18 months position. Research Engineer in microfabrication

For more information on the project and the position offered, please contact:
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Starting in July 2020

Research Engineer in microfabrication

Missions : To Design and to develop the technology and the fabrication process of biosystems.

Our goal is to develop new neuro-biohybrid systems enabling bidirectional communications between neuro-inspired artificial neurons and living neurons. This research constitutes a key strategic area for the laboratory and receives significant funding as a result.

Activities :

The successful applicant is expected to develop devices dedicated to the controlled stimulation of biological neurons (differentiated PC12 cells, iPSC gluta-neurons, etc…) by artificial ones (for more information on artificial neurons, see Sourikopoulos et al., Frontiers in Neuroscience 2017)

Detailed activities

- To study and propose techniques and methods for the manufacture of bio-MEMs that meet scientific requirements.
- To participate in the manufacture of bio-MEMs and their characterization
- To organize the follow-up of the manufacturing process, validate and qualify the devices during the different technological processing steps.
- To analyse the metrological constraints and design the experimental and measurement chain of the fabricated bio-MEMs
- To pilot the achievement of measurements, to interpret and validate them.
- To participate in cell culture maintenance
- To present, disseminate and promote achievements
- To participate in technical meetings (design reviews, problem solving meetings...) and project management meetings.

Expected skills:

In this context, we are seeking a motivated scientist with a strong background in microfabrication, a good expertise in microfluidic and demonstrated competences in designing and producing sensors for biological applications and especially system design to interface with live cells.

Proven experience with programming instruments to automatize data acquisition will be an advantage. Additional knowledge in neuron culture, neurosystem engineering or on artificial neurons will be appreciated.

Working Environnement:

The candidate will be based at IEMN which is one of the four main micro/nanofabrication center in France. He will have full access to the IEMN cleanroom (1600m2) which has all the necessary equipment to perform the fabrication of the devices (www.iemn.fr). Furthermore, the lab has a fully equipped L2 lab to perform the test with live cells.