

Virtual Centre for Research in NANOTEchnologies for new MATerials and FABrication processes

The NANOMATFAB network, coordinated by IMT acts as a distributed (virtual) centre of excellence for nanomaterials and new production processes, a project financed by the national RTDI programme MATNANTECH. The corresponding consortium groups the Romanian participants to FP6's new instruments in the field of micro- and nanotechnologies.

The virtual research centre comprises **11 multidisciplinary research centres** / 7 organisations operating in the fields of engineering (micro- and nanotechnologies), physics and chemistry:

1. Centre for Microstructures and Microsystems for Bio-medical and Environmental Applications, from IMT-Bucharest
2. Centre of Nanotechnologies (under the aegis of the Romanian Academy) from IMT-Bucharest
3. Nano(bio)materials Group, "PETRU PONI" Institute of Macromolecular Chemistry, Institute of Excellence of the Romanian Academy, Iasi
4. Group of Physical chemistry of micro and nanoprocesses, "PETRU PONI" Institute of Macromolecular Chemistry, Institute of Excellence of the Romanian Academy, Iasi
5. Centre of interactions Laser-Surface-Plasma, National Institute for Lasers, Plasma and Radiation Physics, INCD-FLPR, Bucharest
6. Centre of Laser Photochemistry, National Institute for Lasers, Plasma and Radiation Physics, INCD-FLPR, Bucharest
7. Laboratory of oxide compounds and materials science, Institute of Physical Chemistry "Ilie Murgulescu", Institute of Excellence of the Romanian Academy, ICF, Bucharest
8. Laboratory of kinetics and catalysis, Institute of Physical Chemistry "Ilie Murgulescu", Institute of Excellence of the Romanian Academy, ICF, Bucharest
9. Group of Conductive polymers, National Institute for R&D of Isotopic and Molecular Technologies, INCD-TIM, Cluj-Napoca
10. Centre for Fundamental and Advanced Technical Research, Timisoara Branch of the Romanian Academy, CCTFA
11. National Center for Engineering of Systems with Complex Fluids, University Politehnica Timisoara, UPT.

The centre's main objectives are the following:

- **Cooperation in scientific research in the nanotechnology domain**, with application in realization of new materials and new fabrication processes
- Assuring **connexions between the Romanian scientific community and the European research**
- Cooperation in **developing the basis for technological transfer at national scale**, by extending the network, including industrial partners

Taking into account the specific activity of the NANOMATFAB consortium, the project is initiating a **“FACILITIES NETWORK IN NANOTECHNOLOGY”**, with the following characteristics:

- The facilities network would represent a form of association for laboratories with experimental technological or characterisation installations in the nanotechnology domain:
- **The information exchange** regarding the existing installations (characteristics, potential, expertise), for a better knowledge of the experimental potential of each laboratory, in order to easily obtain future bilateral collaborations;
- **Elaboration of a cumulated offer of technological and scientific services**, at the level of this laboratories network, so that each laboratory potential would be better known in and outside the country
- After the two stages mentioned above, the network members could agree with an **improved offer**, which will include after a while services offered by the collaboration between laboratories
- **The network of facilities could be extended** by some “centres” (laboratories) joining NANOMATFAB or just the facilities network
- The network members will establish a **conduct code**, with main emphasis on respecting the independence of each laboratory, encouraging bilateral or multilateral collaborations, attracting other resources and collaborations for the common benefit.

Integration in Networks of Excellence at European level

IMT-Bucharest – 7 networks: 5 NoEs in FP6: AMICOM, PATENT (priority 2, IST); NANOFUN-POLY, 4M, NANO2LIFE (priority 3, NMP); international network PHANTOMS; regional network COSENT - Cooperation of Southeast European countries in field of Nanotechnology

“PETRU PONI”, Iasi – 4 networks: ERIC (2003–2005); European Polysaccharide Network POLYSACCHARIDES; GROWTH GIRDC-CT-1999-00130 – SPONGE; NANO2LIFE ICF, Bucharest – 1 network: INSIDE-PORES; regional network COSENT INCD-TIM Cluj-Napoca – 1 network: NANOFUN-POLY

NANOMATFAB Partners in FP6

The 7 organisations in the NANOMATFAB consortium are involved together in **17 FP6 projects in the nanotechnology domain**, as coordinators or partners: **1 Integrated Project (IP)**, **9 Networks of Excellence (NoEs)**, **1 STREP**, **4 Specific Support Actions (SSA)**, **2 Marie Curie**.

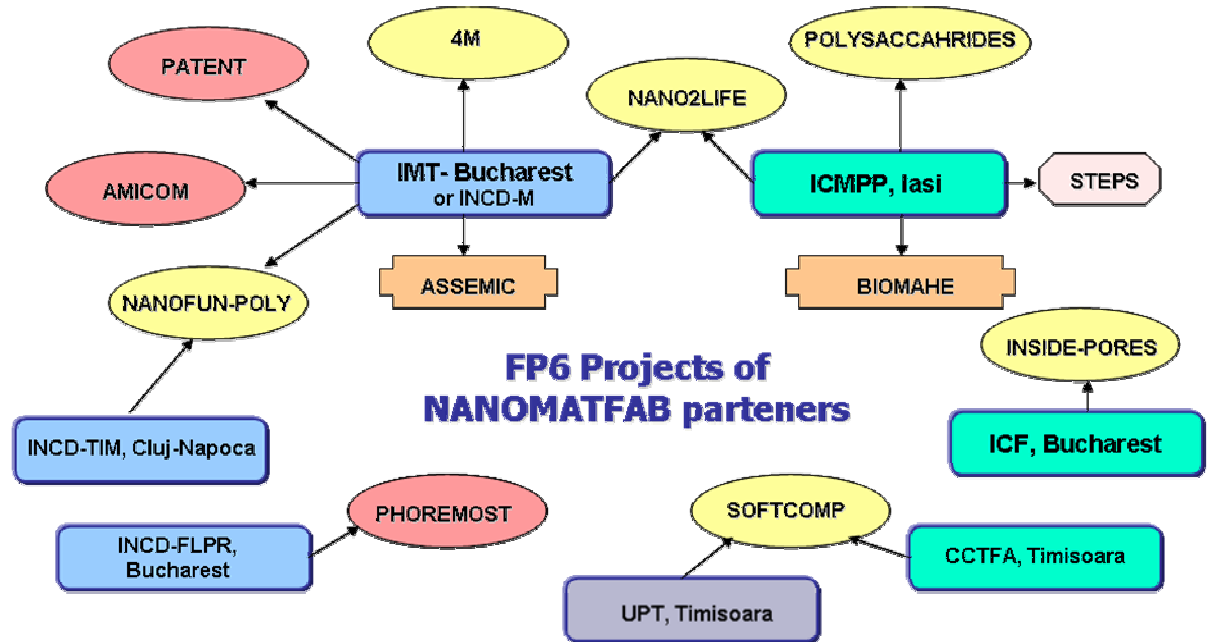
The NANOMATFAB partners attendance to thematic courses at national or international level - 4 in Romania, 4 in Europe

Young researchers enrolled at master/doctorate courses: 23 PhD students and 2 students at master courses

Existing national projects between NANOMATFAB partners – 20 projects

National projects in the nanotechnology domain – 37 projects

Visits of foreign researchers at NANOMATFAB laboratories – 12 visits



PATENT – Design for Micro & Nano Manufacture (Packaging, Test and Reliability Engineering in Micro & Nanosystems Technologies)
AMICOM – Advanced MEMS for RF and Millimeter Wave communications
PHOREMOST – Nanophotonics to realize molecular technologies
NANOFUN.POLY – Nanostructured and Functional Polymer Based Materials and Nanocomposites
4M – Multi-Material Micro Manufacture: Technologies and Applications
NANO2LIFE – A network for bringing NANOTEchnologies TO LIFE
POLYSACCAHRIDES – European Polysaccharide Network
INSIDE.PORES – In Situ Study and Development of Processes Involving Nanoporous Solids
SOFTCOMP – Soft Matter Composites – An Approach to Nanoscale Functional Materials
STEPS – A Systems Approach to Tissue Engineering Processes and Products
ASSEMIC – Advanced Handling and Assembly in Microtechnology
BIOMAHE – Biodegradable Polymeric Materials for Health and Environment

- NoE (Networks of Excellence), priority 2
- NoE (Networks of Excellence), priority 3
- IP (Integrated projects), priority 3
- Marie Curie Network