PDF file**.

Deadline for applications is the 31st of May, 2024.

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.