IEEE/ASME TRANSACTIONS ON

MECHATRONICS

Call for Papers

Focused Section on Optomechatronics

The introduction of optical technology into mechatronic systems has created a significant progress towards improving miniaturization, precision, functionality, intelligence, and autonomy of mechatronic systems. The integration of optical technologies is due to their attractive characteristics such as non-contact features, ease of transduction, wide sensing range, micro/nanoactuation, insensitivity to electrical noise, distributed sensing and communication potential, and high bandwidth.

This technology fusion is termed as *Optomechatronics* and is expected to play a major role in further development of mechatronics systems due to the synergistic effects of their integration, which include not only enhanced performance but also innovative functionalities. Examples of such effects can be found from a great number of technical fields such as adaptive optics, optical illumination control,, sensing and actuation, scanning and motion tracking, feedback control and manipulation, data storage/retrieval, data switching and transmission, projection and display, material, electrical, and optical property variations, on-line pattern recognition, and material processing. The recent developments in micro-systems fabrication, optical sensors and actuators, optical communication, biomedical imaging and control, optoelectronic processing, and mico-opto-electromechanical systems (MOEMS) integration have been all driving factors in increased functionalities and interest in optomechatronic systems, suggesting novel applications in both macro and micro scales. In particular, we expect that optomechatronic technologies will significantly contribute to the developments of micro/nano-opto-MEMS, biosystems with nano/microsensing and manipulation capabilities, and micro/nanofabrication. Today, examples of optomechatronic systems can be found in many products related to instrumentation, control, testing, manufacturing, consumer and industrial electronics, MEMS, MOEMS, automotive, and biomedical applications.

This Focused Section of IEEE/ASME Transactions on Mechatronics (TMECH) is dedicated to new advances in optomechatronic systems. The papers should contain both principle and practical experimental results and are subject to the TMECH review procedures. Potential topics include but are not limited to:

- Actuators and manipulation incorporated with optical elements
- Optical based sensors and instruments
- Optical metrology
- Micro/nano devices and components with optical elements
- MOEMs
- Optomechatronic systems control
- Optical/vision-based control
- Adaptive optics
- Optomechatronics in biomedical and robotic fields

Manuscript Submission

Please submit the manuscripts in PDF format to http://mc.manuscriptcentral.com/tmech-ieee, and indicate on your cover letter that "*This paper is submitted for possible publication in the Special Issue on Optomechatronics*." Instructions for authors are available online at: http://www.ieee-asme-mechatronics.org (or http://www.me.gatech.edu/aimrl/TMech/Index-TMech.htm). If you have any questions relating to this Focused Section, please email one of the guest editors.

Important Dates:

Manuscript Submission	November 1, 2009
Completion of First Review	February 1, 2010
Submission of Revised Papers	March 15, 2010
Completion of Final Review	May 1, 2010
Submission of Final Manuscripts and Copyright Forms	May 15, 2010
Publication	August 2010

Guest Editors

FARROKH JANABI-SHARIFI, Guest Editor
Department of Mechanical and Industrial Engineering
Ryerson University
Toronto, Canada
E-mail: fsharifi@ryerson.ca

HYUNGSUCK CHO, Guest Editor
Department of Mechanical Engineering
Korea Advanced Institute of Science and Technology
Dae Jeon, Korea
E-mail: hscho@kaist.ac.kr

TOSHIO FUKUDA, Guest Editor
Department of Micro System Engineering and
Department of Mechano-Informatics and Systems
Nagoya University
Furo-cho, Chikusa-ku,
Nagoya, Japan
E-mail: fukuda@mein.nagoya-u.ac.jp