2nd Workshop on Dynamics and Control of Micro and Nanoscale Systems: 23-24 February 2012

The University of Newcastle, Australia

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

PRIORITY RESEARCH CENTRE FOR:
COMPLEX DYNAMIC SYSTEMS & CONTROL

Australian Nanotechnology Network

Australian Government
Department of Innovation Industry, Science and Research

Control system design has emerged as a critical technology in emerging micro and nanoscale systems. The purpose of this workshop is to bring together some of the leading experts in the field of dynamics and control of micro and nanoscale systems to discuss emerging research problems and recent advances. Among our list of distinguished presenters shown below, our two keynote speakers are Prof. Dr. Brad Nelson (ETH Zurich) and Prof. Masayoshi Tomizuka (University of California, Berkley).

The Australian Nanotechnology Network (ANN) is funding generous subsidies for Australian-based early career researchers and students to register for the workshop. Please visit our website to apply. Please apply by Monday 30 January 2012.

Keynote and invited lectures are listed below:

Keynotes

- MicroRobotics and NanoMedicine (Prof. Dr. Brad Nelson, ETH Zurich)
- Handling Narrow-Band Disturbances in Precision Motion Control Systems (Prof. Masayoshi Tomizuka, University of California, Berkley)

Invited Lectures:

- High-speed Micro-robot in Microfluidic Chip (Prof. Fumihito Arai, Nagoya University)
- Reconstruction of Real Topographic Images Distorted by Nonlinearities of a Vertical Scanner in Atomic Force Microscopy (Prof. Chung Choo Chung, Hanyang University)
- Nanoscale Motion Control - Optimal Trajectory Planning (Prof. Raymond de Callafon , University of California San Diego)
- Towards Nano-sized End-effectors for Nanorobotic Manipulation (Prof. Lixin Dong, Michigan State University)
- Nanopositioning and Control for Flexible Recording Media (Dr. Evangelos Eleftheriou, IBM Research, Zurich)
- Exploiting parametric Resonance in Electrostatic MEMS (Prof. Gary K. Fedder, Carnegie Mellon University)
- Dynamics and Control of MEMS Angle-Measuring Gyroscopes (Prof. Roberto Horowitz, University of California Berkley)
- Mechanical Design and Repetitive Control for High-Speed Nanopositioning (Dr. Kam K. Leang, University of Nevada)
- Control Methods for Micro and Nanoscale Drug Delivery through the Vascular Network (Prof. Sylvain Martel, École Polytechnique de Montréal)
- Q-Control of Atomic Force Microscope Cantilevers (Prof. Reza Moheimani (University of Newcastle)
- Novel Concepts in High-Speed Nanopositioning (Dr. Angeliki Pantazi, IBM Research Zurich)
- Frequency Locking of an Optical Cavity using Linear Quadratic Gaussian Control (Prof. Ian Petersen, UNSW-ADFA)
- Dynamics of Nanomechanical Devices with Applications to Atomic Force Microscopy and Sensing in Fluid (Prof. John Sader, University of Melbourne)
- Real-time Quantitative Estimation of Material Properties at the Nanoscale (Prof. Murti Salapaka (University of Minnesota atMinneapolis)
- Toward a New High-Speed Dynamic Mode Imaging in Atomic Force Microscopy (Prof. Srinivasan Salapaka University of Illinois)
- High-Speed AFM by Mechatronic System Integration (Prof. Georg Schitter , Vienna University of Technology)
- Enabling Tools for Quantitative Multi-Frequency AFM (Dr. Abu Sebastian (IBM Research)
- Video Rate Imaging using Atomic Force Microscopy (Prof. Ning Xi, Michigan State University)

For more information please visit http://rumi.newcastle.edu.au/Workshop2012