



## A la pointe de l'analyse médicale

A Montpellier, HORIBA Medical conçoit, développe et distribue partout dans le monde des automates d'analyses médicales qui contribuent dès aujourd'hui à préparer la santé de demain.

- > Plus de 27000 laboratoires clients dans le monde
- > Plus de 7000 analyseurs produits annuellement
- > Plus de 700 employés à Montpellier

# Thesis « Cifre » (M/W)

## Biophysics

**Service applicant :** Research, Digital Systems Manager.

### Frame of search :

This study is part of the research work on new methodologies in immunodiagnosics within Horiba Medical Company. New perspectives in the field of hematology diagnostics are open thanks to flow cytometry, where antigenic expression of cell subpopulations is studied by means of bio molecules coupled with fluorochromes. The present trend is to multiply markers up to ten or more, which makes realisation of analysis devices as well as their use complicated and costly. Presently, flow cytometry remains a highly specialized technique limited to research laboratories. Now, some applications in specialized care centers require reliable and fast measures calling for immunodiagnostic techniques. This particularly concerns follow-up of residual illnesses in most malignant hemopathies.

**Objectives :** This thesis aims at studying, conceiving and realizing a multiparametrical analysis device allowing a technological approach enhanced for hematology. The targets are : 1) to obtain sufficient sensitivity, specificity and reproducibility so as to consider clinical use within specialized care centers and to make this method completely automatic in order to reduce intervention of highly specialized personnel.

One of the consequences will be reducing the cost of biological tests as well as use of the equipment by non-specialized personnel. The PhD student will have to develop the device: reagents, optics, electronics, data acquisition and processing. This device will be evaluated in a hospital setting.

### Wished Profile :

The candidate must have a sound background in chemistry and physics, a good knowledge in laboratory techniques, and be motivated for experimental work.

**Duration :** 3 years (convention CIFRE)

**Beginning :** According to the available funds of the student.

**Place :** Montpellier

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