



Post-doctoral position (16 months) on the chemical characterization of aircraft engine exhaust based on chamber experiments

The Laboratory of Atmospheric Sciences and Environmental Engineering (SAGE) of IMT Lille Douai, France (<http://sage.imt-lille-douai.fr/>), has ongoing research activities focused on the impact of climate change on air quality and atmospheric composition. SAGE is currently composed of a staff of about 50 people including 19 full-time faculty members. This fixed-term position is available for 16 months. The expected starting date is **October 2020**.

Project description

Within the context of climate change, the aircraft industry is in dire need to find new paths toward zero-carbon flying. While its amount of CO₂ emissions (2% globally) is small compared with other industry sectors, such as energy production and ground transport, these industries have already viable alternative energy sources available. For example, the power generation industry can turn to wind, hydro, nuclear and solar technologies to produce electricity with low CO₂ emissions. In the case of aviation, while solar and electric aircrafts are being researched, they are still a long way from commercial versions due to aviation need for high power-to-weight ratio and globally compatible infrastructure. Therefore, the aviation industry has identified the development of biofuels as one of the major tools to tackle its emissions. Nevertheless, the possible impact of these biofuels has to be investigated. A significant fraction of particulate matter from aircraft engines are thought to be formed from nucleation from gaseous precursors and subsequent growth, however the molecular understanding of those processes are still largely lacking.

Job description

The postdoctoral researcher will conduct chamber experiments (CESAM) focusing on characterizing the primary and secondary particulate matter from the combustion of a range of aircraft fuels. The researcher will be responsible for the High-Resolution Aerosol Mass Spectrometer (HR-AMS) deployment and further analysis. He/she will be integrated in a vibrant and international team part of the UNREAL project (<https://anr.fr/Project-ANR-18-CE22-0019>). The postdoctoral fellow is expected to present his/her findings in international conferences and lead peer-reviewed publications.

Job qualifications

The successful applicant will hold a Ph.D. degree in a relevant area of atmospheric sciences and will have a good knowledge of the field of research, as well as skills in mass spectrometry techniques. Previous experience of chamber experiments, as well as knowledge of the IGOR software, will be assets for this position. Good proficiency in English is a prerequisite.

Applicants are invited to send their Curriculum Vitae, a cover letter, and two reference letters to:

- Dr. Joel F. de BRITO (joel.brito@imt-lille-douai.fr)
- Prof. Veronique RIFFAULT (veronique.riffault@imt-lille-douai.fr)

Review of applications will begin immediately and continue until the position is filled. Shortlisted applicants will undergo a video interview during the second half of July 2020.