

Organization: National Research and Development in Microtechnologies (IMT)

Web Page: <http://www.imt.ro>

Country: Romania

Main Activity: Research

Department: L4

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Profile:

- MICROMACHINED STRUCTURES, MICROWAVE CIRCUITS AND DEVICES LABORATORY

Mission:— scientific research and technological development of RF MEMS (microwave micromachined devices and circuits), contributions to the developing strategy of the domain. The new RF MEMS concept represents a solution to manufacture high performance microwave and millimeter wave devices and circuits using MEMS technologies

The laboratory was recognized at national level as RF-MEMS Center of Excellence, financed by the National Programme MATNANTECH (2002-2005).

Participation to European Projects:

- 1. One of the first European founded projects in RF MEMS "MEMSWAVE" (1998-2001) was coordinated by the laboratory. The project was nominated, in 2002 between the first ten European projects for the Descartes Prize (awarded for the best European co-operative research projects)
2. Presently, the laboratory is a member of FP6 NoE AMICOM dedicated to RF MEMS

ICT-2007.8.1: FET proactive 1: Nano-scale ICT devices and systems competence / resources

Main area expertise:

- Development of a new generation of circuits devoted to the millimeter wave communications based on the semiconductor (Si, GaAs, GaN) micromachining and nanoprocessing materials
- Design, modeling and simulations of microwave and millimeter wave components and circuits
- Silicon, GaAs and GaN micromachining
- Manufacturing of micromachined Yagi-Uda antennae; monolithically and hybrid integrated receiver modules; receiver modules integrated with Yagi-Uda antenna.
- Design, modelling and manufacturing reconfigurable millimeter wave circuits for wireless communication systems
- Electromagnetical modelling of RF switches
- Studies on magnetostatic wave resonators in microstrip and CPW configurations
- Design, modelling and manufacturing F-BARS on compound semiconductors
- MEMS and NEMS technologies development

Facilities:

Computers and software (IE3D and Fidelity from ZELAND software packages) Access to the technology laboratory and mask manufacturing facilities; Access (by international cooperation) to millimeter wave on wafer measurements.

proposal / interest

1. carbon nanotube devices for wireless applications
2. energy harvesting based on nanotubes

ICT-2007.8.3: FET proactive 3: Bio-ICT convergence

competence / resources

Main area expertise:

- Development of a new generation of circuits devoted to the millimeter wave communications based on the semiconductor (Si, GaAs, GaN) micromachining and nanoprocessing materials
- Design, modeling and simulations of microwave and millimeter wave components and circuits
- Silicon, GaAs and GaN micromachining
- Manufacturing of micromachined Yagi-Uda antennae; monolithically and hybrid integrated receiver modules; receiver modules integrated with Yagi-Uda antenna.
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- Studies on magnetostatic wave resonators in microstrip and CPW configurations
- Design, modelling and manufacturing F-BARS on compound semiconductors
- MEMS and NEMS technologies development

Facilities:

Computers and software (IE3D and Fidelity from ZELAND software packages) Access to the technology laboratory and mask manufacturing facilities; Access (by international cooperation) to millimeter wave on wafer measurements.

proposal / interest

1. biological sensor based on nanotubes
2. environmental monitoring based on nanotubes