

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

**Post Doctoral Researcher**  
to work on  
**IR nano-imaging development**

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 Nanooptics Group, led by Prof. Rainer Hillenbrand ([r.hillenbrand@nanogune.eu](mailto:r.hillenbrand@nanogune.eu)). The Nanooptics Group performs experimental and theoretical research in Nanooptics and Nanophotonics, covering both fundamental and applied aspects. Essentially, we develop near-field nanoscopy (scattering-type scanning near-field optical microscopy, s-SNOM) and infrared nanospectroscopy (Fourier transform infrared nanospectroscopy, nano-FTIR), and apply these novel analytical tools in different areas of science and technology. Both techniques offer a wavelength-independent spatial resolution of about 10 to 20 nm spatial resolution at visible, infrared and terahertz frequencies, thus beating the conventional resolution (diffraction) limit by a factor of up to 1000.

The candidate will join a **research line** focusing on the instrumental developments, plasmonics and phononics, IR nanospectroscopy as well as the nanooptics theory. More information can be found at <https://www.nanogune.eu/nanooptics>.

The aim of the **project** as postdoctoral researcher in the CIC02 Nanooptics group at CIC nanoGUNE involves experimental and theoretical research in the fields of nanooptics and near field spectroscopy, covering both fundamental and applied aspects. Main objectives involve the development of methods for IR nano-imaging and IR nano-spectroscopy, as well as their application to chemical nanoimaging of biological samples. To this end, it is planned to fabricate and test experimentally novel illumination schemes for scattering-type scanning near-field optical microscopy (s-SNOM), and potentially achieve an increased sensitivity to small amounts of organic material. Furthermore, we aim to achieve a greater understanding of material contrasts observed in near-field spectra and the effect that unwanted background signals may have on quantitative results. Lastly, the developed should be applied to real samples with relevance for practical applications.

The candidate will work on the development of novel methods for improving infrared nanoimaging, and subsequent application for chemical mapping of polymer nanostructures.

The successful **candidate** will have a PhD in Physics, Chemistry, Material Sciences or similar.

Additionally, the candidate should demonstrate experience in the following skills:

- Experience in scattering type scanning near field microscopy (s-SNOM), Fourier transform infrared spectroscopy and nano-FTIR spectroscopy.
- Solid background in optics and nanophotonics.
- Proficiency in spoken and written English is compulsory.
- Availability to start as soon as possible.

**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. And we offer a stimulating, interdisciplinary research and high quality international scientific environment.

The position is expected to start in 01/07/2021 and for a total length of up to 6 months (01/07/2021 - 31/12/2021) in the Nanooptics Group.

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

- a. A complete CV
- b. A cover letter

The **deadline** for applications is **31/05/2021**.

*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.*