

## APPLICATIONS

- Stimulation of living tissues
- Recording of living tissues' answer to stimulation

## DEVELOPMENT PHASE

A prototype has been developed and tested *ex vivo*

## PUBLICATIONS

« Développement de nouvelles matrices de micro-électrodes pour l'analyse et la compréhension du système nerveux central » Lionel Rousseau 2010 thesis

## INTELLECTUAL PROPERTY

International Patent Application filed on October 2015

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## MICRO ELECTRODE ARRAY

Thanks to a pluggable fork system, this new MEA device not only reduces replacement costs when the fork breaks, but also allows different types of forks to work with on the same device. The Signal Noise Ratio may also improve.

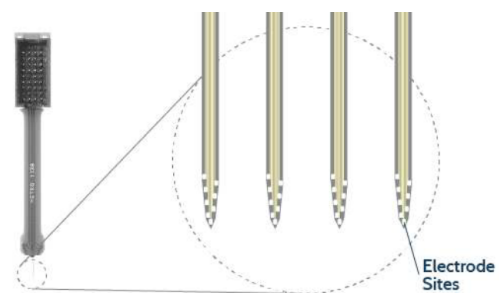
Micro Electrode Array (MEA) ■ Optogenetics ■ Neurophotronics ■ Microfluidic ■ Hybrid Neural Networks for rehabilitation

## PRESENTATION

Probes used for stimulating living tissues or for recording living tissues' answer to stimulation are usually composed of a micro electrode array (MEA) wire bonded to a print circuit board and to a connector. The MEA generally has the form of a fork whose silicon teeth are very fragile. The whole probe is expensive and has to be replaced in its entirety when the MEA is damaged.

The development of new probes in which the MEA is demountable enables to limit the consumable part that has to be changed when the probe is defective. The replacement costs are thus far reduced. This new design also leads to a more versatile device as the "MEA fork" can be adjusted according to the desired application or to the tests to be done. Furthermore the electronic part which is usually delocalized can now be placed close to the PCB which is no more disposable, leading to an increased signal to noise ratio (SNR).

This new MEA device is one step further towards hybrid systems connecting artificial and biological neural networks, for example devices able to restore an organ functional activity after a nerve lesion.



MEA © Neuronexus company

## COMPETITIVE ADVANTAGES

- Modularity
- Reduced replacement costs
- Versatility
- Improved SNR