



Internship or final project of Master degree

Modelling/Simulation of an array of coupled transducers for detection and quantification of biological species

Project : Arrays of mechanically coupled structures for biological species detection

Laboratory : Femto-ST Institute – Département Microsystèmes Nanosystèmes Sciences et Systèmes / Département Mécanique Appliquée

Receiving Institution: University of Bourgogne Franche-Comté – Faculty of Sciences and Techniques - 16 route de Gray 25000 Besançon

Time span : 6 months ideally starting in September

Field : Numerical simulation for microsystems

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Salary : 529.20 €/month for 35h per week (average value)

Goals of the study :

The field of the internship is the field of high sensitivity biosensors for the detection and quantification of molecules in biological liquid.

The two main goals of the internship are:

- Design innovative structures based on coupled piezoelectric membranes being able to operate in a liquid
- Modelling these devices with COMSOL Multiphysics® to quantify the expected performances of the sensor with modal and harmonic analyses.

Required skills: Numerical simulation with COMSOL Multiphysics® or ANSYS Multiphysics®, Structural dynamics.