



Nanoactivity in Portugal

Luis Viseu Melo

FCT Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR Portugal



Introduction

- Nanotechnology: What is it?
 - Deals with (fabricates, manipulates, uses) objects $\leq 100\text{nm}$ in at least one dimension
 - Is concerned with properties due specifically to this size range



Introduction

- Why has Nanotechnology gained relevance in the last years?
 - Development of the technologies necessary
 - New properties (namely quantum) can be used



Introduction

- But also...
 - Very strong motivation: **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.



Introduction

- Notice that:
 - It is **multidisciplinary** in nature, as classic disciplines like Biology, Chemistry or Physics are hard to separate at this scale. A new class of applications is at reach if the appropriate effort is placed into Research and Development in this area

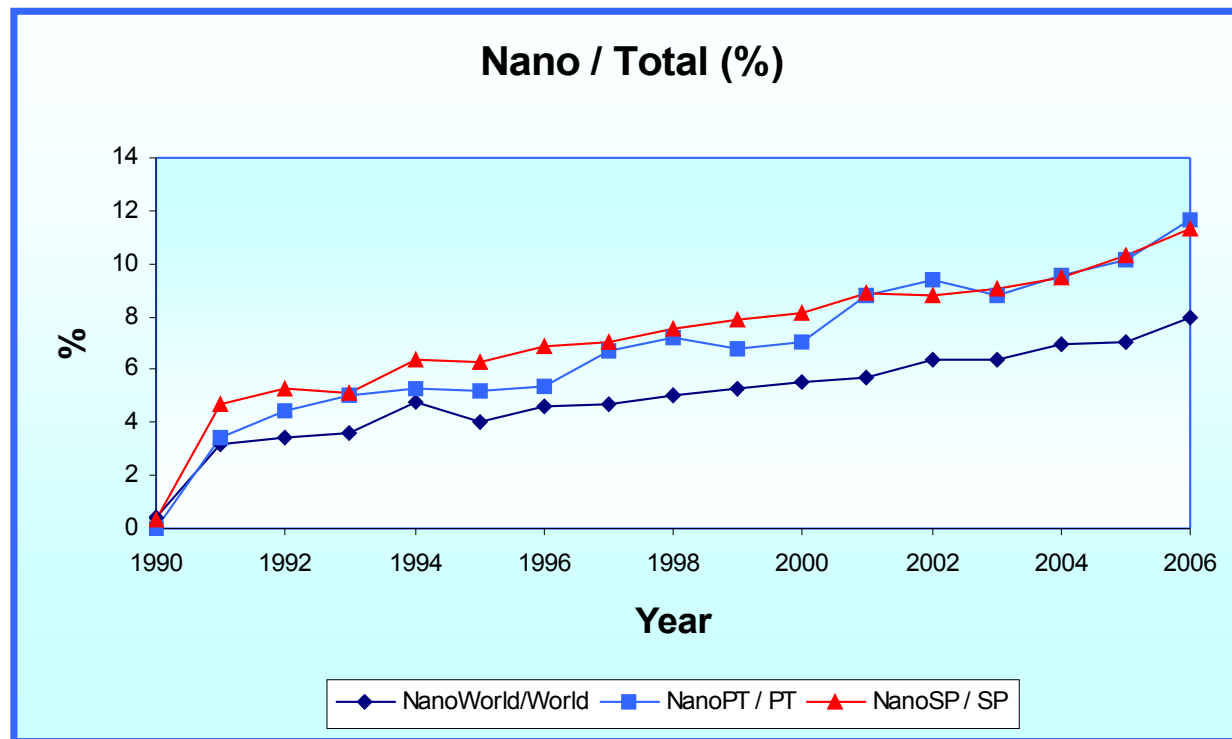


Evolution

- Since the word Nanotechnology started being used in the early 1990's the growth of Scientific production in the area has grown very rapidly
- But do not forget that some people were in fact working in the field without using the word. This is the case of many remarkable groups and labs working in Nanotechnology today



Evolution



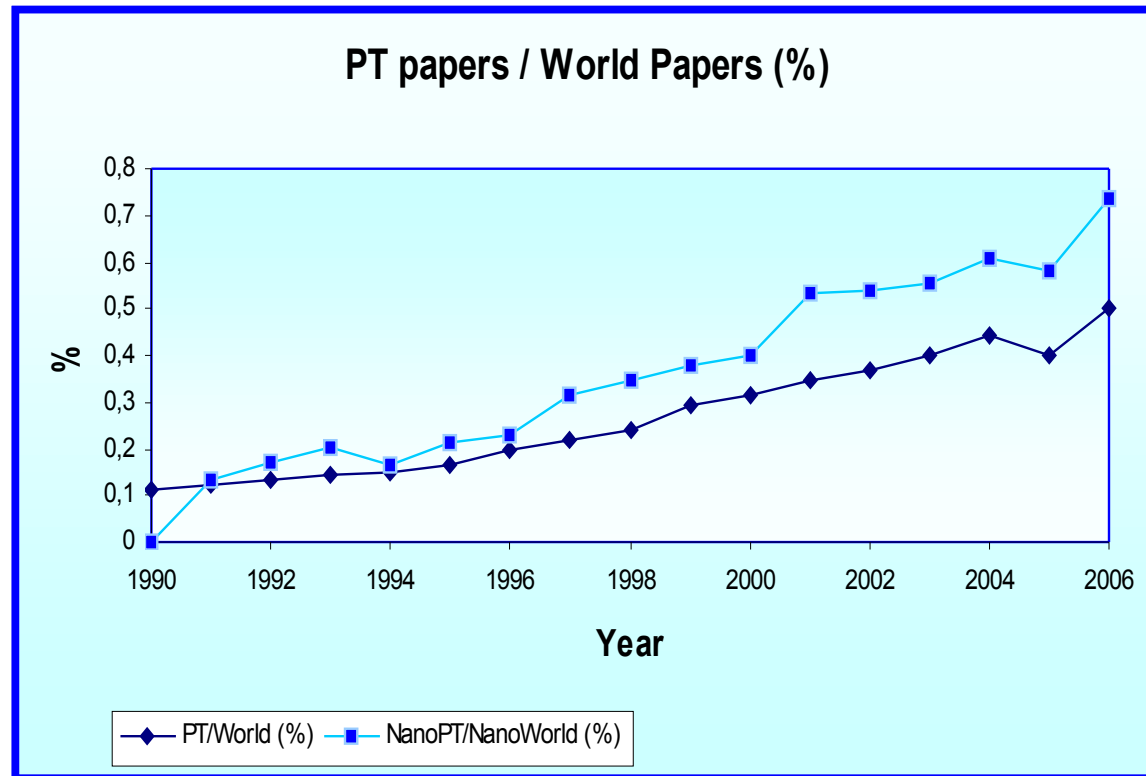


Evolution

- Nano picked up very quickly in the World
- Even more quickly in Portugal and Spain
- In a similar way in both Countries



Evolution





Evolution

- Portuguese Scientific production grows steadily
- The percentage of Portuguese Nano papers over the total World Nano papers is higher and grows more quickly than the equivalent percentage for papers in all fields \Rightarrow Higher PT impact in Nano



Actions

- Coordination
- Foster
- Outreach



Activities: Coordination

- PortugalNano: Portuguese Nanotechnology Network
 - Public database with PT Scientists working in the field
 - Papers (ISI) database
 - News broadcast (e-mail)
 - Web site: www.portugalnano.org
 - Launch a regular Workshop series



PortugalNano: Home - Microsoft Internet Explorer

Ficheiro Editar Ver Favoritos Ferramentas Ajuda

Retroceder Avançar Procurar Favoritos Multimédia

Endereço <http://www.nanoportugal.eu/> Ir para Hiperligações

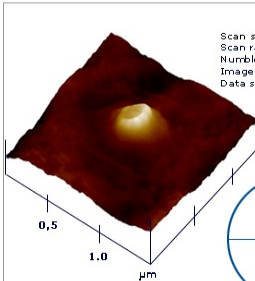
Portugal Nano
Portuguese Nanotechnology Network

Home Members Papers Events Jobs Links

PortugalNano - The Portuguese Nanotechnology Network

The Portuguese Nanotechnology Network - PortugalNano has now been set up. It is intended to serve as a central linking spot for Nanotechnology in Portugal, getting together Researchers around a dedicated resource. This will provide information on the activity and resources in the area, as well as other relevant information. It will be an useful instrument in helping Researchers to establish collaborations, exploiting synergies and expertises. It will also provide general Society with updated information on this emerging topic.

[Read More](#)



Scan size 1.500μm
Scan rate 2.001Hz
Number of Samples 256
Image Data Height 80.00 nm
Data scale

0,5 1.0 μm

x 0.500 μm/div
z 80.000 nm/div

Highlight

Nanotechnology and Nanoscience: Creation of Portugal-Spain R&D Institute

The final proposal for the creation of the Portugal-Spain R&D Institute should be completed by the end of October, and shall be officially announced during the XXII Portugal-Spain Summit, scheduled for late 2006.

[Read](#)

Events

2006/10/19 [European Forum on Nanosciences](#)

2006/10/22 [VII Spanish-Portuguese Conference on Controlled Drug Delivery](#)

2006/10/29 [8th International Conference on Materials for Microelectronics and Nanoelectronics](#)

[More Events](#)

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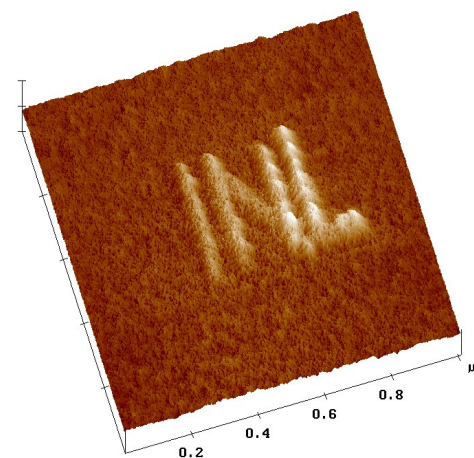
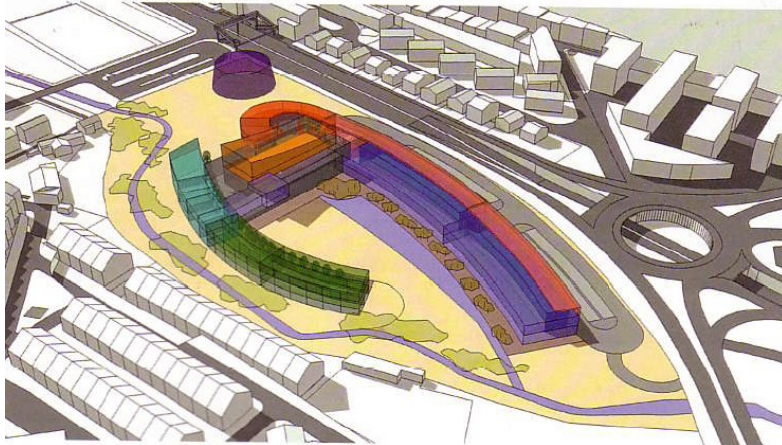
Disclaimer: Technical support by webmaster@portugalnano.eu

Internet



Activities: Foster

- Cooperation: Infrastructures
 - International Iberian Nanotechnology Laboratory (**INL**), between Spain and Portugal, located in Braga, to start on-site activity in 2009





Activities: Foster

- Cooperation: Infrastructures
 - Two Associated Laboratories in Nanotechnologies created in 2006



Activities: Foster

- Cooperation: Capacitation and Networking
 - Joint call between Spain and Portugal for collaborative projects in:
 - Nanomedicine
 - Nanotechnologies for Environmental Monitoring and Food Quality Control and Safety
 - Graduate Course on NanoMedicine starting between Galician and Northern Portuguese Universities
 - This Nanoiberian Conference



Activities: Foster

- Cooperation: Portugal-France Scientific Bilateral Agreement involving Nanotechnologies specifically
 - Activities under consideration:
 - Short courses
 - Interchange of Scientists



Activities: Foster

- Cooperation: Integrated approach to European and International Collaboration:
 - **ERANETs:**
 - NanoSciERA
 - MNT ERANET (Micro and Nano Technologies) - Joining phase 2
 - EuroNanoMed (Nanomedicine) – preparing proposal
 - **FP7:**
 - NanoTechnology, Materials and New Production Technologies
 - **Joint Technology Initiatives (JTI):**
 - ENIAC (Nanoelectronics)
 - **OECD:**
 - Working Party on Nanotechnology



Activities: Outreach

- Ciência Viva:
 - Events organized in 2006 and 2007, with active participation of the Scientific Community



Future: **Bright!**

- More spread and effective collaboration between Scientists, plus
- Better infrastructures available, plus
- Better knowledge and coordination, should establish:
- **Nanotechnology and Nanoscience as a key R&D topic in Portugal in the near future**