

PEPiTH Project

Prostate Endovascular Plasma Therapy



INSTITUT  
PASCAL

sciences de l'ingénierie et des systèmes



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36 Months Post-doc position Plasma Physics/ Biology  
University Clermont Auvergne, Clermont-Ferrand, France

*Plasma-jets optimisation and  
characterisations for preclinical treatment of  
prostate cancer.*



<https://www.clermontauvergneturisme.com/en/sports-and-outdoors/chaine-des-puys/discover-puy-de-dome/>

**SALARY : 2400-2800 € depending on profile.**

**Kick-off : January/February 2023.**

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The craze for the treatment of cancerous tumors by cold plasma has only grown over the past 5 years in particular. In the plasma team of Institut Pascal (IP) in Clermont-Ferrand, we have shown the apoptotic effect of helium cold atmospheric plasma on LNCaP and PC3 prostate tumor cell lines whereas healthy P69 cell lines are less impacted [1].

**PEPiTH** project is now funded by INCA (French National Institute of Cancer). The project brings together 4 research teams.

- Plasma Team of [IP](#)
- [CAVITI](#) Team of IP, expert in medical imaging
- Nuclear Receptor and Prostate diseases team of [iGRed](#),
- [Jean Perrin Cancer Center](#).

This project has three main objectives:

- A) The development and characterization of a Cold Atmospheric Plasma Jet (CAPJ). This will consist in designing an efficient turn-key in-vivo cancer treatment for operating theaters (TEAMS # 1, 2).
- B) The proof of concept in mouse models (Wild, Node-Scid, PTEN MGMT), and understandings of the biological effects (TEAMS # 1, 2, 4).
- C) The microtomography imaging of treated prostates to feed artificial intelligence imagery models (TEAM #4).

The plasma Team (TEAM #1) offers a post-doc position from 24 to 36 months, mainly to work on tasks A & B. Nevertheless, the candidate will have to interact through the 3 tasks.

### Profile & skills:

Ideally, the candidate must have worked on plasma medicine during his/her thesis. A physicist or plasma physicist profile would be preferred, but with biological knowledges (chemical, biological assays, cell biology).

*Please send your CV, motivation and a support letter to S. Menecier before end of november.*

[1] Mohamed Fofana, Julio Buñay, Florian Judée, Silvère Baron, Sébastien Menecier, et al. Selective treatments of prostate tumor cells with a cold atmospheric plasma jet. *Clinical Plasma Medicine*, Elsevier, 2020, 17-18, pp.100098. [10.1016/j.cpme.2020.100098](https://doi.org/10.1016/j.cpme.2020.100098). [hal-03049052](https://hal.archives-ouvertes.fr/hal-03049052)