

## SEMINAIRE

(de 13 h à 14 h, salle Belledonne, IMEP-LaHC, Bât. BCAi, Minatec,  
ouvert à tous : enseignants, étudiants, chercheurs, administratifs, techniciens)

Jeudi 18 mai 2017

### “Multimodal imaging of the spinal cord”

par Sylvain FERUGLIO

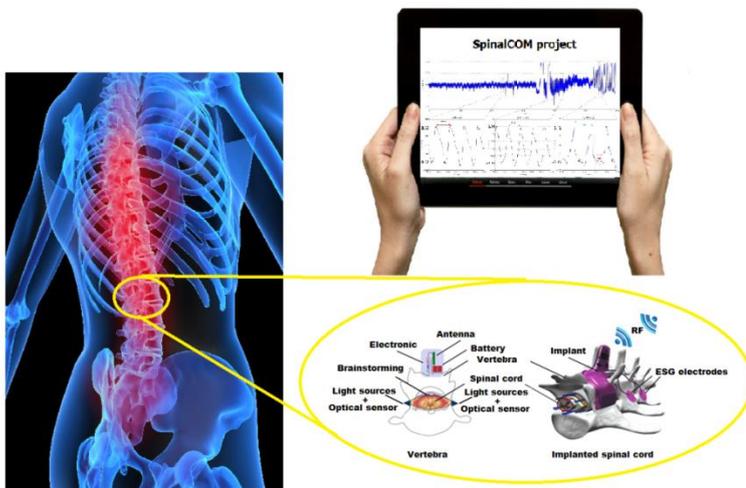
LIP6 : Laboratoire d’Informatique de Paris 6

**Abstract:** The usual imaging techniques providing only limited information, there is an unmet need for methods, firstly, to monitor the functional status of the Spinal Cord (SC) and, secondly, to assess the functional consequences of the SC Injuries (SCI) and the effect of therapeutic interventions. To meet these needs, our project aims to investigate a new imaging approach of SC on animal model (before a potential transfer to the human being), through the realization and the

modelling of a multimodal communicating device for measuring the SC activity. This approach will establish locally and specifically the functional state of the SC in real time, which will provide a break-through in the aortic surgery, as well as in the care and therapeutic trials for SCI.

Our project proposes to design a highly innovative embedded system in the bio-medical field, responding to real public health problems and complementing systems already used routinely. It gives rise to both scientific and technical issues that have not yet been explored or too few.

During this seminar, we propose to present the first results of this multidisciplinary research.



*Sylvain Feruglio received the B.Sc. and M.Sc. degrees in electronics, electrotechnics and automatics, and the master degree in electronics, (instrumentation & systems option) from the UPMC - Paris 6 (Université Pierre et Marie Curie), & Paris-Sorbonne University, in 1999 and 2001, respectively. He received the Ph.D. degree in noise computation in integrated active pixel image sensors from LISIF (Laboratoire d’Instrumentation d’Ile de France), UPMC-Paris 6, in 2005 and continued his activities through a postdoctoral position with IMEP-LaHC (Institut de Microélectronique, Electromagnétisme et Photonique - Laboratoire d’Hyperfréquences et de Caractérisation), INPG (Institut National Polytechnique de Grenoble) and UJF (Université Joseph Fourier), in collaboration with CEA-LETI, SOITEC and the Alliance (Freescale, NXP and STmicroelectronics) on the study and the characterization of new CMOS and SOI technologies. Since 2007, he has been with LIP6 (Laboratoire d’Informatique de Paris 6) in the SoC (System on Chip) department. His research interests include integrated sensors and electronics, noise analysis and signal integrity, mainly applied to image sensors and biomedical engineering.*