

Other organisations from Romania

R&D National Institute for Electrical Engineering ICPE - CA, www.icpe-ca.ro

Main R&D directions:

- Advanced Materials: functional/multifunctional, crystalline and nanostructured materials and composites
- New sources of energy (wind energy, solar energy, fuel cells, biogas, hydro-energy, hydrogen storage): conversion, saving and recovery
- Micro-Electromechanical technologies and systems: nonconventional electrical engineering

MNT.ERA-NET project "Mini-supercapacitors technology, based on hybrid CNT/CNF - electroactive polymer networks", 2012 - 2015



Positive electrode-polypyrrole deposited by cyclic voltammetry on CNTs

National Institute of R&D in Mechatronics and Measurement Technique INCDMTM
www.incdmtm.ro

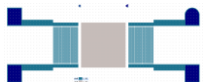
Areas of expertise: Precision Mechanics, Mechatronics and Cyber-MixMechatronics, Integronics, Adaptronics and Intelligent Measurement Technique industries.

Research results with industrial and medical applications: computer-aided intelligent complex measuring and integrated control equipment; quality control equipment; biomedical devices and systems.

Industrial cooperation: processing and machinery industry, automotive domain.

ROMQUARTZ S.A., www.minatech.ro/romquartz

Project "SH-SAW sensor fabrication on LiTaO₃ for mass detection in liquid media"



Device Layout (CleWin)



Packaging

Danubian Region

Bulgaria

- Institute of Solid State Physics; ▪ Institute of Optical Materials & Technologies; ▪ University of Sofia; ▪ "Sofia Tech Park" JSC, Micro Nano Lab
- Companies:** ▪ Multicoats; ▪ Innovative Solutions Bulgaria Ltd.; ▪ Smartcom (MEMS design, modeling and characterization); ▪ NANOTECH GROUP

Czech Republic

CEITEC - Central European Institute of Technology



CEITEC Nano is Czech Republic's largest cleanroom nanocentre: 61 research groups, 25000 m² of new laboratories; 10 core facilities.

Hungary

- Budapest University of Technology and Economics, Dept. of Electron Devices
- Institute of Technical Physics & Material Sciences, Centre for Energy Research;
- Institute for Solid State Physics and Optics



Republic of Moldova

- National Center for Materials Study and Testing (NCMST) - Technical University of Moldova
- Ghitu Institute of Electronic Engineering and Nanotechnologies
- ELIRI company

Full info: www.imt.ro/MMS2017_RO.pdf

Contact: Dr. Adrian Dinescu, adrian.dinescu@imt.ro

IMT Bucharest CEO and President of the Board

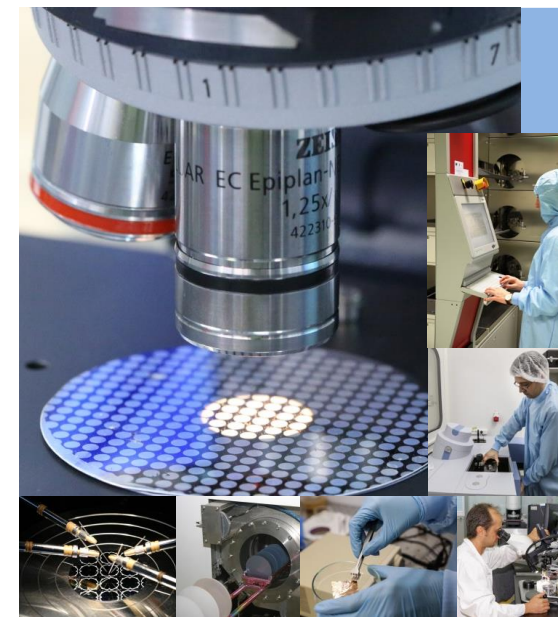


www.imt.ro

IMT Bucharest

National Institute for R&D in Microtechnologies

On behalf of Romania and "Danubian" region



Romania is participating to "Micromachine Summit" since 2007 (Venice, Italy)

IMT research fields:

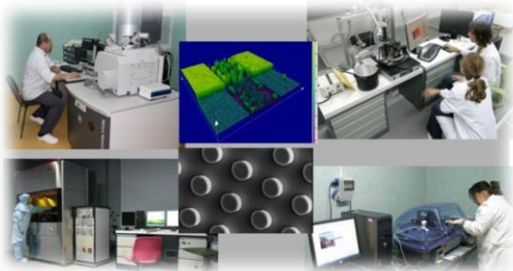
- micro and nanoelectronic devices
- micro and nanophotonics
- micro and nanodevices for medical applications (BIOMEMS)
- micro-electro-mechanical systems (MEMS) including microtransducers, micro and nanofluidics
- advanced materials and nanotechnologies

Offer of services

IMT centre for Micro- and NanoFABrication (IMT-MINAFAB)

www.imt.ro/MINAFAB

- X-ray diffraction characterization for thin films
- DNA/protein microarray slide analysis
- Electrochemical analyses, ultra-high resolution field emission SEM imaging
- Studies of mechanical properties of materials on small scales or near surfaces with high spatial resolution
- Scanning Probe Microscopy characterization
- Confocal, AFM, Near field scanning optical microscopy, Raman spectroscopy and imaging
- Technological processes in inert atmosphere
- RAMAN Spectroscopy
- Spectroscopic Ellipsometry



Facility for micro-nanostructuring of devices and systems

- Technological services for micro-nano devices and systems;
- Masks fabrications;
- Isotropic silicon etching; Chopping gas method (Bosch process) for anisotropic silicon etching; Cryogenic method for anisotropic silicon etching;
- Dry etching of Si, SiO₂, Si₃N₄; Polymer etching; Surface modification in plasma;
- Nano-scale patterning of various substrates, electron beam induced deposition and etching.

Experimental Infrastructure

Research Centre for Integrated Systems Nanotechnologies and Carbon Based Nanomaterials

New!

CENASIC (completed - 2015)

- Epitaxial growth of nitride compounds on various substrates;
- Growth of graphene / carbon nanotubes;
- Deposition of oxide ultra-thin films using ALD technology;
- Thin layer deposition using RF magnetron sputtering;
- Wet oxidation (Hydrox);
- Boron diffusion; Phosphorous diffusion;
- Thermal annealing;
- FT-IR investigations under vacuum conditions, FT-Raman;
- High performance computing: Numerical modeling/simulation for: Multiphysics; Quantum mechanics; Molecular dynamics



Plasma Enhanced Chemical Vapor Deposition (PECVD) - Nanofab 1000/ Oxford Instruments Plasma Technology, Ltd./2015

Molecular Beam Epitaxy (MBE) - COMPACT 21 DZ/Riber Inc./2015



RF Magnetron Sputtering - PlasmaLab System 400/ Oxford Instruments Plasma Technology, Ltd./2015



International cooperation



- "Integrated Components for Complexity Control in affordable electrified cars - 3CCar"; ECSEL, 2015-2018, <http://www.3ccar.eu/>
- "Crossbar of Microelectromechanical Selectors and Non-Volatile Memory Devices for Neuromorphic Computing – SelectX"; Marie Skłodowska-Curie Actions - Individual Fellowship, 2016-2018, <http://www.imt.ro/selectx>



- "PiezoMEMS - Piezoelectric MEMS for efficient energy harvesting", 2015-2018
- "PhotoNanoP - High photoconductive oxide films functionalized with GeSi nanoparticles for environmental applications", 2015-2018



- "Microwave filters based on GaN/Si SAW resonators, operating at frequencies above 5GHz"
- "0-level encapsulation of reliable MEMS switch structures for RF applications"
- "PROBA-3 Coronagraph System"

The Danube Nano Micro Facility Network (DNMF_net)

Expected start date: 1st of June 2017.

Partners:

- Karlsruhe Institute of Technology (KIT), Germany - Karlsruhe Nano Micro Facility (KNMF) – *coordinator*;
- CEITEC Nano, Central European Institute of Technology, Czech Republic;
- Budapest University of Technology and Economics, Department of Electron Devices (BME-EET), Hungary;
- IMT-MINAFAB, National Institute for Microtechnologies IMT Bucharest, Romania;
- National Center for Materials Study and Testing (NCMST), Republic of Moldova