25/01/2024

Applied Plasma Physics Scientist

Company

Hysilabs has developed a liquid hydrogen carrier HydroSil, stable and safe at ambient temperature and atmospheric pressure. This breakthrough in the energy sector takes advantage of the remarkable properties of hydrogen without the usual drawbacks inherent to its storage and transportation. This innovative liquid state allows to use similar logistics as conventional fuels. By employing renewable resources for its production, this solution enhances the deployment of considerably more environmentally friendly solutions compared to fossil fuels. Our ambition is to gather motivated and passionate people around this project in order to achieve new development steps together.

Job description / mission

You will integrate a start-up of 30 collaborators and actively contribute to the success of the projects. Your role will be to tackle the understanding of underlying mechanisms and principles related to intended chemical processes in thermal plasma. Contributions are expected to support and drive the continuous design of thermal plasma reactors. The device is currently working and is operated to perform chemical reactions as part of a precise experimental testing program.

The ultimate goal is to achieve a proof of concept by successfully achieving the targeted chemical reaction and to optimize the process parameters to control the product's physical and chemical properties. The outcome of the team's mission is expected to constitute a major breakthrough, both in the academic and industrial environments, which will be materialized via patents and scientific publications.

Profile

- You hold a PhD in applied physics and ideally, a post-doc or hands-on experience in experimentation, preferably, and thermal plasma experiments
- Ideally you have 4 years of experience in the relevant fields
- You have a deep understanding of plasma thermodynamic equilibrium, non-equilibrium, local thermodynamic equilibrium (LTE) and its impact in chemical reaction kinetics.
- You have knowledge in Density Functional Theory (DFT) and molecular dynamics simulation
- Ideally, you have knowledge of heterogeneous chemical catalysis in harsh environments, preferably hydrogenation catalysis
- Ideally, you have significant experimental background operating plasma sources or plasma assisted device and hands-on experience with thermal plasma sources.
- Ideally, you have knowledge of Inductively coupled plasmas

- Ideally, you have hands-on experience on experimental plasma-assisted chemical synthesis.
- You are persistent when confronted with technical issues.
- You have excellent technical writing skills in English (patent manuscript, publications, etc.)
- You have passion for both upstream and applied research
- You are autonomous, proactive and have an aptitude for teamwork.
- You are rigorous regarding everyday work safety and confidential material.

Offer

- Fixed-term contract with possible extension
- Position is to be filled on site
- Position to be filled as soon as possible Gross annual salary: depending on profile
- Position based in Aix-en-Provence (France) on the Technopôle de l'Environnement de l'Arbois.
- The site is located in full-nature, easily accessible by public transportation.

Application process

Send your resume and covering letter (English or French) as PDF attachment via email to aventurelli@hysilabs.com. Please include this reference to the subject of your email: [PLASEXP]_