

Postdoctoral researcher at the Smart Nano-Bio-Devices Research Group (Ref: PD SS)

Introduction to the vacant position:

The Smart Nano-Bio-Devices Group is looking for a Chemistry Postdoctoral Researcher to work on the development of self-propelled nanobots for translational approaches within biomedicine.

The contract will be within the framework of the ERC Proof-of-Concept named **iNanoSwarms Project**, which aims to develop enzyme-powered nanoparticles capable of self-propelling using bioavailable fuels and display collective and cooperative behaviour through communication among them as well as with the host environment.

Main tasks and responsibilities:

- Synthesis, characterization of biocompatible and biodegradable inorganic (e.g., mesoporous silica, gold nanoparticles, iron oxide nanoparticles) and organic (e.g., lipidic, polymeric, hydrogel-based) nanocarrier.
- Characterize the physico-chemical structure of the nanoparticles/nanomotors
- Study of enzyme functionalization and drug loading/release capabilities of nanoparticles for the development of precision and personalized nanobots.
- Design of nanobots to be used as active smart drug delivery systems.
- Guide bachelor, master, and PhD students.
- Interaction and reporting within the group and with private foundations and companies.
- Actively working in the development of new ideas that give rise to future and/or evolution of projects and generation of intellectual property.

Requirements for candidates:

Essential:

- PhD in the field of chemistry, biochemistry, nanobiotechnology, pharmacy, nanomedicine, or similar.
- Experience in nanoparticle synthesis, and characterization of biocompatible and/or biodegradable inorganic (e.g., mesoporous silica, gold nanoparticles, iron oxide nanoparticles) and organic (e.g., lipidic, polymeric, hydrogel-based) nanocarrier.
- Knowledge of common characterisation techniques in chemistry (NMR, FTIR, DLS, Z-potential, GPC, HPLC chromatography, SEM, TEM, AFM, spectroscopy equipment, etc).
- Knowledge of modulating polymers / poly-peptides.
- Experience grafting the surface of the NPs (e.g., surface grafting with polymers to reduce protein corona effect, anchoring an antibody/enzyme.)

Advantageous:

- Experience in drug loading and drug delivery studies with therapeutic small molecules.
- Basic knowledge of fluorescence microscopy.
- Competencies and skills: Communication, Teamwork, Proactivity, Commitment, Collegiality, Integrity, Critical and Analytical thinking.
- High level of English.

We Offer:

- Number of available positions: 1
- Starting date:

- Working conditions:
 - Temporary full-time contract.
 - Measures to reconcile work and family life (maternity and paternity leave, flexible schedule working hours, 23 working days of paid holidays, 9 leave days for personal matters, among others).

- IBEC ensures equality of access to professional development opportunities irrespective of employment status, length at IBEC or other factors. The IBEC's yearly training catalogue offers a wide range of training in technical and transferable skills including mobility grants and a Mentoring programme for predoctoral and postdoctoral researchers.
- Stimulating, interdisciplinary research and high-quality international scientific environment.
- Induction programme to facilitate incorporation at IBEC and additional support is provided for foreigners to obtain Visa-working permit and to install in Barcelona.

How to apply:

Until 06/01/2024 an online application form is available through IBEC dedicated site:

<https://careers.ibecbarcelona.eu/>

Only those applications submitted before the deadline will be evaluated.

Reference: PD_SS

If you have any further question regarding your application, please contact us at jobs@ibecbarcelona.eu

Principles of the selection process:

IBEC is committed to the principles of the Code of Conduct for the Recruitment of Researchers of the European Commission and the Open, Transparent and Merit based Recruitment principles (OTM-R) <https://ibecbarcelona.eu/careers-at-ibec/jobs/>

IBEC's Commitment on equal opportunity:

Our strength and excellence as an international transdisciplinary Research Institute are based on diversity. Being an equal opportunity employer, we are committed to diversity and inclusion, so that we support employees irrespective of their gender, nationality, religion, disabilities, age, sexual identity or cultural and socioeconomic background."

IBEC actively looks for female candidates for Senior positions (Postdoctoral and GL positions) ensuring that at least 40% of shortlisted applicants invited to interview have to be women with comparable level of CVs as the male candidates. At the end of the evaluation process, in case of equal merit, priority will be given to female candidates.

For candidates with children that come from outside Barcelona, we offer babysitting services during the interview, so you don't have to worry about anything else than doing a good interview. Contact us if you are interested in this service.

IBEC, as a signatory of the San Francisco Declaration on Research Assessment (DORA), will consider, especially for early-stage investigators, much more the scientific content of research outputs, than publication metrics or the identity of the journal in which it were published.

Protection of personal data:

IBEC guarantees that candidates' personal data are processed in accordance with the requirements of the EU General Data Protection Regulation (GDPR) and Law 3/2018 on Data Protection.

Personal data will be processed solely for the purposes of the selection process.

Who we are?

The Institute for Bioengineering of Catalonia, IBEC is an interdisciplinary research center focused on Bioengineering and Nanomedicine based in Barcelona. IBEC is one of the top research institutions named as a Severo Ochoa Research Centre by the Ministry of Science, Universities and Innovation, which recognizes excellence at the highest international level in terms of research, training, human resources, outreach and technology transfer.

IBEC's mission is to develop international high-quality interdisciplinary research that, while creating knowledge, contributes to making a better quality of life, improving health and creating wealth. A close link with key universities, reference hospitals and corporations, are assets that facilitate achieving the mission.

IBEC was established in 2005 by the Generalitat de Catalunya (Autonomous Government of Catalonia), the University of Barcelona (UB) and the Technical University of Catalonia (UPC).

IBEC is located within the Barcelona Science Park and is managing 3.800 square meters facilities, with an annual budget of 13 Mio€; 3.800 square meters of facilities; 21 research groups and a team of researchers and support services of 350 people from 30 different countries.
www.ibecbarcelona.eu

