

PhD in AGRIFOOD AND ENVIRONMENTAL SCIENCES

CALL 2025 – CYCLE 41

Reserved scholarship:

O - SNIFF – Sensory and Nose-space Integration For Flavor: Exploring the dynamics of aroma release and flavor perception across individuals using integrated sensory and mass spectrometry tools.

Funding Body: **University of Trento and University of Copenhagen**

Supervisor 1: **Flavia Gasperi - UniTN**

Supervisor 2: **Sylvester Holt - University of Copenhagen**

Supervisor 3: **Michele Pedrotti - FEM**

Context / Synthetic description of the project

Flavor is a key driver of food acceptance, with aroma perception playing a crucial role in the overall sensory experience. However, understanding how aroma is perceived during consumption is complex and influenced by the dynamic release of volatile organic compounds (VOCs), individual physiology, and multisensory integration.

This PhD project aims to explore the mechanisms underlying flavor perception by combining Proton Transfer Reaction–Mass Spectrometry (PTR-ToF-MS) for real-time monitoring of in vivo aroma release with dynamic sensory methods.

The research will investigate how inter-individual variability—including physiological (e.g. salivary flow, oral processing), psychological (e.g. expectations, attention), and multisensory factors—affects the relationship between aroma release and perceived flavor. By integrating instrumental and sensory data with advanced statistical and AI tools, the project will help bridge the gap between objective measurements and subjective experiences, improving our understanding of flavor perception and its variability across individuals.

The candidate will spend at least 12 months at the University of Copenhagen, working in a highly interdisciplinary and international environment at the forefront of sensory and food sciences.