

## PharmaSense Project: post-doctoral position

### Context

The scope covered by PharmaSense project concerns the pharmaceutical industry. The manufacturing methods, in the field of the pharmaceutical industry, are evolving from a manufacturing batch to a continuous production flow. Due to the position in the pharmaceutical market, its technological expertise and latest innovations, PRODITEC in collaboration with the IMS laboratory in the University of Bordeaux, had the opportunity to participate to this industrial mutation. Innovation in this area requires the integration of a number of new technologies based on infrared and terahertz unconventional sensors. In this context, the PharmaSense project will offer to pharmaceutical customers innovative solutions using scalable control and online analysis processes to eliminate defects of production lines. With this project, the consortium will have the opportunity to improve the manufacturing process and meet the future challenges of cost, availability and safety of medicinal products worldwide.

Position 18 months (Planned start March/April 2016)  
Laboratoire IMS UMR 5218 Université de Bordeaux  
Cadre : Projet partenarial « Pharmsense »

- <http://www.proditec.com/>
- <https://www.ims-bordeaux.fr/fr/recherche/groupe-recherche/25-signal/15-signal-et-image>

### Aims and Task

The study addresses various imaging modalities ranging from multi to hyperspectral NIR for on-line quality control production of tablets, capsules and pharmaceutical powders. For the project, the PRODITEC Company will develop common work with the IMS Lab teams "Signal and Image" and "Digital System Design" devoted to the data processing and implementing of digital systems respectively. These will conduct joint study using a near infrared hyperspectral imaging device trade for quality control tablets (coating homogeneity, adapted distribution of active ingredients), pharmaceutical capsules (presence of foreign matter defects membranes) and powders (humidity rate, presence of foreign bodies). The project involves the design and development of processing for large amounts of offline data. The project includes support to subcontract the EXPLOSENSE company, R & D-based startup specializing in Talence unconventional optical technologies. It is looking for relevant descriptors in the multi- and hyperspectral images to detect defects in the production of pharmaceuticals. Such study will include our participation in the formation of a basic training data and testing for performance evaluation, deploying methods of classification or indexing defects.

### Expertise expected

The candidate must have a PhD in one of the following topics (but not exclusively) in signal and image processing, data classification or in learning. He (she) has a taste for advanced algorithmic development and programming Matlab / C ++; working language can be English or French.

### Contact

Send a CV, a cover letter and a link to your personal page if applicable: [yannick.berthoumieu@ims-bordeaux.fr](mailto:yannick.berthoumieu@ims-bordeaux.fr).  
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