PARTNER PRESENTATION AND INTEREST IN HORIZON EUROPE PARTICIPATION

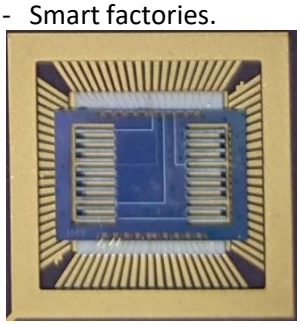
MEMS-based energy harvesters

Applications

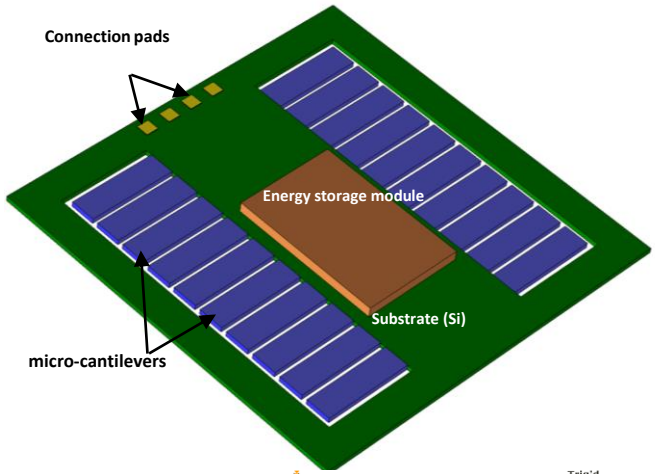
Integrated, miniaturized, highly energy efficient, maintenance-free and environmentally-friendly energy sources, with extensive scalability and re-configurability.

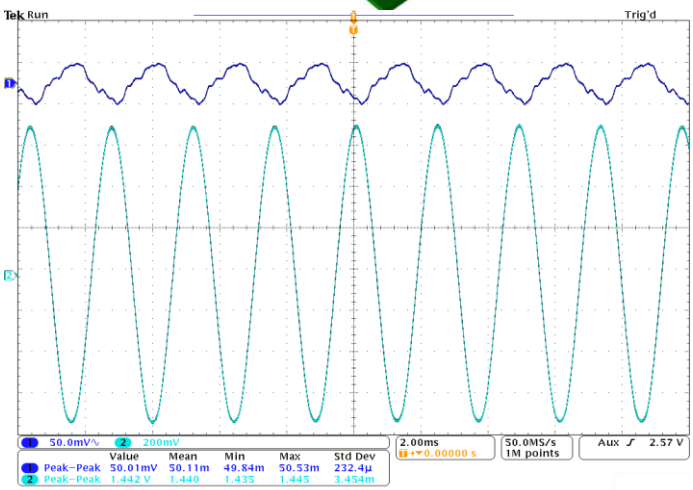
Targeted applications:

- Implantable devices (powering up active bio-medical devices that generally use replaceable batteries);
- Automotive and aerospace applications (harvest motion vibrations);
- Environmental sensors arrays (to power up remote or inaccessible water or air monitoring systems);
- Smart factories.



Fabricated piezoelectric resonant structures





Vibration analysis of the piezoelectric cantilevers at 411 Hz and 1g

Details

The systems include silicon-based piezoelectric resonators, an energy storage module and the required electronics.

The piezoelectric energy harvester can be customized to match the ambient conditions like resonant frequencies and acceleration, as well as the electrical parameters like the voltage threshold for the electronic module and current capabilities for the storage module.

Targeted topics and challenges

- Energy;
- Process technology, equipment, materials and manufacturing.

Contact details:
Name: Carmen Moldovan
Organisation: IMT-Bucharest
Email: carmen.moldovan@imt.ro
Telephone: +4021.269.07.70

More info:

Partners:

- Institute of Physical Chemistry of the Romanian Academy
- Pitesti University
- Renault Technologie Roumanie
- Łukasiewicz Instytut Technologii Elektronowej Poland
- Medbryt Poland
- EPFL Switzerland
- CCRS @ ETH Zurich

www.imt.ro/CESMIN

„CESMIN – Support Center for European cooperation in MIcro- Nanotechnologies (CESMIN)”, SMIS2014+ 107894
Project co-financed by the European Regional Development Fund through the Competitiveness Operational Program 2014-2020