

## Barcelona Nanotechnology Cluster Bellaterra (BNC-b)\*

BNC-b was created during 2007 within the UAB (*Universitat Autònoma de Barcelona*) Research Park, gathering research institutions, laboratories and associated companies endowed with knowledge, experience and resources for working on nano-technology. BCN-b represents also an initiative of coordination of capacities and efforts in nano-technology, feasible not only by the suitable capacities, but also by the geographic proximity and willingness of its members looking for investments and resources optimization.



UAB Bellaterra Campus showing situation of BCN centers

BCN-b gathers together the “nano” capacities of:

- *Centro Nacional de Microelectrónica*, CNM-CSIC and the associated ICTS “Clean Room for nano- micro- fabrication”
- *Instituto de Ciencia de Materiales de Barcelona*, ICMAB-CSIC
- *Centro de Investigación en Nanociencia y Nanotecnología*, CIN2 (CSIC-ICN)
- Some laboratories and research groups of the *Universitat Autònoma de Barcelona* (UAB)
- The companies *MATGAS A.I.E* and *D+T Microelectrónica A.I.E*

All these entities are located at the Campus of the *Universitat Autònoma de Barcelona* and, in their laboratories and facilities, with no more of 200m between them, nano-Science, nano-

technology and related activities are developed. Laboratories and facilities are provided with singular capacities as well as specific equipment for fabrication and characterisation.

In this monographic issue and following this brief description, each centre included within BNC-b expose the R+D in nano-Science, nano-technology and related topics developed within its facilities, as well as the figures allowing the evaluation of the respective skills and capacities. The super-structure that means the BCN-b, allows the interaction between centres with respect to projects and activities, besides the BNC-b researcher’s access to each centre facilities, equipments and capacities, in advantageous conditions. The joint human resources, with the proved or potential inter-discipline skills, permit as well to tackle national or international large or ambitious R+D initiatives.

Entities of BNC-b have their own structure and rules and belong to different organisms, having also different legal entity. In this sense, CSIC (Public Research Organism), UAB (Public University), ICN (Catalonian Government Foundation), or the involved private companies, are the organisms to which BNC-b centres belong. The Nano-cluster does not have its own legal entity but operates through the legal entity of the Organisms correspondent to the individual centres. As a consequence BCN-b is a “virtual super-structure” with a scientific, technologic and industrial orientation, intending to work with such a normative that allows the most flexible functioning. At this purpose, a Coordination Committee meets with a monthly periodicity in order to discuss and manage on BNC-b orientation and actions, according with its objectives and skills, in the frame of the super-structure Mission and Vision.

The BNC-b Mission is to coordinate, to promote and to develop R + D in nano-Science and nano-technology field, and its Vision is to set up a reference cluster in nano-technology at an International level.

With the most respect towards each centre functioning regulations, the nano-cluster detailed objectives are:

- To promote a maximum of visibility of BNC-b, as a whole, and each one of its members
- To increase the existing critical mass
- To provide access to each centre facilities, equipments and capacities, in advantageous conditions
- To promote and coordinate common and transversal research lines capability
- To promote and to participate the creation and development of education and training programmes

\* For further information: Emilio Lora-Tamayo. BNC-b Coordinator.  
E-mail: Emilio.LoraTamayo@uab.cat

Activities within BNC-b aims to design and develop joint actions of implicated agents hurling and exploiting, in a synergic way, complementary capacities, promoting R+D lines and themes and carrying out actions for diffusion and transference of results to the industrial sector. In particular, but in a neither exclusive nor exhaustive way, the following activities can be identified:

- To coordinate research activities in the nano-technology area
- To coordinate technologic development and innovation activities in nano-technology
- To carry out activities of technology transference
- To organize technology courses and continuous training in nano-technology fields
- To coordinate the marketing of technology products of R+D projects
- Promotion and dissemination of the BNC-b members activities
- Coordination of new equipment acquisition, access and organization of the Cluster members scientific and technical services
- Representation of BCN-b members
- To promote and support association initiatives, plans and structures, within the nano-Science and nano-technology areas, at national and/or international levels

- Any other activity resulting in the above mentioned, with an auxiliary character with respect to the cluster members activities

The BCN-b initial interest lies in the following working lines:

- Nano-materials and nano-devices
- Theory and modelling
- Nano-scale properties
- Nano-fabrication and packaging
- Characterization at atomic and nano-metric size scales

It is evident that, beyond the easiness that location in the UAB research Park means, the principle of joining and optimizing resources that rules BCN-b called for the enlargement of the "super-structure" concept, can be easily envisaged for promoting of new horizontal and transversal collaboration methods. Therefore, starting from this principle, groups with coincident objectives, at Barcelona, Catalonia or Spain levels, can be gathered for similar or larger initiatives. Not underestimating motivations, compromises and problems associated to this grouping concept, the synergic effects derivate from this type of partnership more than justify the special interest on its study and analysis.