2014 IEEE/ASME International Conference on Advanced Intelligent Mechatronics

(AIM 2014)

Besancon, France
8-11 July 2014

Pages 1-881

IEEE Catalog Number: CFP14775-POD
ISBN: 978-1-4799-5737-8

Technical Program of 2014 IEEE/ASME International Conference on Advanced Intelligent Mechatronics

Technical Program for Tuesday July 8, 2014

TuAT1	AmphiTheater
Non Contact Micromanipulation (Invited Session)	
Chair: Régnier, Stéphane	Univ. Pierre et Marie Curie
Co-Chair: Gauthier, Michael	FEMTO-ST Inst.
Organizer: Bolopion, Aude	Femto-st Inst.
Organizer: Gauthier, Michael	FEMTO-ST Inst.
Organizer: Régnier, Stéphane	Univ. Pierre et Marie Curie
10:45-11:05	TuAT1.1
Position Control of a Ferromagnetic Micro-Particle in a Dry Environment (I), pp. 1-6.	
Bouchebout, Soukeyna	Univ. of Pierre Et Marie Curie
Bolopion, Aude	FEMTO-ST Inst
Gauthier, Michael	FEMTO-ST Inst
Régnier, Stéphane	Univ. of Pierre Et Marie Curie
11:05-11:25	TuAT1.2
First High Speed Simultaneous Force Feedback for Multi-Trap Optical Tweezers (I), pp. 7-12.	
Ni, Zhenjiang	Univ. Pierre Et Marie Curie
Yin, Munan	Univ. Pierre and Mariue Curie
Pacoret, Cécile	Univ. Pierre and Mariue Curie
Benosman, Ryad Benjamin	Univ. Pierre Et Marie Curie
Régnier, Stéphane	Univ. Pierre Et Marie Curie
11:25-11:45	TuAT1.3
Advantages and Limitations of the Various Magnetic Manipulation Methods of Untethered Agents in the Human Body (I), pp. 13-18.	
Martel, Sylvain	Pol. Montreal
11:45-12:05	TuAT1.4
Dielectrophoretic Actuation Strategy for Micromanipulation Along Complex Trajectories (I), pp. 19-25. Attachment	
Zemanek, Jiri	Czech Tech. Univ. in Prague
Drs, Jakub	Czech Tech. Univ. in Prague
Hurák, Zdeněk	Czech Tech. Univ. in Prague
12:05-12:25	TuAT1.5
Versatile Non-Contact Micro-Manipulation Method Using Rotational Flows Locally Induced by Magnetic Microrobots (I), pp. 26-31. Attachment	
Ye, Zhou	Carnegie Mellon Univ
Edington, Collin	Univ. of Pittsburgh
Russell, Alan James	Cmu
Sitti, Metin	Max-Planck Inst. for Intelligent Systems

TuAT2	Chardonnet Salon
Design Optimization (Regular Session)	
Chair: CHOLEY, Jean-Yves	SUPMECA-LISMMA
Co-Chair: Elsayed, Yahya	Univ. of surrey
10:45-11:05	TuAT2.1
Tailored Compliance for Adaptive Solar Energy Heliostats with Experimental Validation, pp. 32-37.	
Meng, Li	Tsinghua Univ
You, Zheng	Tsinghua Univ
Dubowsky, Steven	Mit
11:05-11:25	TuAT2.2
Multidisciplinary Optimization of Servodrives for Robot Manipulators, pp. 38-43.	
Citalán Lara, Roger	Cinvestav-Ipn
Cruz-Villar, Carlos Alberto	Cinvestav-Ipn
11:25-11:45	TuAT2.3
Design Optimisation of Soft Silicone Pneumatic Actuators Using Finite Element Analysis, pp. 44-49.	
Elsayed, Yahya	Univ. of Surrey
Lekakou, Constantina	Univ. of Surrey
Saaj, Chakravarthini	Univ. of Surrey
Geng, Tao	Univ. of Surrey
11:45-12:05	TuAT2.4
Modeling and Optimization of a Digital Electromagnetic Actuators Array, pp. 50-55.	
Huyan, Pengfei	Univ. De Tech. De Compiègne
Xu, Jing	Univ. De Tech. De Compiègne
Petit, Laurent	Univ. De Tech. De Compiègne
Prelle, Christine	Univ. De Tech. De Compiègne
12:05-12:25	TuAT2.5
Multidisciplinary Approach for Optimizing Mechatronic Systems: Application to the Optimal Design of an Electric Vehicle, pp. 56-61.	
GUIZANI, Amir	Supmeca-Lismma / Enis-La2mp
HAMMADI, Moncef	Supmeca-Lismma
CHOLEY, Jean-Yves	Supmeca-Lismma
SORIANO, Thierry	Supmeca-Lismma
ABBES, Mohamed Slim	Enis-La2mp
HADDAR, Mohamed	Enis-La2mp

TuAT3	Fourier Salon
Legged Robots (Regular Session)	
Chair: Oh, Sehoon	Sogang Univ.
Co-Chair: Kong, Kyoungchul	Sogang Univ.
10:45-11:05	TuAT3.1
Frequency Bandwidth Enlargement of Robotic Legs by Dual-Stage Springs, pp. 62-65.	
Na, Byeonghun	Sogang Univ
Kong, Kyoungchul	Sogang Univ
11:05-11:25	TuAT3.2
Gait Planning and Gait Transition of AmphiHex-I, pp. 66-71.	
Kong, Ziwen	Univ. of Science and Tech. of China
Xu, Min	Univ. of Science and Tech. of China
Zhou, Youcheng	Univ. of Science and Tech. of China
Wang, Xudong	Univ. of Science & Tech. of China
Zhang, Shiwu	Univ. of Science and Tech. of China
11:25-11:45	TuAT3.3
A Disturbance Observer for Robust Position Tracking Control and Ground Contact Detection of a Cheetaroid-I Leg, pp. 72-75.	
Choi, Jungsu	Sogang Univ
Na, Byeonghun	Sogang Univ
Oh, Sehoon	Sogang Univ
Kong, Kyoungchul	Sogang Univ
11:45-12:05	TuAT3.4
Singular Configurations Analyses of the Modifiable Theo Jansen-Like Mechanism by Focusing on the Jacobian Determinant - a Finding Limitations to Exceed Normal Joint Range of Motion, pp. 76-81.	
Komoda, Kazuma	Kyushu Inst. of Tech
Wagatsuma, Hiroaki	Graduate School of Life Science and Systems Engineering, Kyushu
12:05-12:25	TuAT3.5
LAURON V: A Versatile Six-Legged Walking Robot with Advanced Maneuverability, pp. 82-87. Attachment	
Roennau, Arne	FZI Forschungszentrum Informatik
Heppner, Georg	Forschungszentrum Informatik
Nowicki, Michał	Poznan Univ. of Tech
Dillmann, Rüdiger	Karlsruhe Inst. of Tech. (KIT)
12:25-12:45	TuAT3.6
Invasive Weed Optimization of Swing-Up Control Parameters for Robot Gymnast, pp. 88-93. Attachment	
Ismail, Hafizul Azizi	Cardiff Univ
Eldukhri, Eldaw	Cardiff Univ
Packianather, Michael S	Cardiff Univ

TuAT4	Granvelle Salon
Biomechatronics (Regular Session)	
Chair: Hashimoto, Minoru	Shinshu Univ.
Co-Chair: Kim, Ji-Chul	KAIST
10:45-11:05	TuAT4.1
Influence of the Number of Stacked Layers on the Performance of PVC Gel Actuators, pp. 94-99.	
Li, Yi	Shinshu Univ
Tsuchiya, Yoichiro	Shinshu Univ
Suzuki, Aya	Shinshu Univ
Shirai, Yoshiko	Shinshu Univ
Hashimoto, Minoru	Shinshu Univ
11:05-11:25	TuAT4.2
Characteristics of a Non-Woven PVC Gel Actuator, pp. 100-105.	
Tokoro, Hiromi	Shinshu Univ
Hashimoto, Minoru	Shinshu Univ
11:25-11:45	TuAT4.3
Multi-Applications of a Magnet Configuration in Actuating Capsule Endoscope, pp. 106-111. Attachment	
Sun, Zhen-Jun	Huazhong Univ. of Sience and Tech
Cheng, Xing-Guo	Huazhong Univ. of Sience and Tech
Cao, Shu	Huazhong Univ. of Sience and Tech
Ye, Bo	Huazhong Univ. of Sience and Tech
Zhang, Hong-Hai	Huazhong Univ. of Sience and Tech
Liu, Sheng	Huazhong Univ. of Sience and Tech
11:45-12:05	TuAT4.4
Wearable Sensor System Including Optical 3-Axis GRF Sensor for Joint Torque Estimation in Real-Time Gait Analysis, pp. 112-117.	
Kim, Ji-Chul	Kaist
Kim, Kyung-Soo	KAIST(Korea Advanced Inst. of Science and Tech
Kim, Soohyun	KAIST(Korea Advanced Inst. of Science and Tech
12:05-12:25	TuAT4.5
Target Evolution Modeling for Robotized Adaptive Radiotherapy, pp. 118-124.	
RAAD, Ali	Pol. Univ. of Lille1
Ayache, Mohammad	Islamic Univ. of Lebanon
Abboud, Alaa	Islamic Univ. of Lebanon
Permezel, Astrid	Pol. Univ. of Lille
Merzouki, Rochdi	Pol. Univ. of Lille1
Iartigau, Eric	Centre Oscar Lambret
12:25-12:45	TuAT4.6
Development of a Finger Motion Measurement System Using Linear Potentiometers, pp. 125-130.	
Park, Yeongyu	UNIST(Ulsan National Inst. of Science and Tech
Lee, Jeongsoo	Unist
Bae, Joonbum	Unist

TuAT5	Lumière Salon
Motion Vibration and Noise Control I (Regular Session)	
Chair: Nakamura, Yukinori	Tokyo Univ. of Agriculture and Tech.
Co-Chair: Seki, Kenta	Nagoya Inst. of Tech.
10:45-11:05	TuAT5.1
Flow Disturbance Suppression and Transmissibility Reduction of Pneumatic Anti-Vibration Apparatuses Using Repetitive Control, pp. 131-136.	
Noguchi, Yuki	Tokyo Univ. of Agriculture and Tech
Nakamura, Yukinori	Tokyo Univ. of Agriculture and Tech
Wakui, Shinji	Tokyo Univ. of Agriculture and Tech
11:05-11:25	TuAT5.2
Smith Predictor-Based Time Delay Compensation for Attitude Control of Pneumatic Anti-Vibration Apparatuses with Two Degrees-Of-Freedom, pp. 137-142.	
Goto, Satoru	Tokyo Univ. of Agriculture and Tech
Nakamura, Yukinori	Tokyo Univ. of Agriculture and Tech
Wakui, Shinji	Tokyo Univ. of Agriculture and Tech
11:25-11:45	TuAT5.3
Implementation and Experimental Evaluation of PIS Control for Suppression of Flow Disturbance to Pneumatic Vibration Isolators, pp. 143-149.	
Nakamura, Yukinori	Tokyo Univ. of Agriculture and Tech
Akagawa, Hirotaka	Tokyo Univ. of Agriculture and Tech
Wakui, Shinji	Tokyo Univ. of Agriculture and Tech
11:45-12:05	TuAT5.4
A Phase Stabilization Method for Unbalance Vibration Control of Five-Axes Active Magnetic Bearing Systems, pp. 150-155.	
Nakamura, Taiki	Tokyo Univ. of Agriculture and Tech
Wakui, Shinji	Tokyo Univ. of Agriculture and Tech
Nakamura, Yukinori	Tokyo Univ. of Agriculture and Tech
12:05-12:25	TuAT5.5
Disturbance Suppression Control Combined Disturbance Ovserber with Acceleration Feedback in 2-Dimensional Shaking Table System, pp. 156-161.	
Seki, Kenta	Nagoya Inst. of Tech
Iwasaki, Makoto	Nagoya Inst. of Tech
12:25-12:45	TuAT5.6
Decentralized Complex Envelope Controller for ASAC by Virtual Mechanical Impedances, pp. 162-167.	
Michau, Marc, Michau	Univ. De Sherbrooke
Micheau, Philippe, Micheau	Univ. De Sherbrooke,
Boulandet, Romain, Boulandet	Univ. De Sherbrooke
Berry, Alain, Berry	Univ. De Sherbrooke
Herzog, Philippe, Herzog	Lab. De Mécanique Et D'acoustique, UPR CNRS 7051

TuAT6	Proudhon Salon
Actuators (Regular Session)	
Chair: Mercorelli, Paolo	Leuphana Univ. of Lueneburg
Co-Chair: Civet, Yoan	EPFL
10:45-11:05	TuAT6.1
Bingham-Papanastasiou and Approximate Parallel Models Comparison for the Design of Magneto-Rheological Valves, pp. 168-173.	
Grivon, Daniel	École Pol. Fédérale De Lausanne (EPFL)
Civet, Yoan	Epfl
Pataky, Zoltan	Hug
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)
11:05-11:25	TuAT6.2
A Planar Electromagnetic Actuator Based on Two Layer Coil Assembly for Micro Applications, pp. 174-179.	
Arora, Neha	Univ. De Tech. De Compiègne
Khan, Muneeb-Ullah	Univ. De Tech. De Compiègne
Petit, Laurent	Univ. De Tech. De Compiègne
Prelle, Christine	Univ. De Tech. De Compiègne
11:25-11:45	TuAT6.3
Design and Modeling of an Electromagnetic Peristaltic Micropump, pp. 180-185.	
Beckers, Guillaume	Univ. Catholique De Louvain
Dehez, Bruno	Univ. Catholique De Louvain
11:45-12:05	TuAT6.4
A Model of a Servo Piezo Mechanical Hydraulic Actuator and Its Regulation Using Repetitive Control, pp. 186-191.	
Mercorelli, Paolo	Leuphana Univ. of Lueneburg
Werner, Nils	Ostfalia Univ. of Applied Sciences
12:05-12:25	TuAT6.5
Development of Constant Torque Device and Its Application to Power Assist Systems, pp. 192-197.	
Minamiyama, Yasuhiro	Kurume National Coll. of Tech
Kiyota, Takanori	The Univ. of Kitakyushu
Mori, Takahiro	The Univ. of Kitakyushu
Sugimoto, Noboru	Meiji Univ

TuBT1	AmphiTheater
Modeling and Design of Mechatronic Systems I (Regular Session)	
Chair: Baratcart, Travis	The Univ. of Tokyo
Co-Chair: CHOLEY, Jean-Yves	SUPMECA-LISMMA
14:00-14:20	TuBT1.1
Analytical Study on Increasing Isotropy of Intrinsic Stiffness in Manipulators through Biarticular Structure, pp. 198-203.	
Salvucci, Valerio	The Univ. of Tokyo
Baratcart, Travis	The Univ. of Tokyo
Koseki, Takafumi	The Univ. of Tokyo
14:20-14:40	TuBT1.2
7-DOF Horseback Riding Simulator Based on a Crank Mechanism with Variable Radius and Its Inverse Kinematics Solution, pp. 204-209.	
Kwon, Oh-Hun	Kaist
Yang, Jeong-Yean	Kaist
Lim, Chan soon	KAIST(Korea Advanced Inst. of Science and Tech
Kwon, Dong-Soo	Kaist
14:40-15:00	TuBT1.3
Design and Characterisation of a Serial-Kinematic Nanopositioner for High-Speed AFM, pp. 210-215.	
Wadikhaye, Sachin	Univ. of Newcastle
Yong, Yuen Kuan	The Univ. of Newcastle
Moheimani, S. O. Reza	The Univ. of Newcastle
15:00-15:20	TuBT1.4
Modeling of a Coupled Fluid-Structure System Excited by Piezoelectric Actuators, pp. 216-221. Attachment	
Cardoso-Ribeiro, Flavio Luiz	Univ. De Toulouse - ISAE
Pommier-Budinger, Valerie	Univ. De Toulouse - ISAE
Schotte, Jean-Sebastien	Onera
Arzelier, Denis	Laas
15:20-15:40	TuBT1.5
Equivalent Piezoelectric Actuator Circuits and Comparison, pp. 222-226.	
LIU, Xinchang	Epfl
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)
Civet, Yoan	Epfl
15:40-16:00	TuBT1.6
Design and Analysis of a Piezostack Driven Jetting Dispenser for High Viscosity Adhesives, pp. 227-232.	
Lu, Shizhou	Harbin Inst. of Tech
Liu, Yaxin	Harbin Inst. of Tech
Yao, Yufeng	Harbin Inst. of Tech
Huang, Bo	Harbin Inst. of Tech
Sun, Lining	Harbin Inst. of Tech

TuBT2	Chardonnet Salon
Actuator Control (Regular Session)	
Chair: Wu, Jianhua	Shanghai Jiao Tong Univ.
Co-Chair: Hubert, Arnaud	Univ. of Franche-Comte
14:00-14:20	TuBT2.1
Analysis and Control of Nonlinear Actuator Dynamics Based on the Sum of Squares Programming Method, pp. 233-238.	
Nemeth, Balazs	Hungarian Acad. of Sciences
Gaspar, Peter	Hungarian Acad. of Sciences
14:20-14:40	TuBT2.2
Modeling and Control for a Monopropellant-Powered Actuator, pp. 239-244.	
Zope, Mandar	Indian Inst. of Tech. Bombay
Chowdhury, Arindrajit	Indian Inst. of Tech. Bombay
Gupta, Abhishek	Indian Inst. of Tech. Bombay
14:40-15:00	TuBT2.3
Robust Control Design of an Electro-Hydraulic Actuator, pp. 245-250.	
Nemeth, Balazs	MTA SZTAKI Inst. for Computer Science and Control
Varga, Balázs	Mta Sztaki
Gaspar, Peter	Hungarian Acad. of Sciences
15:00-15:20	TuBT2.4
Closed Loop Position Control of a Linear PZT Poly-Actuator, pp. 251-256.	
Torres, James	Massachusetts Inst. of Tech
Asada, Harry	Mit
15:20-15:40	TuBT2.5
PID Saturation Function Sliding Mode Control for Piezoelectric Actuators, pp. 257-262.	
Ma, Haifeng	Shanghai Jiao Tong Univ
Wu, Jianhua	Shanghai Jiao Tong Univ
Xiong, Zhenhua	Shanghai Jiao Tong Univ

TuBT3	Fourier Salon
Rehabilitation Robots I (Regular Session)	
Chair: Xie, Shane	Univ. of Auckland
Co-Chair: Hirata, Yasuhisa	Tohoku Univ.
14:00-14:20	TuBT3.1
Performance Verification of a Kinematic Prototype 5-DOF Upper-Limb Exoskeleton with a Tilted and Vertically Translating Shoulder Joint, pp. 263-268.	
Jung, Yeongtae	Unist
Bae, Joonbum	Unist
14:20-14:40	TuBT3.2
An Upper Limb Exoskeleton with an Optimized 4R Spherical Wrist Mechanism for the Shoulder Joint, pp. 269-274.	
Lo, Ho Shing	Univ. of Auckland
Xie, Shane	Univ. of Auckland
14:40-15:00	TuBT3.3
Design of a Compact Hydraulic Actuation Mechanism for Active Ankle-Foot Prostheses, pp. 275-278.	
Woo, Hanseung	Sogang Univ
Song, Seok-ki	Sogang Univ
Jeon, Doyoung	Sogang Univ
Kong, Kyoungchul	Sogang Univ
15:00-15:20	TuBT3.4
Exoskeletal Meal Assistance System (EMAS III) for Progressive Muscle Dystrophy Patient, pp. 279-284.	
Hasegawa, Yasuhisa	Nagoya Univ
Kikai, Tomoaki	Univ. of Tsukuba
Eguchi, Kiyoshi	Univ. of Tsukuba
Shimada, Satoshi	Univ. of Tsukuba
15:20-15:40	TuBT3.5
Walking Support by Wearable System Based on the Spring-Mass Model, pp. 285-290.	
Suzuki, Shinji	Tohoku Univ
Hirata, Yasuhisa	Tohoku Univ
Kosuge, Kazuhiro	Tohoku Univ

TuBT4	Granvelle Salon
Control Application I (Regular Session)	
Chair: Yao, Bin	Zhejiang Univ.
Co-Chair: Li, Yunhua	BeiHang Univ.
14:00-14:20	TuBT4.1
Design and Implementation of Gas Temperature Control System of Heat-Calibration Wind Tunnel, pp. 291-296.	
Cai, Chaozhi	BeiHang Univ
Li, Yunhua	BeiHang Univ
Dong, Sujun	BeiHang Univ
14:20-14:40	TuBT4.2
LMI-Based Distributed H-Inf Control of Dynamically Coupled Large Segmented Telescope Mirrors, pp. 297-303.	
Ulutas, Baris	Univ. of Victoria
Park, Edward J.	Simon Fraser Univ
Suleman, Afzal	Univ. of Victoria
14:40-15:00	TuBT4.3
Adaptive Robust Synchronous Control of a Individual Metering Dual-Cylinder Pneumatic System with Composite Parallel Method, pp. 304-309.	
Zhu, Xiaocong	Zhejiang Univ
Yao, Bin	Zhejiang Univ
Tao, Guoliang	Zhejiang Univ
Wang, Qingfeng	Zhejiang Univ
Cao, Jian	Hefei Univ. of Tech
15:00-15:20	TuBT4.4
Model-Based Control of a Dual Active Bridge for Bidirectional Feeding of DEAP Transducers, pp. 310-315.	
Maas, Juergen	Ostwestfalen-Lippe Univ. of Applied Sciences
Hoffstadt, Thorben	Ostwestfalen-Lippe Univ. of Applied Sciences
15:20-15:40	TuBT4.5
Adaptive Robust Synchronous Control with Dynamic Thrust Allocation of Dual Drive Gantry Stage, pp. 316-321.	
Li, Cong	Zhejiang Univ
Yao, Bin	Zhejiang Univ
Zhu, Xiaocong	Zhejiang Univ
Wang, Qingfeng	Zhejiang Univ
15:40-16:00	TuBT4.6
Trajectory Tracking of a 2-DOF Helicopter System Using Neuro-Fuzzy System with Parameterized Conjunctors, pp. 322-326.	
Aras, Ayse Cisel	AVL Res. and Engineering Turkey and Bogazici Univ
Kaynak, Okyay	Bogazici Univ. and Harbin Inst. of Tech

TuBT6	Proudhon Salon
Identification and Estimation I (Regular Session)	
Chair: Ruderman, Michael	Nagoya Inst. of Tech.
Co-Chair: Beaman, Joseph	The Univ. of Texas at Austin
14:00-14:20	TuBT6.1
Continuous-Time Gray-Box Identification of Mechanical Systems Using Subspace-Based Identification Methods, pp. 327-333.	
Olofsson, Bjorn	Lund Univ
Sornmo, Olof	Lund Univ
Robertsson, Anders	LTH, Lund Univ
Johansson, Rolf	Lund Univ
14:20-14:40	TuBT6.2
Back-EMF and Rotor Angular Velocity Estimation for a Reaction Sphere Actuator, pp. 334-339.	
Rossini, Leopoldo	Swiss Center for Electronics and Microtechnology
Onillon, Emmanuel	Swiss Center for Electronics and Microtechnology
Chételat, Olivier	Swiss Center for Electronics and Microtechnology
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)
14:40-15:00	TuBT6.3
Implementation of a Particle Filter on a GPU for Nonlinear Estimation in a Manufacturing Remelting Process, pp. 340-345.	
Lopez, Felipe	The Univ. of Texas at Austin
Zhang, Lixun	Univ. of Texas at Austin
Beaman, Joseph	The Univ. of Texas at Austin
Mok, Aloysius	The Univ. of Texas at Austin
15:00-15:20	TuBT6.4
A Bayesian Framework for Calibration and Real-Time Localization of Magnetometers Using a Controllable Passive Permanent Magnet, pp. 346-353.	
Aoki, Edson Hiroshi	Singapore Univ. of Tech. and Design
Foong, Shaohui	Singapore Univ. of Tech. and Design
Madhavan, Dushyanth	Singapore Univ. of Tech. and Design
Lo, Yew Long	Singapore General Hospital
15:20-15:40	TuBT6.5
A Low Cost, Sensorless Drag Force Estimation Methodology Via Measuring of Motor Currents, pp. 354-359.	
Tsounis, Vassilios	National Tech. Univ. of Athens
Makrodimitris, Michail	National Tech. Univ. of Athens
Papadopoulos, Evangelos	National Tech. Univ. of Athens
15:40-16:00	TuBT6.6
Sensorless Control of Motor Velocity in Two-Mass Actuator Systems with Load Sensing Using Extended State Observer, pp. 360-365.	
Ruderman, Michael	Nagoya Inst. of Tech
Iwasaki, Makoto	Nagoya Inst. of Tech

TuCT1	AmphiTheater
Micro/Nano Manipulation (Regular Session)	
Chair: Arai, Tatsuo	Osaka Univ.
Co-Chair: Clévy, Cédric	Franche-Comté Univ.
16:30-16:50	TuCT1.1
Motion Control and Manipulation of Nanowires under Electric-Fields in Fluid Suspension, pp. 366-371.	
Yu, Kaiyan	Rutgers, the State Univ. of New Jersey
Shan, Jerry	Rutgers Univ
Yi, Jingang	Rutgers Univ
16:50-17:10	TuCT1.2
Optimization of the Size of a Magnetic Microrobot for High Throughput Handling of Micro-Objects, pp. 372-377.	
Dkhil, Mohamed	Femto-St Inst. and Univ. Pierre Et Marie Curie
Bolopion, Aude	Femto-St Inst
Régnier, Stéphane	Univ. Pierre Et Marie Curie
Gauthier, Michael	Femto-St Inst
17:10-17:30	TuCT1.3
Releasing Tool-Adhered Natural Fibrous Microscale Objects with Vacuum System, pp. 378-383.	
Lai, Yuli	Tampere Univ. of Tech
Cervinka, Tomas	Tampere Univ. of Tech
Kallio, Pasi Johannes	Tampere Univ. of Tech
17:30-17:50	TuCT1.4
Automated Cell Stiffness Measurement with Two-Fingered Microhand Using Micro Force Sensor, pp. 384-389.	
Yabugaki, Hiroyuki	Osaka Univ
Ohara, Kenichi	Meijo Univ
Kojima, Masaru	Osaka Univ
Horade, Mitsuhiro	Osaka Univ
Kamiyama, Kazuto	Osaka Univ
Sakai, Shinji	Osaka Univ
Kihara, Takanori	The Univ. of Kitakyushu
Mae, Yasushi	Osaka Univ
Tanikawa, Tamio	National Inst. of AIST
Arai, Tatsuo	Osaka Univ
17:50-18:10	TuCT1.5
Resistive Force Theory Based Modeling and Simulation of Surface Contact for Swimming Helical Micro Robots with Channel Flow, pp. 390-395.	
Erman, Aydek Gokce	Istanbul Commerce Univ
Tabak, Ahmet Fatih	Istanbul Commerce Univ
18:10-18:30	TuCT1.6
Intention Prediction Approach to Interact Naturally with the Microworld, pp. 396-401.	
Cohen, Laura	Univ. Pierre Et Marie Curie
Haliyo, Dogan Sinan	Univ. Pierre Et Marie Curie
Chetouani, Mohamed	Univ. Pierre Et Marie Curie
Régnier, Stéphane	Univ. Pierre Et Marie Curie

TuCT2	Chardonnet Salon
Network Robotics (Regular Session)	
Chair: Bhattacharya, Sourabh	Iowa State Univ.
Co-Chair: Laurent, Guillaume J.	FEMTO-ST Inst. - CNRS - ENSMM - Univ. deFranche-Comté
16:30-16:50	TuCT2.1
Swarm Optimization Techniques for Source Localization, pp. 402-407. Attachment	
Zou, Rui	Iowa State Univ
Kalivarapu, Vijay	Virtual Reality Applications Center, Iowa State Univ
Oliver, James	Virtual Reality Applications Center, Iowa State Univ
Bhattacharya, Sourabh	Iowa State Univ
16:50-17:10	TuCT2.2
Towards Programmable Material: Flexible Distributed Algorithm for Modular Robots Shape-Shifting, pp. 408-414.	
Mabed, Hakim	FEMTO-ST Lab. Univ. De Franche-Comté
Bourgeois, Julien	Lab. D'informatique De L'univ. De Franche-Comté
17:10-17:30	TuCT2.3
Networked Dual-User Teleoperation with Time-Varying Authority Adjustment: A Wave Variable Approach, pp. 415-420.	
Shahbazi, Mahya	Wetsern Univ. (UWO)
Talebi, H. Ali	AmirKabir Univ. of Tech
Patel, Rajnikant V.	Wetsern Univ. (UWO)
17:50-18:10	TuCT2.5
Bondgraph Model for System of Systems Wireless Communication Link, pp. 427-432.	
Koubeissi, Ahmad	Pol. Univ. of Lille1
Merzouki, Rochdi	Pol. Univ. of Lille1
Ayache, Mohammad	Islamic Univ. of Lebanon

TuCT3	Fourier Salon
Aerial Robots (Regular Session)	
Chair: Islam, Shafiqul	Carleton Univ.
Co-Chair: Berg, Jordan M.	Texas Tech. Univ.
16:30-16:50	TuCT3.1
A Nonlinear Force Observer for Quadrotors and Application to Physical Interactive Tasks, pp. 433-440. Attachment	
Yuksel, Burak	Max Planck Inst. for Biological Cybernetics
Secchi, Cristian	Univ. of Modena & Reggio Emilia
Buelthoff, Heinrich H.	Max Planck Inst. for Biol. Cybernetics
Franchi, Antonio	Centre National De La Recherche Scientifique (CNRS)
16:50-17:10	TuCT3.2
Adaptive Tracking Control for Quadrotor Unmanned Aerial Flying Vehicle, pp. 441-445.	
Islam, Shafiqul	Carleton Univ
Dias, Jorge	Univ. of Coimbra
Seneviratne, lakmal	Kings Coll. London
17:10-17:30	TuCT3.3
Robust Tracking Control for Underactuated Autonomous Vehicles Using Feedback Linearization, pp. 446-451.	
Maithripala, D. H. S.	Univ. of Peradeniya
Berg, Jordan M.	Texas Tech. Univ
17:30-17:50	TuCT3.4
Saturation Managing for the Propulsion System and Optimal Dispatching Proposal for Multi-Rotor UAV, pp. 452-457.	
Perez-Montenegro, Carlos Norberto	Pol. Di Torino
Lotufo, Mauricio Alejandro	Pol. Di Torino
Canuto, Enrico	Pol. Di Torino
Colangelo, Luigi	Pol. Di Torino
17:50-18:10	TuCT3.5
Hardware-In-The-Loop Experimental Setup Development for a Guided Projectile in a Wind Tunnel, pp. 458-463.	
STRUB, Guillaume	French-German Res. Inst. of Saint-Louis
GASSMANN, Vincent	French-German Res. Inst. of Saint-Louis
THEODOULIS, Spilios	French-German Res. Inst. of Saint-Louis
DOBRE, Simona	French-German Res. Inst. of Saint-Louis
BASSET, Michel	Univ. De Haute Alsace

TuCT4	Granvelle Salon
Identification and Estimation II : Robotic Systems (Regular Session)	
Chair: Matsubara, Takamitsu	NAIST/ATR
Co-Chair: Brethe, Jean-François	LE HAVRE Univ.
16:30-16:50	TuCT4.1
Improving Robot Precision Using Jump Process and Granular Stochastic Modeling, pp. 464-469.	
Brethe, Jean-François	LE HAVRE Univ
16:50-17:10	TuCT4.2
In Situ Calibration of Joint Torque Sensors of the KUKA LightWeight Robot Using Only Internal Controller Data, pp. 470-475.	
Briot, Sébastien	IRCCyN
Gautier, Maxime	Univ. of Nantes/IRCCyN
Jubien, Anthony	Univ. De Nantes
17:10-17:30	TuCT4.3
Task-Adaptive Inertial Parameter Estimation of Rigid-Body Dynamics with Modeling Error for Model-Based Control Using Covariate Shift Adaptation, pp. 476-482.	
Matsubara, Takamitsu	Nara Inst. of Science and Tech
Takada, Hiroaki	Nara Inst. of Science and Tech
Sugimoto, Kenji	Nara Inst. of Science and Tech
17:30-17:50	TuCT4.4
Dynamic Identification of the Kuka LightWeight Robot: Comparison between Actual and Confidential Kuka's Parameters, pp. 483-488.	
Jubien, Anthony	Univ. De Nantes
Gautier, Maxime	Univ. of Nantes/IRCCyN
Janot, Alexandre	Onera
17:50-18:10	TuCT4.5
Study on Acceleration/Deceleration Feedrate Planning for Multi-Block Line Segments Using Estimated Contour Error Formulation, pp. 489-493.	
Tsai, Meng-Shiun	National Chung-Cheng Univ
Wu, Shih-Kai	National Chung Cheng Univ
Huang, Hong Wei	National Chung Cheng Univ
18:10-18:30	TuCT4.6
On-Line Robot Dynamic Identification Based on Power Model, Modulating Functions and Causal Jacobi Estimator, pp. 494-499.	
GUO, QI	Ec. Centrale De Lille
Perruquetti, Wilfrid	Ec. Centrale De Lille
Gautier, Maxime	Univ. of Nantes/IRCCyN

TuCT5	Lumière Salon
Motion Vibration and Noise Control II (Regular Session)	
Chair: Itoh, Masahiko	Sendai National Coll. of Tech.
Co-Chair: Guo, Jiajie	Huazhong Univ. of Science and Tech.
16:30-16:50	TuCT5.1
Automotive MR Damper Modelling for Semi-Active Vibration Control, pp. 500-505.	
Kasprzyk, Jerzy	Silesian Univ. of Tech
Wyrwał, Janusz	Silesian Univ. of Tech
Krauze, Piotr	Silesian Univ. of Tech
16:50-17:10	TuCT5.2
Vibration Suppression Control of Geared Mechanical System with Power Circulation Structure: Simulation Study on Effects of Sensor-Based Control, pp. 506-511.	
Itoh, Masahiko	Sendai National Coll. of Tech
17:10-17:30	TuCT5.3
Dynamic Analysis and Experimental Validation of Vibration Sensing for Machining Thin-Walled Components, pp. 512-517.	
Guo, Jiajie	Huazhong Univ. of Science and Tech
Lee, Kok-Meng	Georgia Inst. of Tech
Liu, Wuguang	Huazhong Univ. of Science & Tech
wang, bo	Huazhong Univ. of Science and Tech
17:30-17:50	TuCT5.4
FxLMS Algorithm with Preview for Vibration Control of a Half-Car Model with Magnetorheological Dampers, pp. 518-523.	
Krauze, Piotr	Silesian Univ. of Tech
Kasprzyk, Jerzy	Silesian Univ. of Tech
17:50-18:10	TuCT5.5
Systemic Optimization of an Active Vibration Micro-Isolator: An Interval Computation and Constraint Propagation Based Approach, pp. 524-529.	
MEYER, Yann	Utbm
YVARS, Pierre-Alain	LISMMA, SUPMECA Paris
VERDOT, Thierry	CEA/LETI-Minatec

TuCT6	Proudhon Salon
Human -Machine Interfaces (Regular Session)	
Chair: DANG, Quoc Viet	Univ. of Valenciennes, LAMIH UMR CNRS 8201
Co-Chair: Andreff, Nicolas	Univ. de Franche Comté
16:30-16:50	TuCT6.1
Hybrid Interface: Integrating BCI in Multimodal Human-Machine Interfaces, pp. 530-535.	
Kalunga, Emmanuel Kimpinde	Tshwane Univ. of Tech. and Univ. De Versailles Sa
Chevallier, Sylvain	Univ. of Versailles
Rabreau, Olivier	Univ. of Versailles
Monacelli, Eric	Univ. of Versailles
16:50-17:10	TuCT6.2
Interdisciplinary and Model-Based Development of User Interfaces for Production Plants, pp. 536-541.	
Richter, Christoph	TU Munich
Reinhart, Gunther	Tech. Univ. München
17:10-17:30	TuCT6.3
Motion Direction Estimation of Walking Base on EEG Signals, pp. 542-547.	
Nojiri, Kousei	Kumamoto National Coll. of Tech
Iwane, Fumiaki	Nara Inst. of Science and Tech
17:30-17:50	TuCT6.4
Task Estimation of Upper-Limb Using EEG and EMG Signals, pp. 548-553.	
Kiguchi, Kazuo	Kyushu Univ
Hayashi, Yoshiaki	Saga Univ
17:50-18:10	TuCT6.5
Experimental Study on Stability of a Haptic System with Variable Time-Delays, pp. 554-559.	
DANG, Quoc Viet	Univ. of Valenciennes, LAMIH UMR CNRS 8201
DEQUIDT, Antoine	Univ. of Valenciennes, LAMIH UMR CNRS 8530
VERMEIREN, Laurent	Univ. of Valenciennes, LAMIH UMR CNRS 8201
Dambrine, Michel	Univ. De Valenciennes Et Du Hainaut-Cambrésis
18:10-18:30	TuCT6.6
Particle Filter Based Finger Tracking Utilising Magnetoresistive Sensors, pp. 560-565.	
Simmons, Luke Peter	Univ. of Newcastle
Welsh, James	Univ. of Newcastle, Australia

WeAT1	AmphiTheater
Sensors and Sensing Systems I (Regular Session)	
Chair: Vihonen, Juho	Tampere Univ. of Tech.
Co-Chair: Lim, Chot Hun	Multimedia Univ.

08:45-09:05 WeAT1.1

SNR Improvement in MEMS Electrothermal Displacement Sensors, pp. 566-569.

Mohammadi, Ali	Univ. of Newcastle
Moheimani, S. O. Reza	The Univ. of Newcastle
Yuce, Mehmet	Monash Univ

09:05-09:25 WeAT1.2

Geometry-Aided Low-Noise Angular Velocity Sensing of Rigid-Body Manipulator Using MEMS Rate Gyros and Linear Accelerometers, pp. 570-575.

Vihonen, Juho	Tampere Univ. of Tech
Honkakorpi, Janne	Tampere Univ. of Tech
Koivumäki, Janne	Tampere Univ. of Tech
Mattila, Jouni	Tampere Univ. of Tech
Visa, Ari	Tampere Univ. of Tech

09:25-09:45 WeAT1.3

A MEMS Based, Low Cost GPS-Aided INS for UAV Motion Sensing, pp. 576-581.

Lim, Chot Hun	Faculty of Engineering & Tech. Multimedia Univ
Lim, Tien Sze	Faculty of Engineering & Tech. Multimedia Univ
Koo, Voon Chet	Faculty of Engineering & Tech. Multimedia Univ

09:45-10:05 WeAT1.4

Resistive Silicon Microstructure for Embedding in Aluminium During Casting, pp. 582-586.

Dumstorff, Gerrit	Univ. of Bremen
Lang, Walter	Univ. of Bremen - IMSAS

10:05-10:25 WeAT1.5

In Vivo Tumor Interstitial Fluid Pressure Measurement Using Static Micro Force Sensor and Mechanical Tumor Model, pp. 587-592.

Sun, Zhiyong	Michigan State Univ
Yang, Ruiguo	Michigan State Univ
Kovalenko, Pavlo	Department of Surgery, Michigan State Univ
Song, Bo	Michigan State Univ
Chen, Liangliang	Michigan State Univ
Walsh, Mary	Department of Surgery, Michigan State Univ
Hao, Lina	School of Mechanical Engineering and Automation
Basson, Marc	Department of Surgery, Michigan State Univ
Xi, Ning	Michigan State Univ

10:25-10:45 WeAT1.6

Pose Estimation with Capacitive Sensors Experiencing Non-Linear Response to Tilt, pp. 593-598.

Clark, Leon S.	Monash Univ
Shirinzadeh, Bijan	Monash Univ
Zhong, Yongmin	RMIT Univ
Smith, Julian	Monash Univ

WeAT2	Chardonnet Salon
Flexible Manipulators and Structures (Regular Session)	
Chair: ALICI, Gursel	Univ. of Wollongong
Co-Chair: Tan, U-Xuan	Singapore Univ. of Tech. and Design
08:45-09:05	WeAT2.1
Modeling a Soft Robotic Mechanism Articulated with Dielectric Elastomer Actuators, pp. 599-604.	
Nguyen, Chuc	Wollongong Univ
ALICI, Gursel	Univ. of Wollongong
Mutlu, Rahim	Univ. of Wollongong
09:05-09:25	WeAT2.2
Design of a Linear Variable-Stiffness Mechanism Using Preloaded Bistable Beams, pp. 605-610.	
Wu, Yi-Syuan	National Cheng Kung Univ
Lan, Chao-Chieh	National Cheng Kung Univ
09:25-09:45	WeAT2.3
An Active-Compliant Micro-Stage Based on EAP Artificial Muscles, pp. 611-616.	
Mutlu, Rahim	Univ. of Wollongong
ALICI, Gursel	Univ. of Wollongong
Xiang, Xingcan	Univ. of Wollongong
Li, Weihua	Univ. of Wollongong
09:45-10:05	WeAT2.4
Development of a Two-Link Planar Manipulator with Continuously Variable Transmission Mechanism, pp. 617-622.	
Okada, Tomofumi	Kyushu Univ
Tahara, Kenji	Kyushu Univ
10:05-10:25	WeAT2.5
Shape Computation of Closed Elastica under External Forces, pp. 623-627.	
Watanabe, Daisuke	Univ. of Tsukuba
Mochiyama, Hiromi	Univ. of Tsukuba
10:25-10:45	WeAT2.6
Algorithm for Design of Compliant Mechanisms for Torsional Applications, pp. 628-633. Attachment	
Cheng, Zhuoqi	Singapore Univ. of Tech. and Design
Foong, Shaohui	Singapore Univ. of Tech. and Design
Sun, Defeng	National Univ. of Singapore
Tan, U-Xuan	Singapore Univ. of Tech. and Design

WeAT3	Fourier Salon
Visual SLAM (Regular Session)	
Chair: Panzieri, Stefano	Univ. Roma Tre
Co-Chair: TAMADAZTE, Brahim	CNRS, UFC/ENSMM/UTBM
08:45-09:05	WeAT3.1
Recognition of Inside Pipeline Geometry by Using Monocular Camera and PSD Sensors, pp. 634-639.	
Choi, Yun Seok	SungKyunKwan Univ
Kim, Ho Moon	Sungkyunkwan Univ
Suh, Jung Seok	SungKyunKwan Univ
Mun, Hyeong Min	Sungkyunkwan Univ
Yang, Seung Ung	Sungkyunkwan Univ
Park, Chan Min	Sungkyunkwan Univ
Choi, Hyouk Ryeol	Sungkyunkwan Univ
09:05-09:25	WeAT3.2
A MonoSLAM Approach to Lane Departure Warning System, pp. 640-645. Attachment	
Özcan, Barış	Istanbul Tech. Univ
Boyraz, Pinar	Istanbul Tech. Univ
Yiğit, Cihat Bora	Istanbul Tech. Univ
09:25-09:45	WeAT3.3
Hybrid Map Building for Personal Indoor Navigation Systems, pp. 646-651.	
Faramondi, Luca	Univ. Degli Studi Roma Tre
Inderst, Federica	Univ. Degli Studi Roma Tre
Panzieri, Stefano	Univ. Degli Studi Roma Tre
Pascucci, Federica	Univ. Degli Studi Roma Tre
09:45-10:05	WeAT3.4
A Real Time Visual SLAM for RGB-D Cameras Based on Chamfer Distance and Occupancy Grid, pp. 652-657.	
Dib, Abdallah	INRIA Res. Center
Charpillet, Francois	INRIA, Loria
Beaufort, Nicolas	INRIA Res. Center
10:05-10:25	WeAT3.5
Optimal Angular Back-Projection Error for Vehicle Motion Estimation Using Omnidirectional Vision, pp. 658-663.	
Hoang, Van-Dung	Univ. of Ulsan
Caceres Hernandez, Danilo	Univ. of Ulsan
Seo, Dongwook	Univ. of Ulsan
Jo, Kang-Hyun	Univ. of Ulsan
10:25-10:45	WeAT3.6
Analysis of Effective Environmental-Camera Images Using Virtual Environment for Advanced Unmanned Construction, pp. 664-669.	
Yang, Junjie	Waseda Univ
Kamezaki, Mitsuhiro	Waseda Univ
Iwata, Hiroyasu	Waseda Univ
Sugano, Shigeki	Waseda Univ

WeAT4	Granvelle Salon
Control Application II (Regular Session)	
Chair: Moallem, Mehrdad	Simon Fraser Univ.
Co-Chair: Brändle, Markus	MBDA Deutschland GmbH
08:45-09:05	WeAT4.1
Design of Real Time Embedded PID Controller for Sun Tracking Robot Manipulator, pp. 670-675.	
Engin, Mustafa	Ege Univ
Engin, Dilşad	Ege Univ. Ege Higher Vocational School
09:05-09:25	WeAT4.2
Pointing / Tracking Control for a High Energy Laser System, pp. 676-682.	
Braendle, Markus	MBDA Deutschland GmbH
09:25-09:45	WeAT4.3
Time Delay Controller for the Position Control of a MRI-Compatible Pneumatic Actuation with Long Supply Lines, pp. 683-689.	
Franco, Enrico	Imperial Coll. London
Ristic, Mike	Imperial Coll. London
09:45-10:05	WeAT4.4
Event-Based Speed Control on a Sensor-Less Miniature Thruster, pp. 690-696.	
Raharijaona, Thibaut	Aix Marseille Univ
DOLA, Lorris	Inst. of Movement Science (ISM)
Boisseau, Bruno	Gipsa-Lab
MARTINEZ MOLINA, John Jairo	GRENOBLE-INP, GIPSA-Lab
Marchand, Nicolas	GIPSA-Lab. CNRS/U of Grenoble/INRIA
Ruffier, Franck	CNRS / Aix-Marseille Univ
10:05-10:25	WeAT4.5
Tracking Control of Nonlinear Stochastic Systems with Actuator Nonlinearity, pp. 697-702.	
Srang, Sarot	Tokyo Inst. of Tech
Yamakita, Masaki	Tokyo Inst. of Tech
10:25-10:45	WeAT4.6
System Modeling and Control of Resonance Frequency for an RF Cavity Using Reflected Power Measurements, pp. 703-708.	
Leewe, Ramona	SFU, TRIUMF/ National Lab. for Particle and Nuclear Physic
Moallem, Mehrdad	Simon Fraser Univ
Fong, Kenneth	TRIUMF/ National Lab. for Particla and Nuclear Physics

WeAT5	Lumière Salon
Modeling and Design of Mechatronic Systems II (Regular Session)	
Chair: Yang, Liman	BeiHang Univ.
Co-Chair: Teo, Tat Joo	Singapore Inst. of Manufacturing Tech.
08:45-09:05	WeAT5.1
SysML Geometrical Profile for Integration of Mechatronic Systems, pp. 709-714.	
WARNIEZ, Aude	Supmeca - LISMMA
PENAS, olivia	Lismma
PLATEAUX, Régis	Ismep (supmeca)
SORIANO, Thierry	Supmeca-Lismma
09:05-09:25	WeAT5.2
Automatic Fault Tree Generation from SysML System Models, pp. 715-720.	
Mhenni, Faïda	Ismep - Lismma
Nguyen, Nga	Eisti
CHOLEY, Jean-Yves	Supmeca-Lismma
09:25-09:45	WeAT5.3
Configuration Synthesis of Underactuated Resilient Robotic Systems, pp. 721-726.	
Zhang, Tan	Univ. of Saskatchewan
Liu, Changli	East China Univ. of Science and Tech
Qian, Zhiqin	East China Univ. of Science and Tech
Zhang, Dan	Univ. of Ontario of Tech
Gupta, Madan	Univ. of Saskatchewan
Zhang, Wenjun	Univ. of Saskatchewan
09:45-10:05	WeAT5.4
A Robotic Structured Light Camera, pp. 727-734.	
Olaya, Emerson J.	Univ. Blaise Pascal
berry, francois	Cnrs
Mezouar, Youcef	Ifma
10:05-10:25	WeAT5.5
Versatile Modular Electronics for Rapid Design and Development of Humanoid Robotic Subsystems, pp. 735-741.	
Pierce, Brennand	Tech. Univ. München
Cheng, Gordon	Tech. Univ. Munich
10:25-10:45	WeAT5.6
Thermal Field Modeling Algorithm Based on Flexible Space Division for High-Power, High-Precision Mechatronic Systems, pp. 742-747.	
Yang, Liman	BeiHang Univ
Lee, Kok-Meng	Georgia Inst. of Tech
Bai, Kun	Huazhong Univ. of Science and Tech

WeAT6	Proudhon Salon
Energy Harvesting & Storage, Alternative Power Sources (Regular Session)	
Chair: Aw, Kean C.	The Univ. of Auckland
Co-Chair: Lumentut, Mikail	Curtin Univ. Australia
08:45-09:05	WeAT6.1
Comparative Numerical Studies of Electromechanical Finite Element Vibration Power Harvester Approaches of a Piezoelectric Unimorph, pp. 748-753.	
Warman, Ezi	Curtin Univ. Australia
Lumentut, Mikail	Curtin Univ. Australia
Howard, Ian	Curtin Univ. Australia
09:05-09:25	WeAT6.2
A Low Power Electronics Converter with Input Resistance Control for Piezoelectric Energy Harvesting, pp. 754-759.	
Moallem, Mehrdad	Simon Fraser Univ
09:25-09:45	WeAT6.3
Intrinsic Geometries and Properties of Piezo-MEMS Power Harvesters with Tip Mass Offset Using New Electromechanical Finite Element Vibration Analysis, pp. 760-765.	
Lumentut, Mikail	Curtin Univ. Australia
Howard, Ian	Curtin Univ. Australia
09:45-10:05	WeAT6.4
Polydimethylsiloxane Structure As a Broadband Vibrational Energy Harvester, pp. 766-770.	
Aw, Kean C.	The Univ. of Auckland
Xie, Mengying	Univ. of Auckland
Gao, Wei	Univ. of Auckland
10:05-10:25	WeAT6.5
Experimental Verification of Thermal Insulation and Cooling for 500W Class Micro Gas Turbine Generator, pp. 771-774.	
Park, Cheol Hoon	Korea Inst. of Machinery & Materials
Choi, SangKyu	Kimm
Yoon, Tae Gwang	Kimm
Hong, Doo Euy	Kimm
Lee, Sunghee	Korea Inst. of Machinery & Materials (KIMM)
10:25-10:45	WeAT6.6
Optimal Sizing of an Energy Storage System for a Hybrid Vehicle Applied to an Off-Road Application, pp. 775-780.	
CHAUVIN, Alan	Lab. AMPERE UMR CNRS 5005, INSA De Lyon
SARI, Ali	Lab. AMPERE UMR CNRS 5005, Univ. Claude Bernard Lyon
HIJAZI, Alaa	Lab. AMPERE UMR CNRS 5005, INSA De Lyon
BIDEAUX, Eric	Lab. AMPERE UMR CNRS 5005, INSA De Lyon

WeBT1	AmphiTheater
Control Application III: Magnetic Systems (Regular Session)	
Chair: Derammelaere, Stijn	Univ. Gent
Co-Chair: Aghili, Farhad	Concordia Univ.
13:30-13:50	WeBT1.1
Analysis and Control of One-Axis Active Magnetic Bearing Using Single Side Electromagnetic Drive, pp. 781-787.	
Kanematsu, Haruna	Tokyo Univ. of Agriculture and Tech
Wakui, Shinji	Tokyo Univ. of Agriculture and Tech
Nakamura, Yukinori	Tokyo Univ. of Agriculture and Tech
13:50-14:10	WeBT1.2
Open Loop Control of a Stepping Motor with Step Loss Detection and Stall Detection Using Back-EMF Based Load Angle Estimation, pp. 788-793.	
Derammelaere, Stijn	Univ. Gent
Verbelen, Florian	Univ. Gent
Stockman, Kurt	Univ. Gent
14:10-14:30	WeBT1.3
Position Sensorless Control for Five-Phase Permanent-Magnet Synchronous Motors, pp. 794-799.	
Chen, Hung-Chi	National Chiao Tung Univ
Chang, Da Kai	National Chiao Tung Univ
Hsu, Chih-Hao	National Chaio Tung Univ
14:30-14:50	WeBT1.4
Modeling and Robust Output Feedback Tracking Control of a Single-Phase Rotary Motor with Cylindrical Halbach Array, pp. 800-805.	
Kamaldin, Mohammed Nazir Bin	National Univ. of Singapore
Chen, Silu	Singapore Inst. of Manufacturing Tech
Teo, Tat Joo	Singapore Inst. of Manufacturing Tech
Liang, Wenyu	National Univ. of Singapore
Tan, Kok-Kiong	National Univ. of Singapore
Yang, Guilin	Ningbo Inst. of Material Engineering and Tech. CAS
14:50-15:10	WeBT1.5
Velocity Fluctuation Suppression of Non-Ideal PM Synchronous Motors, pp. 806-811.	
Aghili, Farhad	Canadian Space Agency

WeBT2	Chardonnet Salon
Intelligent Process Automation (Regular Session)	
Chair: Giraud-Audine, Christophe	Arts et Métiers Paristech
Co-Chair: Zhang, Yuming	Univ. of Kentucky
13:30-13:50	WeBT2.1
Control of a Multi-Degree of Freedom Worktool for Vibrations Assisted Forging, pp. 812-817.	
Giraud-Audine, Christophe	Arts Et Métiers Paristech
Bigot, Regis	Arts Et Métiers Paristech
Amberg, Michel	USTL, Univ. Nord De France
Lemaire-Semail, Betty	Ustl
ABBA, Gabriel	Arts Et Métiers ParisTech
Nguyen, Thanh-Hung	Arts Et Métiers Paristech
13:50-14:10	WeBT2.2
An Experimental Study on Energy Saving Potential for Cutterhead Drive of Shield Tunneling Machine Using Variable-Speed Hydraulic System, pp. 818-823.	
Shi, Hu	Xi'an Jiaotong Univ
Gong, Guofang	Zhejiang Univ
Mei, Xuesong	Xian Jiaotong Univ
Li, Xiaohu	Xi'an Jiaotong Univ
14:10-14:30	WeBT2.3
Control of Human Welder's Arm Movement in Manual Gas Tungsten Arc Welding (GTAW) Process, pp. 824-829.	
Huang, Ning	Beijing Univ. of Tech
Liu, Yukang	Univ. of Kentucky
chen, Shujun	Beijing Univ. of Tech
Zhang, Yuming	Univ. of Kentucky
14:30-14:50	WeBT2.4
Correction of Tooth Surface Deviations for Aero Spiral Bevel and Hypoid Gears, pp. 830-834.	
Yang, Yu	Xi'an Jiaotong Univ
Mao, Shimin	Xi'an Jiaotong Univ
Zhao, Pengju	Xi'an Jiaotong Univ
Guo, Wenchao	Xi'an Jiaotong Univ
14:50-15:10	WeBT2.5
Inspection Planning for Customer-Driven Manufacturing Environments with Modular Inspection Stations, pp. 835-840.	
Davrajh, Shaniel	Univ. of KwaZulu Natal
Bright, Glen	Univ. of KwaZulu Natal
15:10-15:30	WeBT2.6
A Bayesian Network-Based Classifier for Machining Error Prediction, pp. 841-844.	
Wang, Mingwei	Northwestern Pol. Univ
Zhou, Jingtao	Northwestern Pol. Univ

WeBT3	Fourier Salon
Planning and Navigation I (Regular Session)	
Chair: Dötlinger, Alexander	Tech. Univ. München
Co-Chair: Moon, Hyungpil	Sungkyunkwan Univ.
13:30-13:50	WeBT3.1
Robust Receding Horizon Based Trajectory Planning, pp. 845-851.	
Dötlinger, Alexander	Tech. Univ. München
Larcher, Florian	Tech. Univ. München
Kennel, Ralph M.	Tech. Univ. München
13:50-14:10	WeBT3.2
Optimal Point-To-Point Motion Planning of Flexible Parallel Manipulator with Adaptive Gauss Pseudospectral Method, pp. 852-858.	
Kong, Minxiu	Harbin Inst. of Tech
Chen, Zhengsheng	Harbin Inst. of Tech
Ji, Chen	Harbin Inst. of Tech
Liu, Ming	Harbin Inst. of Tech
14:10-14:30	WeBT3.3
Structure Design and Trajectory Planning of a Precision Repetitive-Scanning Stage with Separated Drive Units for Heat-Reduction, pp. 859-864.	
Chen, Han	Tsinghua Univ
Hu, Chuxiong	Tsinghua Univ
Mu, Haihua	Tsinghua Univ
Zhu, Yu	Tsinghua Univ
Cai, Tian	Tsinghua Univ
Zhang, Ming	Tsinghua Univ
14:30-14:50	WeBT3.4
An Online Trajectory Planning of Struck Ball with Spin by Table Tennis Robot, pp. 865-870.	
Nakashima, Akira	Nagoya Univ
Ito, Daigo	Nagoya Univ
Hayakawa, Yoshikazu	Nagoya Univ
14:50-15:10	WeBT3.5
*A Clustering Based Path Planning for UV Laser Galvanometric Scanning Drilling Machine Using Spatial Tessellations with A**, pp. 871-876.	
Kwak, Hosun	Sungkyunkwan Univ
Han, SangChul	Sungkyunkwan Univ
Koo, Ja Choon	Sungkyunkwan Univ
Choi, Hyouk Ryeol	Sungkyunkwan Univ
Moon, Hyungpil	Sungkyunkwan Univ
15:10-15:30	WeBT3.6
Path Planning of 5-DOF Manipulator, pp. 877-881.	
Kim, Hyun-Woo	Pusan National Univ
Chen, Hu	Pusan National Univ
Lee, Jangmyung	Busan National Univ. Busan, Korea

WeBT5	Lumière Salon
Robot Dynamics and Control (Regular Session)	
Chair: Kawamura, Akihiro	Ritsumeikan Univ.
Co-Chair: Oh, Sehoon	Sogang Univ.
13:30-13:50	WeBT5.1
Adaptive Motion Control of a Robotic Arm with Movable Counterweights, pp. 882-887.	
Kawamura, Akihiro	Ritsumeikan Univ
Hisatsune, Tomoaki	Ritsumeikan
Matsusaka, Kento	Ritsumeikan Univ
Uemura, Mitsunori	Osaka Univ
Kawamura, Sadao	Ritsumeikan Univ
13:50-14:10	WeBT5.2
Design of a Biarticular Robotic Manipulator and Its Control in the Rotating Coordinate System, pp. 888-891.	
Choi, Hyunjin	Sogang Univ
Oh, Sehoon	Sogang Univ
Kong, Kyoungchul	Sogang Univ
14:10-14:30	WeBT5.3
Improving the Transient Performance in Robotics Force Control Using Nonlinear Damping, pp. 892-897.	
Lai, Chow Yin	A*STAR Singapore Inst. of Manufacturing Tech
14:30-14:50	WeBT5.4
Decoupling of Macro-Mini Manipulator Using Adaptive Neural Networks, pp. 898-903.	
Lai, Chow Yin	A*STAR Singapore Inst. of Manufacturing Tech
14:50-15:10	WeBT5.5
Hamiltonian Exploitation in Underactuated Robot System Inversion, pp. 904-909.	
Short, Joel Stephen	National Univ. of Singapore
Poo, Jim A.N.	National Univ. of Singapore
Ang Jr, Marcelo H	National Univ. of Singapore
Lai, Chow Yin	A*STAR Singapore Inst. of Manufacturing Tech
Tao, Pey Yuen	A*STAR Singapore Inst. of Manufacturing Tech
15:10-15:30	WeBT5.6
Hydraulic Manipulator Virtual Decomposition Control with Performance Analysis Using Low-Cost MEMS Sensors, pp. 910-917. Attachment	
Koivumäki, Janne	Tampere Univ. of Tech
Honkakorpi, Janne	Tampere Univ. of Tech
Vihonen, Juho	Tampere Univ. of Tech
Mattila, Jouni	Tampere Univ. of Tech

WeBT6	Proudhon Salon
Visual Servoing (Regular Session)	
Chair: Janabi-Sharifi, Farrokh	Ryerson Univ.
Co-Chair: Dahmouche, Redwan	Univ. de Franche Comté
13:30-13:50	WeBT6.1
6-DoF Automatic Micropositioning Using Photometric Information, pp. 918-923.	
CUI, Le	Univ. of Rennes 1
Marchand, Eric	Univ. De Rennes 1, IRISA, INRIA Rennes
HALIYO, Dogan Sinan	Univ. Pierre Et Marie Curie - Paris 6 - CNRS
Régnier, Stéphane	Univ. Pierre Et Marie Curie
13:50-14:10	WeBT6.2
Manipulation Model of Thread-Rotor Object by a Robotic Hand for High-Speed Visual Feedback Control, pp. 924-930. Attachment	
Kim, Hyuno	Univ. of Tokyo
Yamakawa, Yuji	Univ. of Tokyo
Senoo, Taku	Univ. of Tokyo
Ishikawa, Masatoshi	Univ. of Tokyo
14:10-14:30	WeBT6.3
Hybrid Predictive Control for Constrained Visual Servoing, pp. 931-936.	
Assa, Akbar	Ryerson Univ
SHARIFI, Farrokh	Ryerson
14:30-14:50	WeBT6.4
A Vision-Based Generic Dynamic Model of PKMs and Its Experimental Validation on the Quattro Parallel Robot, pp. 937-942.	
Ozgur, Erol	Pascal Inst
Dahmouche, Redwan	Univ. De Franche Comté
Andreff, Nicolas	Univ. De Franche Comté
Martinet, Philippe	Ec. Centrale De Nantes
14:50-15:10	WeBT6.5
Stabilization for an Ear Surgical Device Using Force Feedback and Vision-Based Motion Compensation, pp. 943-948.	
Liang, Wenyu	National Univ. of Singapore
Gao, Wenchao	National Univ. of Singapore
Chen, Silu	Singapore Inst. of Manufacturing Tech
Tan, Kok-Kiong	National Univ. of Singapore

WeCT1	AmphiTheater
Micro/Nano Actuators (Regular Session)	
Chair: Chen, Silu	Singapore Inst. of Manufacturing Tech.
Co-Chair: Gu, Guo-Ying	Shanghai Jiao Tong Univ.

17:00-17:20 WeCT1.1

Design of a Variable Stiffness Flexure Mechanism for Micromanipulation Tasks, pp. 949-954.

Zhao, Su	Singapore Inst. of Manufacturing Tech
Iwasa, Toshihiro	Nanyang Tech. Univ
Lim, Zhen Yi	Nanyang Tech. Univ
Shee, Cheng Yap	Nanyang Tech. Univ. Singapore
Chen, Silu	Singapore Inst. of Manufacturing Tech
Ang, Wei Tech	Nanyang Tech. Univ

17:20-17:40 WeCT1.2

Optimal Design and Comparative Analysis of a Novel Microgripper Based on Matrix Method, pp. 955-960.

Wu, Zhigang	Univ. of Macau
Li, Yangmin	Univ. of Macau

17:40-18:00 WeCT1.3

Experimental Characterization of Drobot: Towards Closed-Loop Control, pp. 961-966.

Nathalie, Majcherczyk	BEAMS Department, École Pol. De Bruxelles, Univ. L
Rabenorosoa, Kanty	FEMTO-ST Inst
Clévy, Cédric	Franche-Comté Univ
Mincheva, Rosica	Lab. of Pol. and Composite Materials (Mons)
Raquez, Jean-Marie	Lab. of Pol. and Composite Materials (Mons)
Viallon, Marc	PFT Proto-Micro, Lycée Edgar Faure
Mastrangeli, Massimo	Ec. Pol. Federale De Lausanne (EPFL)
Lambert, Pierre	Univ. Libre De Bruxelles

18:00-18:20 WeCT1.4

Precise Motion Control of Piezoelectric Actuators Using Modified ZPETC-Based Composite Controller, pp. 967-972.

Tian, Lizhi	Shanghai Jiao Tong Univ
Wu, Jianhua	Shanghai Jiao Tong Univ
Xiong, Zhenhua	Shanghai Jiao Tong Univ
Ding, Han	Shanghai Jiao Tong Univ

18:20-18:40 WeCT1.5

Robust Tracking of Nanopositioning Stages Using Sliding Mode Control with a PID Sliding Surface, pp. 973-977.

Gu, Guo-Ying	Shanghai Jiao Tong Univ
Li, Chun-Xia	Shanghai Jiao Tong Univ
Zhu, Li-Min	Shanghai Jiao Tong Univ
Fatikow, Sergej	Univ. of Oldenburg

18:40-19:00 WeCT1.6

Integrating Robotic Software Frameworks for Convenient Software Component Exchange in Micro and Nanoscale Applications, pp. 978-983.

Tiemerding, Tobias	Univ. of Oldenburg
von Essen, Mathias	Tampere Univ. of Tech
Diederichs, Claas	Department of Computing Science, Univ. of Oldenburg
Kallio, Pasi Johannes	Tampere Univ. of Tech
Fatikow, Sergej	Univ. of Oldenburg

WeCT2	Chardonnet Salon
Climbing Robots (Regular Session)	
Chair: Shammas, Elie	American Univ. of Beirut
Co-Chair: Gauthier, Michael	FEMTO-ST Inst.

17:00-17:20 WeCT2.1

Dynamic Analysis of an Angular Swivel Steering Mechanism with Applications to Step Climbing, pp. 984-989.

Salem, Wael	American Univ. of Beirut
Shammas, Elie	American Univ. of Beirut
Asmar, Daniel	American Univ. of Beirut
Bazzi, Salah	American Univ. of Beirut

17:20-17:40 WeCT2.2

Optimal Attaching and Detaching Trajectory for Bio-Inspired Climbing Robot Using Dry Adhesive, pp. 990-993.
Attachment

Wang, Zhongyuan	Nanjing Univ. of Aeronautics and Astronautics
Dai, Zhendong	Nanjing Univ. of Aeronautics and Astronautics
Yu, Zhiwei	Nanjing Univ. of Aeronautics and Astronautics
Shen, Danni	Nanjing Univ. of Aeronautics and Astronautics

17:40-18:00 WeCT2.3

Adaptive Impedance Control of a Cleaning Unit for a Novel Wall-Climbing Mobile Robotic Platform (ROPE RIDE), pp. 994-999.

Kim, Taegyun	Seoul National Univ
Seo, Kunchan	Seoul National Univ
Kim, Jongwon	Seoul National Univ
Kim, Hwa Soo	Kyonggi Univ

18:00-18:20 WeCT2.4

Development of Traveling Wave Type Omnidirectional Wall Climbing Robot Using Permanent Magnetic Adhesion Mechanism and Proposal of Locomotion Strategy for the Robot, pp. 1000-1005.

Go, Tetsuhide	Chuo Univ
Osawa, Tatsuya	Chuo Univ
Ogawa, Teruyoshi	Chuo Univ
Nakamura, Taro	Chuo Univ

18:20-18:40 WeCT2.5

Modeling and Analysis of Static Wheelie of a Five-Wheeled Wheelchair for Climbing Over a Step, pp. 1006-1011.
Attachment

Munakata, Yu	Tokyo Univ. of Agriculture and Tech
Wada, Masayoshi	Tokyo Univ. of Agriculture and Tech

WeCT3	Fourier Salon
Planning and Navigation II (Regular Session)	
Chair: Martinez, Jorge L.	Univ. of Malaga
Co-Chair: Lee, Jangmyung	Busan National Univ. Busan, Korea
17:00-17:20	WeCT3.1
Collapsible Cubes: Removing Overhangs from 3D Point Clouds to Build Local Navigable Elevation Maps, pp. 1012-1017.	
Reina, Antonio J.	Univ. of Malaga
Martinez, Jorge L.	Univ. of Malaga
Mandow, Anthony	Univ. of Malaga
Morales, Jesús	Univ. De Málaga
García-Cerezo, Alfonso	Univ. of Malaga
17:20-17:40	WeCT3.2
An Approach to Path Planning and Real-Time Redundancy Control for Human-Robot Collaboration, pp. 1018-1023. Attachment	
Sanderud, Audun Rønning	Chuo Univ
Thomessen, Trygve	Ppm As
Hashimoto, Hideki	Chuo Univ
Osumi, Hisashi	Chuo Univ
Niitsuma, Mihoko	Chuo Univ
17:40-18:00	WeCT3.3
Efficient Motion Planning for Quasi-Static Elastic Rods Using Geometry Neighborhood Approximation, pp. 1024-1029.	
Roussel, Olivier	LAAS-CNRS/Univ. Paul Sabatier
Taïx, Michel	LAAS-CNRS/Univ. Paul Sabatier
Bretl, Timothy	Univ. of Illinois at Urbana-Champaign
18:00-18:20	WeCT3.4
The Deadlock Free Path Generation Algorithm for Multi-MoMo in R+iSpace, pp. 1030-1035.	
Park, JongSeung	Ritsumeikan Univ
Nunogaki, Toshitake	Ritsumeikan Univ
Lee, Joo-Ho	Ritsumeikan Univ
18:20-18:40	WeCT3.5
Repulsive Reaction Vector Generator for Whole-Arm Collision Avoidance of 7-DoF Redundant Robot Manipulator, pp. 1036-1041.	
Luo, Ren	National Taiwan Univ
Ko, Meng-Chu	National Taiwan Univ
Chung, Yi-Ting	National Taiwan Univ
Chatila, Raja	Isir
18:40-19:00	WeCT3.6
Using Particle Filters for Modeling Landmarks' Uncertainties in Bearing-Only SLAM, pp. 1042-1047.	
Berkovskii, N.A.	St.Petersburg State Pol. Univ. (SPbSPU)
Arsenjev, Dmitriy G.	St.Petersburg State Pol. Univ. (SPbSPU)

WeCT4	Granvelle Salon
Wheeled Robots and Vehicule Control (Regular Session)	
Chair: Kawabata, Kuniaki	RIKEN
Co-Chair: Voos, Holger	Univ. of Luxembourg
17:00-17:20	WeCT4.1
On-Line Reference Governor for Mobile Robot with Velocity Feedback Controller, pp. 1048-1053.	
Kawabata, Kuniaki	Riken
Xue, Jianru	Xi'an Jiaotong Univ
Ma, Liang	Xi'an Jiaotong Univ
Zheng, Nanning	Xi'an Jiaotong Univ
17:20-17:40	WeCT4.2
Derivation of Error Models Incorporating Slippage for a Tracked Vehicle Coupled to a Steerable Trailer, pp. 1054-1060.	
Briquet-Kerestedjian, Nolwenn	Univ. of New South Wales
Taghia, Javad	Univ. of New South Wales
Katupitiya, Jayantha	The Univ. of New South Wales
17:40-18:00	WeCT4.3
Research on Obstacle Negotiation Capability of Tracked Robot Based on Terramechanics, pp. 1061-1066.	
Li, Liyun	State Key Lab. of Robotics and System, Harbin Inst. Of
Wang, Weidong	State Key Lab. of Robotics and System, Harbin Inst. Of
Wu, Dongmei	State Key Lab. of Robotics and System, Harbin Inst. Of
Du, Zhijiang	State Key Lab. of Robotics and System, Harbin Inst. Of
18:00-18:20	WeCT4.4
A Novel Model-Predictive Cruise Controller for Electric Vehicles and Energy-Efficient Driving, pp. 1067-1072.	
Schwickart, Tim	Univ. of Luxembourg
Voos, Holger	Univ. of Luxembourg
Hadji-Minaglou, Jean-Regis	Univ. of Luxembourg
Darouach, Mohamed	Univ. De Lorraine
18:20-18:40	WeCT4.5
Control of an Electric Vehicle with a Large Sideslip Angle Using Driving Forces of Four Independently-Driven Wheels and Steer Angle of Front Wheels, pp. 1073-1078.	
Nakano, Hiroshi	Tohoku Univ
Okayama, Ken	Tohoku Univ
Kinugawa, Jun	Tohoku Univ
Kosuge, Kazuhiro	Tohoku Univ
18:40-19:00	WeCT4.6
Design and Modeling of a Novel Single-Actuator Differentially Driven Robot, pp. 1079-1084.	
Sfeir, Joy	American Univ. of Beirut
Shammas, Elie	American Univ. of Beirut
Asmar, Daniel	American Univ. of Beirut

WeCT5	Lumière Salon
Medical Robotics (Regular Session)	
Chair: Watanabe, Tetsuyou	Kanazawa Univ.
Co-Chair: Foong, Shaohui	Singapore Univ. of Tech. and Design
17:00-17:20	WeCT5.1
Flexible Instrument for Minimally Invasive Robotic Surgery Using Rapid Prototyping Technology for Fabrication, pp. 1085-1090.	
Mintenbeck, Julien	Karlsruhe Inst. of Tech
Siegfarth, Marius	Karlsruhe Inst. of Tech
Estana, Ramon	Univ. of Applied Science Karlsruhe
Woern, Heinz	Karlsruhe Inst. of Tech. (KIT)
17:20-17:40	WeCT5.2
Design and Analysis of a Compliant Non-Invasive Real-Time Localization System for Nasogastric Intubation, pp. 1091-1096. Attachment	
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
17:40-18:00	WeCT5.3
Design Optimization of a Magnetomechanical System for Drug Delivery in Wireless Capsule Endoscopy, pp. 1097-1102.	
Munoz, Fredy	Univ. of Wollongong
ALICI, Gursel	Univ. of Wollongong
Li, Weihua	Univ. of Wollongong
18:00-18:20	WeCT5.4
Disturbance-Observer-Based User Force Estimation for Bilateral Teleoperated Needle Insertion, pp. 1103-1109.	
Janssens, Jérôme	Univ. Libre De Bruxelles
Catoire, Laurent	Univ. Libre De Bruxelles
Torfs, Serge	Univ. Libre De Bruxelles
Kinnaert, Michel	Univ. Libre De Bruxelles
18:20-18:40	WeCT5.5
Three-Axis Force Visualizing System for Fiberscopes Utilizing Highly Elastic Fabric, pp. 1110-1115.	
Iwai, Takanobu	Kanazawa Univ
Fujihira, Yoshinori	Kanazawa Univ
Wakako, Lina	Kanazawa Univ
Kagawa, Hiroyuki	Kanazawa Univ
Yoneyama, Takeshi	Kanazawa Univ
Watanabe, Tetsuyou	Kanazawa Univ
18:40-19:00	WeCT5.6
Control Architecture of a Sensorless Robotic Platform for Minimally Invasive Surgery, pp. 1116-1121. Attachment	
Rivas-Blanco, Irene	Univ. of Malaga
Tortora, Giuseppe	Scuola Superiore Sant'Anna
Menciassi, Arianna	Scuola Superiore Sant'Anna - SSSA
Muñoz, Victor	Univ. of Malaga

WeCT6	Proudhon Salon
Opto-Mechatronics (Regular Session)	
Chair: Woern, Heinz	Karlsruhe Inst. of Tech. (KIT)
Co-Chair: Lamarque, Frédéric	Univ. de Tech. de Compiègne

17:00-17:20 WeCT6.1

1 X 4 Optical Switch Based on a Four Discrete Position Digital Actuator, pp. 1122-1127. Attachment

Petit, Laurent	Univ. De Tech. De Compiègne
Al Hajjar, Hani	Univ. De Tech. De Compiègne
Terrien, Jérémy	Univ. De Tech. De Compiègne
Lamarque, Frédéric	Univ. De Tech. De Compiègne

17:20-17:40 WeCT6.2

Dynamic Reconfiguration of a Compact Active Stereovision System with Digital Electromagnetic Actuators, pp. 1128-1133.

HOU, Yingfan	Univ. De Tech. De Compiègne
Dupont, Erwan	Univ. De Tech. De Compiègne
Petit, Laurent	Univ. De Tech. De Compiègne
Redarce, Tanneguy	INSA De Lyon (Inst. National Des Sciences Appliquees)
Lamarque, Frédéric	Univ. De Tech. De Compiègne

17:40-18:00 WeCT6.3

Integrated Waveguide Interferometer with Picometric Performances, pp. 1134-1138.

Missoffe, Alexia	IADI-INSERM U947, Univ. De Lorraine
Olivier, olivier	Cea
Cagneau, Barthélemy	Univ. De Versailles Saint-Quentin En Yvelines
Millier, Philippe	Cea
Guan, Hongyu	Univ. De Versailles Saint-Quentin En Yvelines
Chassagne, Luc	Univ. of Versailles

18:00-18:20 WeCT6.4

Cylindrical Tactile Sensor for a Robot Hand Using Position Sensitive Detectors on a Suspension Shell, pp. 1139-1144.

Nishibori, Kento	Nagoya Univ
Oshima, Kazuhiko	Daido Univ
Nishibori, Kenji	Daido Univ

18:20-18:40 WeCT6.5

Optical Coherence Tomography As Highly Accurate Optical Tracking System, pp. 1145-1150.

Zhang, Yaokun	Karlsruhe Inst. of Tech. (KIT)
Woern, Heinz	Karlsruhe Inst. of Tech. (KIT)

18:40-19:00 WeCT6.6

Maximum Length Sequence Encoded Hadamard Measurement Paradigm for Compressed Sensing, pp. 1151-1156.

Qin, Shujia	Shenyang Inst. of Automation, Chinese Acad. of Sciences
Bi, Sheng	South China Univ. of Tech
Xi, Ning	Michigan State Univ

ThAT1	AmphiTheater
Sensors and Sensing Systems II (Regular Session)	
Chair: Parker, Johne	Univ. of Kentucky
Co-Chair: Kim, Young-Keun	Handong Global Univ.
08:45-09:05	ThAT1.1
Eye Gaze Estimation Based on Ellipse Fitting and Three-Dimensional Model of Eye for "Intelligent Poster", pp. 1157-1162.	
Urano, Roma	Shibaura Inst. of Tech
Suzuki, Ryuji	Shibaura Inst. of Tech
Sasaki, Takeshi	Shibaura Inst. of Tech
09:05-09:25	ThAT1.2
Characterization of Fiber Bragg Grating Sensor for Ph Measurement, pp. 1163-1166.	
Yulianti, Ian	Univ. Negeri Semarang, Indonesia
M. Supaát, Abu Sahmah	Univ. Teknologi Malaysia
Idrus, Sevia Mahdaliza	Univ. Teknologi Malaysia
09:25-09:45	ThAT1.3
Algorithm of 6-DOF Motion Detection of Curved Surface Object Based on Laser Distance Sensors, pp. 1167-1170.	
Kim, Young-Keun	Handong Global Univ
Kim, Kyung-Soo	KAIST(Korea Advanced Inst. of Science and Tech
09:45-10:05	ThAT1.4
Lissajous-Like Scan Pattern for a Gimballed LIDAR, pp. 1171-1176.	
Anderson, J Wesley	Villanova Univ
Clayton, Garrett	Villanova Univ
10:05-10:25	ThAT1.5
Research on Wavelet Analysis for Pipeline Pre-Warning System Based on Phase-Sensitive Optical Time Domain Reflectometry, pp. 1177-1182.	
Shi, Yi	TianJin Univ
Feng, Hao	TianJin Univ
An, Yang	TianJin Univ
Feng, Xin	TianJin Univ
Zeng, Zhoumo	TianJin Univ
10:25-10:45	ThAT1.6
Received Signal Strength Indication Signature for Passive UHF Tags, pp. 1183-1187. Attachment	
Whitney, Ann	Univ. of Kentucky
Fessler, John	Lexmark International
Parker, Johne	Univ. of Kentucky
Jacobs, Nathan	Univ. of Kentucky

ThAT2	Chardonnet Salon
Modeling and Simulation (Regular Session)	
Chair: Lee, Kok-Meng	Georgia Tech. Univ. of Sci & Tech.
Co-Chair: KHALIL, Wisama	Ec. Centrale de Nantes, france
08:45-09:05	ThAT2.1
Real-Time Computational Model for Visualizing Compliant Beam Motion of a Flexible Mobile-Sensing Node, pp. 1188-1193.	
Ji, Jingjing	Huazhong Univ. of Science and Tech
Lee, Kok-Meng	Georgia Inst. of Tech
Wang, Dong-hai	Zhejiang Univ
09:05-09:25	ThAT2.2
Modeling and Simulation of Modular Complex System: Application to Air-Jet Conveyor, pp. 1194-1199.	
Gauthier, Jean-Marie	Univ. of Franche-Comté FEMTO-ST Inst. DISC
Gendreau, Dominique	Univ. of Franche-Comté FEMTO-ST Inst. AS2M
Hammad, Ahmed	Univ. of Franche-Comté FEMTO-ST Inst. DISC
Bouquet, Fabrice	Univ. of Franche-Comté FEMTO-ST Inst. DISC
09:25-09:45	ThAT2.3
Dynamic and Transient Simulation Analyses of Grid Connected Large Wind Parks, pp. 1200-1205.	
Okedu, Eloghene Kenneth	Univ. of Port Harcourt
Uhunwangho, Roland	Univ. of Port Harcourt
Ngerebara, Sampson Audu	Univ. of Port Harcourt
09:45-10:05	ThAT2.4
OpenSYMORO: An Open-Source Software Package for Symbolic Modelling of Robots, pp. 1206-1211.	
KHALIL, Wisama	Ec. Centrale De Nantes, France
Vijayalingam, Aravindkumar	Ec. Centrale De Nantes
Khomutenko, Bogdan	Ec. Centrale De Nantes
Mukhanov, Izzatbek	Ec. Centrale De Nantes
Lemoine, Philippe	Ec. Centrale De Nantes
Ecorchard, Gaël	Fraunhofer Inst. for Machine Tools and FormingTechnology
10:05-10:25	ThAT2.5
3D Geometric Removability Analysis for Virtual Disassembly Evaluation, pp. 1212-1217.	
WANG, Chenggang	Grenoble INP, Joseph Fourier Univ
MITROUCHEV, Peter	Grenoble INP, Joseph Fourier Univ
Li, Guiqin	Shanghai Univ
Lu, Lixin	Shanghai Univ
10:25-10:45	ThAT2.6
Modeling Variable Speed Drive for Positive Displacement Pump, pp. 1218-1223.	
Josifovic, Aleksandar	Univ. of Strathclyde
Corney, Jonathan	Heriot-Watt Univ
Davies, Bruce	Heriot-Watt Univ

ThAT3	Fourier Salon
Grasping and Manipulation (Regular Session)	
Chair: Sugano, Shigeki	Waseda Univ.
Co-Chair: YAMADA, Takayoshi	Gifu Univ.
08:45-09:05	ThAT3.1
Identification of Contact Conditions between Fingers and a Grasped Object by Active Force Sensing, pp. 1224-1229.	
YAMADA, Takayoshi	Gifu Univ
NAKANISHI, Shotaro	Gifu Univ
Yamamoto, Hidehiko	Gifu Univ
Johansson, Rolf	Lund Univ
09:05-09:25	ThAT3.2
Advantage of Variable Stiffness of Human Fingers for Key Insertion Task, pp. 1230-1235.	
Hasegawa, Yasuhisa	Nagoya Univ
Kitamura, Ojiro	Univ. of Tsukuba
09:25-09:45	ThAT3.3
New Metric for Wrench Space Reachability of Multifingered Hand with Contact Uncertainties, pp. 1236-1242.	
Caldas, Alex	Cea List
Micaelli, Alain	Commissariat à L'energie Atomique
Grossard, Mathieu	CEA LIST - Interactive Robotic Lab
Makarov, Maria	SUPELEC Systems Sciences (E3S)
Rodriguez-Ayerbe, Pedro	SUPELEC Systems Sciences (E3S)
Dumur, Didier	Supelec
09:45-10:05	ThAT3.4
Online Via-Points Trajectory Generation for Reactive Manipulations, pp. 1243-1248.	
Zhao, Ran	Univ. of Toulouse
Sidobre, Daniel	Univ. of Toulouse
He, Wuwei	Laas-Cnrs
10:05-10:25	ThAT3.5
The Robot That Can Achieve Card Magic, pp. 1249-1254. Attachment	
Koretake, Ryoma	Osaka Univ
Kaneko, Makoto	Osaka Univ
Higashimori, Mitsuru	Osaka Univ
10:25-10:45	ThAT3.6
Tool-Body Assimilation Model Using a Neuro-Dynamical System for Acquiring Representation of Tool Function and Motion, pp. 1255-1260.	
Takahashi, Kuniyuki	Waseda Univ
Ogata, Tetsuya	Waseda Univ
Tjandra, Hadi	Waseda Univ
Yamaguchi, Yuki	Kyoto Univ
Suga, Yuki	Waseda Univ
Sugano, Shigeki	Waseda Univ

ThAT4	Granvelle Salon
Mems (Regular Session)	
Chair: LUTZ, Philippe	FEMTO-ST - UMR CNRS 6174 - UFC/ENSMM/UTBM
Co-Chair: Chen, Chung-De	Feng Chia Univ.

08:45-09:05 ThAT4.1

Two-Axis MEMS Scanning Mirror Driven by a Single PZT Actuator, pp. 1261-1266.

Chen, Chung-De	Feng Chia Univ
Wang, Yu-Jen	National Taipei Univ. of Tech
Yeh, Chien-Hsien	Industrial Tech. Res. Inst

09:05-09:25 ThAT4.2

PMN-PT [001] Bulk Piezoelectric Actuator for Shape Analysis for MOEMS, pp. 1267-1272.

Ciubotariu, Dragos Adrian	Femto-ST Inst. / Univ. Franche-Comte / "Valahia" Univ
Ivan, Ioan Alexandru	Univ. De Lyon, ENISE, LTDS, UMR 5513 CNRS
Clévy, Cédric	Franche-Comté Univ
LUTZ, Philippe	Femto-St - Umr Cnrs 6174 - Ufc/ensmm/utbm

09:25-09:45 ThAT4.3

Design Optimization of Bistable Modules Electrothermally Actuated for Digital Microrobotics, pp. 1273-1278.

Hussein, Hussein	Femto-St
Chalvet, Vincent	FEMTO-ST Inst. Univ. of Franche-Comté
Haddab, Yassine	Femto-St
LUTZ, Philippe	Femto-St - Umr Cnrs 6174 - Ufc/ensmm/utbm
Le moal, Patrice	Femto-St
Bourbon, Gilles	Femto-St

09:45-10:05 ThAT4.4

Dynamics of Bistable Initially Curved Shallow Microbeams: Effects of the Electrostatic Fringing Fields, pp. 1279-1283.

Tajaddodianfar, Farid	School of Engineering, Univ. of Tehran-Iran
Hairi Yazdi, Mohammad Reza	School of Engineering, Univ. of Tehran
Nejat Pishkenari, Hossein	School of Mechanical Engineering, Sharif Univ. of Tech

10:05-10:25 ThAT4.5

Nonlinear Dynamics of Electrostatically Actuated Micro-Resonator: Analytical Solution by Homotopy Perturbation Method, pp. 1284-1289.

Tajaddodianfar, Farid	Department of Mechanical Engineering, Univ. of Tehran-Iran
Hairi Yazdi, Mohammad Reza	Department of Mechanical Engineering, Univ. of Tehran
Nejat Pishkenari, Hossein	Shool of Mechanical Engineering, Sharif Univ. of Tech
Ehsan, Maani Miandoab	Department of Mechanical Engineering, Univ. of Tehran

ThAT5	Lumière Salon
Assistive and Wearable Robotics (Regular Session)	
Chair: WATANABE, Keisuke	Japan Aerospace Exploration Agency
Co-Chair: Lee, Min Cheol	Pusan National Univ.
08:45-09:05	ThAT5.1
A New Vision and Navigation Research for a Guide-Dog Robot System in Urban System, pp. 1290-1295.	
Wei, Yuanlong	Pusan National Univ
Kou, Xiangxin	Pusan National Univ
Lee, Min Cheol	Pusan National Univ
09:05-09:25	ThAT5.2
Attaching Sub-Links on Linear Actuators of Wearable Robots for Payload Increase, pp. 1296-1301.	
Jeong, Dong-Hyun	Daewoo Shipbuilding & Marine Engineering Co., Ltd
Choo, Junghoon	Hanyang Univ. and DSME(Daewoo Shipbuilding & Marine Enginee
Jeong, Seungwoo	Daewoo Shipbuilding & Marine Engineering Co., Ltd
Chu, Gilwhoan	Daewoo Shipbuilding & Marine Engineering Co., Ltd
09:25-09:45	ThAT5.3
Lift-Up Motion Generation of Nursing-Care Assistant Robot Based on Human Muscle Force and Body Softness Estimation, pp. 1302-1307.	
Ding, Ming	Nagoya Univ
Ikeura, Ryojun	Mie Univ
Mori, Yuki	Riken
Mukai, Toshiharu	Riken
Hosoe, Shigeyuki	Riken
09:45-10:05	ThAT5.4
Mechatronic Design of the Gyrolift Verticalization Wheelchair, pp. 1308-1313. Attachment	
Trenoras, Lambert	Univ. of Versailles
Gregory, Unéné	Tshwane Univ. of Tech
Monacelli, Eric	Univ. of Versailles
HUGEL, Vincent	Univ. of Versailles
10:05-10:25	ThAT5.5
Improvement of Reclining Wheelchair with Transfer Assistance Functions, pp. 1314-1318.	
Iwano, Yuki	Akashi National Coll. of Tech
10:25-10:45	ThAT5.6
A Wearable Manipulator for Supporting Extra-Vehicular Activity: Concept and a Prototype for Ground Test, pp. 1319-1324.	
WATANABE, Keisuke	Japan Aerospace Exploration Agency
UETA, Atsushi	Japan Aerospace Exploration Agency
TAKEI, Yuto	Tokyo Inst. of Tech
TSUMAKI, Toshimichi	Japan Aerospace Exploration Agency

ThAT6	Proudhon Salon
Kinematics (Regular Session)	
Chair: Shintemirov, Almas	Nazarbayev Univ.
Co-Chair: An, Happy H.	OSC
08:45-09:05	ThAT6.1
Analytical Inverse Kinematic Solution with Self-Motion Constraint for the 7-DOF Restore Robot Arm, pp. 1325-1330. Attachment	
An, Happy H.	Osc
Clement, William	Clement Engineering, Inc
Reed, Benjamin	Gsfc
09:05-09:25	ThAT6.2
Ellipsoidal Outer-Approximation of Workspace of Binary Manipulator for Inverse Kinematics Solution, pp. 1331-1336.	
Maeda, Kensuke	Meijo Univ
Konaka, Eiji	Meijo Univ
09:25-09:45	ThAT6.3
Inverse Kinematic Modeling of a Class of Continuum Bionic Handling Arm, pp. 1337-1342.	
Lakhal, Othman	Univ. Lille1
Achille, Melingui	Univ. of Lille1, Pol. Lille, LAGIS Lab
Chibani, Abdelhakim	Univ. of Lille1, Pol. Lille, LAGIS Lab
Escande, Coralie	Univ. Lille 1, Pol
Merzouki, Rochdi	Pol. Univ. of Lille1
09:45-10:05	ThAT6.4
Extending the Resolution Range of the Cascaded Generalized Inverse, pp. 1343-1348.	
Baratcart, Travis	The Univ. of Tokyo
Salvucci, Valerio	The Univ. of Tokyo
Koseki, Takafumi	The Univ. of Tokyo
10:05-10:25	ThAT6.5
Computing Safe Trajectories for an Assistive Cable-Driven Parallel Robot by Selecting the Cables under Tension and Using Interval Analysis, pp. 1349-1354.	
RAMADOUR, REMY	Inria Sophia Antipolis
Merlet, Jean-Pierre	Inria
10:25-10:45	ThAT6.6
An Approach for Obtaining Unique Kinematic Solutions of a Spherical Parallel Manipulator, pp. 1355-1360. Attachment	
Niyetkaliyev, Aibek	Nazarbayev Univ
Shintemirov, Almas	Nazarbayev Univ

ThBT1	AmphiTheater
Sensors and Sensing Systems III (Regular Session)	
Chair: Grossard, Mathieu	CEA LIST - Interactive Robotic Lab.
Co-Chair: Kahali Moghaddam, Maryam	Bremen Univ.
13:30-13:50	ThBT1.1
Multi-Axis Force Sensing with Pre-Stressed Resonant Composite Plates: An Alternative to Strain Gauge Force Sensors, pp. 1361-1367.	
Castano Cano, Davinson	CEA LIST - Interactive Robotic Lab
Grossard, Mathieu	CEA LIST - Interactive Robotic Lab
Hubert, Arnaud	Univ. of Franche-Comte
13:50-14:10	ThBT1.2
Design, Development and Preliminary Assessment of a Force Sensor for Robotized Medical Applications, pp. 1368-1374.	
Kumar, Nitish	Univ. of Strasbourg
Piccin, Olivier	Insa
Meylheuc, Laurence	ICube AVR
Barbé, laurent	Univ. of Strasbourg, ICUBE CNRS
Bayle, Bernard	Univ. of Strasbourg
14:10-14:30	ThBT1.3
Enhanced Tactile Sensor for the Minimally Invasive Robotic Palpation, pp. 1375-1380.	
Kwon, Joon Ho	Korea Univ
Hwang, Jung-Hoon	Korea Eletronics Tech. Inst
Hong, Daehie	Korea Univ
An, Jinung	Dgist
Yang, Gi-Hun	Kitech
14:30-14:50	ThBT1.4
Experimental Study of Non-Ideal Phenomena Affecting Magneto-Rheological Elastomers Piezoresistivity, pp. 1381-1386.	
Grivon, Daniel	École Pol. Fédérale De Lausanne (EPFL)
Civet, Yoan	Epfl
Pataky, Zoltan	Hug
Perriard, Yves	Ec. Pol. Fédérale De Lausanne (EPFL)
14:50-15:10	ThBT1.5
Embedding Rigid and Flexible Inlays in Carbon Fiber Reinforced Plastics, pp. 1387-1392.	
Kahali Moghaddam, Maryam	Bremen Univ. - IMSAS
Boll, Dmitriy	Univ. of Bremen - IMSAS
Lang, Walter	Univ. of Bremen - IMSAS

ThBT2	Chardonnet Salon
Parallel Mechanisms (Regular Session)	
Chair: Tsumaki, Yuichi	Yamagata Univ.
Co-Chair: Carbonari, Luca	Pol. Univ. of Marche
13:30-13:50	ThBT2.1
Dynamic Analysis of Scissor Lift Mechanism through Bond Graph Modeling, pp. 1393-1399.	
ISLAM, MD TOUFIQUL	Memorial Univ. of Newfoundland (MUN)
Yin, Cheng	Memorial Univ. of Newfoundland
Jian, Shengqi	Memorial Univ. of Newfoundland
Rolland, Luc	Memorial Univ
13:50-14:10	ThBT2.2
Development of Delta Robot Driven by Pneumatic Artificial Muscles, pp. 1400-1405.	
Hirano, Junya	Chuo-Univ
Tanaka, Dai	Chuo Univ
Watanabe, Takumi	Chuo Univ
Nakamura, Taro	Chuo Univ
14:10-14:30	ThBT2.3
Simplified Model for Inverse Dynamics Control of the Cartesian Parallel Manipulator I.Ca.Ro, pp. 1406-1412.	
Carbonari, Luca	Pol. Univ. of Marche
Callegari, Massimo	Pol. Univ. of Marche, Ancona, Italy
Palmieri, Giacomo	Univ. Degli Studi E-Campus, Univ. Pol. Delle Ma
Palpacelli, Matteo Claudio	Univ. Pol. Delle Marche
14:30-14:50	ThBT2.4
Interference Detection for Cable-Driven Parallel Robots (CDPRs), pp. 1413-1418.	
Blanchet, Laurent	Inria
Merlet, Jean-Pierre	Inria
14:50-15:10	ThBT2.5
Ultra-Lightweight Forearm with a Parallel-Wire Mechanism, pp. 1419-1423.	
Tsumaki, Yuichi	Yamagata Univ
Shimanuki, Shota	Yamagata Univ
Ono, Fumiaki	Yamagata Unversity
Han, Hyun-Tae	Yamagata Univ

ThBT3	Fourier Salon
Artificial Muscles (ESNAM) (Invited Session)	
Chair: Vidal, Frederic	LPPI - Univ. of Cergy-Pontoise
Co-Chair: jean-mistral, claire	LaMCoS, Univ. of Lyon, INSA-Lyon, CNRS
Organizer: Vidal, Frederic	LPPI - Univ. of Cergy-Pontoise
Organizer: CATTAN, Eric	UVHC
Organizer: Plesse, Cedric	LPPI - Univ. of Cergy-Pontoise
Organizer: jean-mistral, claire	LaMCoS, Univ. of Lyon, INSA-Lyon, CNRS
Organizer: Randriamahazaka, Hyacinthe	Univ. Paris Diderot
13:30-13:50	ThBT3.1
Patterning Innovative Conducting Interpenetrating Polymer Network by Dry Etching (I), pp. 1424-1429.	
Khaldi, Alexandre	Iemn-Uvhc
Maziz, Ali	Lab. Physico-Chimique Des Pol. Et Des Interfaces, Un
Plesse, Cedric	LPPI - Univ. of Cergy-Pontoise
Soyer, Caroline	Iemn-Uvhc
Teyssie, Dominique	LPPI - Univ. De Cergy-Pontoise
Vidal, Frederic	LPPI - Univ. of Cergy-Pontoise
Cattan, Eric	Iemn-Uvhc
13:50-14:10	ThBT3.2
Modelling of Soft Generator Combining Electret and Dielectric Elastomer (I), pp. 1430-1435.	
Jean-Mistral, Claire	LaMCoS, Univ. of Lyon, INSA-Lyon, CNRS
Porter, Tomos	LaMCoS, Univ. of Lyon, INSA-Lyon, CNRS
Vu-Cong, Thanh	G2Elab, Univ. of Grenoble (UJF), INPG, CNRS
Chesné, Simon	LaMCoS, Univ. of Lyon, INSA-Lyon, CNRS
Sylvestre, Alain	G2Elab, Univ. of Grenoble (UJF), INPG, CNRS
14:10-14:30	ThBT3.3
Integration of CNT-Based Actuators for Bio-Medical Applications – Example Printed Circuit Board CNT Actuator Pipette (I), pp. 1436-1441.	
Addinall, Raphael	Fraunhofer Inst. for Manufacturing Engineering and Automatio
Sugino, Takushi	AIST Kansai
Neuhaus, Raphael	Fraunhofer Inst. for Manufacturing Engineering and Automatio
Kosidlo, Urszula	Fraunhofer Inst. for Manufacturing Engineering and Automatio
Tonner, Friedemann	Fraunhofer Inst. for Manufacturing Engineering and Automatio
Glanz, Carsten	Fraunhofer Inst. for Manufacturing Engineering and Automatio
Kolaric, Ivica	Fraunhofer Inst. for Manufacturing Engineering and Automatio
Bauernhansl, Thomas	Fraunhofer Inst. for Manufacturing Engineering and Automatio
Asaka, Kinji	National Inst. of AIST
14:30-14:50	ThBT3.4
Highly Sustainable Electroactive Artificial Muscle with Graphene Paper Electrodes (I), pp. 1442-1445.	
OH, ILKWON	Korea Advanced Inst. of Science and Tech
Kim, J.	Kaist
Jeon, J.H.	Kaist
Kim, H.J.	Kaist
Lim, H.	Kimm
14:50-15:10	ThBT3.5
Pulse-Width-Modulated Charging of Ionic and Capacitive Actuators (I), pp. 1446-1451.	
Must, Indrek	Inst. of Tech. Univ. of Tartu
Kaasik, Friedrich	Intelligent Materials and Systems Lab. (http: //www.ims.ut.ee), In
Põldsalu, Inga	Intelligent Materials and Systems Lab. (http: //www.ims.ut.ee), In
Mihkels, Lauri	Univ. of Tartu, Inst. of Tech
Johanson, Urmas	Intelligent Materials and Systems Lab. (http: //www.ims.ut.ee), In
Punning, Andres	Tartu Univ
Aabloo, Alvo	Tartu Univ

ThBT4	Granvelle Salon
Advances in Micro and Nanoscale Positionning Systems: Design & Control I (Invited Session)	
Chair: Rakotondrabe, Micky	FEMTO-st Inst. UMR CNRS 6174 - UFC / ENSMM / UTBM
Co-Chair: Fleming, Andrew J.	Univ. of Newcastle
Organizer: Yong, Yuen Kuan	The Univ. of Newcastle
Organizer: Fleming, Andrew J.	Univ. of Newcastle
Organizer: Rakotondrabe, Micky	FEMTO-st Inst. UMR CNRS 6174 - UFC / ENSMM / UTBM

13:30-13:50 ThBT4.1

A Novel Electrical Configuration for Three Wire Piezoelectric Bimorph Micro-Positioners (I), pp. 1452-1457.

Rios, Shannon Andrew	Univ. of Newcastle
Fleming, Andrew J.	Univ. of Newcastle

13:50-14:10 ThBT4.2

Self-Sensing Electrostatic Drive in a MEMS Nanopositioner for the Application of Vibration Control (I), pp. 1458-1463.

Moore, Steven	The Univ. of Newcastle
Moheimani, S. O. Reza	The Univ. of Newcastle

14:10-14:30 ThBT4.3

Sensing Bandwidth of Electrothermal MEMS Transducers in Constant Voltage and Current Modes (I), pp. 1464-1468.

Bazaei, Ali	Univ. of Newcastle, Australia
Mohammadi, Ali	Univ. of Newcastle
Moheimani, S. O. Reza	The Univ. of Newcastle

14:30-14:50 ThBT4.4

Development of a MEMS Position Transducer Using Bulk Piezoresistivity of Suspensions (I), pp. 1469-1473.

Bazaei, Ali	Univ. of Newcastle, Australia
Maroufi, Mohammad	Newcastle Univ
Mohammadi, Ali	Univ. of Newcastle
Moheimani, S. O. Reza	The Univ. of Newcastle

14:50-15:10 ThBT4.5

Dynamic Force/Position Modeling of a One-DOF Smart Piezoelectric Micro-Finger with Sensorized End-Effector (I), pp. 1474-1479.

Komati, Bilal	Univ. of Franche-Comté and FEMTO-ST Inst
Clévy, Cédric	Franche-Comté Univ
Rakotondrabe, Micky	FEMTO-St Inst. UMR CNRS 6174 - UFC / ENSMM / UTBM
LUTZ, Philippe	Femto-St - Umr Cnrs 6174 - Ufc/ensmm/utbm

15:10-15:30 ThBT4.6

Development and Control of a Compact 3-DOF Micromanipulator for High-Precise Positioning (I), pp. 1480-1485.

Xiao, Xiao	Univ. of Macau
Li, Yangmin	Univ. of Macau

ThBT5	Lumière Salon
Rehabilitation Robots II (Regular Session)	
Chair: McDaid, Andrew	The Univ. of Auckland
Co-Chair: Hashimoto, Hiroshi	Advanced Inst. of Industrial Tech.
13:30-13:50	ThBT5.1
Development of a Passive Switching Cam Mechanism for Walking Assistance Using Pneumatic Artificial Muscle, pp. 1486-1491.	
Kawamura, Takuma	Chuo Univ
Noma, Marie	Chuo Univ
Nakamura, Taro	Chuo Univ
13:50-14:10	ThBT5.2
Development of an Active Balance Board for Progressive Ankle Rehabilitation, pp. 1492-1497.	
Putnam, Olivia	Univ. of Auckland
Ogden, Matt	Univ. of Auckland
Stol, Karl	Univ. of Auckland
McDaid, Andrew	The Univ. of Auckland
14:10-14:30	ThBT5.3
Development of a Walking Support Robot with Velocity and Torque-Based Mechanical Safety Devices, pp. 1498-1503.	
Kai, Yoshihiro	Tokai Univ
Arihara, Kai	Tokai Univ
KITAGUCHI, Satoshi	Tokai Univ
14:30-14:50	ThBT5.4
Automatic Tuning with Feed-Forward Compensation of the HuREx Rehabilitation System, pp. 1504-1509.	
Kora, Kazuto	The Univ. of Auckland
Lu, Charles Z.	The Univ. of Auckland
McDaid, Andrew J.	The Univ. of Auckland
14:50-15:10	ThBT5.5
A Depressurization Motion Analysis and Its Assistance for Pressure Sore Prevention of a Seated Patient on a Wheelchair, pp. 1510-1515.	
Shiotani, Kenji	Kwansei Gakuin Univ
Sakamoto, Yu	Kwansei Gakuin Univ
Chugo, Daisuke	Kwansei Gakuin Univ
Yokota, Sho	Toyo Univ
Hashimoto, Hiroshi	Advanced Inst. of Industrial Tech
15:10-15:30	ThBT5.6
A Control Algorithm of Treadmill Speed Adaptation for Lower Extremity Rehabilitation Robot System, pp. 1516-1520.	
Li, Feng	Shanghai Univ

ThBT6	Proudhon Salon
Mobile Robots (Regular Session)	
Chair: Seo, TaeWon	Yeungnam Univ.
Co-Chair: Clayton, Garrett	Villanova Univ.
13:30-13:50	ThBT6.1
Low-Cost Differential GPS for Field Robotics, pp. 1521-1526.	
Nizette, Benjamin	The Australian National Univ
Tridgell, Andrew	The Australian National Univ
Yu, Changbin (Brad)	The Australian National Univ
13:50-14:10	ThBT6.2
Robust Place Recognition by Spectral Graph Matching Using Omni-Directional Images, pp. 1527-1532.	
Yoon, Sukjune	Samsung Electronics Co., Ltd
Park, Soonyoung	Samsung Electronics Co., Ltd
Ahn, SungHwan	Samsung Electronics Co., Ltd
Hwang, Hyoseok	Samsung Electronics Co., Ltd
Roh, Kyung Shik	Samsung Electronics Co., Ltd
14:10-14:30	ThBT6.3
Adaptive Visual Odometry Using RGB-D Cameras, pp. 1533-1538.	
Fabian, Josh	Villanova Univ
Clayton, Garrett	Villanova Univ
14:30-14:50	ThBT6.4
Hinged-Tetro: A Self-Reconfigurable Module for Nested Reconfiguration, pp. 1539-1546. Attachment	
Kee, Vincent	Massachusetts Inst. of Tech
Rojas, Nicolas	Yale Univ
Mohan, Rajesh Elara	Singapore Univ. of Tech. and Design
Sosa, Ricardo	Singapore Univ. of Tech. and Design
14:50-15:10	ThBT6.5
Hovering Underwater Robotic Platform with Four Tilting Thrusters, pp. 1547-1551. Attachment	
Jin, Sangrok	Seoul National Univ
Kim, Jihoon	Seoul National Univ
Kim, Jongwon	Seoul National Univ
Seo, TaeWon	Yeungnam Univ
15:10-15:30	ThBT6.6
Development of a Peristaltic Crawling Robot for Long-Distance Inspection of Sewer Pipes, pp. 1552-1557.	
Tanaka, Tomoya	Chuo Univ
Harigaya, Kensuke	Chuo Univ
Nakamura, Taro	Chuo Univ

ThCT1	AmphiTheater
Modeling and Design of Mechatronic Systems III (Regular Session)	
Chair: Bae, Joonbum	UNIST
Co-Chair: Malvezzi, Monica	Univ. of Siena
16:00-16:20	ThCT1.1
Design and Control of a Ring-Type Flywheel Battery System with Hybrid Halbach Magnetic Bearings, pp. 1558-1562.	
Toh, Chow-Shing	National Chung Cheng Univ
Chen, Shyh-Leh	National Chung Cheng Univ
16:20-16:40	ThCT1.2
An Object-Based Mapping Algorithm to Control Wearable Robotic Extra-Fingers, pp. 1563-1568.	
Prattichizzo, Domenico	Univ. Di Siena
Salvietti, Gionata	Istituto Italiano Di Tecnologia
Chinello, Francesco	Univ. Di Siena
Malvezzi, Monica	Univ. Di Siena
16:40-17:00	ThCT1.3
Conceptual Design and Modeling of a Six Degrees-Of-Freedom Unlimited Stroke Magnetically Levitated Positioner, pp. 1569-1574.	
Zhu, Haiyue	National Univ. of Singapore
Teo, Tat Joo	Singapore Inst. of Manufacturing Tech
Pang, Chee Khiang	National Univ. of Singapore
17:00-17:20	ThCT1.4
Output Characteristics Model of Fast Tool Servo Based on Neural Network Method, pp. 1575-1580.	
Xu, Mengnan	Shanghai Jiao Tong Univ
Zhuang, Chungang	Shanghai Jiao Tong Univ
Xiong, Zhenhua	Shanghai Jiao Tong Univ
17:20-17:40	ThCT1.5
Design Concept of a Novel EM-Array Magnetic Scanning System for Continuous Motion Control of Maximum MFD, pp. 1581-1586.	
Lee, Kok-Meng	Georgia Inst. of Tech
Lin, Chun-Yeon	Georgia Inst. of Tech
17:40-18:00	ThCT1.6
Stroke-Dependent Magnetic Hysteresis Modeling in Proportional Solenoids Using Parametric Gaussian-Mixture Preisach Distribution, pp. 1587-1591.	
Ruderman, Michael	Nagoya Inst. of Tech

ThCT2	Chardonnet Salon
Mechatronics in Manufacturing Processes (Regular Session)	
Chair: Lin, Ming-Tsung	National Formosa Univ.
Co-Chair: Zhang, Yuming	Univ. of Kentucky
16:00-16:20	ThCT2.1
Synthesis of a Mechatronic Reference Model for Engineering Processes of Production Systems, pp. 1592-1597.	
Drescher, Benny	Inst. for Machine Tools and Industrial Management, Tech
Klein, Thorsten	Inst. for Machine Tools and Industrial Management, Tech
Spiegelberger, Bernd	ITQ GmbH
Stetter, Rainer	ITQ GmbH
Reinhart, Gunther	Tech. Univ. München
16:20-16:40	ThCT2.2
A Closed-Loop and Self-Learning STEP-NC Machining System, pp. 1598-1603.	
Hu, Po	Harbin Inst. of Tech
Fu, Hongya	School of Mechatronics Engineering, Harbin Inst. of Tech
Han, Zhenyu	School of Mechatronics Engineering, Harbin Inst. of Tech
Han, Dedong	School of Mechatronics Engineering, Harbin Inst. of Tech
16:40-17:00	ThCT2.3
Virtualized Welding Based Teleoperation with Pipe Gas Tungsten Arc Welding Applications, pp. 1604-1609.	
Liu, Yukang	Univ. of Kentucky
Shao, Zeng	Adaptive Intelligent Systems LLC
Zhang, Yuming	Univ. of Kentucky
Fu, Bo	Univ. of Kentucky
Yang, Ruigang	Univ. of Kentucky
17:00-17:20	ThCT2.4
TCP Interpolation with Look-Ahead Function for Five-Axis Machining, pp. 1610-1615.	
Lin, Ming-Tsung	National Formosa Univ
Chiu, Wan-Ting	National Formosa Univ
Lee, Chien-Yi	Industrial Tech. Res. Inst
Ho, Chih-Kai	National Formosa Univ
17:20-17:40	ThCT2.5
Model Based Current Analysis of Electrical Machines to Detect Faults in Planetary Gearboxes, pp. 1616-1621.	
Zhang, Jidong	Nanyang Tech. Univ
Dhupia, Jaspreet Singh	Nanyang Tech. Univ
Gajanayake, Chandana	Rolls-Royce Singapore Pte. Ltd

ThCT3	Fourier Salon
Monitoring, Fault Detection and Diagnosis in Manufacturing (Regular Session)	
Chair: Xiong, Zhenhua	Shanghai Jiao Tong Univ.
Co-Chair: Huang, Yixiang	Shanghai Jiao Tong Univ.
16:00-16:20	ThCT3.1
Tool Flank Wear Recognition Based on the Variation of Milling Force Vector in End Milling, pp. 1622-1627.	
Hou, Yongfeng	Northwestern Pol. Univ
Zhang, Dinghua	Northwestern Pol. Univ
Luo, Ming	Northwestern Pol. Univ
Wu, Baohai	Northwestern Pol. Univ
16:20-16:40	ThCT3.2
Fault Diagnosis and Novel Fault Type Detection for PEMFC System Based on Spherical-Shaped Multiple-Class Support Vector Machine, pp. 1628-1633.	
LI, Zhongliang	Univ. of Aix-Marseille
Giurgea, Stefan	Univ. of Tech. Belfort-Montbeliard
Outbib, Rachid	Univ. of Aix-Marseille
Hissel, Daniel	Univ. of Franche-Comte
16:40-17:00	ThCT3.3
Health Monitoring of Controller Area Network in Hybrid Excavator Based on the Message Response Time, pp. 1634-1639.	
Gao, Dahui	Zhejiang Univ
Wang, Qingfeng	Zhejiang Univ
17:00-17:20	ThCT3.4
Bearing and Gear Failure Detection for Brushless DC Motors with Adaptive Feature Extraction and Classifi Cation, pp. 1640-1646.	
Zubizarreta Rodriguez, Jose Francisco	The Univ. of Sydney
Vasudevan, Shrihari	Univ. of Sydney
17:20-17:40	ThCT3.5
A Fuzzy Based Semi-Supervised Method for Fault Diagnosis and Performance Evaluation, pp. 1647-1651.	
Huang, Yixiang	Shanghai Jiao Tong Univ
Gong, Liang	Shanghai Jiao Tong Univ
Wang, Shuangyuan	Shanghai Jiao Tong Univ
Li, Lin	Shanghai Jiao Tong Univ
17:40-18:00	ThCT3.6
Real-Time Chatter Detection Using the Weighted Wavelet Packet Entropy, pp. 1652-1657.	
Sun, Yuxin	Shanghai Jiao Tong Univ
Zhuang, ChunGang	Shanghai Jiao Tong Univ
Xiong, Zhenhua	Shanghai Jiao Tong Univ

ThCT4 Granvelle Salon

Advances in Micro and Nanoscale Positionning Systems: Design & Control II (Invited Session)

Chair: Fleming, Andrew J.	Univ. of Newcastle
Co-Chair: Rakotondrabe, Micky	FEMTO-st Inst. UMR CNRS 6174 - UFC / ENSMM / UTBM
Organizer: Yong, Yuen Kuan	The Univ. of Newcastle
Organizer: Fleming, Andrew J.	Univ. of Newcastle
Organizer: Rakotondrabe, Micky	FEMTO-st Inst. UMR CNRS 6174 - UFC / ENSMM / UTBM

16:00-16:20 ThCT4.1

High Precision Positioning Control for SPM Based Nanomanipulation: A Robust Adaptive Model Reference Control Approach (I), pp. 1658-1663.

Song, Bo	Michigan State Univ
Sun, Zhiyong	Michigan State Univ
Xi, Ning	Michigan State Univ
Yang, Ruiguo	Michigan State Univ
Chen, Liangliang	Michigan State Univ

16:20-16:40 ThCT4.2

Discrete-Time Repetitive Control with Model-Less FIR Filter Inversion for High Performance Nanopositioning (I), pp. 1664-1669.

Teo, Yik Ren	The Univ. of Newcastle
Eielsen, Arnfinn Aas	Norwegian Univ. of Science and Tech
Gravdahl, Jan Tommy	Norwegian Univ. of Science and Tech
Fleming, Andrew J	The Univ. of Newcastle

16:40-17:00 ThCT4.3

Nanometer Control of the Markerless Overlay Process Using Thermal Scanning Probe Lithography (I), pp. 1670-1675.

Rawlings, Colin	IBM Res. - Zurich
Durig, Urs	IBM Res. - Zurich
Hedrick, James	IBM Res. - Almaden
Coady, Daniel	IBM Res. - Almaden
Knoll, Armin	IBM Res. - Zurich

17:00-17:20 ThCT4.4

H∞ -Based Position Control of a 2DOF Piezocantilever Using Magnetic Sensors (I), pp. 1676-1682.

escareno, juan	Femto-St
Abadie, Joel	Ufc Ensmm
Rakotondrabe, Micky	FEMTO-St Inst. Univ. of Franche-Comté
Piat, Emmanuel	Femto-St Inst. CNRS UMR 6174

17:20-17:40 ThCT4.5

Enhancement of Micro-Positioning Accuracy of a Piezoelectric Positioner by Suppressing the Rate-Dependant Hysteresis Nonlinearities (I), pp. 1683-1688.

Aljanaideh, Omar	Concordia Univ
Al Janaideh, Mohammad	The Univ. of Jordan & the Univ. of Michigan
Rakotondrabe, Micky	FEMTO-St Inst. Univ. of Franche-Comté, UMR CNRS 6174 -

ThCT5	Lumière Salon
Modelling, Identification and Control of Industrial Robots for Accurate Manufacturing (Invited Session)	
Chair: Klimchik, Alexandr	Ec. des Mines de Nantes
Organizer: Pashkevich, Anatol	Ec. des Mines de Nantes
Organizer: Klimchik, Alexandr	Ec. des Mines de Nantes
Organizer: Caro, Stéphane	CNRS/IRCCyN
16:00-16:20	ThCT5.1
Experimental Study on Geometric and Elastostatic Calibration of Industrial Robot for Milling Application (I), pp. 1689-1696.	
Wu, Yier	Ec. Des Mines De Nantes
Klimchik, Alexandr	Ec. Des Mines De Nantes
Caro, Stéphane	CNRS/IRCCyN
Boutolleau, Christelle	Groupe Europe Tech
Furet, Benoît	IRCCyN
Pashkevich, Anatol	Ec. Des Mines De Nantes
16:20-16:40	ThCT5.2
A Novel Approach for Simplification of Industrial Robot Dynamic Model Using Interval Method (I), pp. 1697-1703.	
Wang, Ke	Arts Et Métiers ParisTech
Léonard, François	Ec. Nationale D'ingénieurs De Metz
Abba, Gabriel	Arts Et Métiers ParisTech
16:40-17:00	ThCT5.3
Comparison of Two Robust Predictive Control Strategies for Trajectory Tracking of Flexible-Joint Robots (I), pp. 1704-1709.	
Makarov, Maria	SUPELEC Systems Sciences (E3S)
Grossard, Mathieu	CEA LIST - Interactive Robotic Lab
Rodriguez-Ayerbe, Pedro	SUPELEC Systems Sciences (E3S)
Dumur, Didier	Supelec
17:00-17:20	ThCT5.4
Algebraic Technique for the Stiffness Model Reduction in Elastostatic Calibration of Robotic Manipulators (I), pp. 1710-1715.	
Klimchik, Alexandr	Ec. Des Mines De Nantes
Furet, Benoît	IRCCyN
Pashkevich, Anatol	Ec. Des Mines De Nantes
17:20-17:40	ThCT5.5
Workpiece Placement Optimization for Machining Operations with Industrial Robots (I), pp. 1716-1721.	
Caro, Stéphane	CNRS-IRCCyN
Garnier, Sébastien	IRCCyN/Univ. of Nantes
Furet, Benoît	IRCCyN
Klimchik, Alexandr	Ec. Des Mines De Nantes
Pashkevich, Anatol	Ec. Des Mines De Nantes
17:40-18:00	ThCT5.6
Optimal Measurement Configurations for the Joint Stiffness Identification of an Industrial Robot Mounted on a Rail (I), pp. 1722-1727.	
Guérin, David	IRT Jules Verne
Caro, Stéphane	CNRS/IRCCyN
Garnier, Sébastien	IRCCyN/Univ. of Nantes
Girin, Alexis	IRT Jules Verne

ThCT6	Proudhon Salon
Sensing Systems and Data Fusion (Regular Session)	
Chair: Richard, Pierre-Luc	Hydro-Quebec Res. Inst.
Co-Chair: Lefort-Piat, Nadine	FEMTO-ST Inst.
16:00-16:20	ThCT6.1
Estimation of Odometer Parameters with MMAE and LSE, pp. 1728-1733.	
Dogruer, Can Ulas	Hacettepe Univ
16:20-16:40	ThCT6.2
Introduction of a LIDAR-Based Obstacle Detection System on the LineScout Power Line Robot, pp. 1734-1740.	
Richard, Pierre-Luc	Hydro-Québec's Res. Inst
Pouliot, Nicolas	Hydro-Québec's Res. Inst
Montambault, Serge	Hydro-Québec's Res. Inst
16:40-17:00	ThCT6.3
SLAM-Based Sensor Calibration System for Easy Construction of Intelligent Spaces, pp. 1741-1746.	
Hashikawa, Fumitaka	Meiji Univ
Morioka, Kazuyuki	Meiji Univ
17:00-17:20	ThCT6.4
Improved Performance of a Low-Cost PDR System through Sensor Calibration and Analysis, pp. 1747-1752.	
Kim, Yunki	Pusan National Univ
Lee, Donghyuk	Pusan National Univ
Kim, kijung	Pusan National Univ
Lee, Jangmyung	Busan National Univ. Busan, Korea
17:20-17:40	ThCT6.5
Analysis of Synchrony of a Handshake between Humans, pp. 1753-1758.	
Melnyk, Artem	Donetsk National Tech. Univ
Borysenko, Volodymyr	Donetsk National Tech. Univ
Hénaff, Patrick	LORIA, CNRS-INRIA-Univ. of Lorraine