Suggested (M2+) PhD Thesis: fully funded PhD Opportunity

Towards green combustion: on development and characterization of plasma source for the CAIPIRINH3A HORIZON-RIA project

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https://scholar.google.com/citations?view_op=list_works&hl=fr&user=T-x1JN4AAAAJ

Fully funded PhD opportunity in Plasma-Assisted Combustion of Ammonia Mist
We are seeking a highly motivated PhD candidate to join the CAIPIRINH3A Project (leading institution is Centre for Research and Technology Hellas (CERTH) in Greece), which focuses on developing plasma-assisted combustion of liquid ammonia as a clean and innovative energy conversion technology. **The PhD position is fully funded for 36 months at Laboratory of Plasma Physics (Palaiseau, France), with an optional 5-month Master internship** before depending on the candidate's availability. The primary goal of the PhD thesis is to develop and characterize an advanced plasma source capable of operating efficiently in ammonia mist environments. The research will involve:

- Plasma characterization using state-of-the-art laser diagnostics:

Planar Laser-Induced Fluorescence (PLIF) and Two-Photon Absorption Laser-Induced Fluorescence (TALIF) for measuring intermediate species densities;
Electric Field Measurements via Second Harmonic Generation of laser radiation (E-FISH).

- Investigating plasma behaviour in non-reactive gases at the Laboratory of Plasma Physics.
- Collaborating with ONERA Toulouse for numerical modelling to support experimental results.
-Conducting plasma-assisted combustion experiments in collaboration with leading combustion laboratories in the UK, Greece and Sweden.

Research environment The Laboratory of Plasma Physics (LPP) offers access to cutting-edge equipment, including nanosecond and picosecond lasers, high-voltage generators, fast oscilloscopes and advanced data processing tools. The research will be embedded in an international, multidisciplinary team of scientists from nine countries as part of the broader CAIPIRINH3A project, providing excellent opportunities for collaboration and networking.

Candidate profile The selection criteria for students are as follows: excellent knowledge of physics (chemistry is encouraged), intellectual capacity, ability to generate ideas to solve problems, ability to make decisions, interest in experimental work, basic programming skills, English at B2 level, integrity and sense of responsibility. Thesis is not confidential. Presentations at national/international conferences will be encouraged and financially supported (from 1 to 4 per year). Scientific publications in the reviewed journals will be encouraged.

How to apply To apply, please send your brief CV, a cover letter, academic transcripts, and contact information of two referees to svetlana.starikovskaia@lpp.polytechnique.fr

Applications will be reviewed on a rolling basis, so **early submissions are encouraged.**