

Sonderkolloquium

Am **Mittwoch, dem 3. Dezember 2008**, um **16:30** Uhr hält

Bijan Shirinzadeh
Monash University, Clayton, Australia

einen Vortrag mit dem Titel

Motion tracking for piezo-actuated micro/nano manipulators

Der Vortrag findet im OFFIS, Escherweg 2, Konferenzraum F02 statt.

Zusammenfassung:

This presentation will provide an overview of some of the research activities at Robotics and Mechatronics Research Laboratory (RMRL), Monash University, Australia. The presentation will also focus on one particular research area - the motion tracking control methodology for piezo-actuated flexure-based micro/nano manipulation mechanisms. The control objective is to track desired motion trajectories in the presence of unknown system parameters, non-linearities including the hysteresis effect, and external disturbances. In this study, a lumped parameter dynamic model that combines the piezoelectric actuator and the micro/nano flexure-based mechanism is described for the formulation of the proposed approach. A precise tracking performance in following a desired motion trajectory is demonstrated in the experimental study. This control methodology is suitable for the implementation of high performance flexure-based micro/nano manipulation control applications.

Eingeladen von Prof. Dr.-Ing. Sergej Fatikow

CV:

Bijan Shirinzadeh received engineering qualifications: BE (Mechanical), BE (Aerospace), MSE (Mechanical), and MSE (Aerospace) from the University of Michigan, Ann Arbor Michigan, USA. He obtained a PhD in Mechanical Engineering from University of Western Australia (UWA), Australia. He has held various positions in academia and industry including research fellow at the University of Western Australia, senior consultant at Sound and Vibration Technology (WA), and senior research scientist at Commonwealth Scientific Industrial Research Organization (CSIRO), Australia. He is currently an Associate Professor in the Department of Mechanical and Aerospace Engineering at Monash University, Australia. He is also the Director of Robotics & Mechatronics Research Laboratory (RMRL) which he established in 1995 at Monash University. His current research interests include mechanisms/robotics; micro-nano manipulation mechanisms/systems; intelligent sensing and control including laser-based sensing, measurements and tracking; modelling and planning in virtual reality; robotic-assisted minimally invasive micro-surgery and nano-surgery; biomechanics; mobile robotics and autonomous systems; and automation science and automated manufacturing.