**10th December Wednesday: 13.00-14.00, Room: A107**

**Speaker: Professor Eric Rogers**

University of Southampton

**Systems & Control: ”** Iterative Learning Control: from Industrial Robotics to

Next Generation Healthcare **“**

Annually, 15 million people worldwide suffer a stroke and 5 million are left permanently disabled. A person who relearns skills after a stroke goes through the same process as someone learning to play tennis, requiring sensory feedback during the repeated practice of a task. Unfortunately, the problem is that they can hardly move and, therefore, do not receive feedback on their performance. Research into conventional therapy and motor learning theory provides evidence that the intensity of practice of a task and feedback are important. This knowledge is motivating the development of novel treatments such as robotic therapy that provide the opportunity for repetitive movement practice. This seminar describes recent research where iterative learning control, originally developed for industrial robots, can be used to develop novel robotic-assisted rehabilitation of the affected upper limb of a stroke patient, including clinical trial results.