

# The 15th Symposium on Theory of Machines and Mechanisms

Date: July 11, 2008

Place: Conference Room 304, 3rd Floor, Ishikawadai 3 Bldg., Tokyo Institute of Technology (Ohokayama Campus)  
2-12-1 Ohokayama, Meguro-ku, Tokyo 152-8552  
(8 min. walk from Ohokayama Station, Tokyu Meguro-line and Ohimachi-line)

Program:

13:05 Opening Address by Yoshihiko NAKAMURA  
President, Jc-IFTToMM (Univ. of Tokyo)

Session 1 : Robotics (13:10-14:10)

Chair: Masafumi OKADA (Tokyo Tech.)

13:10 Development of 3-URU Pure Rotational Parallel Mechanism with Error Compensation Devices  
\*Soichiro MATSUDA (Graduate Student, Tokyo Tech), Yukio TAKEDA (Tokyo Tech) and Masaru HIGUCHI

13:30 Study on Designing a Biped Robot with Bi-articular Muscle Type Bi-lateral Servo System  
\*Kotaro FUJIMOTO (Graduate Student, Tokyo Denki Univ.) , Yukio SAITO (Tokyo Denki Univ.)  
and Atsushi UMEMURA

13:50 Switching Control and Quick Stepping Motion for Falling Avoidance of Humanoid Robot  
\*Kou YAMAMOTO (Graduate Student, Univ. of Tokyo) and Yoshihiko NAKAMURA (Univ. of Tokyo)

Session 2 : Dynamics and Accuracy (14:30-15:50)

Chair: Nobuyuki IWATSUKI (Tokyo Tech.)

14:30 Analysis of Nonlinear Vibration System by Higher Order Spectra  
\*Hiroyuki MATSUMOTO (Institute of Technologists), Yuuto ONODERA (MAKITA Corp.),  
Hisami OHISHI (Kogakuin Univ.) and Shinji YAMAKAWA

14:50 Design of Leg Mechanism for Impact Absorption Based on Kineto-static Mechanical Synthesis of Closed Kinematic Chain  
\*Jun TAKEISHI (Graduate Student, Tokyo Tech) and Masafumi OKADA (Tokyo Tech)

15:10 Friction Control Based on Ultrasonic Oscillation for Rolling-element Linear-motion Guide (4<sup>th</sup> Report)  
\*Takaaki OIWA (Shizuoka Univ.) and Aizat

15:30 Evaluation Method of Gear Measuring Instrument Using Wedge Artifact  
\*Masaharu KOMORI (Kyoto Univ.), Fumi TAKEOKA, Kazuhiko OKAMOTO, Aizoh KUBO,  
Sonko OSAWA (AIST) Osamu SATO and Toshiyuki TAKATSUJI

Session 3 : Application of Robots (16:10-17:10)

Chair: Yukio TAKEDA (Tokyo Tech.)

16:10 Motion Control of an In-pipe Mobile Robot Based on Position Estimation by Only Posture Sensing  
Savaruj NARAMONTHON (Nissan Motor) and \*Nobuyuki IWATSUKI (Tokyo Institute of Technology)

16:30 Space Securing in Minimally Invasive Brain Surgery  
- Development of Master System Considering Maneuverability -  
\*Yosuke AKABANE (Kogakuin Univ.) , Hideki TAKANOBU, Kenji SUZUKI, Hirofumi MIURA,  
Shuta MATSUMURA, Haruka KAWAMITSU, Jun OKAMOTO (Waseda Univ.), Masakatsu G. FUJIE  
and Hiroshi ISEKI (Women's Medical Univ.)

16:50 Development of the Anthropomorphic Saxophonist Robot WAS-2  
- Improvement of the Lip's Mechanisms and Mechanism Designing of an Anthropomorphic Hand -  
\*Shimpei ISHIKAWA (Graduate Student, Waseda Univ.), Tetsuro YAMAMOTO, Masaaki TAKEUCHI,  
Petersen KLAUS, Solis JORGE (Waseda Univ.) and Atsuo TAKANISHI

17:10 Closing Address by Haruo HOUJOH  
Vice President, Jc-IFTToMM(Tokyo Tech.)

17:20 Annual Meeting 2009 (17:20-18:00)

Address from president:

Yoshihiko NAKAMURA(Univ. of Tokyo)

Chair : Nobuyuki IWATSUKI (Tokyo Tech.)

18:10 Wine party (18:10-19:40)

at Room 305, 3rd Floor, Ishikawadai 3 Bldg.  
The fee is 5,000 Jpn yen and free for students.