



Postdoc – Open position

Experimental study of the Auto ignition of gasoline and surrogate fuels in a Rapid Compression Machine

Project description:

Gasoline fuel is the most popular fuel for Spark-ignition engine and for Gasoline Compression engine in a sort future. The characterization and the chemical modeling of the oxidation process at low temperature (600-1000K) and high pressure (10-60 bar) are necessary to predict the auto ignition with CFD code and then to design the next future engines.

Experiments will be performed using a rapid compression machine (RCM), and chemical kinetic and other modeling will be undertaken to post-process and interpret the data. Because the RCM is equipped of windows, spontaneous emissions and absorption techniques will be used to determine radicals species during the oxidation process. The subject is a collaboration project with an oil company.

Qualifications:

The candidate must have a PhD in mechanical engineering, chemical engineering, chemistry, or related discipline. Considerable knowledge of combustion fundamentals is required, as is demonstrated expertise using experimental devices to measure fundamental properties such as ignition delay, flame speed, fuel decomposition/oxidation intermediates and products, etc. Knowledge of internal combustion engines and LTC would be beneficial for this position. Good oral and written communication skills are required. The position requires good collaborative skills, including the ability to work well with other laboratories and with our partner Aramco Overseas.

Appointment period:

The initial appointment period is one year, with renewal possible up to three years total, subject to continued project funding and satisfactory performance. Gross salary evolves between 2400€ and 3400€ per month, depending on candidate experience.

Application:

Candidates will be required to provide: a detailed academic CV; list of publications, abstracts and significant presentations; two letters of recommendation. Direct all the inquiries to Pr. Fabrice FOUCHER (Fabrice.foucher@univ-orleans.fr).

Laboratory:

The research will be perform into the Energy, Combustion and Engine group of the PRISME laboratory. This group is composed of more than 35 researchers and students and is working on the chemical and physical understanding of the combustion process for the Internal Combustion Engine area on real engines, research engine with or without optical access and on high pressure and high temperatures vessels (laminar and turbulent vessel, sprays, auto ignition delays...)