IMT-Bucharest (www.imt.ro) IMT as a "technological pole" and a "pioneer" of the integration in ERA

Full name: National Institute for Research and Development in Micro and Nanotechnologies

Status: autonomous, general coordination by Ministry of Education and Research (Romania)

History: founded in 1993 as Institute of Microtechnology, since 1996 – national institute.

Mission: research and development in micro- and nanotechnologies, technology transfer, education and training, dissemination, development of the national strategy in the field.

Strategic role: a "technological pole" for multidisciplinary activities, integrating research, education and technology transfer, playing a national role through networking and partnership (with University "Politehnica" of Bucharest), emerging as a regional centre.

Directors: Prof. Dan Dascalu (General Director, dascalu@imt.ro), Dr. Dana Cristea (scientific director, danac@imt.ro), Dr. Carmen Moldovan (technological services, cmoldovan@imt.ro), Dr. Raluca Muller (IST services, ralucam@imt.ro), Domnica Geambazi (economic, domnicag@imt.ro) Communication officer: Elena Stanila (elenast@imt.ro).

Research laboratories: Nanotechnologies, Microsystems for Bio-medical and Environmental applications, Micro and Nanophotonics, RF-MEMS, Computer-aided simulation and design, Microphysical characterisation, Reliability. Most of the above laboratories should be "integrated" through the FP6 networks of excellence IMT is participating (see below) in the future "virtual European institutes".

Research domains, in correlation with FP6

	Connection with FP6
1. Nanostructured materials, nanotechnologies and nanostructures (carbon nanotubes, carbide and diamond like carbon, nanostructured Si, AlN, PZT thin layers, silicon nanoelectrode arrays, field emission nanostructures, porous silicon layer)s	**NMP: 3.4.2**. Knowledge-based multifunctional materials **NMP- 3.4.1.**Nanotechnologies and Nanosciences
2.Microstructures and microsytems for sensing applications chemical, mechanical, chemo-optical sensors, micro fluidics, sensors	**IST: 2.3.1.2.** Micro and nano systems 2.3.2.2.Optical, opto-electronic, and photonic functional components
3. Micro/nanostructures for biomedical applications: biomedical applications of nanostructures, biosensors and microsystems for biomedical applications	**NMP**- Nano-biotechnologies - **IST** – Micro and nano systems
4. Microstructures and MEMS for communications: development of new materials, technologies and components RF and Optical MEMS	**IST:** – 2.3.1.2 Micro and nano systems - 2.3.2.2. Optical, opto-electronic, and photonic functional components - 2.3.1.4. Mobile and Wireless above 3 G - 2.3.1.3. Broadband for all

Outstanding scientific results: MEMSWAVE (in the field of RF-MEMS), a R&D project financed by EU under FP4 and coordinated by IMT was the first project coordinated by an organisation outside EU which was nominated (in 2002) for the Descartes Prize (awarded

for the best European co-operative research projects). Two articles in the Encyclopaedia of Nanotechnology.

Infrastructures: **Technological services**: Micro-nanofacility (clean room starting class 100 and providing services in micro and nanotechnologies, including a mask shop).

CAD services in Microsystems (COVENTOR) and microelectronics (CADENCE and Mentor Graphics).

IT and communication infrastructure: 100 Mb/s computer network (IBM servers, CISCO routers), radio and optical fibre connection to Internet.

IT services: interactive databases, web pages on Internet, Intranet, Extranet, specially designed eRoom communication platform for networking.

Technology transfer: involved in EUROPRACTICE consortia (MST-Design, INTEGRAM$^{+)}$, promoter and coordinator of CTT-Baneasa (www.imt.ro/ctt), since 2003 (technology transfer in micro-engineering) and MINATECH-RO (www.minatech.ro), since 2004 (Science and Technology Park in micro- and nanotechnologies). Since 1st October 2005: a partnership for creating the Romanian-German Centre for **micro-and nanotechnologies (MNT)**, focussed on technology transfer, is also effective**.**

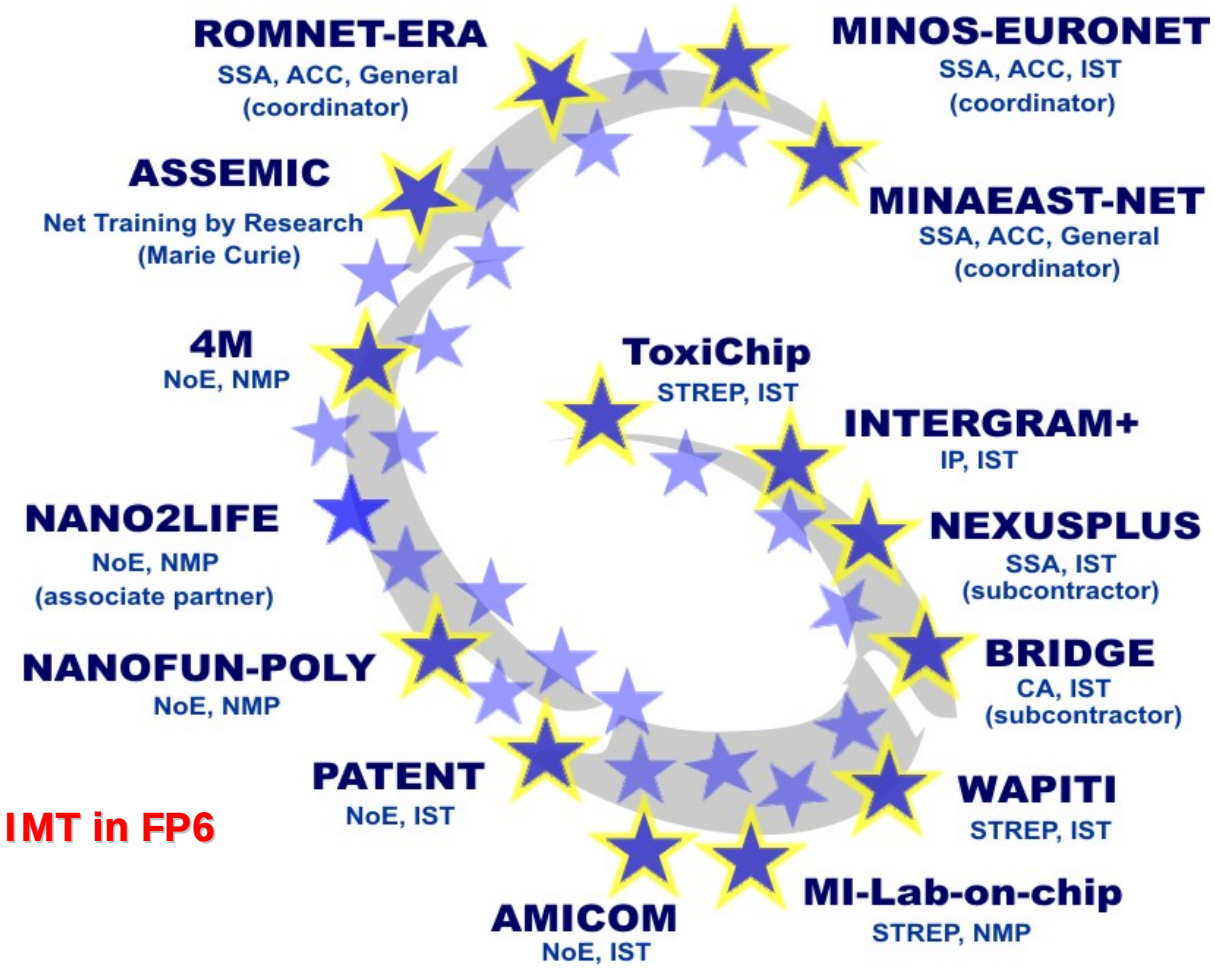
Networking.

IMT was acting as a hub of networks in MNT at the national scale (2001-2005), including the coordination of two distributed (virtual) centres of research: CENOBITE (in nanobiotechnologies) and NANOMATFAB (in new nanomaterials and fabrication processes). This networking is now further developed and focussed on the integration in ERA through the new networks coordinated by IMT (2005-2008): RO-NANOMED (a research network devoted to the integration in the "NanoMedicine" European Technological Platform, and also establishing the common NanoBioLab) and NANOSCALE-CONV (a network of facilities for characterization and structuring and the nanoscale).

Further networking in micro-nanotechnologies is provided through the three SSA EU projects coordinated by IMT: ROMNET-ERA (at the national scale), MINAEAST-NET (Eastern Europe) and MINOS EURONET (networking at the pan-European scale). IMT is also subcontractor for some Eastern Europe countries in NEXUSPLUS (NEXUS network) and in BRIDGE (EUROPRACTICE). The table below gives the whole picture of IMT in FP6.

Participation in FP6 (September 2005)

No.	Project acronym	Instrument	FP 6 priorities	Position of IMT
1.	INTEGRAM^{+}	IP	Priority 3	Partner
2.	AMICOM	NoE	Priority 2	Partner
3.	PATENT	NoE	Priority 2	Partner
4.	4M	NoE	Priority 3	Partner
5.	NANOFUN-POLY	NoE	Priority 3	Partner
6.	Nano2Life	NoE	Priority 3	Associate partner
7.	WAPITI	STREP	Priority 2	Partner
8.	MI Lab on chip	STREP	Priority 3	Partner
9	Toxi Chip	STREP	Priority 2, 3	Partner
10.	ROMNET-ERA	SSA	Priorities 1, 2,3,5	Coordinator
11.	MINAEAST-NET	SSA	Priorities 2, 3	Coordinator
12.	NEXUSPLUS	SSA	Priority 2	Subcontractor
13.	BRIDGE	CA	Priority 2	Subcontractor
14.	MINOS EURONET	SSA	Priority 2	Coordinator
15.	ASSEMIC	Marie Curie, Training by research network	Corresponding to priority 2	Partner



Participation in FP 5: projects (MST-Design, REASON, EMERGE, IMPACT), networks (NEXUS, NOSE, PHANTOMS).

Other projects: "NATO for Peace", PHARE/TTQM, bilateral governmental agreements with EU countries (Belgium, Germany, France, Greece, Hungary, Italy, the Netherlands, Spain, Sweden); projects in co-operation with Switzerland, Israel; industrial cooperation with Korea, Turkey.

Dissemination: **International conferences**: CAS Conference, IEEE annual event (in 2005 at its 28th edition); other international events such as Micromechanics Europe (in 2002), MEMSWAVE (first two editions), the first Nanoforum Workshop (2003).

International publications in English (editing): Micro and Nanotechnologies (MNT) Bulletin (since 2000, MNT activities in Romania; since 2004 MNT activities in Eastern Europe), also on www.imt.ro/MNT; Romanian Journal for Information Science and Technology (of the Romanian Academy); series of books in Micro and Nanoengineering (since 2001) published by the Romanian Academy.

Recognition: "*A pioneer of ERA in Eastern Europe*" (Mr. Philippe Busquin, Commissioner for Research, CEC, EU, visiting IMT on 6th of February, 2004); "*An institute oriented towards the future*" (Mr. Ezio Andreta, Director, Industrial technologies, DG Research, CEC, EU (visiting IMT on 13th of May, 2004).