

## Post-doctoral position

### Development of metaheuristic tools for the diagnosis of human colon cancer by infrared spectral imaging

A one-year post doctoral position is available starting April 2014, University of Reims Champagne-Ardenne, Reims, France, in the research group "Biophotonics and Technologies for Health" (MEDyC UMR CNRS). The group associates biospectroscopists, data analysts, cell biologists and clinicians. Their translational research focuses on new developments of tissue spectral imaging in cancer diagnosis and treatment.

The selected candidate will join an interdisciplinary working group studying the progression steps of human colon cancer by infrared spectral imaging combined to innovative data mining methods. For this, specific spectral markers of the adenoma-carcinoma transition will be identified in the primary tumors and the metastases from cancer patients. These markers will be numerically processed to create an automated early diagnosis and a prediction of the patient response to chemotherapy. To achieve these goals, the development of metaheuristic methods, such as genetic algorithms, is absolutely essential. To our knowledge, such methods have not yet been implemented in the field of biospectral imaging. Consequently, the candidate will have the responsibility to develop such algorithms to optimally automate human colon cancer diagnosis and prediction. This program involves a tight collaboration with oncologists specialized in colon carcinoma pathology (University of Strasbourg, France, Dr. Guenot).

The candidate should have strong experience in signal and image processing, computer engineering or optimization. The net salary will be around 1860 €/month. Our lab has a direct access to Paris and to Paris-CDG airport (45 min by HSR).

Qualified applicants should send a CV, a motivation letter, a list of publications and the contact details of 2 references to:

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