



Microelectrode arrays and microfluidics for the recording of reconstructed neuronal junctions and organoids

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**Amphithéâtre de l'Institut d'Optique d'Aquitaine
Rue François Mitterrand
33400 Talence
Tram B, arrêt Arts et Métiers**

Hosts : Gaëlle Recher (IOA), Sylvie Renaud (IMS), Matthieu Raoux (CBMN)

Selection of recent publications related to Benoît's talk:

1. Poinson M et al. Biologically grounded on-chip model identifies selective topographic reorganization within hyperexcitable corticostriatal networks. *Proc Natl Acad Sci USA*. 2026;123:e2513459123. **2.** Ferreira MJ et al. Advancing organ-on-chip systems: the role of microfluidics in neuro-cardiac research. *Curr Res Pharmacol Drug Discov*. 2025;9:100227. **3.** Partiot E et al. Brain exposure to SARS-CoV-2 virions perturbs synaptic homeostasis. *Nat Microbiol*. 2024;9:1189–1206. **4.** Partiot E et al. Organotypic culture of human brain explants as a preclinical model for AI-driven antiviral studies. *EMBO Mol Med*. 2024;16:1004–1026. **5.** Phouphetlinthong O et al. Protruding cantilever microelectrode array to monitor the inner electrical activity of cerebral organoids. *Lab Chip*. 2023;23:3601–3614. **6.** Duc P et al. Human neuromuscular junction on micro-structured microfluidic devices implemented with a custom micro electrode array (MEA). *Lab Chip*. 2021;21:4223–4236. **7.** Moutaux E et al. An integrated microfluidic/microelectrode array for the study of activity-dependent intracellular dynamics in neuronal networks. *Lab Chip*. 2018;18:3425–3435. **8.** Virlogeux A et al. Reconstituting Corticostriatal Network on-a-Chip Reveals the Contribution of the Presynaptic Compartment to Huntington's Disease. *Cell Rep*. 2018;22:110–122.