

The 10th Symposium on Theory of Machines and Mechanisms

Date: June 25, 2004

Place: Meeting Room 5, 11th Floor, Kogakuin University (Shinjyuku Campus)

Program:

9:50 Opening Address by Hirofumi MIURA
President, Jc-IFTtoMM
(Kogakuin University)

Session 1 : Agricultural/Medical Robots (10:00-11:00)
Chair: Koichi SUGIMOTO (Tokyo Institute of Technology)

10:00 Silkworm Handling Robot
Hideaki TAKANOBU(Kogakuin Univ.), *Tomonari AIZAWA(Graduate School, Kogakuin Univ.),
Yasumasa WATANABE(Graduate School, Kogakuin Univ.), Hiroshi ISHIHARA(Graduate School,
Kogakuin Univ.) and Masanobu OHURA(National Institute of Agrobiological Sciences)

10:20 Muscle Innervations Model of the Spinal Nervous System for Somatosensory Information Processing
*Mihoo OTAKE(Univ. of Tokyo) and Yoshihiko NAKAMURA(Univ. of Tokyo)

10:40 Study on Endoscope-inserting Robot
- Bilateral Servo System with Minute Pressure Control Function -
*Hiroshi NEGOTO(TDU), Yukio SAITO(TDU), Shunsuke MOTOSUGI(Olympus)
and Takamitsu TAJIMA(Honda R&D)

Session 2 : Bio/Humanoid Robots (11:10-12:10)
Chair: Yukio SAITO (Tokyo Denki University)

11:10 Water Strider's Internal Mechanism Based Robot
Hideaki TAKANOBU(Kogakuin Univ.), *Keisuke KODAIRA(Graduate School, Kogakuin Univ.)
and Hitomi TAKEDA(Graduate School, Kogakuin Univ.)

11:30 Research on the Cricket Based Jumping Robot
Hideaki TAKANOBU(Kogakuin Univ.), *Chiharu UCHIDA(Graduate School, Kogakuin Univ.)
and Kohji NOURA(Graduate School, Kogakuin Univ.)

11:50 Mobility Enhancement Control of Humanoid Robot Based on the Whole-body Cooperative Reaction
Force Manipulation
*Tomomichi SUGIHARA(Univ. of Tokyo) and Yoshihiko NAKAMURA(Univ. of Tokyo)

12:10 Luncheon

13:30 Special Lecture (13:30-14:30)
“ Harmonic Drive Gear - Invention, Development and Current Status”
Shoichi Ishikawa (Harmonic Drive Systems Co. Ltd.)

Session 3 : Vibration Analysis and Mechanism Design (14:40-16:00)
Chair: Nobuyuki IWATSUKI (Tokyo Institute of Technology)

- 14:40 Identification of Nonlinear System by Higher Order Spectra
 - Discussion on Nonlinear Mappings -
 *Hiroyuki MATSUMOTO(Institute of Technologists), Hisami OHISHI(Kogakuin Univ.)
 and Shinji YAMAKAWA(Kogakuin Univ.)
- 15:00 Effect of Torsional Damper on Bending Vibration at Crankshaft Rear-end under Operating Condition
 *Takahiro YAMAUCHI(Graduate School, Tohoku Univ.), Katsumi INOUE(Tohoku Univ.),
 Hisami OHISHI(Kogakuin Univ.)
- 15:20 Development of High Performance Transmission with Small Teeth Number Gear
 *Kohhei SAIKI(Fuji Heavy Industries), Yoshitomo TSUKA(Fuji Heavy Industries)
 and Yoshihiko TAKEUCHI(Fuji Heavy Industries)
- 15:40 Evaluation of Stability Margin of Active Magnetic Bearing System
 *Makoto ITO(Graduate School, NDA), Hiroyuki FUJIWARA(NDA)
 and Osami MATSUSHITA(NDA)

Session 4 : Kinematic Analysis of Robotic Mechanisms (16:10-17:30)

Chair: Yoshihiko NAKAMURA (University of Tokyo)

- 16:10 The Through Motion Characteristics of a 6-DOF Serial Manipulator at the Multiple Singular Point
 *Yasuyoshi TAKI(Graduate School, Tokyo Tech) and Koichi SUGIMOTO(Tokyo Tech)
- 16:30 Velocity and Acceleration Analyses of a Spatial Parallel Manipulator of Three R-R-S Chains Based on the Kinematic Analysis of R-S-S Chain
 *Ryuji HOSHINO(Graduate School, Tokyo Tech), Nobuyuki IWATSUKI(Tokyo Tech)
 and Kouichi MORIKAWA(Tokyo Tech)
- 16:50 Development of Position-Orientation Decoupled Spatial In-parallel Actuated Mechanisms with Six Degrees of Freedom
 *Yukio TAKEDA(Tokyo Tech), Koji KAMIYAMA(Tokyo Tech), Yoshihisa MAKI(Tokyo Tech),
 Masaru HIGUCHI(Tokyo Tech) and Koichi SUGIMOTO(Tokyo Tech)
- 17:10 On the Representations of Wrenches for the Analysis of Mechanisms
 Koichi Sugimoto(Tokyo Tech)
- 17:30 Closing Address by Yoshihiko NAKAMURA
 Vice President, Jc-IFToMM(University of Tokyo)

17:40 Annual Meeting 2004 (17:40-18:10)

Address from president:

Hirofumi MIURA (Kogakuin University)

Chair : Nobuyuki IWATSUKI (Tokyo Institute of Technology)

- 18:40 Wine party
 at Meeting Room 5, 11th Floor, Kogakuin University (Shinjuku Campus)
 The fee is 5,000 Jpn yen and free for students.