

Conference Program

November 22

09:30-09:50	Opening Session		
09:50-10:50	Plenary Session 1		
10:50-11:10	Coffee Break		
	Room 1	Room 2	Room 3
11:10-12:30	1. Mon1-1 Network-based Control Systems I	2. Mon2-1 Advanced Motion Control I	3. Mon3-1 Musculoskeletal Structure Based Robotics I
12:30-14:30	Lunch		
14:30-16:10	4. Mon1-2 Advanced Mechatronics I	5. Mon2-2 Advanced Sensing Systems and Applications I	6. Mon3-2 Image and Signal Processing I
16:10-16:30	Coffee Break		
16:30-18:10	7. Mon1-3 Applied Image Processing for System Control	8. Mon2-3 Advanced Motion Control II	9. Mon3-3 Micro Nano Robotics and Mechatronics I

November 23

09:30-10:30	Plenary Session 2		
10:30-10:50	Coffee Break		
	Room 1	Room 2	Room 3
10:50-12:10	10. Tue1-1 Network-based Control Systems II	11. Tue2-1 Measuring System	12. Tue3-1 Micro Nano Robotics and Mechatronics II
12:10-13:40	Lunch		
13:40-15:20	13. Tue1-2 Human Interactive Control	14. Tue2-2 Advanced Sensing Systems and Applications II	15. Tue3-2 Vision and Control for Access Space (VCAS)
15:20-15:40	Coffee Break		
15:40-17:00	16. Tue1-3 Advanced Mechatronics II	17. Tue2-3 Advanced Motion Control III	18. Tue3-3 Musculoskeletal Structure Based Robotics II
19:00-21:00	Banquet		

November 24

09:30-10:30	Plenary Session 3		
10:30-10:50	Coffee Break		
	Room 1	Room 2	Room 3
10:50-12:30	19. Wed1-1 Haptics for Human Support	20. Wed2-1 Power Assist Systems and Rehabilitation Robots	21. Wed3-1 Image and Signal Processing II
12:30-14:30	Lunch		
14:30-16:10	22. Wed1-2 Advanced Mechatronics III	23. Wed2-2 Sensing Systems and Control	24. Wed3-2 Nonlinear System and Analysis
	Coffee Break		
16:30-17:50	SS on Mechatronics Education		

Monday, 22 November: 11:10-12:30

[Program](#)

Room1

1. Mon1-1

Network-based Control Systems I

Chair :

Co-chair :

YO-000477 **H ∞ Filter-based Robotic Localization and Mapping with Intermittent Measurements**

Hamzah Ahmad, Toru Namerikawa

YO-000876 **A wireless network relay structure for real time control**

Haruka Yamada, Yutaka Uchimura

YO-001694 **Effects of Time-Varying Delays on Signal Transmission and Control System**

Kenji Natori

YO-002755 **A teleoperation system for a remote evaluation of the hand in patients with neurological impairments**

Roberto Oboe, Omar A. Daudy, Stefano Masieroz, Fabio Oscarix, Giulio Rosati

Monday, 22 November: 11:10-12:30

[Program](#)

Room2

2. Mon2-1

Advanced Motion Control I

Chair :

Co-chair :

YO-000248 **Workspace Based Controller Design and Performance Evaluation for MDOF Bilateral System**

Ryosuke Horie, Toshiyuki Murakami

YO-000507 **Bilateral Motion Control based on Spatial Frequency Decomposition with Discrete Fourier Series Expansion**

Yoshiyuki Hatta, Tomoyuki Shimono

YO-000019 **Thrust Wire Load Force Compensation for Sensor-less Bilateral System**

Dapeng Tian, Kouhei Ohnishi

YO-002062 **An experimental platform for the production simulation of a robotic fiber placement cell**

B. Arnault, T. Soriano

Monday, 22 November: 11:10-12:30

[Program](#)

Room3

3. Mon3-1

Musculoskeletal Structure Based Robotics I

Chair :

Co-chair :

YO-001929 **Direct-Drive Musculoskeletal Robot Using Spiral Motors and Dynamics Simulation of Closed Link Mechanism**

Yuuki Wakayama, Yasutaka Fujimoto

YO-001961 **Developments of Muscle Motion Actuators**

S. Obata, H. Matsui, T. Haneyoshi

YO-002496 **Infinity Norm Approach for Maximum Output Force of Manipulators Driven by Bi-articular**

Valerio Salvucci, Sehoon Oh, Yoichi Hori

YO-001678 **Modelling and Control of a Biarticular Robot Manipulator using Spiral Motor**

Ahmad Zaki Shukor, Yasutaka Fujimoto

Monday, 22 November: 14:30-16:10

[Program](#)

Room1

4. Mon1-2

Advanced Mechatronics I

Chair :

Co-chair :

- YO-000833 Mechatronics issues for specification of PLM functionalities and features**
Matthieu Bricogne, Laurent Petit, Ahmed Mohamedou Meyine, Nadège Troussier, Benoît Eynard
- YO-002283 Control of TIG Arc by YAG Laser in Hybrid-welding of Thin Metal Plates**
Y. Murata, K.Yokoyama, A.R.Baskoro, T.Kim, Y.Suga
- YO-002313 Integrated Design for a Mechatronic System with CATIA V6**
R. Plateaux, O. Penas, J.Y. Choley, A. Rivière
- YO-002453 One-to-Many Bilateral Control for Adaptation to Environment**
Takeshi Okura, Seiichiro Katsura
- YO-002623 Anti Swinging Control of Automatic Crane System with Variable Rope Length**
Hisanori Ishino, Toshiyuki Murakami

Monday, 22 November: 14:30-16:10

[Program](#)

Room2

5. Mon2-2

Advanced Sensing Systems and Applications I

Chair :

Co-chair :

- YO-000329 A Face-direction estimation for AIBO**
Kohki Abiko, Taiki Fuji, Hironobu Fukai, Yasue Mitsukura
- YO-001317 MEMS-based Eyeglass Type Wearable Line-of-Sight Detection System**
A. Oikawa, T. Muro, N. Miki
- YO-001341 Disturbance Control for Optical Phase Filter**
Y. Ishigami, S. Takahashi, T. Kawajiri, I. Ishimaru
- YO-002402 Advanced Sensing Systems by DSLR Imaging Detailed Indoor Monitoring on Purpose**
Aurelian Ovidius Trufasu, Andrei Nicolae Cuta, Constantin Nitu, Mihai Musculeanu, Cristina Liliana Trufasu
- YO-002488 Optical Flow Estimation based on Camera Motion and Omni-directional Color Vector**
Masaaki Shibata, Mitsunori Kubota, Masahide Ito

Monday, 22 November: 14:30-16:10

[Program](#)

Room3

6. Mon3-2

Image and Signal Processing I

Chair :

Co-chair :

- YO-000035 Visual Motion Observer-based Pose Control via Image Space Navigation Function**
Toshiyuki Muraio, Hiroyuki Kawai, Masayuki Fujita
- YO-000345 Pyramidal Normal Map Integration for Real-time Photometric Stereo**
Vincent Nozick
- YO-000353 Epipolar Rectification for Autostereoscopic Camera Setup**
Fabrice Boutarel, Vincent Nozick
- YO-001953 Cloth Handling Robot System**
Yoshida Yusuke, Seiji Hata, Junichiro Hayashi, Hirotaka Hojoh, Toshihiro Hamada
- YO-002127 Dynamic background modeling for moving objects detection using a mobile stereo camera**
Alessandro Moro,, Enzo Mumolo, Massimiliano Nolich, Kenji Terabayashi,, Kazunori Umeda

Monday, 22 November: 16:30-18:10

[Program](#)

Room1 7. Mon1-3

Applied Image Processing for System Control

Chair :

Co-chair :

YO-001325 **Object Identification by Hough Data Verification**

Kazuki Ueno, Jun'ichi Yamaguchi

YO-000868 **Query-by-Sketch Image Retrieval Using Edge Relation Histogram as Global and Local Feature**

Yoshiki Kumagai, Toru Arikawa, Gosuke Ohashi

YO-002356 **Information fusion merging for person recognition and localization**

Francois Gatto, Hideyuki Sawada, Eric Benoit

YO-001848 **Virtual Darts Using Image Processing**

Kazunori TSUDA, Kenji TERADA, Karungaru Stephen

YO-001333 **Identification of Concrete Surface Damage using Color Image**

Tomoko Fujidai, Jun'ichi Yamaguchi, Motoki Nagai

Monday, 22 November: 16:30-18:10

[Program](#)

Room2 8. Mon2-3 (SS3)

Advanced Motion Control II

Chair :

Co-chair :

YO-001309 **Horizontal Vibration Isolation with Displacement Cancellation and Negative Stiffness Control**

Shahadat, Mizuno, T., Ishino, Y., Takasaki, M.

YO-001872 **Expression of System Connection Considering Communication Delays and Throughput for Control System Design**

Yusuke Eguchi, Kenji Natori, Yoichi Hayashi

YO-002348 **An Expression of Transparency in Time-Delayed Multilateral Control Systems**

Ryogo Kubo, Naoki Motoi

YO-002631 **Dynamic Modeling and FPGA Speed Controllers for Air-Powered Motorcycle**

Shih-Yao Huang, Yean-Ren Hwang

Monday, 22 November: 16:30-18:10

[Program](#)

Room3 9. Mon3-3

Micro Nano Robotics and Mechatronics I

Chair :

Co-chair :

YO-001015 **Needle positioning method of the sub-pico-liter dispensing mechanism using vibration response of the needle**

Kazuki Hirose, Satoshi Adachihara, Yuuka Irie, Shinnosuke Hirata, Hisayuki Aoyama

YO-002119 **Modeling of parameters variations using differential inclusions**

M. Zerelli, T. Soriano

YO-002445 **Micro-Macro Bilateral Control with Variable Scaling Gain Based on Operational Velocity**

Takahiro Kosugi, Seiichiro Katsura

YO-002682 **Modeling and control of non-contact micromanipulations based on dielectrophoresis**

Mohamed Kharboutly, Michaël Gauthier, Nicolas Chaillet

Tuesday, 23 November: 10:50-12:10

[Program](#)

Room1 10. Tue1-1

Network-based Control Systems II

Chair :

Co-chair :

YO-001988 Control method for time-varying system and its application for network based motion control
Yutaka Uchimura, Masanori Nagahara

YO-002321 A Telescope Robust Preliminary Design with SysML
O. Penas, J-Y. Choley, R. Plateaux

YO-002364 Four-channel Force Reflecting Teleoperation System Based on ISS Small Gain Theorem
Nam Do Duc, Toru Namerikawa

YO-002429 Kalman Filter-based multi-sensor fusion for dynamic positioning of ships
Gerasimos G. Rigatos

Tuesday, 23 November: 10:50-12:10

[Program](#)

Room2 11. Tue2-1

Measuring System

Chair :

Co-chair :

YO-000078 Estimation of Tire-road Friction Coefficient Using Equivalent-Input-Disturbance Approach
Jinhua She, Yuki Ogawa, Kohji Makino, Hiroshi Hashimoto

YO-000442 Study of CO2 density management and a harmful influence
Yuu Nakayama, Daisuke Yoshikawa, Okitoshi Tsunoda

YO-000574 Trial for Distribution Imaging of Global Greenhouse Gas by the Imaging-Type Two-Dimensional Fourier Spectroscopy
Takashi TAKUMA, Takeshi KAWAJIRI, Tomohiro URAKI, Wei QI, Akira NISHIYAMA, Satoru TAKAHASHI, Ichirou ISHIMARU

YO-000914 Development of a minute PCB inspection system by using capacitance
Masanori NOGUCHI, Yukio SAITO, Okitoshi TSUNODA, Hideo TOMITA

Tuesday, 23 November: 10:50-12:10

[Program](#)

Room3 12. Tue3-1(SS4)

Micro Nano Robotics and Mechatronics II

Chair :

Co-chair :

YO-000396 Micro Cantilever Type Tactile Sensor for Dexterous Robot
Wataru Mito, Hirotake Yamazoe, Shunsuke Yoshida, Masahiro Tada

YO-001619 Stabilization study at the sub-nanometer level at the interaction point of the future Compact Linear Collider
G. Balik1, A. Badel, B. Bolzon, L. Brunetti, B. Caron, G. Deleglise, Jeremie, R. Lebreton, J. Lottin, L. Pacquet

YO-000965 Development of a micro-encapsulation method using glass capillaries and thin needles for wide-variety and small-quantity production
Kiyoshi Terasaki, Naoya Hata, Shinnosuke Hirata, Hisayuki Aoyama

YO-001031 Screen Printed Windings for Small-Power Electrical Machines
Patrick Br'auer, Thomas Schuhmann, Ralf Werner

Tuesday, 23 November: 13:40-15:20

[Program](#)

Room1 13. Tue1-2

Human Interactive Control

Chair :

Co-chair :

YO-000027 **Manipulating Objects in Harmonic Motion: Distinctions between Power-Assisted and Manual Manipulation**

S.M.Mizanoor Rahman, Ryojun Ikeura, Ishibashi Shinsuke, Hideki Sawai

YO-000183 **Robust Stabilization Control for an Electric Bicycle**

Takuro Kawamura, Toshiyuki Murakami

YO-001864 **Modal Decomposition Method Based on Principal Component Analysis**

Tatsuhito Watanabe, Seiichiro Katsura

YO-002208 **Multi-Motor Structure and Antagonistic drive for Steer-By-Wire System with Redundancy**

K.Nagasawa, A. Umemura, K. Ohnishi, Y. Saito

YO-002844 **Identification of Biceps Surface Electromyography Signals with Continuous Wavelet Entropy Transform**

Amur ALMANJI , Jen-Yuan (James) CHANG

Tuesday, 23 November: 13:40-15:20

[Program](#)

Room2 14. Tue2-2

Advanced Sensing Systems and Applications II

Chair :

Co-chair :

YO-000175 **Object Tracking Control by Extended Jacobian Matrix Based on Visual information in Autonomous Helicopter**

Hiroya Suzuki, Toshiyuki Murakami

YO-000256 **Intelligent Assistance in Localization for Mobile Robots**

Peshala G. Jayasekara , Young Eun Song, Takeshi Sasaki, Hideki Hashimoto

YO-000418 **3D Localization and Map Matching of urban vehicles**

Sébastien Peyraud , Stéphane Renault, Dominique Meizel

YO-001589 **Development of Distributed Capacitive Sensor with Encapsulated Ferroelectric Liquid**

Y.Hotta, Y.Zhang, N.Miki

YO-002267 **Rider's Action Support Method based on Visual Sensing for Power Assisted Wheelchair**

Shouhei Mabuchi , Naoki Oda

Tuesday, 23 November: 13:40-15:20

[Program](#)

Room3 15. Tue3-2

Vision and Control for Access Space (VCAS)

Chair :

Co-chair :

YO-000086 **Diffusion Control of Particle Filtering for Head Pose and Facial Expression Analysis**

Koichi Takahashiy, Hironobu Fukaiz, Yasue Mitsukura

YO-002305 **Monitoring and In-Process Control of Aluminum Pipe Welding Using Omni-Directional Image Sensor**

R. Masuda, A.S.Baskoro, T.Matsui, Y.Tsumura, Y.Suga

YO-002658 **Human-Aware Guidance Robot using Wireless Sensor Network, RFID, and Vision**

Guillermo Enriquez, Sunhong Park, Shuji Hashimoto

YO-002739 **Representation of Haptic Environment by Using Spatial Laplace Operator**

Yuki Yokokura, Seiichiro Katsura

YO-002917 **Body Shape Estimation by Homologous Human Body Model Fitting**

Shunta Saito , Yoshimitsu Aoki, Masaaki Mochimaru , Makiko Kochi

Tuesday, 23 November: 15:40-17:00

[Program](#)

Room1 16. Tue1-3

Advanced Mechatronics II

Chair :

Co-chair :

YO-000825 Modeling of a digital electromagnetic actuators array

L. Petit, P. Huyan, C. Prella, F. Lamarque, E. Doré

YO-002224 Attitude Control of a Pipe Inspection Robot Using Laser Pointers

T. Yokoyama, M. Kikushima, M. Rezaghorizadeh, M. Muramatsu, Y. Suga

YO-002275 Control of Scan Path and Scan Speed for Laser Welding on the Fly

Sung Jo Kwak, Tsutomu Hasegawa, Hee Sin Kang

YO-002526 Multi-physics Issues for 3D Electronics

J-Y. Choley, M. Hammadi, B. Roumizadeh, O. Penas

Tuesday, 23 November: 15:40-17:00

[Program](#)

Room2 17. Tue2-3

Advanced Motion Control III

Chair :

Co-chair :

YO-000426 Progress Report on Haptic Robot Hand II with Thrust Wires and PE Lines

Yusuke Suzuki, Kouhei Ohnishi

YO-000493 Acquisition of Bone Structure in Drilling Process Using Cutting Force Estimation

Yusuke Kasahara, Kouhei Ohnishi, Hiromasa Kawana

YO-001023 Admittance Control of a Multi-Finger Arm Robot Using Manipulability of Fingers

Jian HUANG, Takayuki HORI, Nozomi TOYODA, Tetsuro YABUTA

YO-002518 H_{∞} Control of Systems with Time-Delayed Actuators

M. N. Alpaslan Parlak¹, Ibrahim B. Kuc, Utkdemir

Tuesday, 23 November: 15:40-17:00

[Program](#)

Room3 18. Tue3-3

Musculoskeletal Structure Based Robotics II

Chair :

Co-chair :

YO-002194 Tension Distribution Considering Tension Limit for 2-Joint Arm with 3 Pairs of 6 Tendons

Shota Mori, Satoshi Komada, Junji Hirai

YO-002437 Transition of Bipedal Robot Control Law Using Neural Network

Y. Nara, K. Nakazawa

YO-002763 Swimming Motion of a Lancelet Robot with Flexible Notochord Mechanism

Toshiaki Tsuji, Tomonori Yokoh, Makoto Kamibayashi

YO-002925 Walking-Sensation Feedback Control System with Gravity Compensation of Swing Leg

Kazuki Nagase, Seiichiro Katsura

Wednesday, 24 November: 10:50-12:30

[Program](#)

Room1 19. Wed1-1

Haptics for Human Support

Chair :

Co-chair :

YO-000841 **Improvement of Safety and Comfort by Haptic Pedal in Inter-Vehicular Distance Control of an Electric Vehicle**

Daisuke Jimbo, Toshiyuki Murakami

YO-001171 **Sensorless Force Sensing Using Kalman Filtering Techniques for Bilateral Control System**

Chowarit Mitsantisuk , Thao Phuong Tran, Kiyoshi Ohishi, Seiichiro Katsura

YO-001732 **MEMS-Based Tactile Display Using Large Displacement Actuators Arrays**

H. Ishikawa, X. Arouette, Y. Matsumoto, N. Miki

YO-002674 **An Analysis of the Motion-Copying System**

Noboru Tsunashima, Seiichiro Katsura

YO-002909 **An Ungrounded Force Feedback Device Using Gyroscopic Torque**

Yuri Yamamoto, Kenjiro Takemura

Wednesday, 24 November: 10:50-12:30

[Program](#)

Room2 20. Wed2-1

Power Assist Systems and Rehabilitation Robots

Chair :

Co-chair :

YO-001627 **Hydraulic assist drive electronically controlled for on-road and off-road vehicles AddiDrive™ Assist, a dedicated mechatronics solution to improve the mobility of on-road and off-road vehicles**

David Marcy , Masataka Tsuyama, Yoji Hirose

YO-001996 **Motion control of a multi-dof grasper manipulator for laparoscopic surgery**

Remi ROSSET-LANCHET, Christine BARTHOD, Jeremy OLLAGNIER, Max GIORDANO, Olivier SKOWRON

YO-002259 **Joint Control of Biped Robot with Elastic Joints**

Takahiro Suga, Yasutaka Fujimoto

YO-002747 **Real-time Control of Power Assist Device for Human Elbow Motion Support Using EMG Signal**

Chi Zhu, Masayuki Suzuki, Shota Shimazu, Masashi Oda, Masataka Yoshioka, Tomohiro Nishikawa

YO-001945 **Design of the SEU Power-Assistant Exoskeleton (SPAEX) and Improvement of the SPAEX by the use of Tendon-sheath**

JIA Shan, HAN Yali, NIU Weiqiang, WANG Xingsong

Wednesday, 24 November: 10:50-12:30

[Program](#)

Room3 21. Wed3-1

Image and Signal Processing II

Chair :

Co-chair :

YO-000051 **A Discussion of Neural Network Simplification Based on Genetic Algorithm**

Satoru Suzuki , Yasue Mitsukura

YO-000337 **Music Effects Analysis for Image Impression –The Relation between Physical Feature and Kansei Information**

Keiko Sato, Yasue Mitsukura

YO-002186 **Nano-Level 3-D sharp Measurement Using Color Analysis of RGB LED Light Interference Fringes**

Daichi Kimura, Sheiji Hata, Jun-ichiro Hayashi, Masakatsu Iwamoto, Shigeaki Morimoto, Hiroaki Kobayashi

YO-002399 **Efficient Computation of Optical Flow using Complementary Voting**

Ming Fang, Hidenori Takauji, Shun'ichi Kaneko

YO-002712 **Robust Age Estimation for Face Posture Change**

Hironobu Fukai, Hironori Takimoto, Yasue Mitsukura, Minoru Fukumi

Wednesday, 24 November: 14:30-16:10

[Program](#)

Room1 22. Wed1-2

Advanced Mechatronics III

Chair :

Co-chair :

YO-000191 **Robust Inter-vehicular Distance Control in Vehicle Tracking considering Cornering**

Byounggyu Kim, Toshiyuki Murakami

YO-001104 **Analysis of tool control of hydraulic equipment for load non reversal**

Mamadou C. Diouf, Jacques Lottin, Youssef Chinoune

YO-000639 **Step Climbing Control in Pushing Operation by Mobile Manipulator**

Yusuke Fujimoto, Toshiyuki Murakami

YO-001651 **Long-Life Test of an Optically Controlled Bistable Actuator**

Sajid Zaidi, Fr'ed'eric Lamarque, Christine Prelle, Olivier Carton, Nassim Boudaoud, Zohra Cherfi

YO-002887 **Development of a Laser Range Finder Guided Autonomous Mobile Robot**

Ludovic FARGEAUDOUX, Jen-Yuan (James) CHANG

Wednesday, 24 November: 14:30-16:10

[Program](#)

Room2 23. Wed2-2

Sensing Systems and Control

Chair :

Co-chair :

YO-000167 **A Realization of Stable Configuration for Operational Object by Compliance Control Based Mobile Manipulator with Dual Arms**

Kenichiro Murai, Toshiyuki Murakami

YO-000647 **Feasibility Demonstration of Real-Time Measurement by One-Shot Compact Fourier Spectroscopic Imaging**

Tomohiro URAKI, Ichirou ISHIMARU

YO-001163 **Study of a fatigue analysis method in a manual assembly**

Kazuki Kanda, Shunichi Uno, Okitoshi Tsunoda

YO-002933 **Feasibility Study of GPGPU Acceleration for PC-based Control**

Keita Koyama, Takahiro Yakoh

YO-002704 **Direct Lyapunov Method for Stabilizing Pendulum on a Cart System**

Turker Turker, Haluk Gorgun, Galip Cansever

Wednesday, 24 November: 14:30-16:10

[Program](#)

Room3 24. Wed3-2

Nonlinear System and Analysis

Chair :

Co-chair :

YO-000787 **A new non linear energy harvesting approach for inertial electromagnetic micro-generator**

A. Badel, E. Arroyo, F. Formosa

YO-001147 **A Stabilization Control of Hanging Load by Two-Wheels Driven Mobile Manipulator Based on Absolute Coordinate**

Mayuko WATANABE, Toshiyuki MURAKAMI

YO-001554 **Force Control of 3-Mass Resonant System Based on Resonance Ratio Control**

Shutaro Yorozu, Seiichiro Katsura

YO-002143 **SINGLE DEGREE OF FREEDOM ACTIVE ISOLATION USING AMPLIFIED PIEZOELECTRIC ACTUATOR WITH A HYSTERESIS COMPENSATION METHOD**

R. Le Breton, A. Badel, J. Lottin

YO-002666 **Construction of Heat Inflow Control System Based on Disturbance Heat Flow Estimation**

Hidetaka Morimitsu, Seiichiro Katsura