

Project launch

20 October 2010,
Bucharest, Romanian Academy



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Nanotechnology in Romania: prospective study NANOPROSPECT

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Project summary

The prospective study NANOPROSPECT is devoted to “nanotechnology” (NT). NTs are providing structuring and control of properties of matter at the nanometer scale (1-100 nm). More specifically, NTs allow creation and utilization of materials, devices and systems through the control of matter at the nanoscale, i.e. at the level of atoms, molecules and supermolecular structures. The essence of NT is the ability to work at these levels in order to generate larger structures with a fundamentally new molecular organization. NT experiences an explosive development at the global level (2000-2008), with an average annual increase of the order of 25% for R&D budgets, human resources, published papers and products on the market. EU has a strategy in the field, whereas some countries (e.g. Germany, France, U.K., and Poland) have a special programme and/or strategy.

Romania has a potential and results in NT, as shown by scientific publications in this field and by international cooperation. Through the CEEEX programme, as well as through the programmes from PNCDI II a number of about 400 national projects in the “nano” field have been financed since 2005 (unofficial data, January 2010), with more than 300 R&D projects. The investments through the “Capacities” programme and through structural funding provided state-of-the-art apparatus and equipments, many of them useful for NT (especially for characterization).

NANOPROSPECT will analyze the potential for applications, as well as for international cooperation, putting forward a national strategy for NT, in correlation with the EU strategy. This strategy, apart from the priority research directions, will suggest measures to accelerate innovation, industrialization of results in RD, full use of experimental facilities, formation of interdisciplinary competencies etc. A key aspect is the responsible development of NT, i.e. EHS (environment, health, safety). These topics will be debated in working groups including not only researchers, but also governmental institutions, representatives of private companies, Chambers of Commerce, NGOs, professional associations etc.

This project is developed by a powerful consortium of 7 R&D institutes and 4 universities representing various regions of the country. Besides the human and material resources in R&D, this consortium involves experts with a broad experience in international cooperation, national representation at the EC level, innovation, cooperation with industry etc. The best researchers will be involved, as well as foreign experts and will develop an extensive campaign of networking at the national level, collection and dissemination of information and results of the prospective study.



Project objectives

- ✓ Project management, activities of coordination and networking at national level in the nanotechnologies domain, includes a detailed plan for involving the human resources in NT at national level.
- ✓ Establishing the criteria and indicators for evaluating the fundamental and applicative research activities in the nanotechnologies domain precede a comprehensive analysis of the human and material potential, of the research performance in NT.
- ✓ Evaluation of the national potential of scientific research in the nanotechnologies domain – analysis of the technological competitiveness level in Romania. The activities are related to mapping the RD groups and state of the art experimental infrastructures; identifying the research directions; analysis of Romanian participation to European and international cooperation in NT; establishing the national priorities in NT domain with socio-economic impact.
- ✓ Analysis of the Romanian scientific potential in the nanotechnologies domain with the aim to promote the participation to international cooperation (calls for proposals). This analysis is essential to assure a critical mass in the advanced NT development.
- ✓ Report on the strategic orientations and main research-development directions in the domain for the period 2011-2020. Elaborating the strategy in the domain on short term (2011-2013) and respectively medium term (2014-2020).
- ✓ Information and publicity on the strategy in the nanotechnology domain: the role of science, education, market orientation, development directions.