Science and Technology Park for Micro and Nanotechnologies (MINATECH-RO)
126A Erou Iancu Nicolae Str, 077190, Bucharest, ROMANIA
Phone/Fax: +40-21-490.80.74; www.minatech.ro; E-mail: team@minatech.ro

National Institute for Research and Developments in Microtechnologies (IMT-Bucharest)
126A, Erou Iancu Nicolae street, 077190, Bucharest, ROMANIA
Phone: +40-21-490.85.83; +40-21-490.82.12; +40-21-490.82.03; +40-21-490.84.12;
Fax: +40-21-490.82.38; +40-21-490.85.82; www.imt.ro.

TECHNOLOGICAL FACILITIES OFFER BY IMT-Bucharest

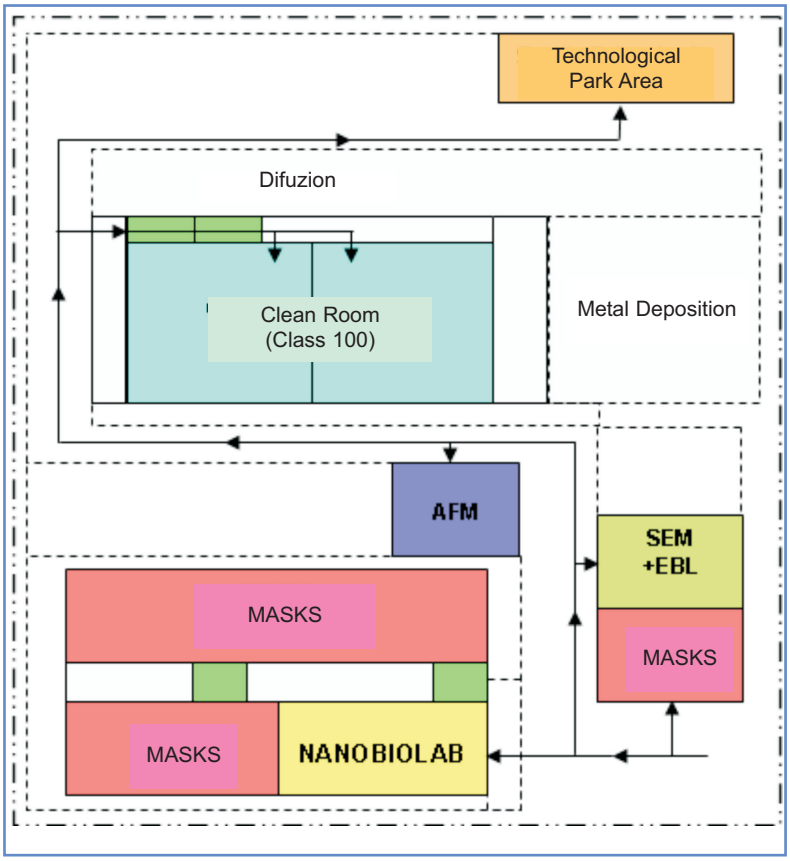
IMT-Bucharest (1993) was the first institute from the eastern Europe (new EU member and candidate countries) in the field of microtechnologies. By building of a second 1000 class clean room (about 100m^2) and by acquisition of new equipments, important steps to nanotechnolgies were made, mainly regarding the lithography (including electron beam). IMT, by the collaboration with other institutes and universities, had an important contribution to the development of this field, facilitating common research projects, multi-disciplinary, including an easy access to the technological facilities of other researchers.

Students (including Master and PhD students) from Romania and abroad were trained in the technological activities in IMT-Bucharest.

Through establishment in the **Scientific and Technology Park (PST)** for micro and nanotechnologies (MINATECH-RO), new possibilities to offer assistance also to the small and medium companies (IMM) appears (companies involved or interested in the micro and nanotechnologies). Two technological area (including the clean room) allow to set up equipments of these companies.

A clean room has a controlled level of contamination that is specified by the number of particles per cubic meter and by maximum particle size - we are talking about pollutants such as dust, airborne microbes, aerosol particles and chemical vapors. Inside the clean room specific equipments are used, which allow structures manufacturing (with a specific functionality, like sensors) having micro or nanometer details. For a normaly operation of these equipments, mantaining of the same climate condition (like temperature and humidity) is needed. Also, high purity fluids (like deionized water and nitrogen) are necessary.

Below, a schematic view of the technological area of the IMT (with a total surface of about 1800 m^2, not scaled) is presented. In the older clean room masks and NANOBIOLAB are operating.

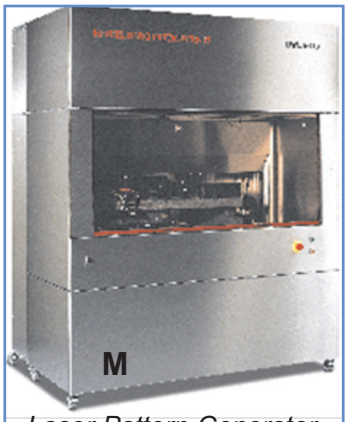


Scientific and Technology Park (PST) MINATECH-RO was established to help Romanian IMM's to obtain an easier access to the last generation technologies. Few companies were interested by these equipments for the moment, like: SC MICROBIOVET SRL, SC DDS DIAGNOSTIC SRL, TELEMEDICA SA, ROMELGEN SRL, ROM-QUARTZ SA, SITEX 45 SRL, OPTOTECH SRL and CENTRUL EUROPEAN DE AFACERI, INVENTICA SI CERCETARE.

IMT-Bucharest has technological facilities which allow structures manufacturing at the micrometer or nanometer scale. In the last years IMT bought new equipments to create a modern facility which can be used also by other institute, universities or by small companies.

Manufacturing technologies:

- masks design and manufacturing (from 2007 the minimum dimension will be 0.6microns due to the new Heidelberg DWL 66fs equipment) - M
- UV photolithography (positive and negative tone resists - FL) nanolithography (electron beam - EBL)
- chemical processing
- metal depositions (electron beam - E, electroplating - I)
- dry etching (RIE and isotropic)
- thin dielectric layers depositions (Si_2, Si_3N_4)
- thermal processes



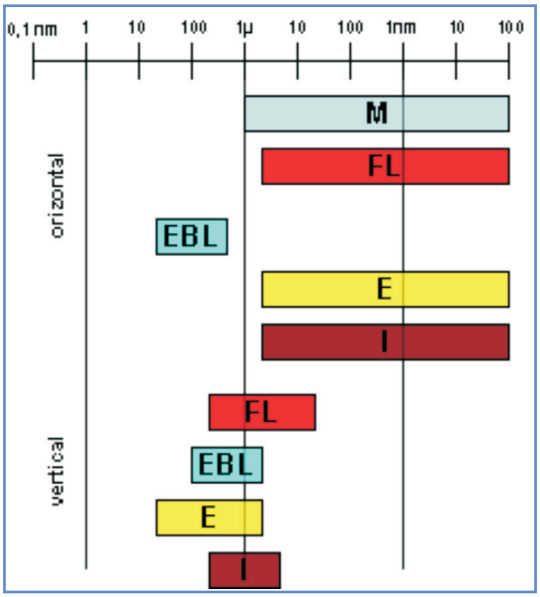
Laser Pattern Generator (minimum feature - 0.6 microns)

Contact and proximity photolithography (both sides)

Resists spinning (positive and negative tone)

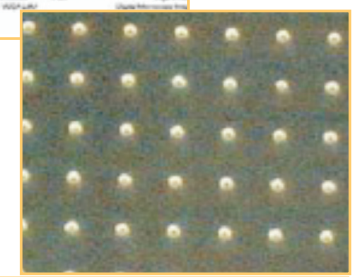
SEM Vega Tescan with EBL Raith

Reactive Ion Etching

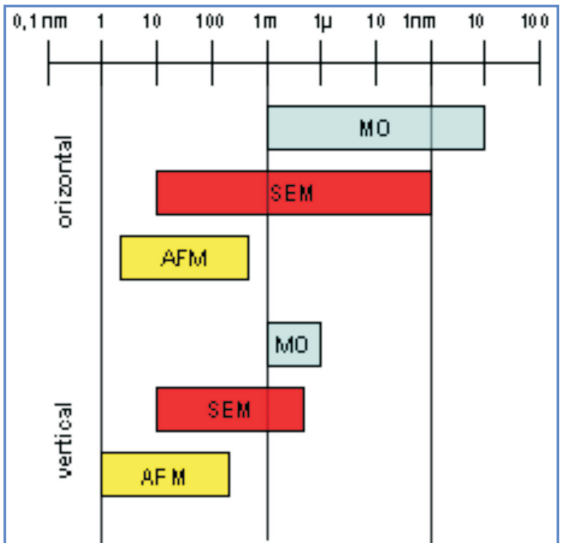


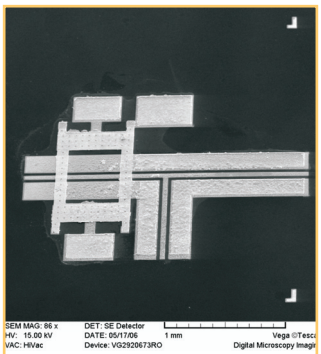
Characterisation facilities:

- Optical Microscopes - MO
- Scanning Electron Microscope Vega Tescan - SEM
- Atomic Force Microscope - AFM
- Talystep - T



SEM pictures of the nanometric plated array peeks, realized in IMT Bucharest





60GHz MEMS selector channel (IMT-Bucharest)

Contact data: PhD. Carmen Moldovan (cmoldovan@imt.ro) Phone: 021 490.82.12; Fax: 021 490.82.38; http://www.imt.ro