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CALL FOR APPLICATIONS 2025 – FELLOWS

Supervisor	Hamid Kokabi
Supervisor page	https://www.researchgate.net/profile/Hamid-Kokabi
Host Institution	Sorbonne Université https://www.sorbonne-universite.fr/en
Research Lab	Group of electrical engineering of Paris https://www.geeps.centralesupelec.fr/index.php?page=home
Research Team	Electronics pole https://www.geeps.centralesupelec.fr/index.php?page=en-electronique

Project Title

Design and fabrication of an electromagnetic microfluidic device for plant disease detection in agricultural and environment applications using magnetic nanoparticles

Project Description

Rapid detection of a biological agent is essential to the protection of biodiversity and ecosystems. Our goal is this diagnosis with a portable, efficient, cost-effective, sensitive and reliable electromagnetic microfluidic lab-on-a-chip system using a few microliters of biological sample from plants, trees or agricultural products. The detection device is based on flat multilayer micro-coils associated with microfluidic structures to detect magnetic nanoparticles linked to pathogen agents.

Keywords

lab-on-a-chip PoC biosensor, biological agent detection, magnetic nanoparticles)

Description of the Host Research Lab

The laboratory one of the most important one in the Ile de France region in the field of "Electrical Engineering". The research work carried out within the unit combines a triple approach: theory - numerical modelling - characterisation and experimental validation. They are divided into 3 poles that allow activities to be carried out on a continuum that extends from materials to systems, whether electronic or energy conversion.

To submit your application, please send an email with the required documents to
msca-pf@sorbonne-universite.fr