# Post-doctoral Research Opportunity in nanotechnology for neuroscience

Laboratory: LAAS-CNRS, Toulouse (France).

The position is opened for 24 months (with possible extension) and will start as soon as the position will be filled.

**Context**: Health costs are expected to increase rapidly in the near future due to aging populations around the world. In this context, cost effective technologies are crucial for biomedical applications, especially for complex and chronic pathologies such as neurodegenerative diseases. While single-cell recording can be achieved by micropipette-based techniques, simultaneous recording of the activity of several cells with high resolution has so far been impossible. To tackle this problem, we are developing a bio-platform integrating vertical nanowire probes using a large-scale manufacturing process using conventional microelectronics techniques. These 3D nanostructures allow a very high affinity with the interfaced cell while being very weakly intrusive because of their low dimensionality.

**Project**: In the framework of the H2020 NEUREKA project (http://neureka.gr/), we will pursue the development of this 3D nanosonde technology by orienting research on sub-cellular neuronal interface to construct hybrid synapses between a defined part of the neuron and the nanoprobe. In particular, one objective will focus on the development of this technology on high density microelectrode architecture.

**Environment**: The project will mainly be carried out in the host laboratory in Toulouse, but the post-doc will work in a very stimulating context of international research within the framework of European project. Numerous exchanges and interactions with the project partners (Switzerland, Italy, Greece) will stimulate the multidisciplinary research. At LAAS, he/she will work in a state-of-the-art cleanroom environment and will have access to the micro &nanofabrication platform (1600m²), and its new biology laboratory for cell cultures.

**Candidate profile:**

- The candidate must be a recent PhD graduate (within the last three years) in nanotechnology, bioelectronics, neuroelectronics
- Successful demonstrations of nanofabrication in a clean room environment are mandatory. Experience in electrophysiology and cell culture is a plus.
- Experience in scientific publishing (proven by a corresponding list of publications).
- Fluency in spoken and written English.
- Ability to prioritize own workload to deal with urgent tasks, while maintaining a high standard of accuracy and attention to detail.
- Willingness to travel.

**Application:**

Full CV, statement of research interest and name and contact of 2-3 referees should be sent to Dr. Guilhem Larrieu guilhem.larrieu@laas.fr