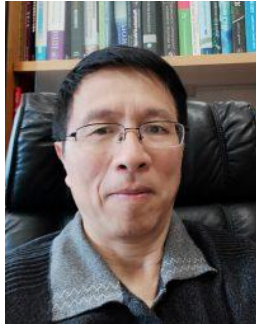


Institut d'Alembert Seminar / February 15. 2023 at 11h am  
Amphi Gilbert Simondon - 1B36  
Bât. Sud-Ouest - Niveau 1



Organ-on-a-chip : Our recent progress and perspective

By Yong Chen

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**Presentation :**

Organ-on-a-Chip is a cutting-edge technology to make miniaturized human tissues or organs under mimicking physiological conditions that can be used for disease modeling and drug testing. In this talk, I will present our recent progress toward sustainable development. I will start from the fabrication of a new type of culture substrate, i.e, an artificial basement membrane (ABM) made of an ultrathin layer of type IV collagen and laminin on which both epithelium and endothelium can be nicely formed, by using other human induced pluripotent stem cells (hiPSCs) or cell lines. Then, I will show how to reversibly integrate them into a plastic device for organ-on-a-chip, including automatic cell culture, real-time impedance monitoring, and applications of various stimuli. I will describe a few examples of our recent work. Finally, I will present the development of a new type of membrane and its application potential for organ-on-a-chip, cancer diagnosis, and environmental control.

**Biography :**

Yong Chen is a CNRS research director at the Ecole Normale Supérieure, Paris. Previously, he served as a Professor of ENS, an Adjunct Professor at Kyoto University (PI), a Lecture Professor at Peking University (guest), a Distinguished Chair Professor at Hong Kong Polytechnic University (guest), and a Guest Professor at Jiangnan University. After working in the fields of condensed matter physics, nanotechnology, and microfluidics for 20 years in L2M/LPN laboratories of CNRS (actually a part of C2N), he has been focused on stem cells and organ-on-chip devices for both academic interest and advanced applications. He is a co-author of about 500 papers and promoted the creation of several startup companies.