

NANO ACTIVITY IN PORTUGAL

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Nanotechnology has gained relevance in the last years. This is largely due to the development of the available technologies, but a very strong motivation is that most biological and chemical processes occur at nanoscale. Seeing and actuating at this scale has almost unlimited potential, in Biomedicine as well as Electronics or Materials science and technology. It is multidisciplinary in nature, as classic disciplines like Biology, Chemistry or Physics are hard to distinguish at this scale. A new class of applications is at reach if the appropriate effort is placed into Research and Development in this area.

Nanotechnology activity has been constantly gaining relevance in Portugal in the last years. Many Portuguese research Groups have shown sizeable activity, both in volume and overall quality, in Nanotechnology topics. Most of those Groups have a well-established tradition of quality research on which their move into Nanotechnology is anchored. The most active topics reflect this fact, Biochips/biosensors, Bio-nanotechnology, Nanomedicine, Nanoelectronics, Nanostructured Materials/Nanocomposites, Nanofiltration/Membranes, Semiconductor Devices, Magnetic Devices. As it would be expected for an emerging, hot topic, there are smaller, younger Groups producing quality work but in smaller volumes in other relevant topics, as SPM or Single-molecule studies and others. In order to foster the potential of Nanosciences and Nanotechnologies a considerable effort has been actively devoted to the development of this field in Portugal.

One step was the gathering of information about the activity actually taking place. This work lead to the launch of PortugalNano, the Portuguese Nanoscience and Nanotechnology Network (www.portugalnano.org). The main purpose is to make available to all Portuguese NanoScientists information on who is doing what, including an extensive database of published work by Portuguese Groups in this field. The availability of this information should help establishing collaborations between Groups and in this way promote further advances in Nanotechnology. This initiative closely coordinates with Portuguese participation in different International and European programmes and initiatives. A bilateral collaboration with France specifically in this field is also being set up.

A very significant step into promoting Nanotechnology was the joint launch with Spain of the International Iberian Nanotechnology Laboratory (INL) to be installed in Braga, Portugal. This will be a World-class international laboratory for about 200 researchers in a first stage, and will focus onto four main topics: Nanomedicine, Nanoelectronics, Nanomanipulation and Nanorobotics, Environment Monitoring and Food Quality Control and Safety.