

PhD position in Grenoble

Peptide decorated amyloid fibrils and hydrogels for sensitivity improvement of electronic nose

Organization: Laboratoire Systèmes Moléculaires et nanoMatériaux pour l'Énergie et la Santé (SyMMES, UMR 5819 CEA-CNRS-UGA) and Laboratoire Chimie et Biologie des Métaux (LCBM, UMR 5249 CEA-CNRS-UGA)

Project Leaders: Yanxia Hou-Broutin and Vincent Forge

Project Description: Nowadays, there is an increasing demand for rapid and reliable analysis of volatile organic compounds (VOCs) in various domains. Electronic noses (eNs) are considered as promising alternatives to traditional analytical methods. However, so far, their performance is still far behind that of the human nose, especially in terms of sensitivity. In this project, based on a new collaboration between SyMMES and LCBM and respective recognized expertise of the two principal investigators in eN development and self-assembly of bioengineered proteins, we aim to develop an original bioinspired chemical approach in order to greatly increase the sensitivity of the eN. Novel sensing materials will be designed for the development of eNs. We will carefully evaluate the performances of the obtained eNs in terms of sensitivity, selectivity, and stability. Finally, the output of the project has great potential for valorization and technological transfer.

Methods and Materials: Biochemistry, analytical chemistry, nanotechnology, electronic nose.

Requirements: Master's degree in chemistry or a related field, background in biochemistry, analytical chemistry, and nanoscience including characterization techniques, background/interest in biosensors, good written and oral communication skills in English.

Application Process: Interested candidates should submit their CV, motivation letter outlining research interests and relevant experience in the domain, copies of academic transcripts and degrees, and names and contact information of two references to the project leaders: Yanxia Hou-Broutin (Yanxia.hou-broutin@cea.fr) and Vincent Forge (vincent.forge@cea.fr).

APPLICATION DEADLINE: March 31 at 23.59.