

National Institute for R&D in Microtechnologies, IMT-Bucharest

“Network of scientific services for nano-scale structuring and characterization, with applications in the development of convergent technologies” NANOSCALE-CONV

<http://www.imt.ro/nanoscaleconv>

The main goal of the project proposed by 11 partners, from national research institutes and universities, spread all over the country and with an interdisciplinary expertise is the realization of a critical mass at national level, to spread excellence, overcome fragmentation, creating a long term national integration in the structured and characterization domain at nanometer scale, in order to advance knowledge-based research and to create a knowledge-based society in convergent nano technologies (micro-nano-bio technologies) for becoming competitive at European level and also to enhance the potential of Romanian production companies.

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**NANOSCALE-CONV PARTNERS:**

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The **general objects** of the project are:

- ♦ common use at the network level of the equipments; new innovative research

- ♦ inventory of characterization/existent resources equipments,
- ♦ acquisition of a new equipment, that would reflect the state of the art, for research at nanometer scale, equipment that will be located in clean room of IMT Bucharest, all partners of the network having access to it
- ♦ realization a web page and data base
- ♦ working point for different partners in IMT technological area
- ♦ common research activities oriented to developing demonstrators of nanodevices
- ♦ experimentations of nanolithography on different materials elaborated by partners
- ♦ realizations of nano devices, utilizing the nanolithography equipment
- ♦ identification of solutions for the convergence of technologies used by consortium members
- ♦ elaboration and realization of a program for education
- ♦ dissemination of obtained results and excellence
- ♦ establishing an offer of complex services
- ♦ increasing number of common projects of partners at national and international level,

**The successful achievement** of this project is possible as well due to the fact that some of the partners have also cooperate in other national networks. The network core will be composed of the partners involved in **MINAMAT-NET** - (Network of Laboratories for Characterization of Materials and Microstructures for micro and nanoengineering), supported by **MATNANTECH Program** in 2001-2004 and of some of the partners involved in **NANOMATFAB, 3N** etc networks.

In addition, the network could be coupled to the following international projects in FP6: NnaofunPoly, 4M, INTEGRAM+ (priority 2), in which IMT is partner, ensuring the success of the project also by means of access to equipments and know-how.

The network coordinator - IMT possesses a clean room (mask fabrication facilities, etc), which allows performing multidisciplinary research, experimenting of non-standard technologies, based on a large variety of nanomaterials which will be used in nanodevice demonstrator structures etc.

The acquisition of a versatile and expensive, high - performance equipment, not available elsewhere in the country, composed by a high-resolution SEM and an EBL will contribute to the success of the project, being of major importance in the developing of novel and state-of-the-art nanodevices and opening the way to new research at European level, allowing the integration of Romanian institutes and companies in ERA.

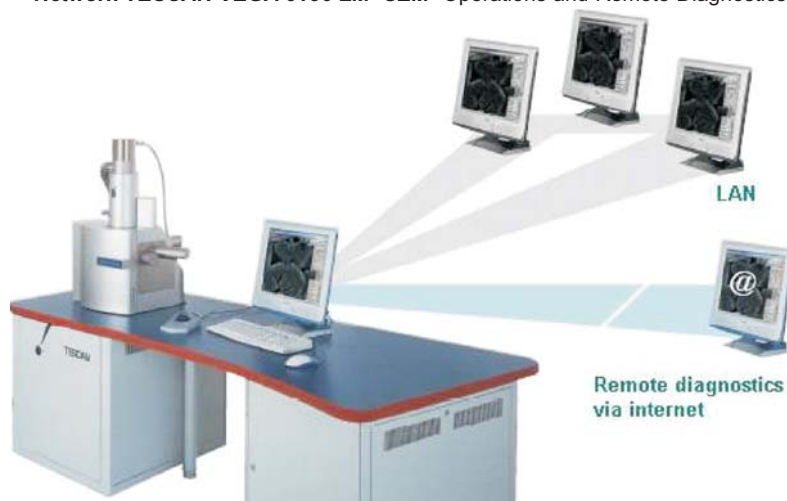
**New equipments in IMT-Bucharest acquired through NANOSCALE-CONV**

**TESCAN VEGA 5136 LM and ELPHY Plus** - Nanolithography equipment, is a dedicated tool for nanolithography, offering a resolution in the range of nanometers. Nanolithography is a strong challenge for all researchers and engineers involved in nanotechnology. Future applications are expected as: nanostructures for bio and chemosensors, biochips, nanochannels, resonant nanocantilevers.

**Network TESCAN VEGA 5136 LM SEM Operations and Remote Diagnostics**



**ELPHY Plus** – Advanced SEM System for Nanolithography



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