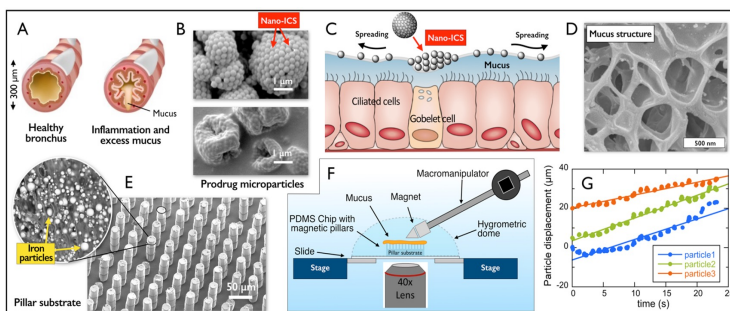


The treatment of inflammatory lung diseases such as asthma requires a better understanding of the interactions of physiological fluids with inhaled drugs. In the framework of the ANR MucOnChip awarded in 2021, We are looking for a motivated and talented candidate to work on an interdisciplinary project focused on the fabrication of a microfluidic chip that mimics mucociliary clearance in the lungs.

The post-doctoral position is funded from the Agence Nationale de la Recherche for 18 months (starting September, 2022). The work will be performed at Sorbonne Université in the PHENIX lab under the supervision of Dr. Jérôme Fresnais. The objectives of the project are to reproduce a flow in microfluidic channels using magnetic pillar arrays as actuators and to evaluate the microchip performance for healthcare applications.

The ANR Consortium comprises the Matière et Systèmes Complexes laboratory at Université Paris Cité (Dr. Jean-François Berret) and the Institut Galien at Université Paris-Saclay (Dr. Nicolas Tsapis).



*A - Schematic representation of healthy and diseased bronchi. B – TEM of Trojan microparticles and nano-ICS. C – Mucociliary clearance mechanism in the bronchial region, and of the spreading of nano-ICS. D – CryoSEM of mucus [14]. E – Pillars loaded with magnetic particles and pillar substrate. F – Schematic representation of the device mimicking the mucociliary clearance. G – Traces of 1 μm particles followed by optical microscopy 20 μm above beating cilia (1 Hz).*

Motivated candidates should have a solid expertise in physical-chemistry or physics of fluids, with a good knowledge in microfluidics, and must have the ability to work in a multidisciplinary consortium. The candidate must also have good writing and communication skills in English, be autonomous and able to emulate further research in the consortium.

Apply using the following link :

<https://emploi.cnrs.fr/Offres/CDD/UMR8234-JERFRE-002/Default.aspx>

