

Benoît CHARLOT, Publications, Juillet 2026

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1. Articles de journaux, RICL

- [1] M.Poinsot, M.Dos Santos, B.Marthy, A.Borges-Correia, E.Gascon-Gonzalo, B.Charlot, M.Cazorla, "Biologically grounded brain-on-chip model identifies selective topographic reorganization within hyperexcitable neural networks", *PNAS*, 13, 123, (2026) <https://doi.org/10.1073/pnas.2513459123>, <https://www.biorxiv.org/content/10.1101/2024.09.30.615880v1>
- [2] A.Mesic, A.Messina, Z.Tiprez, S.Ismail, N.Huang, B.Charlot, S.Bensalem, J.C.Duclos-Vallee, B.Le Pioufle, "In Vitro Space of Disse Model for Exploration of Drug Induced Hepatotoxicity", *RSC Lab On a Chip*, (2026), <https://doi.org/10.1039/D5LC01139F>
- [3] S.Sierra-Alarcón, E.E.Ramírez-Miquet, J.Perchoux, L.Julien, **B.Charlot**, A.Quotb "Self-mixing interferometry system for in-vitro flow mapping of retinal arteriolar network", *Micro and Nano Engineering* 28, 100318 (2025). <https://doi.org/10.1016/j.mne.2025.100318>
- [4] M.J.Ferreira, S.Colombani, A.Bernardin, A.Lacampagne, J.L.Pasquié, P.F.Costa, **B.Charlot**, A.C.Meli, "Advancing organ-on-chip systems: the role of microfluidics in neuro-cardiac research", *Current Research in Pharmacology and Drug Discovery*, 100227, (2025), <https://doi.org/10.1016/j.crphar.2025.100227>
- [5] J.Mateus, P.Melo, M.Aroso, **B.Charlot** and P.Aguiar, "Influence of asymmetric microchannels in the structure and function of engineered neuronal circuits", *IOP Biofabrication*, 17 025022 (2025). <https://doi.org/10.1088/1758-5090/adb2e5>
- [6] Q.Hanniet, Z.Anfar, H.Dory, S.Calas-Etienne, P.Etienne, V.Flaud, J.Castellon, **B.Charlot**, P.Miele, D.Voiry, C.Salameh, "Activation of patternable ceramics for hydrogen evolution reaction using molybdenum-based fillers" *RSC New Journal of Chemistry* 49 (3), 712-720 (2025). <https://doi.org/10.1039/D4NJ02080D>
- [7] E.Partiot, A.Hirschler, S.Colomb, W.Lutz, T.Claeys, F.Delalande, M.S Deffieu, Y.Bare, J.RE Roels, B.Gorda, J.Bons, D.Callon, L.Andreoletti, M.Labrousse, F.M.J.Jacobs, V.Rigau, **B.Charlot**, L.Martens, C.Carapito, G.Gowrishankar, R.Gaudin "Brain exposure to SARS-CoV-2 virions perturbs synaptic homeostasis", *Nature Microbiology* (2024). 1-18. <https://doi.org/10.1038/s41564-024-01657-2>
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- [10] Q.Hanniet, E.Petit, S.Calas-Etienne, P.Etienne, K. Aissou, C.Gervais, P.Miele, **B.Charlot**, C.Salameh, "Rational design of SiBCN microstructures using direct photolithography of patternable preceramic photoresists", *Materials & Design*, 111234, (2022). <https://doi.org/10.1016/j.matdes.2022.111234>
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2. Conferences invité

- [61] **B.Charlot**, "Microelectrode arrays and microfluidics for the recording of reconstructed neuronal junctions and organoids", NeuroTechEU Autumn School : "Closed Loop Neurotechnologies - From sensors to application", 13-16 October 2025 University of Lille.
- [62] **B.Charlot**, "Microelectrode arrays and microfluidics for the recording of reconstructed neuronal junctions and organoids", Journées scientifiques annuelles du PEPR MedOoC Organes et organoïdes sur puce, 27-28 Mai 2025, Institut Imagine, Paris.
- [63] **B.Charlot**, "Microelectrode arrays and microfluidics for the recording of reconstructed neuronal junctions and organoids", Journées plénières du GDR Micro et Nano Fluidique, Nice, 18 et 19 Novembre 2024.
- [64] **B.Charlot**, "Microelectrode arrays and microfluidics for the recording of reconstructed neuronal junctions and organoids", Microfluidic & biodevices Workshop, Institut Jean Lamour, Nancy, 14 Juin 2024.
- [65] **B.Charlot**, "Microelectrode arrays and microfluidics for the recording of reconstructed neuronal junctions and organoids", 4th Workshop on Neuroengineering: brain-on-a-chip platforms, 4-5 April 2024, i3S – Instituto de Investigação e Inovação em Saúde, Porto, Portugal.
- [66] **B.Charlot**, "Microfluidique et organes sur puces", Biomarkers day, le citoyen acteur de sa santé", 30-31 mai 2023, Université de Montpellier, Faculté de médecine.
- [67] **B.Charlot**, "Neuro-electronic interfaces, micro electrodes for neurons and cerebral organoids" OPTAPHI Workshop 4, 4th – 5th April 2023, Université de Montpellier (France)
- [68] **B.Charlot** et al. "Micro-structured microfluidic devices implemented with a custom MEA for all human neuromuscular junctions", Eurobiotech, 8th Central Europe Congress in Life Sciences. Krakow, Poland 20-22 June 2022 .
- [69] **B.Charlot**, "Integration of Micro Electrode Array with compartmentalized microfluidics for the analysis of reconstructed neuronal junctions", Congres BioTRACE, February 7, 2019, Montpellier, France.
- [70] **B.Charlot**, "Microfluidics and Neurosciences", Microfluidics19 - Ecole thématique, 13-18 oct. 2019 Sète, France.
- [71] **B.Charlot**, "Thermodynamics and thermal stimulation of neurons", PEP2018 Photothermal effects in plasmonics, Porquerolles, June 24-39, France.
- [72] **B.Charlot**, "Microfluidique et Lab On a Chip pour l'étude des écoulements sanguine", IMHC 2016, Institut du Mouvement Humain et Cybernétique Jeudi 17 Novembre 2016, Montpellier, France.
- [73] **B.Charlot**, "Neuron - Light interaction, Action potential stimulation in neurons with infrared laser bursts", Workshop on Thermal Nanosciences and Nanoengineering, Paris – November, 12th & 13th 2015.
- [74] **B.Charlot** "Micro mouvement, nano mouvement", Journée "le mouvement dans tous ses états", société de Biologie, 23 Octobre 2013, Montpellier
- [75] **B.Charlot**, W.Sun, K.Yamashita, H.Fujita and H.Toshiyoshi, "Bistable Nanowire For micromechanical memory", The 8th Japan-France Workshop on Nanomaterials. June 15-17th, 2009, NIMS Sengen site, Tsukuba, Japan.

- [76] **B.Charlot**, “La micro thermique dans les systèmes micro-électro-mécaniques”, Congrès Français de Thermique, SFT 2005, Reims, 30 mai - 2 juin 2005.
- [77] **B.Charlot**, S.Mir, L. Rufer and B.Courtois, “On-Chip Testing of Embedded Transducers”, *IEEE System On Chip Conference, SOCC’04*, 12-15 Sept 2004, Santa Clara, CA, USA.
- [78] **B.Charlot**, “Microsystèmes thermiques et applications”, Journée thématique Micro et Nano Thermique, *Exposition de Physique*, 21-22-23 octobre 2003, Paris Expo.
- [79] **B.Charlot**, “Les microsystèmes thermiques, exemples de réalisations”, Séminaire invité, Réunion du groupe de Micro et Nanothermique de la Société Française de Thermique, Reims, Janvier 2002.

3. Conférences internationale à comité de lecture, CICL

- [80] J.Mateus, P.Melo, M.Aroso, **B.Charlot**, P. Aguiar, “Controlling axonal communication in neuronal circuits using microfluidics and microelectrode array”, EUROoCS conference 2026, Braga, Portugal, 22-24 June 2026. (Poster)
- [81] L.Cerutti, L.Vuiart, L.Alonso, P.Massobrio, M.Brofiga, F.Rage, **B.Charlot**, “A compartmentalized microfluidic-MEA for reconstruction of the human cortico-neuromuscular circuit in vitro”, EUROoCS conference 2026, Braga, Portugal, 22-24 June 2026. **(CBMS Best Poster Award)**
- [82] L.Vuiart, M.J.Ferreira, D.Butler, A.Meli, **B.Charlot**, “Vertically protruding microcantilever arrays for monitoring of heart forming organoids” EUROoCS conference 2026, Braga, Portugal, 22-24 June 2026. (Poster)
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Titre : A MEMS CALORIMETRIC SHEAR-STRESS SENSOR AND A METHOD OF FABRICATION THEREOF

Date de dépôt du brevet provisoire: 18 mai 2016

Numéro d'application : 62/338,022

Inventeurs: Julien Weiss, Alain Giani, Philippe Combette et Benoît Charlot.

Titre : Puce microfluidique pour attirer et détruire un élément biologique spécifique

Date de dépôt du brevet provisoire: 15 mars 2019

Numéro d'application FR1902686

Inventeurs: CHARLOT Benoît , RAMIREZ Jean-Marie, MEANCE Sébastien, GARRIC Xavier, PINESE Coline, GUIRAUD Isabelle