



Postdoctoral position (1 year)

Experimental study of the impact of biofuel addition on the aging of conventional fuels

Project description:

The increase of the share of biofuels in the transport sector, imposed by European regulations, requires studying their impacts on the aging of conventional fuels in tanks. This phenomenon finds its origin in the oxidation of liquid fuels and induces structural changes in the fuels, leading to safety problems and engine malfunction. Understanding and simulating these phenomena is therefore an important challenge. The microscopic mechanisms that govern these processes are identical to those involved in their combustion. Although kinetic combustion experiments (gas) are well established in the literature, the development of well-defined liquid phase oxidation kinetic experiments remains a major challenge. This project aims to study the impact of the addition of biofuels on the aging of conventional fuels by developing and using liquid phase oxidation experiments. The hired candidate will be responsible for the development of experiments able to quantify the oxidation stability of fuel surrogates in a standardized autoclave and the development of analytical methods able to measure the evolution of oxidation products.

Qualifications:

The candidate must have a PhD in mechanical engineering, chemical engineering, chemistry, or other close fields. Knowledge in kinetic experiments and analytical systems (chromatography, mass spectrometry) is required. Knowledge in combustion kinetics would be appreciable. Good oral and written communication skills are also required.

Appointment:

The appointment period is for one year, starting December 1st 2018. Gross salary is about 2550 € and depends on the candidate experience.

Application:

Prospective candidates should contact Dr Baptiste Sirjean (baptiste.sirjean@univ-lorraine.fr) and Dr Pierre-Alexandre Glaude (pierre-alexandre.glaude@univ-lorraine.fr) and need to provide a detailed academic CV, including a list of publications.

Laboratory and context:

The research will be performed in the Kinetic, Thermodynamic, Energy group of the Laboratory of Reactions and Process Engineering (<http://lrgp-nancy.cnrs.fr/>) in Nancy. This work will be performed within the ANR project BioACE that aims to study the impact of biofuel on the aging of conventional fuels.

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