

Seminar Series

**Automatic manipulation of biological cells with
holographic optical tweezers**

Songyu Hu

PhD Student

Date: November 27, 2009 (Friday)

Time: 1:30pm - 2:20pm

Venue: Room B5-307, 5/F, Academic Building

ABSTRACT

The ability to manipulate biological cells plays an increasingly important role with the development of cell biology and molecular biology. Conventional manual manipulation methods cannot achieve high resolution and throughput simultaneously, highlighting the need for automation of this process. Holographic optical tweezers (HOT) offer a promising solution. They allow the creation of an enormous number of optical traps for moving objects measuring from tens of nanometers to tens of micrometers. The speaker will explain his study of a visual servo control strategy based on HOT for automatic manipulation of biological cells. Simulation and experimental results will be presented to illustrate the effectiveness of the method.

BIOGRAPHY

Songyu Hu received BSc (2006) and MSc (2008) degrees in Control Science and Engineering from Shandong University and Zhejiang University, respectively. He is currently a PhD candidate in the Department of Manufacturing Engineering and Engineering Management, working with Prof. Dong Sun on problems of motion control and robotic manipulation of biological cells.

Enquiry: 2788 8420

All are welcome!