

## Internship position at the LMGP Laboratory in Grenoble

### Optimization of Molecular Assays on a Magnetic Point-of-Care Diagnostic Platform

#### Job description:

The objective of this internship is to contribute to the development of a molecular biology diagnostic test in partnership with MagiA diagnostics. MagiA diagnostics is developing an innovative magnetic immunoassay platform designed for point-of-care applications [1].

The internship aims to adapt and expand this platform to molecular biology applications, specifically for the detection of nucleic acids using PCR and LAMP technologies. A proof of concept demonstrating the feasibility of molecular test analysis on this platform has already been established [2].

The focus of this internship will be to improve the sensitivity and specificity of the assay, particularly when applied to complex biological samples.

The intern will be involved in the following tasks:

- Functionalization of magnetic nanoparticles
- Development and optimization of molecular biology assays (qPCR and LAMP)
- Primer design for nucleic acid amplification
- Microbiology
- Analysis and optimization of assay performance (sensitivity, specificity, robustness)
- Work on MagiA analyzer

This internship offers hands-on experience at the interface of molecular diagnostics, nanotechnology, and point-of-care test development, in close collaboration with an industrial partner.

#### References

1. Delshadi *et al.*, 2023, *Magnetically localized and wash-free fluorescence immunoassay (MLFIA): proof of concept and clinical application*
2. Orsini *et al.*, 2024, *Magnetically Localized Detection of Amplified DNA Using Biotinylated and Fluorescent Primers and Magnetic Nanoparticles*

#### Research profile & skills (required / highly desirable):

The candidate is an engineering school and / or Master 1-2 student whose training focuses primarily on molecular biology. Aptitude for teamwork, good spoken and written French or English will be appreciated. We are looking for a dynamic, motivated and autonomous student.

#### Scientific environment:

The candidate will work within the LMGP, Materials and Physical Engineering Laboratory, in the Nabios group. Located in the heart of an exceptional scientific environment, the LMGP offers the applicant a rewarding place to work.

LMGP Web Site: <http://www.lmgp.grenoble-inp.fr/>

The candidate may also be required to work at the facilities of MagiA diagnostics (Echirolles).

#### Salary:

≈600 €/month

#### Application procedure:

Please send motivation letter, CV to:

[Franz.bruckert@grenoble-inp.fr](mailto:Franz.bruckert@grenoble-inp.fr)

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