The 23rd Symposium on Theory of Machines and Mechanisms

Date: June 9, 2017

Place: Multipurpose Room, 3rd Floor, Ellipse Bldg.,
       Tokyo University of Agriculture and Technology (Koganei Campus)
       2-24-16 Nakamachi, Koganei-shi, Tokyo 184-8588
       (8 min. walk from Higashikoganei Station, JR Chuo Line)

Program:
8:40  Opening Address by Atsuo TAKANISHI
       President, Jc-IIFToMM (Waseda Univ.)

Special Session 1 : Humanoid Robots and Related Technologies (8:45-9:45)
Moderator: Atsuo TAKANISHI (Waseda Univ.)

Chair: Atsuo TAKANISHI (Waseda Univ.)

8:45  Study on Robot that can Grow Like Humans
      -Modeling of Human Physical Growth and Variable Height and Weight Mechanism-
      *Hiroaki HANAI (Graduate Student, Kogakuin Univ.), Hideaki TAKANOBU (Kogakuin Univ.),
      Takayuki MATSUZAWA, Kenji SUZUKI and Hirofumi MIURA

9:00  Passive Device for Bipedal Robots to Walk on Uneven Terrain
      *Kota SUZUI (Graduate Student, TUAT) and Gentiane VENTURE (TUAT)

9:15  Vital Signs Expression by Patient Robot
      *Junya ISHI (Graduate Student, Kogakuin Univ.), Hideaki TAKANOBU (Kogakuin Univ.),
      Toshifumi NAKAJIMA, Kenji SUZUKI and Hirofumi MIURA

9:30  Research on Biped Running Robot Utilizing Pelvic Movement
      -15th Report: Running Speed Estimation Using Joint Angle Sensor-
      *Mutsuki OHARA (Graduate Student, Waseda Univ.), Takaya ISOMICHI, Takuya OTANI (Waseda Univ.),
      Kenji HASHIMOTO, Hun-Ok LIM (Kanagawa Univ.) and Atsuo TAKANISHI (Waseda Univ.)

9:45  Coffee Break

General Session: (10:00-11:00)
Chair: Nobuyuki IWATSUKI (Tokyo Tech.)

10:00 Research about Dynamical Characteristics and Biomechanics of Double Leg Circles on Pommel Horse
     *Ayaka YAMADA (Graduate Student, Univ. of Tokyo), Yosuke IKEGAMI and Yoshihiko NAKAMURA
     (Univ. of Tokyo)

10:15 A Study on an Effective Shape of the Cylindrical Cam for Jumping Motion of Tiny Mobile Robot
     *Katsuaki TANAKA (Graduate Student, Waseda Univ.), Shou INOUE, Hiroya YOKOYAMA,
     Satoshi OKABAYASHI (Bunka Gakuen Univ.), Qing SHI (Beijing Institute of Technology),
     Yusuke SUGAHARA (Tokyo Tech.) and Atsuo TAKANISHI (Waseda Univ.)
10:30 Variable Velocity Function of Swarm Robots
   *Yo OAKU (Graduate Student, Kogakuin Univ.), Hideaki TAKANOBU (Kogakuin Univ.), Satoru HOUKITA,
   Takuya FUJIMORI, Kenji SUZUKI and Hirofumi MIURA

10:45 Predictive Control for a Manipulator Robot with Robustification by Youla Parameter
   *Liz Rincon ARDILA (TUAT), Takuma KATSUMATA and Gentiane VENTURE

11:10 Jc-IFToMM Annual Meeting 2017 (11:10-12:00)
   Address from president:
   Atsuo TAKANISHI (Waseda Univ.)
   Chair : Gentiane VENTURE (TUAT)

12:00 Lunch Break

Industrial Technology Session (poster session): (13:00-13:45)
   Factory Centered Principle -Robot Development Team-
   *Koichi ISHIHARA (Toshin Seisakusho)
   Baseball Batting Motion Analysis using nMotion musculos
   *Shinichi MASUDA (nac Image Technology Inc.)
   Design and Prototyping for Developing New Products - Development of Rehabilitation Device for Ankle Joint -
   *Toshihiro ICHINOSEKI (Abetechnosystem Corp.)

13:15 Coffee Break

Special Session 2 : Techniques to Analyze and Design Mechanisms (14:00-16:45)
   Moderator: Yukio TAKEDA (Tokyo Tech.)
   Chair: Yukio TAKEDA (Tokyo Tech.)

14:00 Development of High Output and High Rigidity Hydraulic Pump Using Fine Ceramics as Structural Material
   *Mitsuo KOMAGATA (Graduate Student, Univ. of Tokyo), Shunsuke SATO, Hiroshi KAMINAGA
   (Univ. of Tokyo) and Yoshihiko NAKAMURA

14:15 Research on Oral Surgical Retractor
   *Hikaru KITAGAWA (Graduate Student, Kogakuin Univ.), Hideaki TAKANOBU (Kogakuin Univ.),
   Yuta SHIMOMAKI, Kenji SUZUKI, Hirofumi MIURA and Akira SHIMIZU (Tokyo Medical Univ.)

14:30 Development of Flexible Actuator with Bag-like Structure
   *Daiki YASUI (Graduate Student, Tokyo Tech.), Takashi IKEDA, Hitoshi KIMURA (Tokyo Tech.)
   and Norio INOU

14:45 Coffee Break
   Chair: Hideaki TAKANOBU (Kogakuin Univ.)

15:00 Kinematic Clearance Sensitivity Analysis of Parallel Mechanism during Acceleration based on d’Alembert’s Principle
   *Masumi OHNO (Graduate Student, Tokyo Tech.) and Yukio TAKEDA (Tokyo Tech.)

15:15 Mobile Robots on Construction Sites: Challenges and Developments
   *Tim DETERT (RWTH Aachen Univ.), Burkhard CORVES, Mathias HÜSING, Jean-Christopher FAUROUX
   (SIGMA Clermont) and Francesco BECCHI (Danieli Telerobot Labs Srl)
15:30  Design and Analysis of an Improved Jansen Leg Mechanism Capable of Passively Adapting to Obstacles  
*Alexander SZIGETI (Graduate Student, Tokyo Tech.), Daisuke MATSUURA (Tokyo Tech.) and Yukio TAKEDA

15:45  Coffee Break  
Chair: Yoshihiko NAKAMURA (Univ. of Tokyo)

16:00  Jacobian Analysis of a 3-UPR Parallel Manipulator for a Robotic Leg Application  
*Matteo RUSSO (Univ. of Cassino and Southern Latium), Yukio TAKEDA (Tokyo Tech.) and Marco CECCARELLI (Univ. of Cassino and Southern Latium)

16:15  A Survey on Fully-Parallel Delta-like Robots with Articulated and Unarticulated Platforms  
*Jan Brinker (RWTH Aachen Univ.), Burkhard CORVES, Mathias HÜSING and Yukio TAKEDA (Tokyo Tech.)

16:30  Transmissibility and Singularity Analysis of 3-PRS Parallel Mechanism Based on Pressure Angle  
*Xinghai LIANG (Graduate Student, Tokyo Tech.) and Yukio TAKEDA (Tokyo Tech.)

16:45  Coffee Break

Special Lectures (17:00-18:00)  
Chair: Yukio TAKEDA (Tokyo Tech.)

Lecture 1:  
Concepts of IFToMM D-A-CH Workshop
Lecturer: Prof. Mathias HÜSING  
Dept. of Mechanism Theory and Dynamics of Machines, RWTH Aachen University, Germany

Lecture 2:  
On Actual Developments of Mechanism Science in Germany (D), Austria (A) & Switzerland (CH) based on IFToMM D-A-CH Workshops
Lecturer: Prof. Burkhard CORVES  
Dept. of Mechanism Theory and Dynamics of Machines, RWTH Aachen University, Germany

18:00  Closing Address by Nobuyuki IWATSUKI  
Vice President, Jc-IFToMM (Tokyo Tech.)

18:10-19:10  TUAT lab tour  
(You can visit 3 labs.)

19:10  Award ceremony and technical discussions (19:10-20:20)  
at Multipurpose Room, 3rd Floor, Ellipse Bldg.  
The fee is 5,000 JPY and free for students.
Way to TUAT Koganei Campus

JR Chuo Line

TUAT Koganei Campus East Gate

POST office

Kuriyama Park

Mini Stop shop

Peacock Market

7 min. Walk

Seven Eleven shop

MOS burger shop

6 min. Walk

JR Higashi koganei Station Nonowa Exit

South Exit

TUAT Street
The Symposium Site is located in the center of the Koganei Campus map, near Building 12: Department of Biotechnology and Life Science, and Building 13: International Center.