



CSIC collaborates in the first European platform that offers open access to unique nanoscience research infrastructures

- NFFA-Europe started in 2015 as a project funded by Horizon 2020 and now becomes a pilot platform to offer free open access to large nanoscience research infrastructures from 22 European collaborators.
- The platform has just published a Memorandum of Understanding to explore the future sustainability of the initiative.
- The Institute of Microelectronics of Barcelona (IMB-CNM-CSIC), the Institute of Materials Science of Barcelona (ICMAB-CSIC) and the Institute of Materials Science of Madrid (ICMM-CSIC) are the CSIC centres members of the consortium.



Laboratory at ICMAB | ICMAB-CSIC

Barcelona, 5 May 2022. NFFA-Europe is a research infrastructure that offers advanced services for nanoscience research, drawing on the resources of the European laboratories and research centres that make up the consortium. NFFA (Nano Foundries & Fine Analysis) brings together laboratories with nanoscale capabilities and large infrastructures for fine analysis of materials (neutron sources and synchrotron light laboratories). Currently, it is composed of 22 partners from 11 European countries with the participation of CSIC.



The platform has a unique, multidisciplinary catalogue of techniques and equipment offered for public nanoscience projects by its members. It is a free and open access initiative to generate a large European infrastructure. NFFA-Europe started in 2015 in the framework of Horizon 2020 and, since 2021, continues through the NFFA-Europe Pilot project. Research staff, research centres and industry can apply to access all of its services.

The techniques available include nano-characterisation, numerical simulation, advanced techniques for lithography or synthesis of nanomaterials. The catalogue has six main areas and the CSIC leads, collaborates or provides services in each one of them.

The Institute of Microelectronics of Barcelona (IMB-CNM-CSIC) leads the "Nano to Micro/Macro" area, which includes aspects of microfabrication, photolithography or inkjet technologies. In this way, the IMB-CNM integrates its Micro and Nanofabrication Clean Room (a Unique Scientific and Technical Infrastructure) into the platform. Due to the 30 years of experience managing the largest Clean Room in Spain, the IMB-CNM also offers its expertise to contribute to the management of this research infrastructure project.

"NFFA's ambition has always been to extend the philosophy of open and transnational access to the field of nanoscience and nanotechnology, in a way that by federating the skills and 'surplus' capacities of reference centres, any researcher with a good idea can have the possibility of exploring it. Particularly, and as IMB-CNM, we bring capabilities oriented towards micro- and nanoelectronics," explains **Luis Fonseca**, principal investigator of IMB-CNM's contribution to the initiative and current director of the institute.

The Institute of Materials Science of Barcelona (ICMAB-CSIC) leads the "Growth and Synthesis" area, which manages physical and chemical layer deposition and synthesis of nanoparticles or softmatter, among others. "ICMAB's scientific and technical services have a long tradition in the preparation and structural, physical and chemical characterisation of functional nanomaterials. ICMAB's recognition as a Severo Ochoa centre of excellence and its intense collaboration with the ALBA synchrotron has greatly boosted its internationalisation, and therefore participation in NFFA is an additional stimulus of great impact," says **Xavier Obradors**, principal investigator of the ICMAB contribution and director of the institute.

For its part, the Materials Science Institute of Madrid (ICMM-CSIC) provides services in the area of "Synthesis and characterisation" by offering the use of equipment that enables the controlled growth of nanoparticles on an arbitrary surface. "This instrument allows a high degree of control over the purity, size and chemical composition of the nanoparticles produced, while enabling their characterisation by various surface techniques," says **José Ángel Martín Gago**, principal investigator of the ICMM contribution.

Sustainability beyond European funds

The project, under the new form NFFA-Europe Pilot (NEP), aims to explore economic viability beyond the European public funding framework. To this end, its partners have just signed a Memorandum of Understanding (MOU) establishing a roadmap to generate complementary activities and work on long-term international cooperation.



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Participation of CSIC and other centers in Spain

CSIC has been involved in the NFFA initiative from its genesis in 2008 as a Design Study in the FP7 Infrastructures programme to the current pilot platform.

Other Spanish research centres on the list of service providers are the Institut Català de Nanociència i Nanotecnologia (ICN2, with CSIC participation) and the Universitat Autònoma de Barcelona (UAB). ALBA Synchrotron, the Institut de Recerca en Energia de Catalunya (IREC) and CICbioMAGUNE also contribute to this initiative as third parties of the CSIC.

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