MICRO - NANO SYSTEMS LABORATORY

Contact details

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Areas of expertise

- Micro & Nano -systems
- Micro & Nano -mechanics
- Micro & Nano -tribology
- MEMS & NEMS, Microstructures and materials
- Adhesion, Friction, Fatigue, Reliability Design and Optimization

Team

Prof. Dr. Eng. Marius Pustan, Prof. Dr. Eng. Corina Birleanu, Prof. Dr. Eng. Cristian Dudescu, Dr. Eng. Violeta Mere, Math. Florina Maria Rusu, Eng. Radu Chiorean

Representative projects

- **ROBOGRIP**, “Microgrippers as end-effectors with integrated sensors for microrobotics applications” MANUNET ERA-NET 2015 (2016-2018)
- **3SMVIB**, “3 Scale modeling for robust-design of vibrating micro sensors”, FP7, (2012-2015)
Significant results

The most representative publications of the past 5 years:

Significant solutions:
1. Development of a new method to estimate the stiffness of micro and nano-flexible structure by using atomic force microscope
2. Experimental determination of the energy dissipation in oscillating structure in order to increase the lifetime of vibrating sensors
3. Design-Fabrication-Testing of reliable mass-detection sensors
4. Design-Fabrication-Testing of micromembranes with high flexibility
5. Software development for lifetime estimation of vibrating MEMS structures
6. Advance nano-investigations of dental materials

Products and technologies:
1. Micromembrane from optical and RF applications
2. Paddle MEMS cantilevers for mass detection
3. Electrostatically actuated resonator
4. MEMS Software Development

The offer addressed to the economic environment

Research & development
- Micro and Nano - Systems
- Micro and Nano - Tribology
- Micro and Nano - Mechanics

Team members have great knowledge in: reliability design of micro and Nano systems, Nano /micro / macro tribological characterizations, experimental mechanics, material testing and numerical simulations. Due to a close collaboration with the productive sector, the research team is capable of collaboration with various industrial partners and research institutes. Already this laboratory is involved in collaborations with industrial partners, universities and research institutes from Romania, Belgium, Poland, Italy and France.

Consulting
Consulting in any of the above mentioned fields can be done.

Training
The members of the team have a vast experience in the educational field (academics). Also, the team has experience in the development of the professional formation and reorientation trainings for engineers in the field of micro and Nano system design, advance testing at Micro & Nano devices.