European scale infrastructure in Nanobiotechnology "EuroNanoBio"

http://www.euronanobio.eu

FP7 Support Action

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The project has examined the state of the art and future requirements of the nanobiotechnology capacity in Europe with regard to *infrastructure needs, communication management, education and training, and the political and social environment.*

The results after analysis of existing or emerging clusters and intensive consultations and discussions with experts from academia, industry and local and national authorities have corroborated into the following set of **recommendations for a European Infrastructure in nanobiotechnology**:

▪ A distributed infrastructure

Recommendation 1: To cover the large range of scientific disciplines involved in nanobiotechnology and the diversity of application areas, ***a European infrastructure has to be built on regional nanobio clusters*** which have world-class facilities and expertise with high levels of engagement between industry and academia.

Recommendation 2: The nanobio clusters need to be connected and coordinated to create a pan-European network sharing knowledge and equipment and covering the whole value chain in specific application areas of nanobiotechnology such as environment or medicine, for example.

Recommendation 3: A dedicated infrastructure management should improve the engagement between academic disciplines, research centres and companies inside and between the involved clusters.

Recommendation 4: Detailed technical roadmaps for each of the application areas within nanobio should be defined to provide a catalyst for collaboration between industry and academia within the infrastructure and drive the R&D developments.

Recommendation 5: ELSA (***ethical, legal and social aspects)*** experts should be encouraged to work collaboratively with science departments, research institutes and industry to help explore ethical and social implications of developing nanobiotechnologies thereby enabling early decision making about the probability of commercialisation in a socially and ethically responsible manner.

Recommendation 6: Set-up and upgrading of clusters will require ***local, national and European political support and funding*** supplemented by ***private investments*** at a later more mature stage.

- ## Central services

Recommendation 7: A European reference centre is needed ***for characterization and toxicology studies of nanoobjects***, which can be accessed by all nanoobject producers and users from academia and companies similar to the Nanotechnology Characterisation Lab at NCI/USA.

Recommendation 8: A European center for Risk and Safety Management in Nanobiotechnology providing information and advice on existing safety standards and SOPs in Europe would best serve the needs of SMEs and universities who cannot afford expensive risk assessment.

- ## Communication and public engagement

Recommendation 9: The infrastructure should provide pools of experts and professional communication tools necessary for ***engagement with the public***.

Recommendation 10: Promotion of the capabilities of nanobio-technology to SMEs and clinicians should be facilitated by showcasting ***examples of successful exploitation of nanobiotechnologies.***

Recommendation 11: Engagement with ***nanobio clusters and research centers outside the infrastructure based in Europe or elsewhere*** in the world should be encouraged.

- ## Education and training

Recommendation 12: The high interdisciplinary nature of nanobio-technology requires ***the introduction of dedicated nanobio courses preferably at the MSc or PhD level***.

Recommendation 13: Because nanobiotechnologies touch on many important wider issues, teaching an understanding of ***ethical and social aspects and training in science communication and public engagement should be included at the MSc and PhD level.***

Recommendation 14: Due to the rapid development in nanobio-technology ***targeted education and training programmes for in-career training need to be developed***.

Final report is available on the website: *http://www.euronanobio.eu*