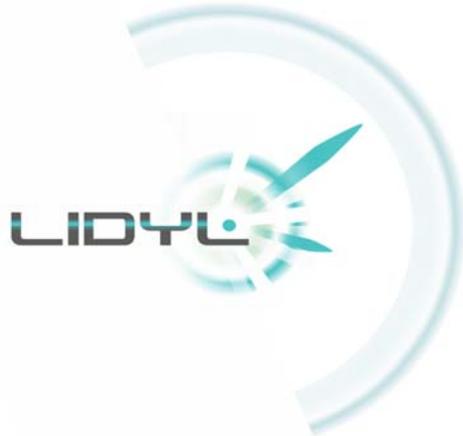




université
PARIS-SACLAY



LIDYL

LABORATOIRE INTERACTIONS, DYNAMIQUES ET LASERS

LIDYL-UMR 9222

CEA, CNRS, Université Paris-Saclay

SEMINAIRE LIDYL

Isabelle FOURNIER

INSERM U1192 - Laboratoire Protéomique, Réponse Inflammatoire et Spectrométrie de Masse, Lille

Le Vendredi 29 Novembre 2019 à 11h00
- Bât. 522, Pièce 137-139

"SpiderMass Water-Assisted Laser Desorption/Ionization Mass spectrometry: A novel mini-invasive technology for intraoperative diagnostics & guided surgery"

Despite important technological advances over the last decades, margin delineation and real-time diagnostic clearly remains an issue. Yet most standard intraoperative procedure is to biopsy and wait for the feedback of a confirmed pathologist ; which is a rather long process prone to errors. Therefore, we have been developing a mini invasive MS based system, called SpiderMass, to target in vivo intraoperative analysis for surgical decision making. The technology is based on a laser microprobe which uses resonant excitation of tissue water to promote mini invasive micro-sampling and gas phase ions formation. SpiderMass is designed so that the mass instrument is standing remotely from the laser microprobe and then the patient. Thus, SpiderMass enables remote mini invasive *in vivo* analysis, safe and painless for the patient using 2.94 μm IR excitation leading to real-time molecular signature of the tissues. We have demonstrated that the technology could be used to distinguish cancer from normal cells, histological regions, or cancer types and grades uniquely by using the collected molecular fingerprints as barcoding; and then be trained to recognize these different situations using machine learning. During the course of surgery, the generated data are thus used to interrogate in real-time the built models and provide instant feedback. We have been conducting a proof-of-concept study to assess the performances of the technology from dog sarcoma and demonstrated the high sensitivity and accuracy of the system for sarcoma grading and typing. Finally, the SpiderMass prototype was showcased at the veterinary surgery room on dog patients for bench *ex-vivo* intraoperative analysis and *in vivo* assessment within the course of the surgery.

Formalités d'entrée :

Visiteur U.E. : Se faire connaître au moins 48 heures à l'avance pour l'établissement de votre autorisation d'entrée sur le Centre de Saclay.

Visiteur hors U.E. : Se faire connaître au moins 4 jours à l'avance pour les formalités d'entrée et se faire accompagner par un agent CEA.

Sans autorisation, vous ne pourrez entrer sur le Centre de Saclay. Tél. : 33.1.69.08.74 09- Fax : 33. 1.69.08.76.39 - email : caroline.lebe@cea.fr ou veronique.gerecny@cea.fr
Dans TOUS LES CAS, se munir d'une pièce d'identité (passeport et carte d'identité - pas de permis de conduire)