ICN2 is a renowned research centre. Its research lines focus on the newly discovered physical and chemical properties that arise from the behaviour of matter at the nanoscale.

The Institute promotes collaboration among scientists from diverse backgrounds (physics, chemistry, biology, and engineering) to develop basic and applied research, while seeking out new ways to interact with local and global industry.

It also offers researchers training in nanotechnology, develops numerous activities to promote and enable the uptake of nanotechnology by industry, and promotes networking among scientists, engineers, technicians, business people, society, and policy makers.

ICN2 was accredited in 2014 as a Severo Ochoa Centre of Excellence and is a founding member of the Barcelona Institute of Science and Technology (BIST). The aim of the Severo Ochoa Program, sponsored by the Spanish Ministry of Economy, Industry and Competitiveness, are to identify and support those Spanish research centres that demonstrate scientific leadership and impact at global level.

Job Title: Senior Researcher

Research area or group: Nanomedicine

Description of Nanomedicine@ICN2 Group/Project:

The main lines of research include:

- Clinical translation of bioelectronic and microfluidic devices
- Nanomaterials as vector systems for therapeutic and diagnostic applications
- Development of graphene and 2D materials in medicine
- Discovery of novel biomarkers and therapeutic targets in oncology and neurology

The group brings to the Institute a strong expertise in research and development of novel types and applications of established nanoparticle systems, particularly liposomes. Moreover, rich experience in the medical translation of carbon nanomaterials, at varying shapes and dimensions, such as fullerenes, carbon nanotubes, nanohorns and graphene. A wide range of nanomaterials developed as platforms for the biological transport of therapeutic and diagnostic components in cell culture and preclinical disease models. The primary therapeutic targets for clinical translation of these technologies have been cancer (solid and metastatic) and brain pathologies (Parkinson's, stroke, Alzheimers, glioblastoma).

Nanomedicine@ICN2 has strong links with the Nanomedicine Lab at the Faculty of Biology, Medicine and Health at the University of Manchester, with Prof. Kostas Kostarelos leading both teams in a joint effort to develop medicines at the nanoscale. Graphene and 2D materials will have a central role in a number of research lines carried out in the context of the Graphene Flagship Biomedical Technologies Work Package.

Main Tasks and responsibilities:
The Senior Scientist will contribute to the synthesis, characterisation and further development of the nanomaterials research programme of the Nanomedicine group at ICN2 and will be in close contact and collaboration with the Nanomedicine Lab in Manchester. The work will focus on the development of surface-modified graphene and other 2D materials for applications for medical applications on the interface with living cells and tissues. Will be expected to contribute to the synthesis, functionalization, characterisation and use of various graphene-based materials (graphene oxide, exfoliated graphene, other 2D material) and liposome systems in collaboration with other researchers at ICN2, as well as other external laboratories. The Senior Scientist will have a central role in the Nanomedicine group at ICN2 both scientifically and managerially. Previous experience on chemistry, functionalization and characterisation of carbon nanomaterials (preferably graphene) and liposomes is essential. Also, experience with industrial processes and upscaling of nanomaterials towards clinical translation will be critical. The Senior Scientist should be able to interact effectively with researchers from a range of other disciplines, manage the programme in close collaboration with the group leader, represent the Nanomedicine group in evaluation and funding committees and apply for funding of the research programme.

Education, Experience, Knowledge and Competences required:

Education

A PhD in chemistry, chemical engineering, materials science, biochemistry, or equivalent

Experience, Knowledge and Competences

Essential

- Demonstrable previous experience in the chemical synthesis, characterisation and modification of carbon nanomaterials, graphene and liposomes.
- Extensive expert use of an array of physicochemical and materials characterisation tools (Raman, AFM, SEM, TGA, laser light scattering, spectrophotometry, electron microscopy, ICPMS, XPS)
- Published research and methodological skills relevant to the research theme (surface modification or chemical functionalisation of carbon nanomaterials and liposomes)
- Previous hands-on research experience in handling and studying the biological investigation of carbon nanomaterials and liposomes with biological matter (proteins, cells, tissues)
- Industry experience in upscaling nanomaterials for clinical trials, including all medical-grade GMP needed by regulatory authorities
- Excellent organisational and time-management skills, including the ability to deliver timely and high quality outputs.
- Ability to demonstrate scientific writing and communication skills
- Ability to be creative in research ideas to develop/progress the research area
- Ability to plan, organise, and undertake work without detailed supervision
- Ability to develop effective working relationships with all levels of staff, students and external contacts
- Ability to work under pressure and maintain a high degree of accuracy
- Excellent verbal and written communication skills
- Ability to work effectively in a multi-disciplinary team
- Ability to work independently, use own initiative, where appropriate, and be proactive in approach to work
- Ability and enthusiasm to learn new skills outside own discipline

Desirable

- Experience in experimental research using of electron microscopy techniques (TEM, cryo-EM, tomography)
- Experience and direct involvement in projects funded by the European Commission (under H2020, FP7, or earlier Framework programmes)
- Previous experience of applying for research funding
- Experience of supervising student research projects
- Evidence of a developing track record in publishing and dissemination of high quality publications in peer-reviewed journals

Summary of conditions:

- Full time work (37,5h/week)
- Contract Length: 4 years.
- Salary will depend on qualifications and demonstrated experience.
- Life Insurance.

Estimated Incorporation date: February 2020.

How to apply:

All applications must be made via the ICN2 website and include the following:

1. A cover letter.
2. A full CV including contact details.
3. 2 Reference letters or referee contacts.

Deadline for applications: 8th January 2020

Equal opportunities:

ICN2 is an equal opportunity employer committed to diversity and inclusion of people with disabilities.