

The Need for New Educational International Institutes in nanomaterials Globalisation of the European GENNESYS model

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In order to face up to the massively sectorial investments of major or emerging countries targeting world leadership in some economic areas, Europe and partner institutions must overcome the fragmentation of the human and materials resources of European Research by gathering the best teams to share these resources through integrating them into new European organisations (GENNESYS European College of Excellence). The GENNESYS initiative represents a unique and attractive opportunity to gather and integrate geographically-dispersed human resources and effectively scientific facilities for training and promoting activities.

Many companies throughout Europe and the world report problems in recruiting the types of graduates they need, as many graduates lack the skills to work in a modern economy. For Europe to continue to compete alongside prestigious international institutions and programmes on nanomaterials, it is important to create a “Europe Elite College” which provides a top-level education and the relevant skills mix. This should be a new and central institution, involving new “satellites” of leading universities and other institutions throughout Europe. Such a New European College for nanoscience should offer education, training, sciences and technologies for research; cover master’s degrees and professional doctorates, linking university researchers and training for industrialists with recognised qualifications. The European College should have close links with universities of excellence in Europe; nanomaterials research institutes, the research infrastructure and have strong involvement by corporate research in industry throughout Europe.

The elements for such a high level education are

- Multidisciplinary skills
- Top expertise in nanomaterials science & engineering;
- Literacy in complementary fields;
- Exposure to advanced research projects;
- Literacy in key technological aspects: exposure to real technological problems;
- Basic knowledge in: social sciences, management, ethics, foreign languages, culture;
- Literacy in neighbouring disciplines: International business, lawetc;
- Interlinkages between: education, research and industrial innovation: students will be ready for that research and development will provide;
- Sharing of post-docs, Masters and PhD students to foster the mobility of permanent researchers and professors between different institutions are needed to create “team spirit”.

The GENNESYS European Nanomaterials College should become an influential body in Europe that stimulates, fosters and promotes education, research and innovation in nanomaterials, nanomaterials-related (life-sciences, physics, chemistry, engineering) science and technology in Europe. The college should become a platform which brings together different aspects of materials science in Europe and makes interfaces/synergetic interactions with all science-, science policy bodies and industry in Europe and worldwide.

A European action plan in nanomaterials education is being worked out to underpin a sustainable nanomaterials research strategy. Strong efforts must be undertaken to improve integration of nanomaterials education and research, particularly at the boundaries of disciplines and to prepare flexible and adaptable nanomaterials scientists and engineers for the future.

A new framework of cooperation between universities, national research institutes, technical societies and industry is being developed and their roles in this new partnership defined.

The goal of GENNESYS College is to develop a mechanism where Education – Research and Industrial Innovation merge. The proposed GENNESYS Nanomaterials European College” would ideally meet the requirements for the training of our future materials scientists and engineers.

GENNESYS International Institute for Nanomaterials is ideally complementing the EIT (European institute for Innovation and Technology). Joining both institutions would become the motor for “Innovative Europe” in nanomaterials science and technology.

The lecture will explain the GENNESYS European model and extrapolate it to a global dimension: (International Institute and satellite colleges for nanomaterials science and technology”.

P.S. The GENNESYS European nanomaterials Strategy Study is available on the website:
“www.maxplanck.de”