

# Medical Robotics Days, June 14<sup>th</sup>&15<sup>th</sup>, 2018

Université Libre de Bruxelles - ULB  
50 avenue FD Roosevelt, B-1050 Brussels  
Solbosch Campus, Building R42.5.103<sup>1</sup>

**Organizers: Pierre LAMBERT (ULB) & Brahim TAMADAZTE (CNRS)**

We are pleased to announce that the ULB and CNRS will organize the “*medical robotics days*” in Brussels, Belgium. The aim is to bring together academic, clinical and industrial experts who have been working for several years on different issues in robotics assisted surgery also known as computer-assisted surgery (CAS) and related fields. These days will provide a review of current achievements/advances and future developments as well as the scientific and technological obstacles to raise to result in clinical added-value and reliable robotics systems. The “*medical robotics days*” will also act as a platform for wider discussions and encourage multidisciplinary collaboration between academic, clinician and industrial experts of both sides of the border (Belgium-France).

*The “medical robotics days” are free but require a registration for logistic reasons and limit of available places.*

## Topics

- Surgical robots: state of the art, current research efforts
- Soft robots, continuum mechanisms
- Endoscopic surgery
- Teleoperation in clinical contexts
- Actuation and stiffening mechanisms
- Biomedical microrobotics
- Medical imaging (registration and multimodal data fusion)
- Soft / stiffness controllable manipulators for minimally invasive-surgery
- Kinematics and dynamics modeling of continuous devices, control
- Sensing, including tactile, force and torque, stiffness sensing
- End user interface

## Day 1: June, 14<sup>th</sup>

|               |  |
|---------------|--|
| 10h00 – 10h10 | <ul style="list-style-type: none"><li>• Medical robotics days’ overview and introduction<br/><b>Pierre Lambert (ULB) &amp; Brahim Tamadazte (CNRS)</b></li></ul>                                 |
| 10h10 – 10h45 | <ul style="list-style-type: none"><li>• Surgical endoscopy: 15 years of collaboration between doctors and engineers at ULB<br/><b>Alain Delchambre, Prof. (ULB)</b></li></ul>                    |
| 10h45 – 11h00 | Coffee break   |
| 11h00 – 11h35 | <ul style="list-style-type: none"><li>• Vision-Based Sensing of External Forces Acting on Soft Robots Using Finite Element Method<br/><b>Jérémie Dequidt, Ass. Prof. (Inria Lille)</b></li></ul> |

<sup>1</sup> <http://www.ulb.ac.be/campus/solbosch/plan-R42.html>

|               |   |
|---------------|---|
| 11h35 – 12h00 | <ul style="list-style-type: none"> <li>AmaRob: Spin-off for intracorporeal laser surgery</li> </ul> <b>Sergio Lescano, PhD (AMAROB spin-off)</b>  |
| 12h00 – 13h45 | Lunch [offered by the organizers]   |
| 14h00 – 14h40 | <ul style="list-style-type: none"> <li>Adaptive robotic assistance for reconstructive microsurgery</li> </ul> <b>Benoit Herman, Prof. (Université Catholique de Louvain)</b>              |
| 14h40 – 15h20 | <ul style="list-style-type: none"> <li>Enhanced laparoscopic surgery : seeing beyond the visible to treat better</li> </ul> <b>Sandrine Voros, PhD (INSERM, TIMC-IMAG)</b>                |
| 15h20 – 16h00 | <ul style="list-style-type: none"> <li>Smart Materials for Flexible Medical Devices</li> </ul> <b>Pierre Lambert, Ass.-Prof. &amp; Loïc Blanc, PhD Student (ULB)</b>                      |
| 16h00 – 16h20 | Coffee Break  |
| 16h20 – 17h00 | <ul style="list-style-type: none"> <li>Design of a microbiota sampling device using bistable mechanism</li> </ul> <b>Mouna Ben Salem, PhD student (LIRMM)</b>                             |
| 17h00 – 17h40 | <ul style="list-style-type: none"> <li>Mesoscale continuum robots: dexterity in confined spaces</li> </ul> <b>Taha Chikhaoui, Post-Doc, (Lab. for Continuum Robotics (LKR), Hannover)</b> |
| 20h00 - ...   | <b>Dinner [offered by the organizers]</b><br>Place to be communicated   |

## Day 2: June, 15<sup>th</sup>

|               |   |
|---------------|---|
| 09h00 – 09h35 | <ul style="list-style-type: none"> <li>Robotics and Urology: from revolution to evolution</li> </ul> <b>Ranan Dasgupta, MD (Imperial College Healthcare NHS Trust)</b>                            |
| 09h35 – 10h10 | <ul style="list-style-type: none"> <li>A surgical cockpit to ease laparoscopic surgery</li> </ul> <b>Guillaume Morel, Prof. (ISIR)</b>  |
| 10h10 – 10h25 | Coffee break  |
| 10h25 – 11h00 | <ul style="list-style-type: none"> <li>Robot-assisted eye surgery made in Europe, recent advances within the EurEyeCase project</li> </ul> <b>Emmanuel Vander Poorten, Prof. (KULeuven)</b>       |
| 11h00 – 11h35 | <ul style="list-style-type: none"> <li>Microrobotics for highly selective cell sorting: towards the development of new innovative medicines</li> </ul> <b>Aude Bolopion, PhD (CNRS, FEMTO-ST)</b> |
| 11h35 – 12h10 | <ul style="list-style-type: none"> <li>Robotic assistance to intraluminal surgery for colorectal cancer treatment</li> </ul> <b>Florent Nageotte, Ass.-Prof. (ICUBE)</b>                          |
| 12h10 – 12h40 | <ul style="list-style-type: none"> <li>L'approche endoscopique du nodule pulmonaire périphérique</li> </ul> <b>Leduc Dimitri, MD (Hôpital Erasme – ULB)</b>                                       |
| 12h40 – 12h45 | End of the medical robotics days<br><b>Pierre Lambert (ULB) &amp; Brahim Tamadazte (CNRS)</b>   |

Access map (the meeting will take place in room R42 surrounded by a circle see map below)

<http://www.ulb.ac.be/campus/solbosch/plan-R42.html>

# > Campus du Solbosch

