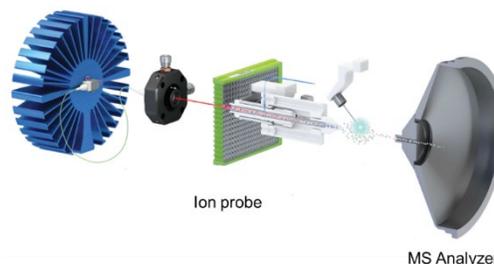


Open post-doctoral position for

“Evaluation of Laser Diode Thermal Desorption for targeted analysis of oils by mass spectrometry”

Quantitation of targeted species in complex mixtures such as bio-oils is an analytical challenge in mass spectrometry, which often requires extensive sample preparation combined with chromatographic separation and/or very high resolution mass analyzers. Moreover, the ionization step is also critical since it should be efficient for a wide variety of compound polarity and avoid any suppression issues to ensure repeatability and reliability of quantitative data.

To address these issues, the Laser Diode Thermal Desorption (LDTD) ion probe released by Phytronix Technologies is a very promising technique. This ionization source uses laser desorption followed by atmospheric pressure chemical ionization (APCI). As shown so far in food or drugs applications, LDTD allows quantitative analysis of both polar and non-polar molecules with precision, accuracy and speed. More particularly, some studies demonstrated the high robustness of this source towards ion suppression (*J. Mass Spectrom.* 2018, 54, 167; *J. Mass Spectrom.* 2019, 54, 948), suggesting the possibility of high throughput quantitative analysis in complex matrices without sample preparation.



The goal of this post-doctoral position is to develop and optimize LDTD-MS methods for quantitative analysis of targeted species in oils, and to evaluate their performance as compared to analytical approaches involving alternative techniques such as electrospray ionization (ESI) coupled to HPLC, desorption electrospray ionization (DESI) and atmospheric solid analysis probe (ASAP).

The candidate should have a PhD in analytical chemistry and be specialized in mass spectrometry. He/she should have a strong expertise in ionization processes. Convincing experience in sample preparation methods and/or HPLC-MS coupling would be a plus. The candidate should have clear motivation for experimental works. Good English communications skills (oral and written) are also requested.

This full time 18-months position, beginning in Fall 2021, is open at Aix-Marseille University. Yet, the candidate will spend 9 months at the Institut de Chimie Radicalaire in Marseille (France), under the supervision of Pr L. Charles, then 9 months at Total Energies in Lacq near Pau (France) under the co-supervision of Dr L. Ligiero. The proposed gross salary is 2500 €/month.

Applications (detailed CV and cover letter including at least 2 references) should be sent to both Pr Laurence Charles (laurence.charles@univ-amu.fr) and Dr Leticia Ligiero (leticia.ligiero@totalenergies.com).