

## **Nano-Education in Europe Development .**

<N.E.E.D Program>

**Activity area “Cross-cutting and enabling R&D” sub-topic: NMP.2012.1.4-5**  
**Improving education in nanotechnologies to match the skill needs of EU industry and society – -**  
**supporting actions.**

**Some ideas by: Paolo Manzelli ; President of EGOCREANET (\*)**

*"Nanotechnology is an area which has highly promising prospects for turning fundamental research into successful innovations. Not only to boost the competitiveness of our industry but also to create new products that will make positive changes in the lives of our citizens, be it in medicine, environment, electronics or any other field."(European Commissioner for Science & Research, Janez Potočnik )*



**Objectives :** The economic importance of nanoscience and nanotechnology has not yet been fully realized to ensure its transformation from a *resource-intensive to a knowledge-intensive industry*. Therefore it is a need to sustain a deep innovation in *advanced nanoeducation in Europe*, by generating step changes in knowledge and implementing decisive knowledge for new applications at the crossroads among different technologies and disciplines. (1)

Toadays the Nanotechnology Infrastructure in education, normally works on commons standard of specialistic separated disciplines, related to reasearch in nanoscience and nanotech (2).

Some problems are associated with the current training courses especially in relation to the need for a flexible work force that will be able to follow a complex transformation of the continuous changes, that links new methods of nano-production with contemporarily societal and environmental challenges.

Evidently the diciplinary approach of training need to cross traditional boundaries between academic training in science and humanities, because today new needs and professions of transdisciplinary knowledge have emerged for improving the industrial exploitation that will be based on management innovation of industry and the workforce skill preparation. A new transdisciplinary approach in “nano-education” is necessary especially for European SMI, to help their changing role, both in createing nano-produscts innovation, and in order to evaluate the greath impact of nano-scale production in the development of sustainable knowledge society. Therefore the focus of the **Nano-Education in Europe Development (N-E-E D.)** will be to benefit both new, high-tech industries and higher-value, knowledge-based traditional industries, through developing a special focus to the appropriate trans-disciplinary actions in cross-cutting and enabling R&D dissemination of RTD results to SMEs. (3)

**Rationale: Educate and train a new generation of skilled workers in the multidisciplinary perspectives necessary for rapid progress in European nanotechnology.**

The increasing difficulties affecting many industrial activities appears no longer to be limited to traditional sectors with a high manual labour intensity, but is beginning to undestand that the future will constitute the established strengths of European industry on the basis of the the transformation of production forward a more added value of nano and bio tech. products; hence forward improving a KBNanoE and KBBioE . As a matter of facts a strong industrial European base must be maintained by strengthening the knowledge RDT contents, in existing industry in order to building, in Europe, a strong knowledge-based, or , knowledge intensive industry, stressing the exploitation of RDT research for industrial applications. This will include the modernization of the existing SME manufactures through the creation of new knowledge-driven management

of SMEs, through the dissemination of knowledge and expertise activities, that can become possible and sustainable by means enhancing collaborative programmes in multidisciplinary education .

Therefore the central objective of [Nano-Education in Europe Development \(N-E-E D.\)](#) will be to support the implementation of a transdisciplinary nano-scale training, ready for the demands of the rapidly developing field of nanotechnology, as well as to underlying the objective of enabling research as a source of innovation in order to move towards a [knowledge-based economy](#) and a [more environmentally friendly industry](#) . Hence this central objective, means to develop activities to favour the orientation of [Nano-Education](#) forward integrated approach of innovation in training, combining materials sciences, nanotechnology, production technologies, information technologies, biotechnologies, etc.. into a flexible formats of [nano-education](#) for various typology of intellectual work-forces.

This means to favour the aggregation of a system of transdisciplinary contents moving [towards knowledge-based products and processes](#) : breakthrough disciplinary structure of knowledge in new applicable formats of training, including advanced RTD in [nano science and tech.](#) This action of [N-E-E D.](#) will be lauched by [EGOCREANET & Collaborators](#), in order to promote the wider scope of the transition of industrial research&production, through contributing to the implementation of the [FP7 -Framework NMP Cooperation Programmes](#) and to facilitate the preparation of future EU research and technological development policy, in particular looking forward to help the promotion of a new model of [European Factory of Future](#). Besides the activities of [N.E.E.D. Program](#) will be focused on an advanced dissemination on-line of the EU-strategy to enhancing the collaboration of civil society organisations and their networks, into the recent activities of the thematic areas of the Cooperation programme in developing and implementing a better environment, health, energy, employment, etc.. to ensuring multi-disciplinarity, cross-sectoral and life-cycle approaches and also though organizing some European conferences; seminars; workshops... in the participants countries ,to promote a multiple-integration of nano-education [N-E-E D.](#) program among actors, sectors, expertise, technologies, activities, funds, all in order to secure and increase the EU competitive position in a highly competitive global context.

(\*) : [EGOCREANET : www.edscuola.it, www.wbabin.net ,www.egocrea.net](#)

#### **BIBLIO ON LINE**

(1)- <http://www.euractiv.com/science/commission-defines-action-plan-nanotechnologies/article-140902>

(2)- [http://en.wikipedia.org/wiki/Nanotechnology\\_education](http://en.wikipedia.org/wiki/Nanotechnology_education)

(3)- see page "26 " of Confidential report:

[http://www.unimagdeburg.de/eu\\_hsnetz\\_media/pdf/arbeitsprogramme/WP\\_2012\\_NMP\\_%5BThema4%5D.pdf](http://www.unimagdeburg.de/eu_hsnetz_media/pdf/arbeitsprogramme/WP_2012_NMP_%5BThema4%5D.pdf)

