

## IMT-Bucharest is creating a “Centre for Converging Technologies” for promoting European cooperation

The term “converging technologies” is describing the simultaneous use of various families of technologies to create a product. In IST (information society technologies) integrated systems are developed using micro-nano-bio-info-technologies, whereas in NMP (nanotechnologies, materials, production) priority of the EU programmes an example is provided by nanobiotechnologies used in “nanomedicine”.

The National Institute for R&D in Microtechnologies (IMT-Bucharest) is creating a “Centre for Converging Technologies”, as a platform of interaction facilitating development in this field, especially cooperation in FP7.

The background for this Romanian initiative is provided by:

- ♦ Participation of IMT-Bucharest in numerous FP 6 projects including research projects and networks of excellence financed from both IST and NMP priorities ([www.imt.ro](http://www.imt.ro));
- ♦ Extensive networking at the national and regional scale in the field of micro- nano-biotechnologies, financed from national programmes and from EU projects ([www.nano-link.net](http://www.nano-link.net));
- ♦ The “technological pole” created by IMT around the Science and technology park for micro- and nano technologies MINATECH-RO ([www.minatech.ro](http://www.minatech.ro)).

### National networks and common laboratories.

The Romanian R&D programme CEEEX, or “Research for Excellence” (2005-2008) is financing “science and/or technological networks”, facilitating European cooperation and especially participation to European Technological Platforms (ETP).

IMT is coordinating three such networks. The first one, called RO-NANOMED (Integrated Research Network Devoted to Nanobiotechnology for Health: Romanian Nanomedicine Network) is targeting the ETP of Nanomedicine. The partners in this network are carrying on exploratory research in 14 small projects grouped in three clusters, focusing on the thematic areas of the above mentioned European platform. Moreover, this network supports the set-up of the **NanoBioLab common laboratory**, equipped with a nanoplotted and a nanoscanner for testing microarrays and located in the “clean-room” area inside IMT (Fig.1). IMT has the capability to design and fabricate microarrays and biochips (as shown by its participation to FP6), a specific target of convergent technologies. The other partners are also



Fig.1



Fig.2

providing access to some of their equipments.

Another network is NANOSCALE-CONV (Network for scientific Services for Structuring and Characterization at the Nanoscale, with Applications in the Development of Convergent Technologies), again with a common laboratory installed in IMT, providing the **electron-beam lithography at the nanoscale** (Fig. 2). The third network coordinated by IMT, called RTN-NANOEL (Romanian Technological Network for Integration in the European Platform for Nanoelectronics) will consolidate the above laboratory. Again, in these two networks the partners are sharing access to their equipment and they are performing common exploratory research.

### A technological pole located in the MINATECH-RO Park.

The focal points of the above networks – *the common laboratories* - represent a key feature of the science and technology park for micro-and nanotechnologies MINATECH-RO, created by IMT together with the University “Politehnica” of Bucharest. A new “clean-room” area was created and new equipments have been installed (fig. 3 shows a computer controlled Reactive Ion Etching equipment). This area is open for industrial companies, which may install their own equipments. A package of technological, training and business services is provided within a network of providers and users of knowledge and technologies supported by a centre of technology transfer (CTT-Baneasa). A number of companies are located in the park; whereas three research institutes have here working points.

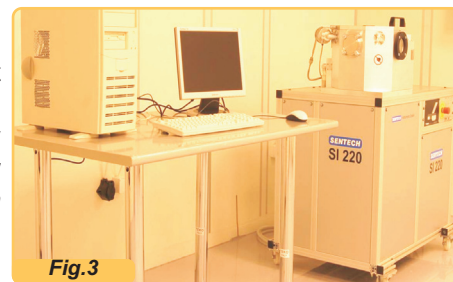


Fig.3

This information is provided through the **ROMNET- ERA** project (EU project 2004-2006, contract No. 510475, see [www.romnet.net](http://www.romnet.net)).

The activities **concentrate on Romania**, important target groups being the high-quality research centres and innovative SMEs. Identifying, screening and **networking of research groups** is focused on some **priorities of FP 6**, catalyzing the participation to future EU projects (FP7).



Fig.4

The partnership with University “Politehnica” of Bucharest focuses on the education and training aspects. This “pole” is also facilitating access of the Ph. D. students to new equipments (fig. 4 shows a spectroellipsometer in the micro- and nano-optics laboratory)

The main role of the new “centre for converging technologies” in the above picture is **exploiting the existing**

**potential in international cooperation.** Short and medium term targets are: a) bringing foreign companies into the science and technology park; b) providing services and training at the regional level; c) facilitating participation to FP7.