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Automatic
Control and
Systems
Engineering

The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Sustainable robotic devices for personalized medical assistance

Dr Dana D. Damian

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The University of Sheffield*

Wednesday, 2 November 2016 at 14:00

LT02, Sir Henry Stephenson Building

Abstract

One of the next technological frontiers in medicine is the realization of sustainable robots that integrate seamlessly with the human to perform repair or augmentation of biological functions over extended period of time. In this talk I will introduce wearable medical devices exemplified as upper-limb prostheses, robotic implants for tissue growth, and ingestible robots, emphasizing on their specific biology-imposed challenges and on technological approaches for personalized medical assistance. First, I will introduce an autonomous robotic implant that aims to grow tissue in vivo for the treatment of gastrointestinal diseases. Second, I will present a prosthetic skin for restoring a rich tactile sense to prosthesis wearers, and for assisting the integration of the prosthetic hand as part of their body. Last, I will introduce an ingestible robot for the treatment of stomach wounds.

Biography

Dana D. Damian is a Lecturer in the Department of Automatic Control and System Engineering since 2015. Prior to this, she was a postdoctoral research fellow at the Department of Cardiovascular Surgery at Boston Children's Hospital, Harvard University, working on robotic implants. She obtained her Ph.D. at the Artificial Intelligence laboratory at University of Zurich in 2012 where she conducted research on prosthetic artificial skins and haptic devices. During her Ph.D. she was a visiting scholar at Johns Hopkins University and Stanford University in 2011, and Carnegie Mellon University in 2012. Her research interests reside in the area of medical robots and assistive technology, aspiring to create life-like sustainable robots for personalized medicine.

*Light refreshments will be served in the
foyer of the Sir Henry Stephenson Building following the seminar*