Institut de Nanociència i Nanotecnologia

UNIVERSITAT DE BARCELONA

PRESENTATION LETTER

A document to know us and welcome researchers on N&N at UB

Institute of Nanoscience and Nanotechnology of the University of Barcelona (IN^2UB)

Contents

About us

Presentation & Our Mission

The Institute of Nanoscience and Nanotechnology of the University of Barcelona (IN²UB) was created in 2006. Its main goal is to coordinate and enhance multidisciplinary research among research groups from the Faculties of Chemistry, Physics, Pharmacy and Food Sciences, Biology, Earth Sciences and Medicine and Health Sciences that work on the different phenomena occurring at the **nanoscale**. This collaborative spirit aims at integrating both, internally and internationally, interdisciplinary activities which compose equally, basic and applied research.

The main goals of the (IN2UB) are:

- To encourage suitable synergies among researchers, to favour the necessary interdisciplinary work patterns needed for frontier research
- To favour interactions between researchers and companies interested in nanotechnology applications and their business opportunities.

At the IN²UB we work to promote and dynamize the research in the field of Nanoscience and Nanotechnology (N&N) at UB to reach the future.

The main areas of interest of IN²UB are **Human Health, Energy & Environment and Technologies of Information and Instrumentation**. The IN²UB exhibits a solid scientific base, gathering around 200 researchers (including Permanent, Non-Permanent, Postdoctoral and Predoctoral Researchers), organized in research groups distributed among these major research areas:

1.Modeling, Simulation and Nanoscopic Methods (NanoMet): This research area develops instrumentation and methodology (employing experimental and theoretical tools) to characterize nanostructures and nanosystems of any nature

2.Nanobioscience, Nanobiomechanics and BioNanotechnology (NanoBio): This research area studies the organizational patterns observable in the molecular structures that control and rule the biological systems both at the cellular and at the molecular scales. Its most relevant application is that of developing techniques and devices aimed at prevention and diagnose.

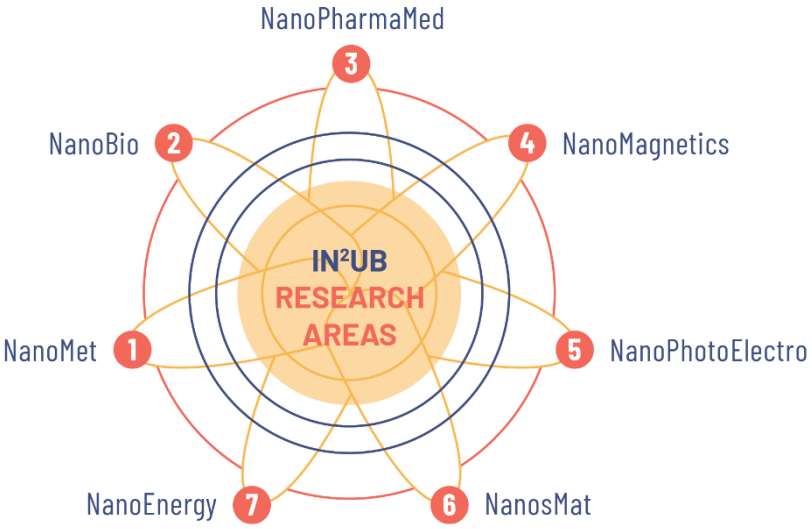
3.Nanopharmaceutics and Nanomedicine (NanoPharmaMed): This area aims at developing nanostructured systems for controlled drug release and to the improvement of drug therapeutic efficiency when administered on targets to treat diseases.

4.Nanomagnetism and Spintronics (NanoMagnetics): The area aims at developing new systems for storage and processing of information at the nanoscopic scale for information processing. It is also devoted to the study of new phenomena appearing at the nanometric size for the implementation of innovative devices of application in healthcare, sustainable energy, environment, healthy food and security.

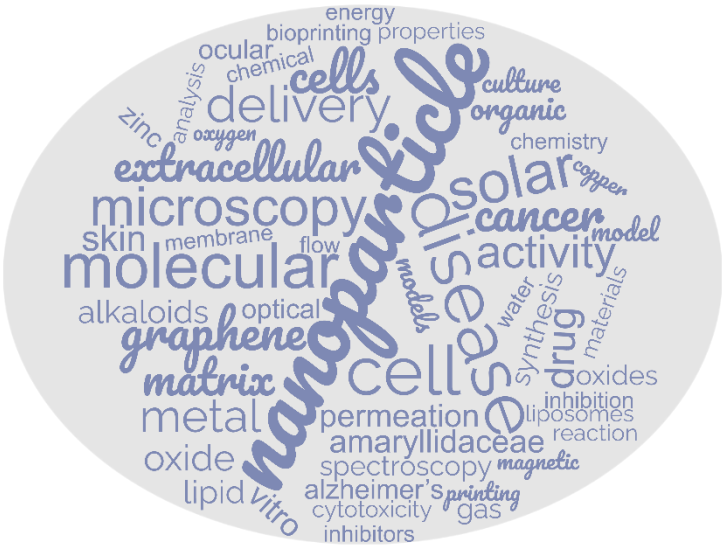
5.Nanoelectronics, Nano-optics and Nanophotonics (NanoPhotoElectro): Study and exploitation at the nanoscale of the interaction of electric, magnetic and optical properties for the design of functional nanosystems.

6.Nanostructured materials (NanosMat). This research area aims at developing new nanostructured materials or improving the properties of existing materials. This line also includes knowledge-frontier research in characterization techniques and manipulation tools at the nanoscale (as electron and probe microscopies, surface analysis, or spectroscopic and magnetic characterization).

7.Nanoenergy: Production and Storage (NanoEnergy): The aim of this research line is the application of nanomaterials to energy production and storage to overcome efficiency and lifetime limits.



Research Areas diagram.



Word Cloud of Author Keywords appearing at least 5 times at the scientific production at IN²UB (Scopus source and WordCloud.com tool)

Finally, but not less important, IN²UB is strongly involved in teaching duties, the most important program being the Master of Nanoscience and Nanotechnology and the Doctoral Program in Nanoscience and Nanotechnology at UB.

Research and Education are our strong commitment with society.

Governance Structure

Our Comissions

Equal Opportunities Committee is born to work for more equal and inclusive research.

Outreach Commission aims at bringing back to society all knowledge in the field of nanoscience and nanotechnology and make our research more accessible.

These commissions are open to all IN²UB members interested in any of them.

What we offer

As Institute, we offer a unique, diverse and inclusive environment to successfully develop your research career by coordinating and enhancing multidisciplinary research among research groups from University of Barcelona working at the nanoscale.

Our Actions and Capabilities

- Provide networking opportunities by organizing Workshops and Meeting where all researchers from the Institute are invited to participate and attend.

- Attending IN²UB International Research Seminars (IRS); a series of International Research Seminars (IRS) in order to provide a source of high-level scientific training to its research staff, once a month.

- All researchers will have full access to the research facilities and Know-How at IN²UB. The Institute has also access to a large array of infrastructures through the Scientific and Technological Centres of the UB. Moreover, IN²UB participates in frame of "Ajuts per a la renovació d'equipament científic i tecnològic de recerca obsolet – UB" and financially supports initiatives to acquire common research infrastructures.

- The Institute gives support to researchers that organize congresses or scientific events as well as contributing to visiting scientist in the fields of the IN²UB.

- At the IN²UB, we organize specific seminars on Working Safely at the Nanoscale.

- IN²UB is part of Secpho and Cluster Mav Clusters. These clusters promote research in our fields and are also an opportunity to interact with the private sector. By contacting us, IN²UB researchers are welcome to participate in any of their actions.

- Regarding transfer of knowledge and industrial collaboration, IN²UB has an intense relation with the Bosch i Gimpera Foundation (FBG).

- In collaboration with UB International Research Projects Office (OPIR) you will be updated about research programmes and calls for proposals from the European Commission and other European and international bodies.

- Furnish access to resources for specific training, offered by the UB through the Institute of Education Sciences, now Institute of Professional Development of the University of Barcelona

(ICE, from Institut de Ciències de l'Educació). Specific activities for safety concerns are organized by the security department of the UB (OSSMA). Moreover, language skills can be improved in the courses of Modern Language School of the UB (EIM), that organizes courses locally or by Rosetta Stone online platform.

Our Training

IN²UB offers a well-structured environment to work in the nanoscience research field. In order to stimulate scientific careers in master's students, in the frame of Beques de Col·laboració UB (UB Collaborating Fellowhips), the Institute offers **Master Fellowships** to collaborate with IN²UB research groups and supports the students in the process of carrying out research and working on their master theses.

For pre- and postdoctoral researchers, apart form having access to all activities described above, at the IN²UB the personal training will not only be based on science at the laboratory, but also training on responsible research and innovation (RRI) is mandatory, being directly mentored by a supervisor.

Moreover, to help postdoctoral researchers and non-permanent staff to achieve the transition between the training process and the moment of becoming an independent scientist, we offer the possibility of receiving internal funding by IN²UB through the scheme of Internal Synergic Research Projects Actions. To facilitate the establishment of multidisciplinary internal collaborations within the IN²UB, the Institute funds a program of join projects; Multidisciplinary Research Grants (called ART, from the Catalan Ajuts a la Recerca Transversal). These are one-year grants assigned to projects that integrate at least two groups from the IN2UB from different areas, which must be led by young, emerging scientists.

Contact&Communication Channels

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All activities and calls are communicated by a periodic **newsletter**.

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Promote the affiliation to the Institute (Institute of Nanoscience and Nanotechnology (IN2UB) [o Institut de Nanociència i Nanotecnologia (IN2UB)], Universitat de Barcelona, Barcelona, 08028, Spain) in your publications.