IDF INNOV

From invention to innovation

PLATFORM FOR THE CHARACTERIZATION OF ELECTROMECHANICAL TRANSDUCERS UNDER VIBRATIONS

Electrical characterization of small electromechanical transducers like MEMS (Micro-Electro-Mechanical Systems) components, when subjected to mechanical vibrations.

SCIENTIFIC EXPERTISE

- MEMS component characterization under mechanical excitation
- Mechanical energy harvesting and conversion into electrical energy

APPLICATIONS

- Electromechanical components with small movable parts
- Microelectromechanical systems (MEMS)
- Sectors: aeronautics, automobile, human and animal health, ICT

TRACK RECORD

- Si-Ware – 2014
- Bodycap – 2015

PUBLICATIONS

Y. Lu et al, AIP Applied Physics Letters 107, 253902 (2015)
P. Basset et al., Journal of Micromechanics and Microengineering, Vol.24, N°3, 2014
F. Cottone et al., Journal of Intelligent Material Systems and Structures, vol. 25, no. 12, 2014

CONTACT

Mail : bd-services@idfinnov.com
Phone : +33(0)1.80.05.65.01

Vibration Test MEMS Transducer Electromechanical

SERVICE DESCRIPTION

This platform for testing MEMS under vibrations is dedicated to the characterization of electromechanical transducers with small movable components like gyroscopes, accelerometers, printer nozzles, control valves, energy harvesters, etc... In particular, the platform can be used to assess MEMS.

In terms of services, the platform provides an advanced support concerning many key issues of industrial products such as reliability, quality or optimization. The platform also offers the ability to perform tests or measurements on electromechanical devices:

- Mechanical reliability tests
- Resonance frequency and quality factor measurements
- Mechanical and electrostatic nonlinearities assessment (measuring the hysteresis frequency, analysis of pull-in ...)
- Optimum electrical impedance characterization
- Expert support and consulting

OFFER

- Fixed frequency tests (up to 10 kHz) (frequency scanning or user-set time signals)
- Accurate control of applied vibrations enabled by feedback loop
- Electrical signals recording with ability of frequency filtering
- Real-time Fourier transform of the recorded signals
- Optimal load impedance characterization with automatic variation of the value of resistance in the test circuit
- Optical control under vibrations (pictures and video)