A 18 months' position for a Postdoctoral Researcher Fellowship in metabolomics is available at LABERCA (Oniris, France) in close collaboration with Department of Veterinary Public health and Food Safety (LCA, Ghent University, Belgium). The project, funded by the RFI will be starting in April 2019.

Proposal title: ***Direct Ambient Ionization Mass Spectrometry for real time classification of food quality***

Acronym: DAIMS

Abstract
The frequent occurrence of food scandals in the world has led to an increase in the public awareness of food safety and quality. All over the world, competent authorities implement strategies to up-grade the food supply system to a high food safety standard. In particular, regarding chemical risks, such strategy relies on laboratory testing services for the detection and quantification of food contaminants. While being extremely efficient, those are limited by sophisticated sample preparation procedures, long analysis time, large (expensive) instruments and experienced staff. Thus, to face the increasing demand, fast and accurate analytical platforms are required. To that end, metabolomics offers a promising approach. Developing a high-throughput metabolomics workflow directly applicable for sampling food items, empowering immediate prediction of its quality or chemical status would be considered a major breakthrough. Recent developments in ambient ionization mass spectrometry, such as Atmospheric Solids Analysis Probe (ASAP) or Rapid Evaporative Ionization Mass Spectrometry (REIMS) open a whole new dimension for rapid (sec) screening of food samples. Both technologies enable point-of-control analysis. In proof of concept studies, ASAP has for example demonstrated to segregate solid or liquid samples based on their chemical profile. For solids samples, REIMS was proposed as a new analytical approach for in-situ detection of a number of food anomalies or chemical residues.
Main objective of the program: The current project aims at confirming, REIMS and ASAP, as valuable *in-situ* high throughput monitoring tools, whereby rapid characterization of food products is a requisite. Three different applications related to food quality issues will be evaluated (pig meat quality / forbidden residues in livestock / historical and emerging contaminant (PCBs & BPA) exposure in livestock)

Coordination /Supervision :
Yann GUITTON, Ph.D (LABERCA) / Gaud DERVILLY-PINEL, Ph.D (LABERCA) / Lynn VANHAECKE, Prof. Ph.D (LCA)

Qualifications
We are looking for a highly motivated, enthusiastic team player and result-driven scientist with:

- Strong chemical background with a PhD in Chemistry, Analytical Chemistry or equivalent
- A significant level of technical knowledge and experience in Mass Spectrometry including its applications in Chemistry and/or Metabolomics
- An excellent academic record (MSc and PhD) in analytical chemistry
- Intermediate to strong statistical skills
- Good collaboration and communication skills (written and oral English)
- Structured and analytical working approach
- Hands-on experience with REIMS, ASAP or other direct ionization technics would be appreciated

Salary and appointment terms
The salary and appointment terms are consistent with the current rules for Post-Doctoral fellows. The current gross salary is starting at 2 300 Euros. The period of employment is 18-months starting in April 2019.

Further information

For further information please contact the project coordinator, Dr Yann GUITTON (yann.guitton@oniris-nantes.fr) and project partner Prof Lynn VANHAECKE (Lynn.Vanhaecke@UGent.be)

Application

Please submit your application no later than **21th December 2018.**

Applications must be submitted as **one pdf file** containing all materials to be given consideration. The file must include:

- A letter motivating the application (cover letter)
- Curriculum vitae
- 1 or 2 letters of support
- PhD diploma

Candidates may apply prior to obtaining their PhD level, but cannot begin before having received it.

You can read more about LABERCA and LCA on http://www.laberca.org and https://www.ugent.be/di/vph/en/research/lca/overview.htm

LABERCA's general domain of activity is the chemical food safety, in a global risk assessment perspective: generation and interpretation of exposure and body burden data, study of the transfer and metabolism of investigated chemicals from their sources to the consumers through the food chain. From an analytical point of view, the two main areas of competence of the laboratory are the treatment of complex biological samples for isolating the studied substances present at (ultra-trace)- level, and the hyphenated measurement of these compounds by various mass spectrometric coupling techniques. Besides these targeted approaches, the laboratory has been developing over the last 10 years an expertise in untargeted approaches (metabolomics) to reveal biomarkers of chemical exposure. The analytical platform is considered as one of the most complete at the national and European level (> 15 last generation MS instruments). All these activities (assays and research) are conducted under management quality system combining accreditation (ISO17025) and certification (ISO9001:2008).

The Laboratory of Chemical Analysis (LCA), led by Prof. Vanhaecke, has more than 35 years of experience in the analysis of residues in matrices of animal origin. In recent years, this general sphere of activity has been expanded to emerging contaminants and bioactive food constituents within the farm to fork approach applicable for food safety and quality in the European Union. In this context, a broad spectrum of mass spectrometry-based detection methods is developed, optimized and validated in collaboration with other research groups and universities at the national level and abroad. In particular, targeted multi-compound approaches and untargeted metabolomic profiling and fingerprinting are developed and applied. To this extent multi HRMS apparatus are available at LCA. Moreover, LCA is well connected to a large international network both in the metabolomics as in the gastrointestinal health field through one finished FP7 project, one on-going Horizon 2020 JPI-HDHL project (Foodball), 1 running COST action (EUROCAROTEN), and as linked party to VITO in H2020 SC1-PM-05-2016. Moreover, LCA recently joined NuGO for its expertise in food metabolomics. Since September 2018, the REIMS apparatus is available at LCA thanks to the approval of a medium-scale infrastructure Hercules grant (Hercules AUGE/17/09). An ASAP source will be available through leasing.

LABERCA and LCA are highly complementary, since each of these two structures is a recognized specialist in analytical chemistry applied to chemical food safety with a particular focus on the "from farm to fork", in a One World-One Health perspective. Both of them are driven by the same leitmotiv "Applying State of the Art analytical developments to answer public health concerns". Their complementary expertise and MS-base analytical platforms are indispensable to the success of the present project, which is a great opportunity to develop joint efforts in the field of chemical food safety.