

TIXIER-MITA LAB.

[Integrated Bio-devices]

Centre for International Research on MicroNano Mechatronics

Integrated MEMS/NEMS technologies for biological applications

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How to improve the detection of disease or to investigate new approaches for further understanding of cells interactions or cells diseases?

Precise and sensitive tools are needed. In particular platforms with integrated electronics allow further investigation in the biomedical field for: diseases detection, new drugs development, or fundamental understanding of biomedical phenomena. Here, new tools are proposed: platforms with integrated array of sensors to allow biological cells and biomolecules manipulation and sensing.

- ◆ Thin-Film-Transistor technology is used here to obtain portable devices with the surface covered with integrated micro-sensors.
- ◆ Investigation on living electrogenic (neuromuscular or heart) cell tissue cultivated on the surface of electronics to model and study intractable disease, such as ALS (Amyotrophic Lateral Sclerosis) or heart attack.
- ◆ Development of array bio-sensors to propose DNA-chip or protein-chip like devices with an electrical label-free measurement approach.

