

2012 International Conference on Advanced Mechatronic Systems
(ICAMechS 2012)

Tokyo University of Agriculture and Technology, Tokyo, Japan, September 18-22, 2012

Special Session on

Intelligent Mechatronic Systems

Organizers:

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The portmanteau *mechatronic* was created by Tetsuro Mori, a senior engineer of Yasukawa Co., Ltd. more than 40 years ago. Yet today's mechatronics is a combination of mechanical engineering, electronic engineering, computer engineering, software engineering, and control engineering in order to design, improve and/or optimize, and manufacture useful products.

The objective of this session is to cover the basics and advances of mechatronic systems and related technologies. Both hardware (sensors, embedded electronics, locomotion, navigation, system integration, energy) and software (high-level control, localization, real-time control, signal processing) aspects will be tackled.

Topics covered by this session include but are not limited to:

Robotic Control	Legged Robots
Mechanics and Locomotion	Medical Mechatronics
Autonomous Robotic Vehicles	Medical Imaging Systems
Intelligent Computing	Sensors and Actuators
Adaptive and Intelligent Control	Embedded Electronics
Human-Machine Interface	Servo-mechanics
CAD	Machine vision

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This special session includes the following papers:

Paper no. 1: Development of Slide Type Inspection Robot Using Flexible Pneumatic Cylinder

Authors: Lin Wang, Tetsuya Akagi, Shujiro Dohta and Takahiro Kawasaki

Affiliation: Okayama University of Science

Paper no. 2: Development of Flexible Spherical Actuator Using Flexible Pneumatic Cylinder

Authors: Changjiang Liu, Shujiro Dohta, Tetsuya Akagi and Ayaka Ando

Affiliation: Okayama University of Science

Paper no. 3: Global Localization of Mobile Robot with a Laser Range Scanner in the Outdoor Environment

Author: Masahiro Tanaka and Keisuke Kochi

Affiliation: Konan University

Paper no. 4: 3D Quasi-passive Walking of Bipedal Robot with Flat Feet

Subtitle : Quasi-passive Walker Driven by Antagonistic Pneumatic Artificial Muscle

Authors : Hiroyuki Watanabe, Shinsaku Fujimoto and Katsuya Kawamoto

Affiliation: Okayama University of Science

Paper no. 5: Development and Control of a Novel Type Diaphragm

Authors: Valeri Kroumov and Yoshiro Kobayashi

Affiliation: Okayama University of Science

Paper no. 6: Development of Hybrid FES Walking Assistive System – Feasibility Study

N. Kurokawa*, N. Yamamoto**, Y. Tagawa**, T. Yamamoto*

Affiliation: *Okayama university of science, **Kyushu Institute of Technology