

2015 IEEE International Conference on Advanced Intelligent Mechatronics

(AIM 2015)

**Busan, South Korea
7-11 July 2015**

Pages 1-902



**IEEE Catalog Number: CFP15775-POD
ISBN: 978-1-4673-9108-5**

Content List of 2015 IEEE/ASME International Conference on Advanced Intelligent Mechatronics

Technical Program for Tuesday July 7, 2015

TuAT2	207-2
Underwater Robotics Applications (Workshop)	
09:30-12:00	TuAT2.1
<i>Underwater Robotics Applications*</i> .	
Baek, Woon Kyung	Pukyong National Univ
Ha, Kyoung Nam	Korea Inst. of Industrial Tech
TuBT1	207-1
Recent Advances in Mechatronics for Intelligent Manufacturing (Workshop)	
13:00-16:45	TuBT1.1
<i>Recent Advances in Mechatronics for Intelligent Manufacturing*</i> .	
Lee, Kok-Meng	Georgia Inst. of Tech
TuCT2	207-2
Rehabilitation and Medical Robotics (Workshop)	
14:00-17:30	TuCT2.1
<i>Rehabilitation and Medical Robotics</i> *.	
Bae, Joonbum	UNIST

Technical Program for Wednesday July 8, 2015

WeAT1	201
Machine Vision (Regular Session)	
Chair: Priggemeyer, Marc	RWTH-Aachen Univ
Co-Chair: Ha, Cheolkeun	Univ. of Ulsan
08:45-09:05	WeAT1.1
<i>Hand-Eye Calibration Using Stereo Camera through Pure Rotations -Fitting Circular Arc in 3D Space with Joint Angle Constraint</i> , pp. 1-6.	
Li, Jianhua	Tokyo Inst. of Tech
Endo, Gen	Tokyo Inst. of Tech
Fukushima, Edwardo F.	Tokyo Univ. of Tech
09:05-09:25	WeAT1.2
<i>Unknown Object Grasping Using Force Balance Exploration on a Partial Point Cloud</i> , pp. 7-14.	
Lei, Qujiang	Delft Univ. of Tech
Wisse, Martijn	Delft Univ. of Tech
09:25-09:45	WeAT1.3
<i>Pose Estimation and Trajectory Calculation for Autonomous Close-Range Rendezvous and Docking</i> , pp. 15-20.	
Priggemeyer, Marc	RWTH-Aachen Univ
Dimartino, Magdalena	Inst. for Man-Machine Interaction, RWTH Aachen Univ
Rossmann, Juergen	RWTH Aachen Univ
09:45-10:05	WeAT1.4
<i>Detection of Pedestrian Crossing Road Using Action Classification Model</i> , pp. 21-24.	
Hariyono, Joko	Univ. of Ulsan
Jo, Kang-Hyun	Univ. of Ulsan
10:05-10:25	WeAT1.5
<i>An Efficient Approach for Circular Shape Target Recovery</i> , pp. 25-28.	
Tran, Thi Trang	Univ. of Ulsan
Ha, CheolKeun	Univ. of Ulsan
10:25-10:45	WeAT1.6
<i>Automatic Landing for Fixed-Wing UAV Using Stereo Vision with a Single Camera and an Orientation Sensor: A Concept</i> , pp. 29-34.	
Sereewattana, Montika	Kasetsart Univ
Ruchanurucks, Miti	Kasetsart Univ
Rakprayoon, Panjawee	Kasetsart Univ
Siddhichai, Supakorn	Nectec, Nstda
Hasegawa, Shoichi	Tokyo Inst. of Tech
WeAT2	202
Computational Models and Methods (Regular Session)	
Chair: Pagliarini, Luigi	DTU
Co-Chair: Kusaka, Takashi	Hokkaido Univ
08:45-09:05	WeAT2.1
<i>Valve Dynamics in Multi-Cylinder Positive Displacement Pump Model</i> , pp. 35-41.	
Josifovic, Aleksandar	Univ. of Strathclyde
Corney, Jonathan	Heriot-Watt Univ
Davies, Bruce	Heriot-Watt Univ
09:05-09:25	WeAT2.2
<i>Residual Correction Method for Fast Calculation of Arctangent in Embedded Systems</i> , pp. 42-47.	
Kusaka, Takashi	Hokkaido Univ
Tanaka, Takayuki	Hokkaido Univ

Kajiwara, Hidekazu	Muroran Inst. of Tech
09:25-09:45	WeAT2.3
<i>Measurement of the Mechanical Power of an EAP Based Pump</i> , pp. 48-53.	
Chavanne, Jonathan	Ec. Pol. Fédérale De Lausanne (EPFL)
Germano, Paolo	EPFL
Civet, Yoan	EPFL
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)
09:45-10:05	WeAT2.4
<i>Autonomous Formation Selection for Ground Moving Multi-Robot Systems</i> , pp. 54-59.	
Yu, Shuang	Monash Univ
Barca, Jan Carlo	Monash Univ
10:05-10:25	WeAT2.5
<i>A Modern Artificial Intelligence Playware Art Tool for Psychological Testing of Group Dynamics</i> , pp. 60-65.	
Pagliariini, Luigi	DTU
Lund, Henrik Hautop	Tech. Univ. of Denmark
10:25-10:45	WeAT2.6
<i>A Heated Needle Micromanipulator with Hybrid Control for Heat-Caused Denaturation in Proteins (I)</i> , pp. 66-70.	
Boksuwan, Sungwan	King Mongkut's Inst. of Tech. Ladkrabang (KMITL)
Benjanarasuth, Taworn	King Mongkut's Inst. of Tech. Ladkrabang (KMITL)
Aoyama, Hisayuki	Univ. of Electro-Communications
WeAT3	206-1
Modeling and Design of Mechatronic Systems I (Regular Session)	
Chair: Wang, Jihong	Univ. of Warwick
Co-Chair: Zhang, Gaonan	Inst. of Systems Engineering, China Acad. of Engineering Physics
08:45-09:05	WeAT3.1
<i>Design of a General Resilient Robotic System Based on Axiomatic Design Theory</i> , pp. 71-78.	
Zhang, Tan	Univ. of Saskatchewan
Zhang, Dan	Univ. of Ontario Inst. of Tech
Gupta, Madan M.	Univ. of Saskatchewan, CA
Zhang, Wenjun	Univ. of Saskatchewan
09:05-09:25	WeAT3.2
<i>Dynamic Modelling of a Hybrid Wind Turbine in Connection with Compressed Air Energy Storage through a Power Split Transmission Device</i> , pp. 79-84.	
Krupke, Christopher	Univ. of Warwick
Wang, Jihong	Univ. of Warwick
Clarke, Jonathan	Univ. of Warwick
Luo, Xing	The Univ. of Warwick
09:25-09:45	WeAT3.3
<i>The Pin-Lock Based Moving Mechanism of Wall Climbing Robot for the Reconfigurable Intelligent Space</i> , pp. 85-90.	
Park, JongSeung	Ritsumeikan Univ
Lee, Joo-Ho	Ritsumeikan Univ
09:45-10:05	WeAT3.4
<i>Nonlinearly Enhanced Vortex Induced Vibrations for Energy Harvesting</i> , pp. 91-96.	
Huynh, Bao Huy	Nanyang Tech. Univ
Tjahjowidodo, Tegoeh	Nanyang Tech. Univ

Zhong, Zhaowei	Nanyang Tech. Univ
Wang, Youyi	Nanyang Tech. Univ
Narasimalu, Srikanth	Energy Res. Inst. @NTU, Singapore

10:05-10:25 WeAT3.5

Kinematic Modelling of Cable Wrapping on Rigid-Link Phenomenon in Cable-Driven Parallel Manipulators, pp. 97-103.

Lei, Man Cheong	The Univ. of Melbourne
Oetomo, Denny	The Univ. of Melbourne

WeAT4 206-2
Legged Robots (Regular Session)

Chair: Seo, TaeWon	Yeungnam Univ
Co-Chair: Li, Xiaoqi	Inst. of Automation, Chinese Acad. of Science

08:45-09:05 WeAT4.1

Height Adjustable Multi-Legged Giant Yardwalker for Variable Presence, pp. 104-109.

Lee, Dong-Jun	Ritsumeikan Univ
Park, Minkee	Seoul National Univ. of Science and Tech
Lee, Joo-Ho	Ritsumeikan Univ

09:05-09:25 WeAT4.2

High Speed Running of Flat Foot Biped Robot with Inerter Using SLIP Model, pp. 110-115.

Doan, Nhat Thanh	Tokyo Inst. of Tech
Hayashi, Terumitsu	Tokyo Inst. of Tech
Yamakita, Masaki	Tokyo Inst. of Tech

09:25-09:45 WeAT4.3

Gait Design by Graph Coloring for Robots That Have Legs on Their Faces, pp. 116-120.

Mikami, Sadayoshi	Future Univ. Hakodate
Fukuda, Tomohisa	Future Univ. Hakodate
Suzuki, Sho'ji	Future Univ. -Hakodate

09:45-10:05 WeAT4.4

Hexapedal Robot for Amphibious Locomotion on Ground and Water, pp. 121-126.

Kim, Hyungyu	YeungNam Univ
Lee, Dong Gyu	Yeunnam Univ
Liu, Yanheng	YeungNam Univ
Jeong, Kyungmin	KAERI
Seo, TaeWon	Yeungnam Univ

10:05-10:25 WeAT4.5

VLR : Cockroach Millirobot with Load Decoupling Structure, pp. 127-132.

Yun, Dongwon	Kim, Korea
Fearing, Ronald	Univ. of California at Berkeley

WeAT5 207-1
Medical Robotics/Mechatronics (Regular Session)

Chair: Gao, Wenchao	National Univ. of Singapore
Co-Chair: Yu, Yong	Kagoshima Univ

08:45-09:05 WeAT5.1

Using Heterogeneous Sensory Measurements in a Compliant Magnetic Localization System for Medical Intervention, pp. 133-138.

Sun, Zhenglong	Singapore Univ. of Tech. and Design
Foong, Shaohui	Singapore Univ. of Tech. and Design

Marechal, Luc	Singapore Univ. of Tech. and Design
---------------	--

Teo, Tee Hui	Singapore Univ. of Tech. and Design
--------------	--

Tan, U-Xuan	Singapore Univ. of Tech. and Design
-------------	--

Shabbir, Asim	National Univ. Health System
---------------	------------------------------

09:05-09:25 WeAT5.2

Research of Rehabilitation Aid System by DOF Constraintable Mechanism and NMES for Hemiplegic Upper Limbs (I), pp. 139-144.

Taniguchi, Koutaro	Kagoshima Univ
Yu, Yong	Kagoshima Univ
Noma, Tomokazu	Kagoshima Univ
Hayashi, Ryota	Kagoshima Univ
Matsumoto, Shuji	Kagoshima Univ
Shimodozono, Megumi	Kagoshima Univ
Kawahira, Kazumi	Kagoshima Univ

09:25-09:45 WeAT5.3

Silicone Retractor with Embedded Force-Sensing Function for Attachment to Surgical Suction Pipes (I), pp. 145-150.

Koyama, Toshio	Kanazawa Univ
Iwai, Takano	Kanazawa Univ
Yoneyama, Takeshi	Kanazawa Univ
Kagawa, Hiroyuki	Kanazawa Univ
Nakada, Mitsutoshi	Kanazawa Univ
Hayashi, Yutaka	Ishikawa Prefectural Central Hospital
Watanabe, Tetsuyou	Kanazawa Univ

09:45-10:05 WeAT5.4

Dexterity and Functionality Enhancement of the SJTU Unfoldable Robotic System, pp. 151-157.

Xu, Kai	Shanghai Jiao Tong Univ
Dai, Zhengchen	Shanghai Jiao Tong Univ
Zhao, Jiangran	Shanghai Jiao Tong Univ
Mei, Wukun	Shanghai Jiao Tong Univ

10:05-10:25 WeAT5.5

Design and Torque-Mode Control of a Cable-Driven Rotary Series Elastic Actuator for Subject-Robot Interaction, pp. 158-164.

Lu, Junkai	Univ. of California, Berkeley
Haninger, Kevin	Univ. of California, Berkeley
Chen, Wenjie	Univ. of California, Berkeley
Tomizuka, Masayoshi	Univ. of California, Berkeley

WeAT6 207-2
Biomechatronics (Regular Session)

Chair: Alici, Gursel	Univ. of Wollongong
Co-Chair: Sheng, Xinjun	Shanghai Jiao Tong Univ

08:45-09:05 WeAT6.1

A Soft Robotic Exoskeleton Utilizing Granular Jamming, pp. 165-170.

Thompson-Bean, Elliot	The Univ. of Auckland
Steiner, Oliver	The Univ. of Auckland
McDaid, Andrew	The Univ. of Auckland

09:05-09:25 WeAT6.2

Optimizing a Hemodynamic Model in the Human Motor Cortex, pp. 171-176.

Nguyen, Hoang-Dung	Pusan National Univ
Hong, Keum-Shik	Pusan National Univ

09:25-09:45 WeAT6.3

Inertial Sensor Based Inverse Dynamics Analysis of Human Motions, pp. 177-182.

Min, Seojung KAIST
Kim, Jung KAIST

09:45-10:05 WeAT6.4

KARL: A New Bio-Inspired Modular Limb for Robotic Applications, pp. 183-188.

D'Imperio, Mariapaola Istituto Italiano Di Tecnologia
Carbonari, Luca Istituto Italiano Di Tecnologia
Rahman, Nahian Istituto Italiano Di Tecnologia
Canali, Carlo Department of Advanced Robotics, Istituto Italiano Di Tecnologia
Cannella, Ferdinando Istituto Italiano Di Tecnologia

10:05-10:25 WeAT6.5

Optimization of Multiple Arc-Shaped Magnets for Drug Delivery in a Capsule Robot, pp. 189-195.

Munoz, Fredy Univ. of Wollongong
Alici, Gursel Univ. of Wollongong
Li, Weihua Univ. of Wollongong

10:25-10:45 WeAT6.6

Towards Zero Training for Myoelectric Control Based on a Wearable Wireless Seng Armband, pp. 196-201.

Guo, Weichao Shanghai Jiao Tong Univ
Sheng, Xinjun Shanghai Jiao Tong Univ
Liu, Jianwei Shanghai Jiao Tong Univ
Hua, Lei Shanghai Jiao Tong Univ
Zhang, Dingguo Shanghai Jiao Tong Univ
Zhu, Xiangyang Shanghai Jiao Tong Univ

WeAT7 208-1
Identification and Estimation in Mechatronics (Regular Session)

Chair: Perruquetti, Wilfrid Ec. Centrale De Lille
Co-Chair: Li, Cong Zhejiang Univ

08:45-09:05 WeAT7.1

Altitude Estimation Using Particle Filter with Monopulse Radars in a Multipath Environment, pp. 202-207.

Takabayashi, Yuki Mitsubishi Electric Corp
Kurazume, Ryo Kyushu Univ
Yasushi, Obata Mitsubishi Electric Corp

09:05-09:25 WeAT7.2

Parameter Estimation of Sandwich Systems with Backlash Via Modified Kalman Filter, pp. 208-213.

Li, Yanyan Nankai Univ
Tan, Yonghong Shanghai Normal Univ
Li, Haifen Nankai Univ
Dong, Ruili Shanghai Normal Univ

09:25-09:45 WeAT7.3

Dual Drive System Modeling and Analysis for Synchronous Control of an H-Type Gantry, pp. 214-219.

Li, Cong Zhejiang Univ
Yao, Bin Purdue Univ
Zhu, Xiaocong Zhejiang Univ
Wang, Qingfeng Zhejiang Univ

09:45-10:05 WeAT7.4

Identification of Robot Dynamic Parameters Using Jacobi Differentiator, pp. 220-225.

Guo, Qi Ec. Centrale De Lille
Gautier, Maxime Univ. of Nantes/IRCCyN

Liu, Da-Yan INSA Centre Val De Loire, Campus De Bourges

Perruquetti, Wilfrid Ec. Centrale De Lille

10:05-10:25 WeAT7.5

DIDIM-CLIE Method for Dynamic Parameter Identification of Flexible Joint Robots, pp. 226-231.

Jubien, Anthony Univ. De Nantes
Gautier, Maxime Univ. of Nantes/IRCCyN
Janot, Alexandre ONERA

10:25-10:45 WeAT7.6

A Novel Way-Finding Method Based on Geomagnetic Field Effects and Magnetic Tensor Measurements for Visually Impaired Users, pp. 232-237.

Lee, Kok-Meng Georgia Tech. Univ. of Sci & Tech

Li, Min Georgia Inst. of Tech

Lin, Chun-Yeon Georgia Inst. of Tech

WePlenary_Session 201 & 202

Plenary Session I (Plenary Session)

Chair: Kim, Sungshin Pusan National Univ

11:30-12:30 WePlenary_Session.1

*Robots for Micro-Nanohandling**.

Gauthier, Michael FEMTO-ST Inst

WeBT1 201

Planning and Navigation (Regular Session)

Chair: Oftadeh, Reza Tampere Univ. of Tech

Co-Chair: Choi, Joon Young Pusan National Univ

13:45-14:05 WeBT1.1

Force Control of a 4WS4WD Vehicle for Path Tracking, pp. 238-243.

Dai, Penglei The Univ. of New South Wales
Katupitiya, Jayantha The Univ. of New South Wales

14:05-14:25 WeBT1.2

Informed RRT towards Optimality by Reducing Size of Hyperellipsoid*, pp. 244-248.

Kim, Min-Cheol Korea Univ
Song, Jae-Bok Korea Univ

14:25-14:45 WeBT1.3

Terrain Aided Navigation for Long-Range AUVs Using a New Bathymetric Contour Matching Method, pp. 249-254.

Zhou, Ling Southeast Univ
Cheng, Xianghong Southeast Univ
Zhu, Yixian Southeast Univ
Lu, Yuan HS Marine Company

14:45-15:05 WeBT1.4

Iterative Polynomial-Based Trajectory Extension for Mobile Robot, pp. 255-260.

Kawabata, Kuniaki RIKEN
Ma, Liang Xi'an Jiaotong Univ
Xue, Jianru Xi'an Jiaotong Univ
Yokota, Sho Toyo Univ
Mitsukura, Yasue Graduate School of Bio-Applications and System Engineering

Zheng, Nanning Xi'an Jiaotong Univ

15:05-15:25 WeBT1.5

Vision-Based Path Coordination for Multiple Mobile Robots with Four Steering Wheels Using an Overhead Camera, pp. 261-268.

Ziaei, Zahra	Tampere Univ. of Tech
Ofstadeh, Reza	Tampere Univ. of Tech
Mattila, Jouni	Tampere Univ. of Tech

15:25-15:45 WeBT1.6

An Intelligent Fault-Tolerant Strategy for AUV Integrated Navigation Systems, pp. 269-274.

Zhu, Yixian	Southeast Univ
Cheng, Xianghong	Southeast Univ
Wang, Lei	Southeast Univ
Zhou, Ling	Southeast Univ

WeBT2 202
Human-Machine Interfaces (Regular Session)

Chair: Malvezzi, Monica	Univ. of Siena
Co-Chair: Yamakawa, Yuji	Univ. of Tokyo

13:45-14:05 WeBT2.1

Number-Based Information and Its Application to Human Mind State Inference in Human-Machine Collaborative Systems, pp. 275-280.

Yang, Chun	Univ. of Saskatchewan
Lin, Yingzi	Northeastern Univ
Zhang, Wenjun	Univ. of Saskatchewan
Zhang, Hongbo	East China Univ. of Science and Tech
Lu, Haili	Univ. of Saskatchewan

14:05-14:25 WeBT2.2

Human-Robot Cooperative Task Realization Using High-Speed Robot Hand System, pp. 281-286.

Yamakawa, Yuji	Univ. of Tokyo
Kuno, Kazuki	Univ. of Tokyo
Ishikawa, Masatoshi	Univ. of Tokyo

14:25-14:45 WeBT2.3

On Redundant Human-Robot Interface: Concept and Design Principle, pp. 287-292.

Xue, Lihua	School of Mechanical and Power Engineering, East China Univ
Liu, Changjun	School of Mechanical and Power Engineering, East China Univ
Lin, Yingzi	Northeastern Univ
Zhang, Wenjun	Univ. of Saskatchewan

14:45-15:05 WeBT2.4

Design and Development of a 3RRS Wearable Fingertip Cutaneous Device, pp. 293-298.

Chinello, Francesco	Univ. of Siena
Malvezzi, Monica	Univ. of Siena
Pacchierotti, Claudio	Univ. of Siena
Prattichizzo, Domenico	Univ. Di Siena

15:05-15:25 WeBT2.5

Analysis of Individual Driving Experience in Autonomous and Human-Driven Vehicles Using a Driving Simulator, pp. 299-304.

Manawadu, Udara	Waseda Univ
Ishikawa, Masaaki	Waseda Univ
Kamezaki, Mitsuhiro	Waseda Univ
Sugano, Shigeki	Waseda Univ

15:25-15:45 WeBT2.6

Enhanced Teleoperation of UAVs with Haptic Feedback, pp. 305-310.

Kanso, Ali	American Univ. of Beirut
Elhaji, Imad	American Univ. of Beirut
Shammas, Elie	American Univ. of Beirut

Asmar, Daniel American Univ. of Beirut

WeBT3 206-1
Modeling and Design of Mechatronic Systems II (Regular Session)

Chair: Wang, Kai	SYSU-CMU Joint Inst. of Engineering
Co-Chair: Zhang, Dan	Univ. of Ontario Inst. of Tech

13:45-14:05 WeBT3.1

Playful Home Training for Falls Prevention, pp. 311-317.

Jessen, Jari Due	Tech. Univ. of Denmark
Lund, Henrik Hautop	Tech. Univ. of Denmark

14:05-14:25 WeBT3.2

Design of a Two Degree of Freedom Resonant Miniature Robotic Leg, pp. 318-323.

Rios, Shannon Andrew	Univ. of Newcastle
Fleming, Andrew J.	Univ. of Newcastle
Yong, Yuen Kuan	The Univ. of Newcastle

14:25-14:45 WeBT3.3

Optimization Design of a Novel Closed-Loop Spray Cooling System, pp. 324-329.

Zhang, Hongsheng	Beihang Univ
Li, Yun-Ze	Beihang Univ
Mao, Yufeng	Beihang Univ
Tian, Shaoping	Beihang Univ
Liu, Yang	Beihang Univ
Yang, Liman	Beihang Univ

14:45-15:05 WeBT3.4

Kinematic Analysis and Optimization for 4PUS-RPU Mechanism, pp. 330-335.

Zhang, Dan	Univ. of Ontario Inst. of Tech
Wei, Bin	Univ. of Ontario Inst. of Tech

15:05-15:25 WeBT3.5

Multi-Joint Gripper - Control of Envelope Gripping -, pp. 336-341.

Sayama, Kazuhiro	Tokai Univ
Tamamoto, Takumi	Tokai Univ
Koganezawa, Koichi	Tokai Univ

15:25-15:45 WeBT3.6

Analytical Modeling of Piezoelectric Charge Gated Thin Film Transistor for Force Sensing and Energy Harvesting, pp. 342-346.

Li, Weiwei	Carnegie Mellon Univ. SYSU-CMU Joint Inst. of Engineer
Weldon, Jeffrey	Carnegie Mellon Univ
Wang, Kai	SYSU-CMU Joint Inst. of Engineering

WeBT4 206-2
Artificial Intelligence in Mechatronics (Regular Session)

Chair: Zhang, Yuming	Univ. of Kentucky
Co-Chair: Kim, Euntai	Yonsei Univ

13:45-14:05 WeBT4.1

Welder Rating System Based Learning of Human Welder Intelligence in GTAW, pp. 347-352.

Liu, Yukang	Univ. of Kentucky
Zhang, Yuming	Univ. of Kentucky

14:05-14:25 WeBT4.2

Integrating Modular Mechatronic Systems for Immersive Performances, pp. 353-358.

Pagliarini, Luigi	DTU
Lund, Henrik Hautop	Tech. Univ. of Denmark
14:25-14:45	WeBT4.3
<i>Pose Estimation and 3D Environment Reconstruction Using Less Reliable Depth Data</i> , pp. 359-364.	
Jo, Sungjin	Yonsei Univ
Jo, HyungGi	Yonsei Univ
Cho, Hae Min	Yonsei Univ
Kim, Euntai	Yonsei Univ
14:45-15:05	WeBT4.4
<i>Adaptive Friction Compensation for Hand Grasping and Compliant Control</i> , pp. 365-370.	
Sadun, Amirul Syafig	Univ. Tun Hussein Onn Malaysia (UTHM)
Jalani, Jamaludin	Univ. Tun Hussein on Malaysia
Abdul Sukor, Jumadi	Univ. Tun Hussein Onn Malaysia (UTHM)
15:05-15:25	WeBT4.5
<i>Torque Ripple Reduction of Switched Reluctance Motor Drive with Adaptive Sliding Mode Control and Particle Swarm Optimization</i> , pp. 371-376.	
Namazi, Mohammad Masoud	Isfahan Univ. of Tech
Mansouri Borujeni, Mojtaba	Isfahan Univ. of Tech
Rashidi, Amir	Isfahan Univ. of Tech
Saghaian-nejad, Sayed Morteza	Isfahan Univ. of Tech
Ahn, Jin-Woo	Kyungsoong Univ
15:25-15:45	WeBT4.6
<i>Anomalous Propagation Echo Detection Using Artificial Neural Network and Doppler Velocity Features</i> , pp. 377-381.	
Lee, Hansoo	Pusan National Univ
Kim, Eun Kyeong	Pusan National Univ
Kim, Sungshin	Pusan National Univ
WeBT5 207-1	
Electric and Hydraulic Actuators and Their Applications I (Organized Session)	
Chair: Jiao, Zongxia	Beihang Univ
Co-Chair: Yan, Liang	Beijing Univ. of Aeronautics and Astronautics
Organizer: Yan, Liang	Beijing Univ. of Aeronautics and Astronautics
Organizer: Jiao, Zongxia	Beihang Univ
13:45-14:05	WeBT5.1
<i>Reliability Assessment of Aircraft Power and Actuation System Based on Three-Axis Control (I)</i> , pp. 382-387.	
Cui, Xiaoyu	Beihang Univ
Wang, Shaoping	Beihang Univ
Li, Qian	Beihang Univ
Shi, Jian	Beihang Univ
14:05-14:25	WeBT5.2
<i>Optimization Design of the Inner Radius of the Sealing Surface of Slipper (I)</i> , pp. 388-395.	
Wang, Qiannan	Zhejiang Univ
Xu, Bing	ZheJiang Univ
Zhang, Junhui	Zhejiang Univ
14:25-14:45	WeBT5.3
<i>Energy-Loss Mechanism and Load Capacity Analysis of Slipper Pair in an Aerial Axial Piston Pump (I)</i> , pp. 396-400.	
Li, Hengbo	Beihang Univ
Yang, Liman	Beihang Univ

Li, Yunhua	BeiHang Univ
Yao, Nan	BeiHang Univ
Ye, Yuan	Center International Group Company
14:45-15:05	WeBT5.4
<i>Design and Analysis of a Limited Angle Torque Motor with Dual Halbach Arrays (I)</i> , pp. 401-406.	
Li, Xiao	Beihang Univ
Wu, Shuai	Beihang Univ
15:05-15:25	WeBT5.5
<i>Multi-Field Interactions Simulation Analysis of New Hydraulic Accumulator Magnetorheological Fluid Chamber (I)</i> , pp. 407-411.	
Li, Bin	Yanshan Univ
Quan, Lingxiao	Yanshan Univ
Zhang, Yutong	Yanshan Univ
Yu, Bin	Yanshan Univ
Kong, Xiangdong	Yanshan Univ
Guan, Qingsheng	Xugong Group of China
15:25-15:45	WeBT5.6
<i>An Improved Hybrid Suppression Method for Extraneous Force of High-Frequency Electro-Hydraulic Loading System (I)</i> , pp. 412-417.	
Sheng, Zhiqing	Beihang Univ
Li, Yunhua	BeiHang Univ
WeBT6 207-2	
Rehabilitation and Medical Robotics I (Organized Session)	
Chair: Bae, Joonbum	UNIST
Co-Chair: Cho, Kyu-Jin	Seoul National Univ
Organizer: Bae, Joonbum	UNIST
13:45-14:05	WeBT6.1
<i>Intention Recognition Method for Sit-To-Stand and Stand-To-Sit from Electromyogram Signals for Overground Lower-Limb Rehabilitation Robots (I)</i> , pp. 418-421.	
Chung, Sang Hun	Korea Inst. of Science and Tech
Lee, Jong Min	Korea Inst. of Science and Tech
Kim, Seung-Jong	Korea Inst. of Science and Tech. (KIST)
Hwang, Yoha	Korea Inst. of Science and Tech
An, Jinung	DGIST
14:05-14:25	WeBT6.2
<i>Rhythmic Auditory Stimulation for Robot-Assisted Gait Rehabilitation: A Preliminary Study (I)</i> , pp. 422-426.	
Lee, Hwi-Young	Korea National Rehabilitation Center
Ko, Byung-Woo	Korea National Rehabilitation Center
Song, Won-Kyung	Korea National Rehabilitation Center
Kim, Hogene	Korea National Rehabilitation Center
Shin, Joon-Ho	Korea National Rehabilitation Center
14:25-14:45	WeBT6.3
<i>Development of Passive Upper Limb Weight Bearing Orthosis to Enhance Voluntary Shoulder Rotation for Activities of Daily Living (I)</i> , pp. 427-431.	
Sin, MinKi	Seoul National Univ. Biorobotics Lab
Kim, Sang-Hun	Seoul National Univ
Cho, Kyu-Jin	Seoul National Univ. Biorobotics Lab

14:45-15:05	WeBT6.4
<i>Real-Time Estimation of Individual Muscular Forces of the Lower Limb Using Wearable Sensors (I)</i> , pp. 432-436.	
Kim, Suin	UNIST
Ro, Kyongkwan	UNIST
Bae, Joonbum	UNIST
15:05-15:25	WeBT6.5
<i>Neuro-Feedback Using Real-Time Near Infrared Spectroscopy En-Hances Brain Plasticity During Treadmill Walking : A Pilot Study (I)</i> , pp. 437-440.	
Lee, Seung Hyun	Daegu Gyeongbuk Inst. of Science and Tech
Jang, Gwang Hee	DGIST
Jin, Sang Hyeon	DGIST
An, Jinung	DGIST
15:25-15:45	WeBT6.6
<i>An Application of User-Friendly Control for Respiratory Rehabilitation and Assistance Robot (I)</i> , pp. 441-446.	
Lee, Sang-Yoep	Seoul National Univ
Jeong, Useok	Seoul National Univ
Cho, Kyu-Jin	Seoul National Univ. Biorobotics Lab
WeBT7	208-1
Micro/Nano System (Regular Session)	
Chair: Wang, Yancheng	Zhejiang Univ
Co-Chair: Mansour, Nader A.	Egypt-Japan Univ. of Science and Tech
13:45-14:05	WeBT7.1
<i>A Novel SMA-Based Micro Tactile Display Device for Elasticity Range of Human Soft Tissues: Design and Simulation</i> , pp. 447-452.	
Mansour, Nader A.	Egypt-Japan Univ. of Science and Tech
Fath El-Bab, Ahmed M. R.	Assiut Univ. Assiut, Egypt
Assal, Samy F. M.	Egypt-Japan Univ. of Science and Tech
14:05-14:25	WeBT7.2
<i>Shape Behavior Analysis of a PMN-PT [001] Actuated MOEMS Micro-Mirror</i> , pp. 453-458.	
Ciubotariu, Dragos Adrian	Femto-ST Inst. / Univ. Franche-Comte /
Clévy, Cédric	Franche-Comté Univ
Ivan, Ioan Alexandru	Univ. De Lyon, ENISE, LTDS, UMR 5513 CNRS
Lutz, Philippe	Femto-St - Umr Cnrs 6174 - Ufc/ensmm/utbm
14:25-14:45	WeBT7.3
<i>Design and Analysis of a Novel 3-D Micromanipulator with Large Range of Motion</i> , pp. 459-464.	
Wu, Zhigang	Univ. of Macau
Li, Yangmin	Univ. of Macau/Tianjin Univ. of Tech
14:45-15:05	WeBT7.4
<i>Scanning Probe Microscope Trajectory Measurement by Scanning a Single Feature</i> , pp. 465-469.	
Peyton Jones, James	Villanova Univ
Clayton, Garrett	Villanova Univ
15:05-15:25	WeBT7.5
<i>Atomic Force Microscopy Using Voice Coil Actuators for Vibration Isolation</i> , pp. 470-475.	
Ito, Shingo	Vienna Univ. of Tech

Neyer, Daniel	Vienna Univ. of Tech
Pirker, Stefan	Vienna Univ. of Tech
Steininger, Juergen	Vienna Univ. of Tech
Schitter, Georg	Vienna Univ. of Tech

15:25-15:45 WeBT7.6

A Flexible Tactile Sensor Array Based on Pressure Conductive Rubber for Three-Axis Force and Slip Detection, pp. 476-481.

Xi, Kailun	Zhejiang Univ
Wang, Yancheng	Zhejiang Univ
Mei, Deqing	Zhejiang Univ
Liang, Guan hao	Zhejiang Univ
Chen, Zichen	Zhejiang Univ

WeInvitedT2 202

Invited Session I (Invited Session)

Chair: Bae, Joonbum UNIST

16:00-17:00 WeInvitedT2.1

*Soft Transducers for Mechatronics**.

Choi, Hyouk Ryeol Sungkyunkwan Univ

WePosterT1 201

Poster Session I (Poster Session)

Chair: Ahn, Jin-Woo Kyungsoong Univ
Co-Chair: Lu, Ming Beijing Inst. of Control Engineering

17:00-18:00 WePosterT1.1

Pseudospectral Motion Planning for Autonomous Bicycles, pp. 482-487.

Yuan, Jing	Nankai Univ
Zhang, Jinhe	Nankai Univ
Ding, Song	Nankai Univ

17:00-18:00 WePosterT1.2

Adaptive Trajectory Tracking Control for a Four-Rope Crane, pp. 488-493.

Lu, Biao	Nankai Univ
Fang, Yongchun	Nankai Univ
Sun, Ning	Nankai Univ

17:00-18:00 WePosterT1.3

Parameter Estimation of the Lankarani-Nikravesh Contact Force Model Using a New Modified Linear Method, pp. 494-499.

Ma, Jia	Nanjing Univ. of Science and Tech
Qian, Linfang	Nanjing Univ. of Science and Tech
Chen, Guangsong	Nanjing Univ. of Science and Tech

17:00-18:00 WePosterT1.4

Gait Transition Based on CPG Modulation for Quadruped Locomotion, pp. 500-505.

Li, Xiaoqi	Inst. of Automation, Chinese Acad. of Science
Wang, Wei	Chinese Acad. of Sciences
Yi, Jianqiang	Inst. of Automation, Chinese Acad. of Science

17:00-18:00 WePosterT1.5

Application of a Robotic System with Mobile Manipulator and Vision Positioning, pp. 506-511.

Shao, Xuesong	Inst. of Automation, Chinese Acad. of Sciences
Xiao, Wei	Inst. of Automation, Chinese

	Acad. of Sciences	Tyapin, Ilya	Univ. of Agder
Wang, Wei	Chinese Acad. of Sciences	Hovland, Geir	Univ. of Agder
17:00-18:00	WePosterT1.6	17:00-18:00	WePosterT1.13
<i>Development of Integrated Hydrostatic-Driven Electric Generator</i> , pp. 512-517.		<i>Performance Analysis of Linux-Based EtherCAT DC Synchronization</i> , pp. 549-552.	
Wang, Tao	Hunan Univ	Yi, Hyun-Chul	Pusan National Univ
17:00-18:00	WePosterT1.7	Choi, Joon Young	Pusan National Univ
<i>High Precision Control Design for SGCMG Gimbal Servo System</i> , pp. 518-523.		17:00-18:00	WePosterT1.14
Lu, Ming	Beijing Inst. of Control Engineering	<i>A Fast-Flow Microfluidic Paper-Based Analytic Platform through Adhesive OHP Film-Hollowed Channels (I)</i> , pp. 553-554.	
Hu, Yuewei	Beijing Inst. of Control Engineering	Shin, Jae-Ho	Kyung Hee Univ
Wang, Yingguang	Beijing Inst. of Control Engineering	Choi, Samjin	Kyung Hee Univ
Li, Gang	Beijing Inst. of Control Engineering	17:00-18:00	WePosterT1.15
Wu, Dengyun	Beijing Inst. of Control Engineering	<i>An Improved RGB-D SLAM Algorithm Based on Kinect Sensor</i> , pp. 555-562.	
Zhang, Jiyang	Beijing Inst. of Control Engineering	Zhang, Liang	Xidian Univ
17:00-18:00	WePosterT1.8	Shen, Peiyi	Xidian Univ
<i>Data Driven Injection Molding Process Monitoring Using Sparse Auto Encoder Technique</i> , pp. 524-528.		Ding, Jieqiong	Xidian Univ
Mao, Ting	Huazhong Univ. of Science and Tech	Song, Juan	Xidian Univ
Zhang, Yun	Huazhong Univ. of Science and Tech	Liu, Jingwen	Xidian Univ
Zhou, Huamin	Huazhong Univ. of Science and Tech	Yi, Kang	Xi'an Communication Inst
Li, Dequn	Huazhong Univ. of Science and Tech	17:00-18:00	WePosterT1.16
Huang, Zhigao	Huazhong Univ. of Science and Tech	<i>The Quantitative Analysis for a Contact-Mode Triboelectric Energy Harvesting Device</i> , pp. 563-566.	
Gao, Huang	Huazhong Univ. of Science and Tech	Hong, Daewoong	Korea Univ
17:00-18:00	WePosterT1.9	Choi, Young-Man	KIMM
<i>Optimizing Transparency of Haptic Device through Velocity Estimation</i> , pp. 529-534.		Jeong, Jaehwa	Korea Univ
Weill--Duflos, Antoine	Univ. Pierre Et Marie Curie	17:00-18:00	WePosterT1.17
Mohand Ousaid, Abdenbi	UPMC Paris 6	<i>Optimal Trajectory Control for Capturing a Mobile Sound Source</i> , pp. 567-570.	
Haliyo, Dogan Sinan	Univ. Pierre Et Marie Curie - Paris 6 - CNRS	Han, Jongho	Pusan National Univ
Régnier, Stéphane	Univ. Pierre Et Marie Curie	Lee, Jangmyung	Busan National Univ. Busan, Korea
Hayward, Vincent	Univ. Pierre Et Marie Curie	Sheng, Xinjun	Shanghai Jiao Tong Univ
17:00-18:00	WePosterT1.10	Xiangyang, Zhu	Shanghai Jiao Tong Univ
<i>Development of a Novel Low-Cost Au-Printed SERS Paper Substrate for Point-Of-Care Application (I)</i> , pp. 535-536.		17:00-18:00	WePosterT1.18
Kim, Wansun	Kyung Hee Univ	<i>A Fast Video Stabilization Algorithm with Unexpected Motion Prediction Strategy</i> , pp. 571-576.	
Park, Hun-Kuk	Kyung Hee Univ	Zhang, Yang	Shenyang Inst. of Automation, Chinese Acad. of Sciences
Choi, Samjin	Kyung Hee Univ	Leng, Yuquan	Shenyang Inst. of Automation, Chinese Acad. of Sciences
17:00-18:00	WePosterT1.11	He, Xu	Shenyang Inst. of Automation, Chinese Acad. of Sciences
<i>Communication Packet Loss Concealment for Pattern Generation with Robotic Swarms</i> , pp. 537-542.		17:00-18:00	WePosterT1.19
Shinnoh, Atsushi	Japan Advanced Inst. of Science and Tech	<i>Locomotion Control Strategy of Hydraulic Lower Extremity Exoskeleton Robot</i> , pp. 577-582.	
Chong, Nak Young	Japan Advanced Inst. of Sci. and Tech	Kim, Hongchul	Agency for Defense Development
Lee, Geunho	Univ. of Miyazaki	Seo, Changhoon	Agency for Defense Development
17:00-18:00	WePosterT1.12	Shin, Young June	KAIST
<i>Robotic Face Milling Path Correction and Vibration Reduction</i> , pp. 543-548.		Kim, Jung	KAIST
Kaldestad, Knut Berg	Univ. of Agder	Kang, Youn Sik	Agency for Defense Development
		17:00-18:00	WePosterT1.20
		<i>Discrete Derivative Method for Adaptive-Notch-Filter Based Frequency Estimators</i> , pp. 583-588.	
		Yoon, Jong-Min	Seoul National Univ
		Bahn, Wook	Seoul National Univ
		Lee, Sang-Hoon	RS Automation Co., Ltd

Cho, Dong-il Dan	Seoul National Univ
17:00-18:00	WePosterT1.21
<i>Research on Harmonic Compensation for Flux and Current of Permanent Magnet Synchronous Motor</i> , pp. 589-594.	
Lu, Jun	Donghua Univ
Yang, Jianguo	Donghua Univ
Ma, Yinchen	Donghua Univ
17:00-18:00	WePosterT1.22
<i>Symmetric Caging Formation for Convex Polygon Object Transportation by Multiple Mobile Robots</i> , pp. 595-600.	
Dai, Yanyan	Yeungnam Univ
Kim, Yoon-Gu	DGIST
Lee, Dong-ha	DGIST
Lee, Suk-Gyu	Yeungnam Univ
WeCT5	207-1
Electric and Hydraulic Actuators and Their Applications II (Organized Session)	
Chair: Yan, Liang	Beijing Univ. of Aeronautics and Astronautics
Co-Chair: Jiao, Zongxia	Beihang Univ
Organizer: Yan, Liang	Beijing Univ. of Aeronautics and Astronautics
Organizer: Jiao, Zongxia	Beihang Univ
16:00-16:20	WeCT5.1
<i>Characteristics Analysis of Heat-Fluid-Solid Coupling Field for Linear Resonant Testing Platform (I)</i> , pp. 601-606.	
He, Ping	Beihang Univ
Jiao, Zongxia	Beihang Univ
Yan, Liang	Beijing Univ
Wang, Tianyi	Beihang Univ
Wang, Zimeng	Beihang Univ
Yao, Nan	Beihang Univ
16:20-16:40	WeCT5.2
<i>Modeling, Simulation and Experiment Study of Electromagnetic Performance for E-Type Series Linear Oscillating Motor (I)</i> , pp. 607-612.	
Wang, Tianyi	Beihang Univ
He, Ping	Beihang Univ
Yan, Liang	Beijing Univ. of Aeronautics and Astronautics
Jiao, Zongxia	Beihang Univ
Chen, Chin-Yin	Ningbo Inst. of Material Tech. and Engineering
16:40-17:00	WeCT5.3
<i>Analysis for the Power Loss of Electro Hydrostatic Actuator and Hydraulic Actuator (I)</i> , pp. 613-616.	
Hu, Wunong	AVIC Xi'an Flight Automatic Control Res. Inst
Zhou, Lei	AVIC Xi'an Flight Automatic Control Res. Inst
Tian, Yisong	AVIC Xi'an Flight Automatic Control Res. Inst
Jiao, Zongxia	Beihang Univ
Shang, Yaoxing	Beihang Univ
Song, Zengning	Beijing Univ. of Aeronautics and Astronautics
Yan, Liang	Beijing Univ. of Aeronautics and Astronautics
17:00-17:20	WeCT5.4
<i>A Novel Dynamic Decoupling Control Algorithm for PMSA by Utilizing Single Neural Adaptive Controllers (I)</i> , pp. 617-622.	

Yan, Liang	Beijing Univ. of Aeronautics and Astronautics
Zhu, Bo	Beihang Univ
Jiao, Zongxia	Beihang Univ
Chen, Chin-Yin	Ningbo Inst. of Material Tech. and Engineering
Chen, I-Ming	Nanyang Tech. Univ
17:20-17:40	WeCT5.5
<i>Magnetic Field Analysis of Permanent Magnet Tubular Linear Machines with Multiple Movers (I)</i> , pp. 623-628.	
Yan, Liang	Beihang Univ
Tianyu, Wang	Beihang Univ
Zongxia, Jiao	Beihang Univ
Chin-Yin, Chen	Ningbo Inst. of Material Tech. and Engineering
I-Ming, Chen	Nanyang Tech. Univ
17:40-18:00	WeCT5.6
<i>Temperature Estimation of Stator Winding for Permanent Magnet Synchronous Motor Used in Electro-Hydrostatic Actuator (I)</i> , pp. 629-634.	
Ling, Lina	Beihang Univ
Li, Yunhua	Beihang Univ
Li, Yun-Ze	Beihang Univ
Wei, Liu	Beihang Univ
Juntao, Jia	Beihang Univ

WeCT6	207-2
Rehabilitation and Medical Robotics II (Organized Session)	
Chair: Kai, Yoshihiro	Tokai Univ
Co-Chair: Brassitos, Elias	Northeastern Univ
Organizer: Bae, Joonbum	UNIST
16:00-16:20	WeCT6.1
<i>Modeling and Development of Tension Force Measurement System for Cable-Driven Hand Exoskeleton Robot (I)</i> , pp. 635-640.	
Pu, Shu-Wei (Wayne)	National Tsing Hua Univ
Chang, Hsien-Ting (Tim)	National Tsing Hua Univ
Chang, Jen-Yuan (James)	National Tsing Hua Univ
16:20-16:40	WeCT6.2
<i>A Robot Suit with Hardware-Based Safety Devices: Frequency Response Analysis of a Velocity-Based Safety Device (I)</i> , pp. 641-646.	
Kai, Yoshihiro	Tokai Univ
Kanno, Shotaro	Tokai Univ
Zhang, Wenlong	Univ. of California at Berkeley
Tomizuka, Masayoshi	Univ. of California
16:40-17:00	WeCT6.3
<i>Design and Simulation of the Adjustable Weight Bearing System to Adjust the Torque Change by the Distal Joint on 2DOF Body Limb (I)</i> , pp. 647-651.	
Park, Daegeun	Seoul National Univ
Cho, Kyu-Jin	Seoul National Univ. Biorobotics Lab
17:00-17:20	WeCT6.4
<i>Force/Torque Sensorless Impedance Control for Indirect Driven Robot-Aided Gait Rehabilitation System (I)</i> , pp. 652-657.	
Tran Van, Quoc	Gwangju Inst. Science & Tech
Kim, Sehun	Gwangju Inst. Science & Tech
Lee, Kyung Hwan	P&S Mechanics Co., Ltd
Kang, Sungchul	Korea Inst. of Science & Tech
Ryu, Jeha	Gwangju Inst. Science & Tech

17:20-17:40

WeCT6.5

Development of a Multimodal Biofeedback System for Balance Training (I), pp. 658-663.

Afzal, Muhammad Raheel Gyeongsang National Univ
Oh, Min-Kyun Gyeongsang National Univ.
Hospital

Yoon, Jungwon Gyeongsang National Univ

17:40-18:00

WeCT6.6

Compact Drive System for Planetary Rovers and Space Manipulators, pp. 664-669.

Brassitos, Elias Northeastern Univ
Dubowsky, Steven MIT

Technical Program for Thursday July 9, 2015

ThAT1	201
Rehabilitation Robots (Regular Session)	
Chair: Zhang, Longzhi	Harbin Inst. of Tech
Co-Chair: Jin, TaeSeok	DongSeo Univ
08:45-09:05	ThAT1.1
<i>Dimensional Synthesis of a Lightweight Shoulder Exoskeleton</i> , pp. 670-675.	
Hsieh, Hsiang-Chien	National Cheng Kung Univ
Chien, Li	National Cheng Kung Univ
Lan, Chao-Chieh	National Cheng Kung Univ
09:05-09:25	ThAT1.2
<i>Kinematic Analysis of a Parallel Manipulator-Based Multi-Function Mobility Assistive Device for Elderly</i> , pp. 676-681.	
Asker, Ahmed	Egypt-Japan Univ. of Science and Tech
Assal, Samy F. M.	Faculty of Engineering, Tanta Univ. Tanta, Egypt
09:25-09:45	ThAT1.3
<i>Research on Cutting Temperature in Bone Cutting Surgery</i> , pp. 682-686.	
Wu, Dongmei	Harbin Inst. of Tech
Zhang, Longzhi	Harbin Inst. of Tech
Liu, Sen	Harbin Inst. of Tech
09:45-10:05	ThAT1.4
<i>Gait Measurement and Evaluation System for Diagnosis of Elderly People's Gait Condition to Prevent Fall</i> , pp. 687-693.	
Ito, Tomotaka	Shizuoka Univ
Umise, Satoru	Shizuoka Univ
10:05-10:25	ThAT1.5
<i>Development of MR Fluid-Based Gait Assist Cane for Elderly People</i> , pp. 694-699.	
Ito, Tomotaka	Shizuoka Univ
Oshita, Genta	Sizuoka Univ. Sity
10:25-10:45	ThAT1.6
<i>Improving the Safety of Ankle-Foot Rehabilitation System with Hybrid Control</i> , pp. 700-705.	
Chen, Geng	Peking Univ
Zhou, Zhihao	Peking Univ
Feng, Yanggang	Peking Univ
Wang, Rongli	Peking Univ. First Hospital
Wang, Ninghua	Peking Univ. First Hospital
Wang, Qining	Peking Univ
ThAT2	202
Mobile Robots I (Regular Session)	
Chair: Dogruer, Can Ulas	Hacettepe Univ
Co-Chair: Cakmakci, Melih	Bilkent Univ
08:45-09:05	ThAT2.1
<i>Optimal Trajectory Tracking under Parametric Uncertainty</i> , pp. 706-712.	
Dogruer, Can Ulas	Hacettepe Univ
09:05-09:25	ThAT2.2
<i>Path Following Control of an Off-Road Track Vehicle Towing a Steerable Driven Implement</i> , pp. 713-718.	
Taghia, Javad	Univ. of New South Wales
Lam, Stanley	Univ. of New South Wales
Katupitiya, Jayantha	The Univ. of New South Wales

09:25-09:45	ThAT2.3
<i>Iterative Overlap-Part Estimation Method for Generating Reliable 3D Terrain Maps</i> , pp. 719-724.	
Kunii, Yasuharu	Chuo Univ
Hashimoto, Naoki	Chuo Univ
Oishi, Shunya	Chuo Univ
09:45-10:05	ThAT2.4
<i>Mechanical Design and Position Control of a Modular Mechatronic Device (MechaCell)</i> , pp. 725-730.	
Ristevski, Stefan	Bilkent Univ
Cakmakci, Melih	Bilkent Univ
10:05-10:25	ThAT2.5
<i>A Hierarchical Topological Planner for Multi-Storey Building Navigation</i> , pp. 731-736.	
Zhang, Qun	Inst. for Infocomm Res. A*STAR
Wu, Xiaojun	Inst. for Infocomm Res
Liu, Bingbing	I2R, A*Star
Adiwahono, Albertus Hendrawan	I2r A-Star
Dung, Tran Anh	Inst. for Infocomm Res
Chang, Tai Wen	Inst. for Infocomm Res. , A*STAR
10:25-10:45	ThAT2.6
<i>Relaxing Nonholonomic Constraints: Towards Continuous-Curvature Dubins Paths</i> , pp. 737-742.	
Bazzi, Salah	American Univ. of Beirut
Shammas, Elie	American Univ. of Beirut
Asmar, Daniel	American Univ. of Beirut
ThAT3	206-1
Control Application in Mechatronics I (Regular Session)	
Chair: Huang, Han-Pang	National Taiwan Univ
Co-Chair: Fang, Yongchun	Nankai Univ
08:45-09:05	ThAT3.1
<i>Performance-Oriented Investigation of Adaptive Robust Control in Iterative Learning Control Framework with Comparative Experiments</i> , pp. 743-748.	
Hu, Zhipeng	Tsinghua Univ
Hu, Chuxiong	Tsinghua Univ
Zhu, Yu	Tsinghua Univ
Yang, Jin	Tsinghua Univ
09:05-09:25	ThAT3.2
<i>Super-Twisting-Based Antiswing Control for Underactuated Double Pendulum Cranes</i> , pp. 749-754.	
Sun, Ning	Nankai Univ
Fang, Yongchun	Nankai Univ
Chen, He	Nankai Univ
Fu, Yiming	Nankai Univ
09:25-09:45	ThAT3.3
<i>Mid-Ranging Control of a Macro/mini Manipulator</i> , pp. 755-760.	
Ma, Zheng	National Univ. of Singapore
Hong, Geok Soon	National Univ. of Singapore
Ang Jr, Marcelo H	National Univ. of Singapore
Poo, Jim A.N.	National Univ. of Singapore
09:45-10:05	ThAT3.4
<i>Humanoid Robot Push-Recovery Strategy Based on CMP Criterion and Angular Momentum Regulation</i> , pp. 761-766.	
Chang, Che-Hsuan	National Taiwan Univ
Huang, Han-Pang	National Taiwan Univ
Hsu, Huan-Kun	National Taiwan Univ

Cheng, Ching-An	National Taiwan Univ
10:05-10:25	ThAT3.5
<i>Improvement of Position Accuracy for Inflatable Robotic Arm Using Visual Feedback Control Method</i> , pp. 767-772.	
Kim, Hyejong	Ritsumeikan Univ
Tanaka, Yuto	Ritsumeikan Univ
Kawamura, Akihiro	Kyushu Univ
Kawamura, Sadao	Ritsumeikan Univ
Nishioka, Yasutaka	Univ. of Shiga Prefecture
10:25-10:45	ThAT3.6
<i>Dynamics Based Motion Optimization and Operational Space Control with an Experimental Rescue Robot, HUBO T-100</i> , pp. 773-778.	
Hong, Seongil	Agency for Defense Development
Lee, Youngwoo	Agency for Defense Development
Park, Kyu Hyun	Agency for Defense Development
Lee, Won Suk	Agency for Defense Development
Choi, Byunghun	Agency for Defense Development
Sim, Okkee	KAIST
Kim, Inhyeok	Korea Advanced Inst. of Science and Tech
Oh, Jun Ho	Korea Advanced Inst. of Sci. and Tech
Kang, Youn Sik	Agency for Defense Development
ThAT4	206-2
Additive Manufacturing (Organized Session)	
Chair: Wicker, Ryan	The Univ. of Texas at El Paso
Co-Chair: Macdonald, Eric	The Univ. of Texas at El Paso
Organizer: Wicker, Ryan	The Univ. of Texas at El Paso
Organizer: Macdonald, Eric	The Univ. of Texas at El Paso
08:45-09:05	ThAT4.1
<i>A Study to Detect a Material Deposition Status in Fused Deposition Modeling Technology (I)</i> , pp. 779-783.	
Kim, Chi Yen	Univ. of Texas at El Paso
Wicker, Ryan	The Univ. of Texas at El Paso
Macdonald, Eric	The Univ. of Texas at El Paso
Espalin, David	The Univ. of Texas at El Paso
Perez, Mireya A	The Univ. of Texas at El Paso
Cuaron, Alejandro	The Univ. of Texas at El Paso
09:05-09:25	ThAT4.2
<i>Automatic Robot Taping: System Integration (I)</i> , pp. 784-789.	
Lembono, Teguh Santoso	Nanyang Tech. Univ
Yuan, Qilong	Nanyang Tech. Univ
Zou, Yuhua	Nanyang Tech. Univ
Chen, I-Ming	Nanyang Tech. Univ
09:25-09:45	ThAT4.3
<i>Effect of Flexure Hinge Type on a 3D Printed Fully Compliant Prosthetic Finger (I)</i> , pp. 790-795.	
Mutlu, Rahim	Univ. of Wollongong
Alici, Gursel	Univ. of Wollongong
in het Panhuis, Marc	Univ. of Wollongong
Spinks, Geoffrey	Univ. of Wollongong
09:45-10:05	ThAT4.4
<i>Speed-Based Diagnostics of Aerodynamic and Mass Imbalance in</i>	

<i>Large Wind Turbines</i> , pp. 796-801.	
Shahriar, Md Rifat	Queensland Univ. of Tech
Borghesani, Pietro	Pol. Di Milano - Department of MechanicalEngineering
Tan, Andy C. C.	Queensland Univ. of Tech
10:05-10:25	ThAT4.5
<i>Pattern Recognition Methods for Multi Stage Classification of Parkinson's Disease Utilizing Voice Features</i> , pp. 802-807.	
Caesarendra, Wahyu	Diponegoro Univ
Tono Putri, Farika	Diponegoro Univ
Ariyanto, Mochammad	Diponegoro Univ
Dharma Setiawan, Joga	Diponegoro Univ
10:25-10:45	ThAT4.6
<i>Incremental Sheet Forming of Aluminum with Warm (I)</i> , pp. 808-811.	
Da Silva, Pablo Josue	Univ. of Brasilia / Inst. Federal De Brasilia
Álvares, Alberto José	Univ. De Brasilia
ThAT5	207-1
Actuators (Regular Session)	
Chair: Hussein, Hussein	FEMTO-ST
Co-Chair: Abdul Nasir, Abd Ghafar	Okayama Univ. of Science
08:45-09:05	ThAT5.1
<i>Modelling and Robust Control of an Inverted Pendulum Driven by a Pneumatic Cylinder</i> , pp. 812-817.	
Krupke, Christopher	Univ. of Warwick
Wang, Jihong	Univ. of Warwick
09:05-09:25	ThAT5.2
<i>Design and Comparison of Different Magneto-Rheological Valves Configurations</i> , pp. 818-823.	
Grivon, Daniel	École Pol. Fédérale De Lausanne (EPFL)
Civet, Yoan	EPFL
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)
Pataky, Zoltan	Univ. Hospital of Geneva
09:25-09:45	ThAT5.3
<i>Vision Based Control of a Conjugated Electro-Active Polymer Actuator</i> , pp. 824-829.	
Coşkun, Mustafa Yavuz	Karadeniz Tech. Univ
İtik, Mehmet	Karadeniz Tech. Univ
09:45-10:05	ThAT5.4
<i>Analysis of Low-Cost Wearable Servo Valve Using Buckled Tubes for Optimal Arrangement of Tubes</i> , pp. 830-835.	
Abdul Nasir, Abd Ghafar	Okayama Univ. of Science
Akagi, Tetsuya	Okayama Univ. of Science
Dohta, Shujiro	Okayama Univ. of Science
Ono, Ayumu	Okayama Univ. of Science
10:05-10:25	ThAT5.5
<i>Analysis of the Dynamic Behavior of a Doped Silicon U-Shaped Electrothermal Actuator</i> , pp. 836-841.	
Hussein, Hussein	Femto-St
Le moal, Patrice	Femto-St
Bourbon, Gilles	Femto-St
Haddab, Yassine	FEMTO-ST
Lutz, Philippe	Femto-St - Umr Cnrs 6174 - Ufc/ensmm/utbm
10:25-10:45	ThAT5.6

Dual Drive Coils Design for a Long Stroke Electromagnetically Actuated Micro-Positioning System, pp. 842-847.

Khan, Muneeb-Ullah Univ. De Tech. De Compiègne
 Prelle, Christine Univ. De Tech. De Compiègne
 Lamarque, Frédéric Univ. De Tech. De Compiègne
 Büttgenbach, Stephanus Tech. Univ. Braunschweig

ThAT6 207-2
Robotics for Rehabilitation and Assistance (Organized Session)

Chair: Chen, Weidong Shanghai Jiao Tong Univ
 Co-Chair: Yi, Jingang Rutgers Univ
 Organizer: Chen, Weidong Shanghai Jiao Tong Univ

08:45-09:05 ThAT6.1

Experimental Validation of Stability and Performance for Position-Error-Based Tele-Surgery (I), pp. 848-853.

Li, Hongbing Shanghai Jiaotong Univ
 Tadano, Kotaro Tokyo Inst. of Tech
 Kawashima, Kenji Tokyo Medical and Dental Univ

09:05-09:25 ThAT6.2

Slip Detection and Prediction in Human Walking Using Only Wearable Inertial Measurement Units (IMUs) (I), pp. 854-859.

Trkov, Mitja Rutgers Univ
 Chen, Kuo Rutgers Univ
 Yi, Jingang Rutgers Univ
 Liu, Tao Zhejiang Univ

09:25-09:45 ThAT6.3

Forearm Skeleton Modeling for Pro-/supination Movement Using CT Image Measurement (I), pp. 860-865.

Nojiri, Kosei National Inst. of Tech.
 Kumamoto Coll
 Kiyokawa, Takuya National Inst. of Tech.
 Kumamoto Coll
 Okayama, Yoji Kyushu Memorial Hospital

09:45-10:05 ThAT6.4

Design of Respiratory Training Robot in Rehabilitation of Chronic Obstructive Pulmonary Disease (I), pp. 866-870.

Zhu, Zhihua Zhejiang Univ
 Cong, Bo Zhejiang Univ
 Liu, Fengping Zhejiang Univ
 Liu, Tao Zhejiang Univ
 Yi, Jingang Rutgers Univ
 Inoue, Yoshio Kochi Univ. of Tech

10:05-10:25 ThAT6.5

Experimental Study on Mapping and Localization Algorithm of Intelligent Wheelchair in Spacious and Dynamic Environments (I), pp. 871-876.

Liu, Li Shanghai Jiao Tong Univ
 Chen, Weidong Shanghai Jiao Tong Univ
 Wang, Jingchuan Shanghai Jiao Tong Univ

10:25-10:45 ThAT6.6

A Synthetic Framework for Evaluating the Anthropomorphic Characteristics of Prosthetic Hands, pp. 877-884.

Liu, Yuan Harbin Inst. of Tech
 Yang, Dapeng Harbin Inst. of Tech
 Jiang, Li Harbin Inst. of Tech
 Liu, Hong Harbin Inst. of Tech

ThAT7 208-1
Sensors and Sensing Systems I (Regular Session)

Chair: Chen, Xiang Univ. of Windsor
 Co-Chair: Son, Hungsun Ulsan National Inst. of Science and Tech

08:45-09:05 ThAT7.1

Cost-Effective Camera Based Ground Truth for Indoor Localization, pp. 885-890.

Becker, Daniel Berlin Inst. of Tech
 Thiele, Fabian Berlin Inst. of Tech
 Sawade, Oliver Fraunhofer FOKUS
 Radosch, Ilya Fraunhofer FOKUS

09:05-09:25 ThAT7.2

Preliminary Experimental Study on the Sensing Performance of a Capacitive Tactile Sensor Array Mounted on Curved Surfaces, pp. 891-896.

Liang, Guanhao Zhejiang Univ
 Wang, Yancheng Zhejiang Univ
 Mei, Deqing Zhejiang Univ
 Xi, Kailun Zhejiang Univ
 Chen, Zichen Zhejiang Univ

09:25-09:45 ThAT7.3

A Novel Magnetic Orientation Sensor for Intubation Procedures, pp. 897-902.

Wu, Fang Singapore Univ. of Tech. and Design
 Jeon, Jiyun Ulsan National Inst. of Science and Tech
 Son, Hungsun Ulsan National Inst. of Science and Tech

09:45-10:05 ThAT7.4

Improved Leg Tracking with Data Association Considering Gait Phase During Turning Motion in Walk Tests, pp. 903-908.

Yorozu, Ayanori Keio Univ
 Moriguchi, Toshiki Murata Machinery, Ltd
 Takahashi, Masaki Keio Univ

10:05-10:25 ThAT7.5

Coverage Enhancement for Deployment of Multi-Camera Networks, pp. 909-914.

Zhang, Xuebo Nankai Univ
 Alarcon Herrera, Jose Luis Univ. of Windsor
 Chen, Xiang Univ. of Windsor

10:25-10:45 ThAT7.6

An Investigation on Temperature Measurements for Machining of Titanium Alloy Using IR Imager with Physics-Based Reconstruction, pp. 915-920.

Ji, Jingjing Huazhong Univ. of Science and Tech
 Lee, Kok-Meng Georgia Tech. Univ. of Sci & Tech
 Lin, Chun-Yeon Georgia Inst. of Tech
 Huang, Yang Huazhong Univ. of Science and Tech

ThPlenary_Session 201 & 202
Plenary Session II (Plenary Session)

Chair: Lee, Jangmyung Busan National Univ. Busan, Korea

11:00-12:00 ThPlenary_Session.1

*Biologically Inspired Approach towards Implementation of Bionic Arm**.

Oh, Sang-Rok Korea Inst. of Science and Tech

ThBT1	201
Advanced Medical and Human Assist Robots (Organized Session)	

Chair: Kiguchi, Kazuo	Kyushu Univ
Co-Chair: Yoon, Jungwon	Gyeongsang National Univ
Organizer: Kiguchi, Kazuo	Kyushu Univ

13:15-13:35	ThBT1.1
<i>LQR Control for a Mobile Manipulator Via COG Feedback (I)</i> , pp. 921-924.	

Chen, Hu	Busan National Univ. Busan, Korea
Zhao, Yudong	Busan National Univ. Busan, Korea
Lee, Jangmyung	Busan National Univ. Busan, Korea

13:35-13:55	ThBT1.2
<i>Motion Planning for Fetch-And-Give Task Using Wagon and Service Robot (I)</i> , pp. 925-932.	

Pyo, Yoonseok	Kyushu Univ
Nakashima, Kouhei	Kyushu Univ
Tsuji, Tokuo	Kyushu Univ
Kurazume, Ryo	Kyushu Univ
Morooka, Ken'ichi	Kyushu Univ

13:55-14:15	ThBT1.3
<i>Development of Gait Training System to Encourage Swinging the Upper Limbs Based on the Phase Change of the Shoulder Horizontal Rotation at Heel Contact (I)</i> , pp. 933-936.	

Nakashima, Yasutaka	Kyushu Univ
Kawano, Shinya	Waseda Univ
Matsumoto, Yuya	Waseda Univ
Kobayashi, Yo	Waseda Univ
Fujie, Masakatsu G.	Waseda Univ
Yamamoto, Motoji	Kyushu Univ

14:15-14:35	ThBT1.4
<i>Motion Assistance Apparatus Enabled for Neuro-Rehabilitation of Patients and for the Promotion of Exercise for the Elderly (I)</i> , pp. 937-942.	

Tanaka, Eiichirou	Saitama Univ
Niwa, Ryosuke	Shibaura Inst. of Tech
Osawa, Kazuki	Shibaura Inst. of Tech
Nakajima, Keyaki	Shibaura Inst. of Tech
Muramatsu, Keiichi	Saitama Univ
Watanuki, Keiichi	Saitama Univ
Saegusa, Shozo	Shujitsu Univ
Yuge, Louis	Hiroshima Univ

14:35-14:55	ThBT1.5
<i>A Study of Features of EEG Signals During Upper-Limb Motion (I)</i> , pp. 943-946.	

Hayashi, Yoshiaki	Saga Univ
Kiguchi, Kazuo	Kyushu Univ

14:55-15:15	ThBT1.6
<i>Development of an Assistance Robot in a Hot Forging Work Site and Its Performance Evaluations (I)</i> , pp. 947-952.	

Song, Jiyeon	Gyeongsang National Univ
Kim, Hwanggeun	Gyeongsang National Univ
Yoon, Jungwon	Gyeongsang National Univ

ThBT2	202
Mobile Robots II (Regular Session)	

Chair: Choi, Jongeun	Michigan State Univ
Co-Chair: Kosuge, Kazuhiro	Tohoku Univ

13:15-13:35	ThBT2.1
-------------	---------

<i>Quality Landmark Selection from Image Streams Based on Distinctiveness and Repeatability</i> , pp. 953-958.	
Shimoda, Masamichi	Shinshu Univ
Yamazaki, Kimitoshi	Shinshu Univ

13:35-13:55	ThBT2.2
<i>Optimized Control of Skid Steering Mobile Robot with Slip Conditions</i> , pp. 959-964.	

Elshazly, Osama	Egypt-Japan Univ. for Science and Tech. (E-JUST)
Zyada, Zakarya	Univ. Teknologi Malaysia, (UTM),
Mohamed, Abdelfatah	Egypt-Japan Univ. of Science and Tech. (EJUST)
Muscato, Giovanni	Univ. Di Catania

13:55-14:15	ThBT2.3
<i>QR-Code Based Localization for Indoor Mobile Robot with Validation Using a 3D Optical Tracking Instrument</i> , pp. 965-970.	

Lee, Seok-Ju	Kettering Univ
Tewolde, Girma	Kettering Univ
Lim, Jongil	Kettering Univ
Kwon, Jaerock	Kettering Univ

14:15-14:35	ThBT2.4
<i>Trajectory Tracking Control of a Vehicle with a Large Sideslip Angle</i> , pp. 971-976.	

Nakano, Hiroshi	Tohoku Univ
Kinugawa, Jun	Tohoku Univ
Kosuge, Kazuhiro	Tohoku Univ

14:35-14:55	ThBT2.5
<i>Consensus Based Attractive Vector Approach for Formation Control of Nonholonomic Mobile Robots</i> , pp. 977-983.	

Jin, Jingfu	Univ. of Texas at Dallas
Kim, Yoon-Gu	DGIST(Daegu Gyeongbuk Inst. of Science & Tech
Wee, Sung-Gil	DGIST
Gans, Nicholas (Nick)	Univ. Texas at Dallas

14:55-15:15	ThBT2.6
<i>Appearance-Based Localization Using Group LASSO Regression with an Indoor Experiment</i> , pp. 984-989.	

Do, Ngoc Huan	Michigan State Univ
Choi, Jongeun	Michigan State Univ
Lim, Chae Young	Michigan State Univ
Maiti, Taps	Michigan State Univ

ThBT3	206-1
Control Application in Mechatronics II (Regular Session)	

Chair: Ouyang, Puren	Ryerson Univ
Co-Chair: Neher, Phillip	Inst. for Control Engineering of Machine Tools and Manufacturing Units (ISW), Univ. Stuttgart

13:15-13:35	ThBT3.1
<i>Zero Torque Control of Switched Reluctance Motors for Charging Reactor of Electric Vehicles</i> , pp. 990-995.	

Rashidi, Amir	Isfahan Univ. of Tech
Namazi, Mohammad Masoud	Isfahan Univ. of Tech
Saghaian-nejad, Sayed Morteza	Isfahan Univ. of Tech
Lee, Dong-Hee	Kyungsoong Univ
Ahn, Jin-Woo	Kyungsoong Univ

13:35-13:55	ThBT3.2
-------------	---------

An Extended Inertia and Eigenfrequency Emulation for Full-Scale Wind Turbine Nacelle Test Benches, pp. 996-1001.

Jassmann, Uwe RWTH Aachen Univ
Abel, Dirk RWTH Aachen Univ
Hakenberg, Mathias RWTH Aachen Univ

13:55-14:15 ThBT3.3

Using Game Physics Engines for Hardware-In-The-Loop Material Flow Simulations: Benefits, Requirements and Experiences, pp. 1002-1007.

Neher, Philipp Stuttgart Univ
Lechler, Armin Stuttgart Univ

14:15-14:35 ThBT3.4

Slip Control of a Wheeled Mobile Robot with a Movable Auxiliary Mass, pp. 1008-1013.

Yokoyama, Makoto Niigata Univ
Matsuhashi, Yuiki Niigata Univ
Sano, Akira Niigata Univ
Myat Thiri, Ko Niigata Univ

14:35-14:55 ThBT3.5

An Adaptive Variable Structure Control Methodology for Attitude and Position Control of a Vectored Thrust Aerial Vehicle, pp. 1014-1019.

Jayakody, Hiranya Samanga Univ. of New South Wales
Katupitiya, Jayantha The Univ. of New South Wales

14:55-15:15 ThBT3.6

Position Domain PD Sliding Mode Control for Contour Tracking, pp. 1020-1025.

Ouyang, Puren Ryerson Univ
Pano, Van Ryerson Univ
Hu, Yuqi Hunan Univ. of Science and Tech

ThBT4 206-2
Hybrid Intelligent Systems (Regular Session)

Chair: Wang, Haitong Tsinghua Univ
Co-Chair: Kim, Jeong-Jung KAIST

13:15-13:35 ThBT4.1

An Effective Hybridized Classifier for Breast Cancer Diagnosis, pp. 1026-1031.

Mittal, Dishant VIT Univ
Gaurav, Dev VIT Univ
Sekhar Roy, Sanjiban VIT Univ

13:35-13:55 ThBT4.2

Adaptability Improvement of Learning from Demonstration with Sequential Quadratic Programming for Motion Planning, pp. 1032-1037.

Kim, Jeong-Jung KAIST
Park, So-Youn KAIST
Lee, Ju-Jang KAIST

13:55-14:15 ThBT4.3

Measurement, Modeling and Compensation of Thermal Error for Machine Tools, pp. 1038-1042.

Wang, Haitong Tsinghua Univ
Li, Fengchun Tsinghua Univ
Li, Tiemin Tsinghua Univ
Wang, Liping Tsinghua Univ

14:15-14:35 ThBT4.4

Model-Free Adaptive Neural Fuzzy Feed Forward Torque Control for Nonlinear Parallel Mechanism, pp. 1043-1048.

Ren, Qun École De Tech. Supérieure, Univ. of Quebec

Bigras, Pascal

École De Tech. Supérieure, Univ. of Quebec

14:35-14:55 ThBT4.5

Robust Tracking Control of Networked Control Systems Included Uncertainties, pp. 1049-1054.

Dinh, Quang Truong Univ. of Ulsan
Ahn, Kyoung Kwan Univ. of Ulsan
Dao, Thanh Liem Univ. of Ulsan
Lee, Seyoung Univ. of Ulsan

14:55-15:15 ThBT4.6

Artificial Neural Circuit Integration for MEMS Microrobot System (I), pp. 1055-1060.

Saito, Ken Coll. of Science and Tech. Nihon Univ
Takato, Minami Nihon Univ
Ishihara, Yuki Nihon Univ
Sugita, Kazuki Nihon Univ
Okane, Yuki Nihon Univ
Oku, Hirozumi Nihon Univ
Asano, Yohei Nihon Univ
Iwata, Kei Nihon Univ
Tatani, Masaki Nihon Univ
Sekine, Yoshifumi Nihon Univ
Uchikoba, Fumio Nihon Univ

ThBT5 207-1
Actuators in Mechatronic Systems I (Regular Session)

Chair: Ohishi, Kiyoshi Nagaoka Univ. of Tech
Co-Chair: Wang, Shaoping Beihang Univ

13:15-13:35 ThBT5.1

Multi-Degree of Freedom Platform Based on Spherical Wheels, pp. 1061-1065.

Park, SangA Ulsan National Inst. of Science and Tech
Son, Hungsun Ulsan National Inst. of Science and Tech

13:35-13:55 ThBT5.2

A Comparison of Some Famous Electromechanical Soft Actuators, pp. 1066-1071.

Taghia, Javad Univ. of New South Wales

13:55-14:15 ThBT5.3

Rotational Twisted String Actuator with Linearized Output: Mathematical Model and Experimental Evaluation, pp. 1072-1077.

Mehmood, Usman Korea Univ. of Tech. and Education
Popov, Dmitry KOREATECH, Korea Univ. of Tech. and Education
Gaponov, Igor Korea Univ. of Tech. and Education
Ryu, Jee-Hwan Korea Univ. of Tech. and Education

14:15-14:35 ThBT5.4

FPGA Based Fine Tracking Control System for Blu-Ray Disc System Considering 1.5usec Delay Time (I), pp. 1078-1083.

Yoshida, Keisuke Nagaoka Univ. of Tech
Ohashi, Takahiro Nagaoka Univ. of Tech
Ohishi, Kiyoshi Nagaoka Univ. of Tech
Miyazaki, Toshimasa Nagaoka Univ. of Tech

14:35-14:55 ThBT5.5

Design and Analysis of an Elastic Mechanism with Adjustable Zero-To-Infinite Linear Stiffness (I), pp. 1084-1089.

Wu, Tai-Hsun	National Cheng Kung Univ
Lan, Chao-Chieh	National Cheng Kung Univ
14:55-15:15	ThBT5.6
<i>Study of the Efficiency of an Electronically-Controlled Linear Escapement</i> , pp. 1090-1095.	
Besuchet, Romain	Ec. Pol. Fédérale De Lausanne (EPFL)
Civet, Yoan	EPFL
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)

ThBT6	207-2
Flexible Manipulators and Structures (Regular Session)	

Chair: Fukamachi, Naofumi	Univ. of Tsukuba
Co-Chair: Lan, Chao-Chieh	National Cheng Kung Univ

13:15-13:35	ThBT6.1
<i>Cooperative String Looping by Dual Shooting Manipulation (I)</i> , pp. 1096-1101.	

Hatakeyama, Tomofumi	Univ. of Tsukuba
Mochiyama, Hiromi	Univ. of Tsukuba

13:35-13:55	ThBT6.2
<i>Palm-Top Jumping and Crawling Robot Using Snap-Through Buckling of Arched Elastica Supported by Ω-Shaped Frame (I)</i> , pp. 1102-1107.	

Fukamachi, Naofumi	Univ. of Tsukuba
Mochiyama, Hiromi	Univ. of Tsukuba

13:55-14:15	ThBT6.3
<i>Design of a Low-Cost Underactuated Finger for Positioning or Pinching Thin Objects</i> , pp. 1108-1113.	

Fan, Jinchang	Zhejiang Univ
Yang, Can-Jun	Zhejiang Univ
Bi, Qian	Zhejiang Univ
Gu, Hao	ABB Corp. Res. Center

14:15-14:35	ThBT6.4
<i>Wave-Based Load Disturbance Observer for Robust Enhancement of Reflected Wave Rejection-Based Vibration Control</i> , pp. 1114-1119.	

Saito, Eiichi	Keio Univ
Katsura, Seiichiro	Keio Univ

14:35-14:55	ThBT6.5
<i>Trajectory Control of Robot Arm Using Flexible Pneumatic Cylinders and Embedded Controller</i> , pp. 1120-1125.	

Mohd, Aliff	Okayama Univ. of Science
Dohta, Shujiro	Okayama Univ. of Science
Akagi, Tetsuya	Okayama Univ. of Science

14:55-15:15	ThBT6.6
<i>Comparison of Passivity Based Impedance Controllers without Torque-Feedback for Variable Stiffness Actuators</i> , pp. 1126-1131.	

Lendermann, Markus	Tech. Univ. Darmstadt
Singh, Bajwa Roodra Pratap	Indian Inst. of Tech. Madras
Stuhlenmiller, Florian	Tech. Univ. Darmstadt
Beckerle, Philipp	Tech. Univ. Darmstadt
Rinderknecht, Stephan	Tech. Univ. Darmstadt
Pudureddiyur Venkataraman, Manivannan	IIT Madras

ThBT7	208-1
Sensors and Sensing Systems II (Regular Session)	

Chair: Whitney, Ann	Univ. of Kentucky
Co-Chair: Jung, Seul	Chungnam National Univ

13:15-13:35	ThBT7.1
<i>A Haptic Interface with Adjustable Stiffness Using MR Fluid</i> , pp. 1132-1137.	
Somlor, Sophon	Waseda Univ
Aguirre Dominguez, Gonzalo	Waseda Univ
Schmitz, Alexander	Waseda Univ
Kamezaki, Mitsuhiro	Waseda Univ
Sugano, Shigeki	Waseda Univ

13:35-13:55	ThBT7.2
<i>RSSI Informed Phase Method for Distance Calculations</i> , pp. 1138-1142.	

Whitney, Ann	Univ. of Kentucky
Parker, John	Univ. of Kentucky
Engelhard, Mallory	Paul Laurence Dunbar High School
Kratzer, Zach	Lexmark International
Fessler, John	Lexmark International

14:15-14:35	ThBT7.4
<i>Hybrid Electromagnetic-Piezoelectric Transduction for a Frequency Up-Converted Energy Harvester</i> , pp. 1149-1154.	

Edwards, Bryn	Univ. of Auckland
Aw, Kean C.	The Univ. of Auckland
Hu, Aiguo Patrick	Univ. of Auckland
Tang, Lihua	Univ. of Auckland

14:35-14:55	ThBT7.5
<i>Experimental Verification of Physical Relation between a Gimbal System and a Body System: GYROBO</i> , pp. 1155-1160.	

Lee, Sangdeok	Chungnam National Univ
Jung, Seul	Chungnam National Univ

14:55-15:15	ThBT7.6
<i>Slew Bearing Early Damage Detection Based on Multivariate State Estimation Technique and Sequential Probability Ratio Test</i> , pp. 1161-1166.	

Caesarendra, Wahyu	Diponegoro Univ
Lee, Jong Myeong	Gyeongsang National Univ
Ha, Jung Min	Gyeongsang National Univ
Choi, Byeong Keun	Gyeongsang National Univ

ThInvitedT2	202
Invited Session II (Invited Session)	

Chair: Kim, Jong-Wook	Dong-A Univ
-----------------------	-------------

15:30-16:30	ThInvitedT2.1
<i>Motion-Copying System for Perfect Reproduction of Human Motion*</i> .	

Katsura, Seiichiro	Keio Univ
--------------------	-----------

ThPosterT1	201
Poster Session II (Poster Session)	

Chair: Asano, Fumihiko	Japan Advanced Inst. of Science and Tech
Co-Chair: Wu, Changgui	Tsinghua Univ

16:30-17:30	ThPosterT1.2		
<i>Application of Particle Swarm Optimization for Tuning the SVR Parameters</i> , pp. 1173-1177.			
Wang, Xinqing		China Univ. of Petroleum	
Gao, Juan		Qingdao Harbour Vocational and Tech. Coll	
16:30-17:30	ThPosterT1.3		
<i>Stability Analysis of Limit Cycle Walking in Traversing Steps Based on Semianalytical Solution of Transition Function of State Error</i> , pp. 1178-1183.			
Asano, Fumihiko		Japan Advanced Inst. of Science and Tech	
16:30-17:30	ThPosterT1.4		
<i>A Novel Generation Method for Underactuated Bipedal Gait with Landing Position Control of Swing Leg Based on Property of Zero Dynamics</i> , pp. 1184-1189.			
Asano, Fumihiko		Japan Advanced Inst. of Science and Tech	
16:30-17:30	ThPosterT1.5		
<i>Research on Dynamic Transmission Characteristics of Box-Like Structures Based on a Hybrid Model Method</i> , pp. 1190-1194.			
Gao, Weijin		BeiHang Univ	
Wang, Liang		BeiHang Univ	
16:30-17:30	ThPosterT1.6		
<i>High Integrated Modular Joint for Chinese Space Station Experiment Module Manipulator</i> , pp. 1195-1200.			
Shi, Shicai		Harbin Inst. of Tech	
Wang, Da		Harbin Inst. of Tech	
Ruan, Sipu		Honors School of Harbin Inst. of Tech	
Li, Rong		Department of Automobile, Heilongjiang Inst. of Tech	
Jin, Minghe		Harbin Inst. of Tech	
Liu, Hong		Harbin Inst. of Tech	
16:30-17:30	ThPosterT1.7		
<i>An Efficient Adaptive Sequential Polynomial Chaos Expansion Metamodel</i> , pp. 1201-1206.			
Chen, Guangsong		Nanjing Univ. of Science and Tech	
Qian, Linfang		Nanjing Univ. of Science and Tech	
Ma, Jia		Nanjing Univ. of Science and Tech	
Ji, Lei		Nanjing Univ. of Science and Tech	
16:30-17:30	ThPosterT1.8		
<i>A General Optimization Framework for Complex PDE Models Based on Data Interactive Mechanism</i> , pp. 1207-1211.			
Li, Kangji		Jiangsu Univ	
Xue, Wenping		Jiangsu Univ	
Liu, Guohai		Jiangsu Univ	
16:30-17:30	ThPosterT1.9		
<i>A Modified Vibration Model for Piezoelectric Energy Harvester by Considering the Joints between Adjacent Parts</i> , pp. 1212-1217.			
Chen, Chung-De		Feng Chia Univ	
Yang, Yu-Rui		Feng Chia Univ	
16:30-17:30	ThPosterT1.10		
<i>Tool Holder Sensor Design for Measuring the Cutting Force in CNC Turning Machines</i> , pp. 1218-1223.			
Yeh, Syh-Shiuh		National Taipei Univ. of Tech	
Reyes-Uquillas, Daniel Alberto		National Taipei Univ. of Tech	
16:30-17:30	ThPosterT1.11		
<i>Pose Measurement of Robot Arm End Based on Laser Range Finders</i> , pp. 1224-1228.			
Liu, Hong		Harbin Inst. of Tech	
Zhang, Yu		Harbin Inst. of Tech	
Sun, Kui		Harbin Inst. of Tech	
Fan, Shaowei		Harbin Inst. of Tech	
Chen, Jiawei		Harbin Inst. of Tech	
16:30-17:30	ThPosterT1.12		
<i>Modelling and Analyzing of Postural Synergy Based Underactuated Robotic Hand with Contact and Friction Constraints</i> , pp. 1229-1234.			
Li, Shunchong		Shanghai Jiao Tong Univ	
Sheng, Xinjun		Shanghai Jiao Tong Univ	
Zhu, Xiangyang		Shanghai Jiao Tong Univ	
16:30-17:30	ThPosterT1.13		
<i>Design and Control of a Robotic Wrist Orthosis for Joint Rehabilitation</i> , pp. 1235-1240.			
Meng, Wei		The Univ. of Auckland	
Sheng, Bo		Univ. of Auckland	
Klinger, Michael		Univ. of Auckland	
Liu, Quan		Wuhan Univ. of Tech	
Zhou, Zude		Wuhan Univ. of Tech	
Xie, Sheng Quan		Univ. of Auckland	
16:30-17:30	ThPosterT1.14		
<i>Model Based Open-Loop Posture Control of a Parallel Ankle Assessment and Rehabilitation Robot</i> , pp. 1241-1246.			
Zhang, Mingming		The Univ. of Auckland	
Sheng, Bo		Univ. of Auckland	
Davies, T.Claire		Univ. of Auckland	
Meng, Wei		The Univ. of Auckland	
Xie, Sheng Quan		Univ. of Auckland	
16:30-17:30	ThPosterT1.16		
<i>Ground Micro-Gravity Verification of Free-Floating Non-Cooperative Satellite Docking</i> , pp. 1253-1258.			
Yang, Haitao		Harbin Inst. of Tech	
Jin, Minghe		Harbin Inst. of Tech	
Xie, Zongwu		Harbin Inst. of Tech	
Zhang, Yu		Harbin Inst. of Tech	
Sun, Kui		Harbin Inst. of Tech	
Zhao, Xiaoyu		Harbin Inst. of Tech	
16:30-17:30	ThPosterT1.17		
<i>Map Building of Indoor Environment Using Laser Range Finder and Geometrics</i> , pp. 1259-1264.			
Kim, Eun Kyeong		Pusan National Univ	
Cho, HyunHak		Pusan National Univ	
Jang, EunSeok		Pusan National Univ	
Park, Myung Kuk		Pusan National Univ	
Kim, Sungshin		Pusan National Univ	
16:30-17:30	ThPosterT1.18		
<i>Design and Optimization of Piezoelectric Actuated Plate Eigenmodes for Workpiece Transportation</i> , pp. 1265-1270.			
Shi, Dan		EPFL	
Civet, Yoan		EPFL	
Perriard, Yves		Ec. Pol. Fédérale De Lausanne	

		(EPFL)
16:30-17:30	ThPosterT1.19	
<i>Design of Hyper Redundant Robot Using Ball Screw Mechanism Approach</i> , pp. 1271-1276.		
Bayani, Salar	Islamic Azad Univ	
Rastegari, Rambod	Islamic Azad Univ	
Cheraghpour Samavati, Farzad	Islamic Azad Univ	
16:30-17:30	ThPosterT1.20	
<i>Design of Control System for Optical Fiber Assembly</i> , pp. 1277-1282.		
Huang, Xiaojin	Beihang Univ	
Chen, Weihai	Beihang Univ	
Zhang, Jianbin	Beihang Univ	
Wang, Shaoping	Beihang Univ	
16:30-17:30	ThPosterT1.21	
<i>Position Tracking System Using Single RGB-D Camera for Evaluation of Multi-Rotor UAV Control and Self-Localization</i> , pp. 1283-1288.		
Baek, Jun Young	Pusan National Univ	
Park, Se Hong	Pusan National Univ	
Cho, Beom-Seok	Pusan National Univ	
Lee, Min Cheol	Pusan National Univ	
16:30-17:30	ThPosterT1.22	
<i>Development of Temperature Sensing System in Downhole Application from Temperature Field in Oil Well</i> , pp. 1289-1291.		
Deng, Yongqiang	China Acad. of Engineering Physics	
Shi, Lei	Downhole Operation Projection Company, Cheng Du, Si Chuan	
Chen, Yanqiu	China Acad. of Engineering Physics	
Liu, Yu	Chengdu Green Energy and Green Manufacturing Tech. R&D Cent	
ThCT5		207-1
Actuators in Mechatronic Systems II (Regular Session)		
Chair: Dresscher, Douwe		Univ. of Twente
Co-Chair: Hasturk, Ozgur		Roketsan Missile Industries Inc
15:30-15:50	ThCT5.1	
<i>Research on PMA Properties and Humanoid Low Limb Application</i> , pp. 1292-1297.		
Jiang, Feilong	Zhejiang Univ	
Tao, Guoliang	Zhejiang Univ	
Liu, Hao	Zhejiang Univ	
15:50-16:10	ThCT5.2	
<i>A Novel Electromechanical Actuator for Missile Jet Vane Thrust Control</i> , pp. 1298-1302.		
Hasturk, Ozgur	Roketsan Missile Industries Inc	
16:10-16:30	ThCT5.3	
<i>Design Considerations for a Radially Magnetized Permanent Magnet Worm Drive Actuator</i> , pp. 1303-1308.		
Efobi, Okechukwu	Yokohama National Univ	
Fujimoto, Yasutaka	Yokohama National Univ	
16:30-16:50	ThCT5.4	
<i>A Novel Concept for a Translational Continuously Variable Transmission</i> , pp. 1309-1315.		
Dresscher, Douwe	Univ. of Twente	
De Vries, Theo	Univ. of Twente	
Stramigioli, Stefano	Univ. of Twente	

16:50-17:10	ThCT5.5	
<i>Development and Analysis of an Electrically Activated Sucker for Handling Workpieces with Rough Surface</i> , pp. 1316-1321.		
Dong, Lujian	Zhejiang Univ	
Li, Xin	Zhejiang Univ	
Liu, Hao	Zhejiang Univ	
Tao, Guoliang	Zhejiang Univ	
17:10-17:30	ThCT5.6	
<i>A Concept for a Robot Arm with Adjustable Series Clutch Actuators and Passive Gravity Compensation for Enhanced Safety</i> , pp. 1322-1327.		
Schmitz, Alexander	Waseda Univ	
Bhavaraju, Soumya	Waseda Univ. Sugano Lab	
Somlor, Sophon	Waseda Univ	
Aguirre Dominguez, Gonzalo	Waseda Univ. Sugano Lab	
Kamezaki, Mitsuhiro	Waseda Univ	
Wang, Wei	Waseda Univ	
Sugano, Shigeki	Waseda Univ	

ThCT6	207-2
Flexible Mechatronics for Intelligent Manufacturing and Robotics (Organized Session)	

Chair: Wang, Qining		Peking Univ
Co-Chair: Zhang, Ying		Northwestern Pol. Univ
Organizer: Guo, Jiajie		Huazhong Univ. of Science and Tech
Organizer: Lan, Chao-Chieh		National Cheng Kung Univ

15:30-15:50	ThCT6.1	
<i>Efficiency Analysis of Sinusoidal Stiffness Variation Method for Chatter Suppression (I)</i> , pp. 1328-1333.		
Sun, Yuxin	Shanghai Jiao Tong Univ	
Xiong, Zhenhua	Shanghai Jiao Tong Univ	

15:50-16:10	ThCT6.2	
<i>Transitions of Three Gaits in Dynamic Bipedal Robot with Adaptable Joint Stiffness (I)</i> , pp. 1334-1339.		
Huang, Yan	Peking Univ	
Chen, Liyang	Peking Univ	
Vanderborght, Bram	Vrije Univ. Brussel	
Wang, Qining	Peking Univ	

16:10-16:30	ThCT6.3	
<i>An Evolutionary Topology Optimization Method for Design of Compliant Mechanisms with Two-Dimensional Loading (I)</i> , pp. 1340-1345.		
Liu, Chih-Hsing	National Cheng Kung Univ	
Huang, Guo Feng	National Cheng Kung Univ	
Chiu, Chen-Hua	National Cheng Kung Univ	

16:30-16:50	ThCT6.4	
<i>Damping Support Fixture for Vibration Suppression in Milling of Thin-Walled Casing (I)</i> , pp. 1346-1349.		
Luo, Ming	Northwestern Pol. Univ	
Zhang, Xiaofan	Northwestern Pol. Univ	
Wu, Baohai	Northwestern Pol. Univ	

16:50-17:10	ThCT6.5	
<i>Displacement Field Sensing and Reconstruction for Vibration of a Thin-Wall Plate (I)</i> , pp. 1350-1355.		
Guo, Jiajie	Huazhong Univ. of Science and Tech	
Liu, Ruochu	Huazhong Univ. of Sciences and Tech	
Lee, Kok-Meng	Georgia Tech. Univ. of Sci & Tech	

An Adaptive Approach to Error Compensation by On-Machine Measurement for Precision Machining of Thin-Walled Blade (I), pp. 1356-1360.

Zhang, Ying	Northwestern Pol. Univ
Zhang, Dinghua	Northwestern Pol. Univ
Wu, Baohai	Northwestern Pol. Univ

Technical Program for Friday July 10, 2015

FrAT1	201
Motion Vibration and Noise Control (Regular Session)	
Chair: Sakr, Ahmed	Cairo Univ. Faculty of Engineering, Mechanical Design and Production Dept
Co-Chair: Chen, Silu	Singapore Inst. of Manufacturing Tech
08:45-09:05	FrAT1.1
<i>Low-Order Feedforward Control Schemes for Flexible Motion Systems with Different Rigid-Body Damping</i> , pp. 1361-1366.	
Li, Xiacong	National Univ. of Singapore
Chen, Silu	Singapore Inst. of Manufacturing Tech
Teo, Chek Sing	SIMTech
Tan, Kok Kiong	National Univ. of Singapore
09:05-09:25	FrAT1.2
<i>System Frequency Tuning for Heaving Buoy Wave Energy Converters</i> , pp. 1367-1372.	
Sakr, Ahmed	Cairo Univ
Anis, Yasser	Cairo Univ
Metwalli, Sayed	Cairo Univ
09:25-09:45	FrAT1.3
<i>Robust Stabilization for Friction-Induced Vibration with Parameter Uncertainties</i> , pp. 1373-1377.	
Liang, Yao	Tokyo Inst. of Tech
09:45-10:05	FrAT1.4
<i>A Benchmark Study on the Planning and Control of Industrial Robots with Elastic Joints</i> , pp. 1378-1383.	
Kim, Joonyoung	Hyundai Heavy Industries Co., Ltd
Croft, Elizabeth	Univ. of British Columbia
10:05-10:25	FrAT1.5
<i>A Feasibility Study of Designing a Tunable Vibration Absorber Using Stiffness Variable Magnetorheological Gel</i> , pp. 1384-1387.	
Shin, Beom-Cheol	Handong Global Univ
Yoon, Jung-Hwan	Handong Global Univ
Kim, Young-Keun	Handong Global Univ
Kim, Kyung-Soo	KAIST(Korea Advanced Inst. of Science and Tech
FrAT2	202
Industrial Application of Sensors (Organized Session)	
Chair: Kim, Jong-Wook	Dong-A Univ
Co-Chair: Jin, TaeSeok	DongSeo Univ
Organizer: Kim, Jong-Wook	Dong-A Univ
Organizer: Kim, Guryong	Dong-Eui Inst. of Tech
Organizer: Choe, Jongguk	LG Production Engineering Res. Inst
Organizer: Jin, TaeSeok	DongSeo Univ
Organizer: Go, Seokjo	DONGEUI Inst. of Tech
08:45-09:05	FrAT2.1
<i>Robust 3D Map Building for a Mobile Robot Moving on the Floor (I)</i> , pp. 1388-1393.	
Hwang, Yo-Seop	Pusan National Univ
Lee, Jangmyung	Pusan National Univ
09:05-09:25	FrAT2.2
<i>Dynamic Modeling-Based Flight PD Controller Applied to an Unmanned Hexarotor Helicopter (I)</i> , pp. 1394-1397.	
Han, Jae-Gyun	Dongseo Univ

Jin, TaeSeok	DongSeo Univ
09:25-09:45	FrAT2.3
<i>Study on Measurement Free Fall Posture and Height of a Mobile Device Using MEMS Sensors (I)</i> , pp. 1398-1401.	
Kim, Guryong	Dong-Eui Inst. of Tech
Choe, Jongguk	LG Production Engineering Res. Inst
09:45-10:05	FrAT2.4
<i>Development of 3D Laser Rrange Finder System for Object Recognition (I)</i> , pp. 1402-1405.	
Moon, Young-Geun	Pusan National Univ
Go, Seokjo	DONGEUI Inst. of Tech
Yu, Ki-Ho	Pusan National Univ
Lee, Min Cheol	Pusan National Univ
10:05-10:25	FrAT2.5
<i>Sensory Reflex Control of a Humanoid Robot Using FSR Sensor (I)</i> , pp. 1406-1409.	
Kim, Jong-Wook	Dong-A Univ
Dang Van, Chien	Dong-A Univ
Sung, Ki Je	Dong-A Univ
10:25-10:45	FrAT2.6
<i>Design of a Sensing System for a Spherical Motor Based on Hall Effect Sensors and Neural Networks (I)</i> , pp. 1410-1414.	
Guo, Jinjun	Nanyang Tech. Univ
Bak, Chanbeom	Ulsan National Inst. of Science and Tech
Son, Hungsun	Ulsan National Inst. of Science and Tech
FrAT3	206-1
Robot Dynamics and Control I (Regular Session)	
Chair: Shammass, Elie	American Univ. of Beirut
Co-Chair: Li, Yangmin	Univ. of Macau
08:45-09:05	FrAT3.1
<i>A Generalized Underactuated Robot System Inversion Method Using Hamiltonian Formalism</i> , pp. 1415-1420.	
Short, Joel Stephen	National Univ. of Singapore
Poo, Jim A.N.	National Univ. of Singapore
Lai, Chow Yin	A*STAR Singapore Inst. of Manufacturing Tech
Tao, Pey Yuen	SIMTech
Ang Jr, Marcelo H	National Univ. of Singapore
09:05-09:25	FrAT3.2
<i>Dynamics and Control of an Overhead Shuttle Transport System</i> , pp. 1421-1426.	
Kim, Gyoung-Hahn	Pusan National Univ
Shah, Umer Hameed	Pusan National Univ
Piao, Mingxu	Pusan National Univ
Choi, Sang-Hei	Korea Maritime Inst
Kim, Seoung-Nam	Seoho Electric
Hong, Keum-Shik	Pusan National Univ
09:25-09:45	FrAT3.3
<i>An Adaptive Neural Network Compensator for Decoupling of Dynamic Effects of a Macro-Mini Manipulator</i> , pp. 1427-1432.	
Wu, Ting-Ying	A*STAR Singapore Inst. of Manufacturing Tech
Lai, Chow Yin	A*STAR Singapore Inst. of Manufacturing Tech
Chen, Silu	A*STAR Singapore Inst. of Manufacturing Tech
09:45-10:05	FrAT3.4

Modeling, Analysis, and Controllability of a Single-Actuator Differentially-Driven Robot, pp. 1433-1438.

Alsalmán, Mohamad American Univ. of Beirut
 Shammás, Elie American Univ. of Beirut
 Salman, Hadi American Univ. of Beirut

10:05-10:25 FrAT3.5

Cross-Coupling Control of the HIT-DLR Robotic Finger, pp. 1439-1444.

Wang, Xinqing China Univ. of Petroleum
 Gao, Juan Qingdao Harbour Vocational and Tech. Coll
 Pan, Jun Haerbin Inst. of Tech

10:25-10:45 FrAT3.6

Dynamic Analysis of a 3-DOF 3-PUU Parallel Manipulator Based on the Principle of Virtual Work, pp. 1445-1450.

Lu, Song Univ. of Macau
 Li, Yangmin Univ. of Macau/Tianjin Univ. of Tech

FrAT4 206-2
Mechatronics in Manufacturing Processes (Regular Session)

Chair: Hsu, Pau-Lo National Chiao Tung Univ
 Co-Chair: Csiszar, Akos Univ. of Stuttgart

08:45-09:05 FrAT4.1

A Combinatorial Optimization Approach to the Denavit-Hartenberg Parameter Assignment, pp. 1451-1456.

Csiszar, Akos Univ. of Stuttgart

09:05-09:25 FrAT4.2

Analytical Development of a Minimum Bearing Reaction Twin-Motor for Duplex Machining, pp. 1457-1462.

Bai, Kun Huazhong Univ. of Science and Tech
 Lee, Kok-Meng Georgia Tech. Univ. of Sci & Tech
 Cao, Jun State Key Lab. of Digital Manufacturing Equipment and Tech
 Hao, Bingjie State Key Lab. of Digital Manufacturing Equipment and Tech

09:25-09:45 FrAT4.3

The Angle Cutting Robot System in the Shipbuilding Industry, pp. 1463-1466.

Nam, Mihee Samsung Heavy Industries and Pusan National Univ
 Mun, SeungHwan Samsung Heavy Industries and Pusan National Univ
 Lee, JaeChang Samsung Heavy Industries
 Lee, Jangmyung Busan National Univ. Busan, Korea

09:45-10:05 FrAT4.4

Robust Controller Design for CNC Servo Motors against the Variation of External Loading Via The $\|H\|_{\infty}$ /QFT Approach, pp. 1467-1471.

Wu, Bo-Yi Univ. of Chiao-Tung
 Hsu, Pau-Lo Univ. of Chiao-Tung

10:05-10:25 FrAT4.5

A Constrained Linear Quadratic Optimization Approach to Jerk Decoupling Cartridge Design for Vibration Suppression, pp. 1472-1477.

Chen, Silu Singapore Inst. of Manufacturing Tech
 Ma, Jun National Univ. of Singapore

Teo, Chek Sing SIMTech
 Kong, Chun Jeng Singapore Inst. of Manufacturing Tech

Lin, Wei SIMTech, A*STAR
 Tay, Arthur National Univ. of Singapore
 Mamun, Abdullah Al National Univ. of Singapore

10:25-10:45 FrAT4.6

Machine Assisted Manual Torch Operation in Gas Tungsten Arc Welding Process, pp. 1478-1483.

Huang, Ning Beijing Univ. of Tech
 Chen, Shujun Beijing Univ. of Tech
 Zhang, Yuming Univ. of Kentucky

FrAT5 207-1
Intelligent Process Automation (Regular Session)

Chair: Tjahjowidodo, Tegoeh Nanyang Tech. Univ
 Co-Chair: Xiong, Zhenhua Shanghai Jiao Tong Univ

08:45-09:05 FrAT5.1

Automatic Defect Detection and the Estimation of Nominal Profiles Based on Spline for Free-Form Surface Parts, pp. 1484-1489.

Dung, Van Than Nanyang Tech. Univ
 Tjahjowidodo, Tegoeh Nanyang Tech. Univ
 Han, Ming Li Advanced Remanufacturing and Tech. Centre

09:05-09:25 FrAT5.2

A Fast Non-Uniform Knots Placement Method for B-Spline Fitting, pp. 1490-1495.

Tjahjowidodo, Tegoeh Nanyang Tech. Univ
 Dung, Van Than Nanyang Tech. Univ
 Han, Ming Li Advanced Remanufacturing and Tech. Centre

09:25-09:45 FrAT5.3

Weld Quality Assessment Based on Arc Sensing for Robotic Welding, pp. 1496-1501.

Lubecki, Tomasz Marek Singapore Inst. of Manufacturing Tech
 Bai, Fengjun Singapore Inst. of Manufacturing Tech

09:45-10:05 FrAT5.4

Sub-Assembly Welding Robot System at Shipyards, pp. 1502-1507.

Mun, SeungHwan Samsung Heavy Industries and Pusan National Univ. Korea
 Nam, Mihee Samsung Heavy Industries and Pusan National Univ. Korea
 Lee, JaeChang Samsung Heavy Industries, Korea
 Doh, KyuWon Samsung Heavy Industries, Korea
 Park, GiBeom Samsung Heavy Industries, Korea
 Lee, HyunCheol Samsung Heavy Industries, Korea
 Kim, DaeKyung Samsung Heavy Industries, Korea
 Lee, Jangmyung Pusan National Univ. Busan, Korea

10:05-10:25 FrAT5.5

Flexible Workpiece Vibration Suppression in Milling Process Based on a New Response Metric, pp. 1508-1513.

Zhang, Xiaoming Huazhong Univ. of Science and Tech
 Zhang, Dong Huazhong Univ. of Science and Tech

		Tech
Lee, Kok-Meng	Georgia Tech. Univ. of Sci & Tech	Education
Ding, Han	Shanghai Jiao Tong Univ	Education
10:25-10:45		FrAT5.6
<i>Intelligent Chatter Detection Based on Wavelet Packet Node Energy and LSSVM-RFE</i> , pp. 1514-1519.		
Qian, Shicai	Shanghai Jiao Tong Univ	
Sun, Yuxin	Shanghai Jiao Tong Univ	
Xiong, Zhenhua	Shanghai Jiao Tong Univ	

FrAT6 207-2
Design Optimization in Mechatronics (Regular Session)

Chair: Cao, Jian	Zhejiang Univ
Co-Chair: Kim, Bong Keun	National Inst. of Advanced Industrial Science and Tech

08:45-09:05 FrAT6.1

Design of Novel High Speed 2-Phase 4/3 Switched Reluctance Motor for Air-Blower Application, pp. 1520-1524.

Pham, Trung Hieu	Kyungsung Univ
Lee, Dong-Hee	Kyungsung Univ
Ahn, Jin-Woo	Kyungsung Univ

09:05-09:25 FrAT6.2

Optimal Design of a Compound Hybrid System Consisting of Torque Coupling and Energy Regeneration for Hydraulic Hybrid Excavator, pp. 1525-1530.

Xiao, Yang	Zhejiang Univ
Guan, Cheng	Zhejiang Univ
Li, Perry	Univ. of Minnesota
Wang, Fei	Zhejiang Univ

09:25-09:45 FrAT6.3

Analytical Modeling and Optimal Design of a MR Damper with Power Generation, pp. 1531-1536.

Zhu, Xiaocong	Zhejiang Univ
Wang, Weiwei	Zhejiang Univ
Yao, Bin	Zhejiang Univ
Cao, Jian	Zhejiang Univ
Wang, Qingfeng	Zhejiang Univ

09:45-10:05 FrAT6.4

Optimum Electric Cable Selection for Kite-Like Unmanned Aerial Vehicle, pp. 1537-1540.

Wang, Ko-Yuan	National Chiao Tung Univ
Lee, Pei Hsuan	National Chiao Tung Univ
Hung, Shao-Kang	National Chiao Tung Univ

10:05-10:25 FrAT6.5

Indoor Snowfall Simulation Chamber for Realizing Uniform Snowfall, pp. 1541-1545.

Kim, Bong Keun	National Inst. of Advanced Industrial Science and Tech
Sumi, Yasushi	National Inst. of Advanced Industrial Science and Tech

FrAT7 208-1
Aerial Robots (Regular Session)

Chair: Chae, Heeseo	Samsung Tech
Co-Chair: Wang, Zhongkui	Ritsumeikan Univ

08:45-09:05 FrAT7.1

Tracking a Moving Ground Object Using Quadcopter UAV in a Presence of Noise, pp. 1546-1551.

Razinkova, Anastasia	Korea Univ. of Tech. and Education
----------------------	------------------------------------

		Education
Cho, Hyun-Chan	Korea Univ. of Tech. and Education	Education

09:05-09:25 FrAT7.2

Parameter Estimation for the Pitching Dynamics of a Flapping-Wing Flying Robot, pp. 1552-1558.

Chand, Aneesh Neeschal	Toyota Tech. Inst
Kawanishi, Michihiro	Toyota Tech. Inst
Narikiyo, Tatsuo	Toyota Tech. Inst

09:25-09:45 FrAT7.3

Laser Interferometry-Based Tracking of Multirotor Helicopters, pp. 1559-1564.

Porter, Robert John	Monash Univ
Shirinzadeh, Bijan	Monash Univ
Choi, Man Ho	Monash Univ
Bhagat, Umesh	Monash Univ

09:45-10:05 FrAT7.4

Origami Structure Toward Floating Aerial Robot, pp. 1565-1569.

Le, Phuong	Ritsumeikan Univ
Wang, Zhongkui	Ritsumeikan Univ
Hirai, Shinichi	Ritsumeikan Univ

10:05-10:25 FrAT7.5

Modelling and Control of Quadrotor Maneuvers with Variations of Center of Gravity (COG), pp. 1570-1574.

Lotfi, Behrooz	Islamic Azad Univ. Mashhad Branch
Goharimanesh, Masoud	Ferdowsi Univ. of Mashhad, Mashhad, Iran
Huang, Loulin	Auckland Univ. of Tech

10:25-10:45 FrAT7.6

The IoT Based Automate Landing System of a Drone for the Round-The-Clock Surveillance Solution, pp. 1575-1580.

Chae, Heeseo	Samsung Tech
Park, JunHo	Samsung Tech
Song, HoNam	Samsung Tech
Kim, YongHwan	Samsung Tech
Jeong, Hae Wook	Samsung Tech

FrPlenary_Session 201 & 202

Plenary Session III (Plenary Session)

Chair: Lee, Min Cheol	Pusan National Univ
-----------------------	---------------------

11:00-12:00 FrPlenary_Session.1

*Robotic Self-Reconfiguration, Self-Repair, and Self-Replication**.

Chirikjian, Gregory	Johns Hopkins Univ
---------------------	--------------------

FrBT1 201

Sensor Integration, Data Fusion (Regular Session)

Chair: Chen, Xiaohan	Beihang Univ
Co-Chair: Kim, Byoung-Ho	Kyungsung Univ

13:15-13:35 FrBT1.1

A PCB Inductive Sensor for Compact Ionic Polymer Metal Composite (IPMC) Displacement Sensing Used in Biomedical Pumps, pp. 1581-1584.

Wang, Jiaqi	The Univ. of Auckland
Aw, Kean C.	The Univ. of Auckland
McDaid, Andrew	The Univ. of Auckland
Sharma, Rajnish	The Univ. of Auckland

13:35-13:55 FrBT1.2

Pose Estimation of Robotic End-Effectors under Low Speed

Motion Using EKF with Inertial and SE(3) Measurements, pp. 1585-1590.

Chen, Xiaohan	Singapore Univ. of Tech. and Design
Soh, Gim Song	Singapore Univ. of Tech. and Design
Foong, Shaohui	Singapore Univ. of Tech. and Design
Otto, Kevin	Singapore Univ. of Tech. and Design

13:55-14:15 FrBT1.3

Performance Analysis of Mobile Robot Self-Localization Based on Different Configurations of RFID System, pp. 1591-1596.

Mi, Jian	Univ. of Fukui
Takahashi, Yasutake	Univ. of Fukui

14:15-14:35 FrBT1.4

A Novel Soft Intelligent Calibrator for Low-Velocity Hot Bulb Anemometers, pp. 1597-1602.

Zhang, Hongsheng	Beihang Univ
Li, Yun-Ze	Beihang Univ
Zhong, Ming Liang	Beihang Univ
Li, Miao	Beihang Univ
Guo, Wei	Beihang Univ
Liu, Yang	Beihang Univ

14:35-14:55 FrBT1.5

Design and Modelling of a Test Bench to Characterize Magnetic Fluids, pp. 1603-1607.

Cuchet, Cécile	Epfl, Lai
Espanet, Christophe	Moving Magnet Tech. S.A
Civet, Yoan	EPFL
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)
Biwersi, Stéphane	Moving Magnet Tech. S.A

14:55-15:15 FrBT1.6

The Fault-Tolerant Control of Tilt Sensor for EPB, pp. 1608-1612.

Pi, Dawei	Nanjing Univ. of Science and Tech
Xu, Jialin	Nanjing Univ. of Science and Tech
Wang, Hongliang	Nanjing Univ. of Science and Tech
Shi, Bingliang	PLA
Li, Nan	PLA

FrBT2 202

Novel Industry Applications of Mechatronics (Regular Session)

Chair: Huang, Shouren	Univ. of Tokyo
Co-Chair: Kim, Young-Keun	Handong Global Univ

13:15-13:35 FrBT2.1

Sensor Guided Robot Path Generation for Repairing Drilling Riser Buoyancy Module, pp. 1613-1618.

Deng, Di	Singapore Inst. of Manufacturing Tech
Sam, Wai Ban	Singapore Inst. of Manufacturing Tech
Tao, Pey Yuen	SIMTech
Lubecki, Tomasz Marek	Singapore Inst. of Manufacturing Tech

13:35-13:55 FrBT2.2

Simple Triboelectric Generator Applied on Macro-Sized Surface Patterns and Test-Bed Device to Control Humidity, pp. 1619-1622.

Yang, Jun-Ho	Handong Global Univ
--------------	---------------------

Kim, Seong-Yoon	Handong Global Univ
Sim, Seong Bo	Handong Global Univ
Kim, Young-Keun	Handong Global Univ
Lee, Jae Young	Handong Global Univ

13:55-14:15 FrBT2.3

A Novel Propeller-type Climbing Robot for Vessels Inspection, pp. 1623-1628.

Alkalla, Mohamed	Egypt-Japan Univ. for Science and Tech. E-JUST
Fanni, Mohamed Ahmed	Egypt-Japan Univ. of Science and Tech. E-JUST
Mohamed, Abdelfatah	Egypt-Japan Univ. of Science and Tech. E-JUST

14:15-14:35 FrBT2.4

Realizing 1D Robotic Catching without Prediction Based on Dynamic Compensation Concept, pp. 1629-1634.

Huang, Shouren	Univ. of Tokyo
Yamakawa, Yuji	Univ. of Tokyo
Senoo, Taku	Univ. of Tokyo
Ishikawa, Masatoshi	Univ. of Tokyo

14:35-14:55 FrBT2.5

Temperature Control of Permanent-Magnet Synchronous Motor Using Phase Change Material, pp. 1635-1640.

Wang, Shengnan	Beihang Univ
Li, Yun-Ze	Beihang Univ
Liu, Yang	Beihang Univ
Zhou, Hang	Beihang Univ
Li, Yunhua	BeiHAng Univ
Guo, Wei	BeiHAng Univ
Xiao, Xi	China Aviation Industry Jincheng Nanjing Electrical and Hydraul

14:55-15:15 FrBT2.6

Dynamic Simulation of a Novel Free-Piston Linear Generator (I), pp. 1641-1646.

Sun, Peng	Univ. of Chinese Acad. of Sciences
Zhao, Fei	Ningbo Inst. of Material Tech. and Engineering, CAS
Zhang, Chi	Ningbo Inst. of Material Tech. and Engineering, CAS
Zhang, Jie	Ningbo Inst. of Material Tech. and Engineering, CAS
Chen, Jinhua	Ningbo Inst. of Material Tech. and Engineering, CAS

FrBT3 206-1

Robot Dynamics and Control II (Regular Session)

Chair: Lee, Min Cheol	Pusan National Univ
Co-Chair: Jabbari Asl, Hamed	Iran Univ. of Science and Tech

13:15-13:35 FrBT3.1

Design and Implementation of Model-Free PID Fuzzy Logic Control on a 4-Bar Parallel Mechanism, pp. 1647-1652.

Ren, Qun	École De Tech. Supérieure, Univ. of Quebec
Bigras, Pascal	École De Tech. Supérieure, Univ. of Quebec

13:35-13:55 FrBT3.2

Intrinsic UDE Control of Mechanical Systems on SO(3), pp. 1653-1658.

Liyanage, Sanka	Texas Tech. Univ
Berg, Jordan M.	Texas Tech. Univ

Ren, Beibei	Texas Tech. Univ
Maithripala, D. H. S.	Univ. of Peradeniya
13:55-14:15	FrBT3.3
<i>Sensor-Minimal Motion Control of Variable Stiffness Actuators Based on the Passivity Principle and Velocity Estimation</i> , pp. 1659-1663.	
Singh, Bajwa Roodra Pratap	Indian Inst. of Tech. Madras
Pudureddiyur Venkataraman,	IIT Madras
Manivannan	
Beckerle, Philipp	Tech. Univ. Darmstadt
14:15-14:35	FrBT3.4
<i>Estimated Force Based Velocity Synchronization for Fly Touch Control in Hot Rolling Process</i> , pp. 1664-1669.	
Yoon, Sung Min	Pusan National Univ
Lee, Min Cheol	Pusan National Univ
Kim, Sung Jin	Pusan National Univ
Kim, Hyun Hee	Pusan National Univ
Cha, Keum Gang	Pusan National Univ
14:35-14:55	FrBT3.5
<i>Vision-Based Control of a Flying Robot without Linear Velocity Measurements</i> , pp. 1670-1675.	
Jabbari Asl, Hamed	Gyeongsang National Univ
Yoon, Jungwon	Gyeongsang National Univ
14:55-15:15	FrBT3.6
<i>Dynamic Multi-Obstacles Avoidance of a Robot Manipulator Based on Repulsive Vector Summation for Human-Robot Co-Works</i> , pp. 1676-1681.	
Luo, Ren	National Taiwan Univ
Chung, Yi-Ting	National Taiwan Univ
FrBT4	206-2
High Frequency Research for Industrial Application (Organized Session)	
Chair: Kim, Heeje	Pusan National Univ
Co-Chair: Kim, Sungshin	Pusan National Univ
Organizer: Kim, Heeje	Pusan National Univ
13:15-13:35	FrBT4.1
<i>Optimization of 4Hz Medical Ruby Laser Power System with Dual Cavities Using Multi-Resonant Converter (I)</i> , pp. 1682-1685.	
Lee, Jae Cheol	Department of Electrical Engineering, Pusan National Univ
Kim, Heeje	Pusan National Univ
13:35-13:55	FrBT4.2
<i>High Power Ultrasonic Transducer with LLC Resonant Converter Using Digital Control Algorithm (I)</i> , pp. 1686-1689.	
Jeong, DongKeun	Pusan National Univ
Kim, JongHyun	Korea Electrotechnology Res. Inst
Kim, Ho-Sung	KERI
Baek, JuWon	Korea Electrotechnology Res. Inst
Kim, Heeje	Pusan National Univ
13:55-14:15	FrBT4.3
<i>High-Voltage Input Power Supply for Modular Multi-Level Converter (I)</i> , pp. 1690-1693.	
Yun, Hyeok-Jin	Pusan National Univ
Kim, Ho-Sung	KERI
Kim, Heeje	Pusan National Univ
14:15-14:35	FrBT4.4
<i>Research on the Medical Nd: YAG Laser Power System Using</i>	

<i>LLC Resonant Converter (I)</i> , pp. 1694-1698.	
Zheng, Tao	PUSAN NATIONAL Univ
Kim, Heeje	Pusan National Univ
14:35-14:55	FrBT4.5
<i>Optimal Tissue Heating Characteristics for Cancer Cell Treatment (I)</i> , pp. 1699-1700.	
Kim, Heeje	Pusan National Univ
FrBT5	207-1
Underwater Robotics (Regular Session)	
Chair: Santhakumar, Mohan	IIT Indore
Co-Chair: Takesue, Naoyuki	Tokyo Metropolitan Univ
13:15-13:35	FrBT5.1
<i>A Novel Method to Generate Three-Dimensional Paths for Vehicles with Bounded Pitch and Yaw</i> , pp. 1701-1706.	
Wehbe, Bilal	American Univ. of Beirut
Shammas, Elie	American Univ. of Beirut
Asmar, Daniel	American Univ. of Beirut
13:35-13:55	FrBT5.2
<i>Robust PID Control for Position Tracking of an Underwater Manipulator</i> , pp. 1707-1712.	
Mohan, Santhakumar	Asst. Prof (Indian Inst. of Tech. Indore, Indore)
Kim, JinWhan	KAIST
13:55-14:15	FrBT5.3
<i>Robust Nonlinear Task Space Position Tracking Control of an Autonomous Underwater Vehicle-Manipulator System</i> , pp. 1713-1718.	
Londhe, Pandurang	SGGS Nanded
Santhakumar, Mohan	IIT Indore
Patre, Balasaheb	SGGS Inst. of Engineering and Tech. Nanded
Waghmare, Laxman	SGGS Nanded
14:15-14:35	FrBT5.4
<i>Proposal of Miniature Aquatic Robot Utilizing Resonance of Elastic Plate (I)</i> , pp. 1719-1724.	
Takesue, Naoyuki	Tokyo Metropolitan Univ
Mitsuzumi, Takashi	Tokyo Metropolitan Univ
Nagasawa, Mikiro	Tokyo Metropolitan Univ
14:35-14:55	FrBT5.5
<i>Method of Position Measurement for Stationary Sensor Node Based on Marine Tag</i> , pp. 1725-1730.	
Ono, Akihito	Kagawa Univ
Takahashi, Satoru	Kagawa Univ
Kawabata, Kuniaki	RIKEN
Suzuki, Tsuyoshi	Tokyo Denki Univ
Takemura, Fumiaki	Okinawa National Coll. of Tech
FrBT6	207-2
Telerobotics (Organized Session)	
Chair: Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
Co-Chair: Liu, Yen-Chen	National Cheng Kung Univ
Organizer: Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
Organizer: Yang, Gi-Hun	KITECH
Organizer: Hwang, Jung-Hoon	Korea Eletronics Tech. Inst
Organizer: Shin, Eun-Cheol	Korea Inst. of Indutrial Tech
13:15-13:35	FrBT6.1

Network Formulation and Stability Improvement of a Bilateral Teleoperation System with Admittance-Type Master Interfaces (I), pp. 1731-1736.

Nabeel, Muhammad Korea Univ. of Tech. and Education
 Jafari, Aghil Korea Univ. of Tech. and Education
 Ryu, Jee-Hwan Korea Univ. of Tech. and Education

13:35-13:55 FrBT6.2

Simulation and Implementation of Bilateral Teleoperated Needle Insertion Via an Endoscope (I), pp. 1737-1743.

Janssens, Jérôme Univ. Libre De Bruxelles (ULB)
 Catoire, Laurent Univ. Libre De Bruxelles
 Torfs, Serge Univ. Libre De Bruxelles
 Kinnaert, Michel Univ. Libre De Bruxelles

13:55-14:15 FrBT6.3

Estimation of Human Arm Impedance in Accordance with the Master Device Types and Gripping Posture (I), pp. 1744-1748.

Shin, Eun-Cheol Korea Inst. of Industrial Tech
 Yang, Gi-Hun KITECH
 Ryu, Jee-Hwan Korea Univ. of Tech. and Education

14:15-14:35 FrBT6.4

A Novel Wireless Vibrotactile Display Device for Representing 3DOF Force Feedback in Teleoperation (I), pp. 1749-1753.

Won, Jongha Sungkyunkwan Univ
 Yang, Gi-Hun KITECH
 Jeon, Jae Wook Sungkyunkwan Univ

14:35-14:55 FrBT6.5

Reaction Force Estimation of Hydraulic Servo System Using Sliding Perturbation Observer (I), pp. 1754-1759.

Cha, Keum Gang Pusan National Univ
 Yoon, Sung Min Pusan National Univ
 Kim, Hyun Hee Pusan National Univ
 Gim, Ki-Yeon Pusan National Univ
 Lee, Min Cheol Pusan National Univ

14:55-15:15 FrBT6.6

Design and Implementation of a Three-Axis Force Sensor for Applications to Bilateral Teleoperation Systems (I), pp. 1760-1765.

Khong, Mun-Hooi National Cheng Kung Univ
 Liu, Yen-Chen National Cheng Kung Univ

FrBT7 208-1

Service Robots (Regular Session)

Chair: Naruse, Keitaro Univ. of Aizu
 Co-Chair: Zhang, Xinyu East China Normal Univ

13:15-13:35 FrBT7.1

Immersive VR Interface for Informationally Structured Environment, pp. 1766-1771.

Pyo, Yoonseok Kyushu Univ
 Tsuji, Tokuo Kyushu Univ
 Hashiguchi, Yuuka Kyushu Univ
 Kurazume, Ryo Kyushu Univ

13:35-13:55 FrBT7.2

The Concept, Configuration and Operation Procedure of the Energy Management System for Mobile Devices Via Wireless Charging Robot, pp. 1772-1777.

Nakamura, Sousuke Chuo Univ
 Suzuki, Taito Chuo Univ
 Hashimoto, Shun Chuo Univ

Hashimoto, Hideki Chuo Univ

13:55-14:15 FrBT7.3

Balancing Control Application Using Gyroscopic Effect to a Hand-Carried One-Wheel Cart, pp. 1778-1782.

Ha, Minsoo Chungnam National Univ
 Jung, Seul Chungnam National Univ

14:15-14:35 FrBT7.4

Predicting the Disconnection of Flocking Agents in a Swarm, pp. 1783-1788.

Naruse, Keitaro Univ. of Aizu

14:35-14:55 FrBT7.5

ROSBOT: A Low-Cost Autonomous Social Robot, pp. 1789-1794.

Fu, Guohe East China Normal Univ
 Zhang, Xinyu East China Normal Univ

14:55-15:15 FrBT7.6

3D Reconstruction of Complex Weld Geometry Based on Adaptive Sampling, pp. 1795-1800.

Keshmiri, Soheil National Univ. of Singapore
 Tan, Yan Zhi National Univ. of Singapore
 Ahmed, Syeda Mariam National Univ. of Singapore
 Wu, Yue National Univ. of Singapore
 Chew, Chee Meng National Univ. of Singapore
 Pang, Chee Khiang National Univ. of Singapore

FrInvited_Session 201 & 202

Invited Session III (Invited Session)

Chair: Jung, Seul Chungnam National Univ

15:30-16:30 FrInvited_Session.1

*Space Robotics Activities at HIT**.

Liu, Hong Harbin Inst. of Tech