



## THESIS OPPORTUNITY

### Identification of analysis techniques representative of products to establish the link between pets preferences and products aromatic characteristics

Within DIANA Group (368 million € of turnover), SPF is the world leader in the manufacture and marketing of palatability enhancers to pet food manufacturers and conducts extensive research on the understanding of palatability. Several previous research projects clearly demonstrated that pets are very sensitive to different food sensorial attributes. Among all sensorial characteristics, *odor* is particularly important. In order to increase knowledge in pet olfactive preferences, SPF, *Petfood division of DIANA Group*, decides to collaborate with ONIRIS laboratory to offer a CIFRE thesis opportunity.

The research project will be carried out in the FLAVOUR research team (UMR CNRS 6144 GEPEA – AERES evaluation A+) of ONIRIS (*Nantes Atlantic College of Veterinary Medicine, Food Science and Engineering*) located in Nantes (France). The topics of the FLAVOUR research team are dedicated to the control of the organoleptic characteristics of food products and in particular the study of their aromatic properties. The FLAVOUR research team (comprising 6 lecturers-researchers, 2 research engineers and 3 technicians) is recognized for its work aimed at understanding the impact of the processes on the aroma attributes of food. It thus works on the basis of a double scientific approach combining (i) methodology and sensory characterization of foods and (ii) methodological development and instrumental characterization of volatile compounds responsible for the perceived aroma quality (3 patents). To conduct its research activities, FLAVOUR research team relies on analytical platform allowing various extraction techniques of volatile compounds and various aromatic extracts analysis techniques (GC-MS, GC-O, GC-InnOscent, Comprehensive 2D-GCxGC/TOF-MS). Recognized for its expertise, the FLAVOUR team actively participates in academic research programs at regional, national and international level (6<sup>th</sup> and 7<sup>th</sup> FP).

#### Description

Odor of food products is related to its composition of different volatile compounds. Whereas it remains difficult to understand the interactions between different odor active compounds in human food, it is quite challenging to determine the importance of volatile compounds involved in pet's sensory perception due to their very lower threshold perception of aroma compounds compared to humans. In this framework, SPF and FLAVOUR research team from ONIRIS have decided to pool their resources and skills in order to establish the link between pet preferences and volatile compounds composition.

During the purposed research project, the Ph-D student will have to:

- 🐾 Review the literature on extraction techniques of volatile compounds and the evaluation of their analytical and sensorial performances
- 🐾 Conduct a methodological investigation aimed at determining the most relevant extraction technique
- 🐾 Develop an innovative tool dedicated to the evaluation of sensorial performance of pets and to validate it
- 🐾 Manage correlations between pets preferences and extracts odor representativeness
- 🐾 Determine the link between volatile compounds composition and odor of food products according to pets preferences

#### Candidates profile

The position is intended to a master degree in Food Science, with an engineer or academic background. The applicant must provide skills in volatile compounds analytical chemistry (GC-MS, Olfactometry) and/or extraction techniques of volatile compounds. Knowledge in chemistry, sensorial analysis and a master trainee performed in collaboration with industry are considered as an advantage. The applicant must be able to work on his/her own, whilst displaying strong interpersonal skills. He/She must also be dynamic, curious and source of proposals. The applicant must be able to write in French and English and to speak fluent English.

For this **position based in FRANCE**, please send your application (resume + letter) to:

Pr. Carole PROST

carole.prost@oniris-nantes.fr