

## **On-Chip Micro/nanorobotic Swimmers Toward Biological Applications**

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### **Résumé :**

Micro/nanorobotic swimmers can serve as alternative microfluidic tools toward biologic or biomedical applications. We aim to develop highly energy efficient and fully controllable on-chip micro/nanorobotic swimmers with remote controlled functions such as cargo transport and sensing. In this presentation, I will introduce our recently developed micro/nanorobotic swimmers including their fabrications by two-photon laser 3D nanolithography, force characterizations and their microfluidics applications. Two applications to simulate their future in-vivo and lab-on-a-chip applications are demonstrated. First, the micro/nanorobotic swimmer serves as mobile micromanipulator inside microfluidic device to transport microscale objects. Second, we demonstrate their physical sensing applications inside microfluidic control platform.