

Technical Program: 1. Day – July 28

1. Day – July 28: Plenary sessions Yongqian Theater	
09:00 – 09:50 Opening ceremony	
09:50 – 10:30 Plenary talk Chair: Paul Wrede / ETH Zurich, CH	
09:50	Small-scale shape-programmable medical robots Metin Sitti / Koç Univ, Istanbul, TR
16:30 – 17:50 Plenary talks Chair: Xianmin Zhang / South China Univ of Tech, CN	
16:30	Exploring the synergies between micro- and nanorobotics, magnetic particle imaging, and hyperthermia Anna C. Bakenecker / Technical Univ of Darmstadt, DE
17:10	Robotic patch clamp system for brain research in awake animals Xin Zhao / Nankai Univ, Tianjin, CN

1. Day – July 28:		Parallel technical sessions	11:00 – 13:00
Special session Room 1		Magnetic soft materials for small-scale robotics Organized by Veronica Iacovacci / Scuola Superiore Sant’Anna, IT	
11:00	Magnetic soft robots: From bioinspiration to medical applications Arianna Menciassi / Scuola Superiore Sant’Anna, IT		
11:20	Microcatheter robot for protected navigation and on-demand tip exposure for deep localized drug delivery Zhi Chen ^a , D. Castellanos Robles ^{a,b} , F. Striggow ^a , M. Medina-Sánchez ^{a,b} ^a CIC nanoGUNE, ES; ^b Dresden Univ of Technology, DE		
11:40	Animating living robots with magnetic guidance Maria Guix Noguera / Univ of Barcelona, ES		
12:00	FEM framework for simulating magnetic soft continuum robots via consistent torque-to-nodal force mapping Hongyu Zhao ^{a,b} , Z.Chen ^a , F.Striggow ^a , D.Castellanos-Robles ^{a,c} , M.Medina-Sánchez ^{a,c} ^a CIC nanoGUNE, ES; ^b Univ of the Basque Country, ES; ^c Dresden Univ of Tech, DE		
12:20	Self-sensing magnetic soft capsule for targeted cargo release Giordano De Angelis, T. Srymbetov, A. Menciassi, V. Iacovacci Scuola Superiore Sant’Anna, IT		
Special session Room 2		Manufacturing of actuators, sensors, and monolithic structures for miniature robots Organized by Florian Hartmann / Max Planck Inst for Intelligent Systems, DE Guoyong Mao / Zhejiang Univ, CN Chong Hong / Max Planck Inst for Intelligent Systems, Stuttgart, DE	
11:00	Intelligent wireless magnetic soft millirobot with integrated perception and autonomous navigation Qiji Ze / Xi'an Jiaotong Univ, CN		
11:20	Origami-based structures for multimodal soft actuation and high-fidelity haptics Zhuang Zhang / Fudan Univ, CN		
11:40	Flexible wearable haptic feedback devices and small robots Xiaobin Ji / Sun Yat-sen Univ, CN		
12:00	Soft miniature biomedical robots for gastrointestinal tract Yingdan Wu / Harbin Inst of Technology, CN		
12:20	Small-scale foldable electromagnetic soft robot with multimodal locomotion Guoyong Mao / Zhejiang Univ, CN		

1. Day – July 28:		Parallel technical sessions	11:00 – 13:00
Special session Room 3	Micronano robotics: From fabrication to clinical applications (I) Organized by Guang-Zhong Yang / Shanghai Jiao Tong Univ, CN Qingkun Liu / Shanghai Jiao Tong Univ, CN Liping Ouyang / SJTU School of Med, Tongren Hospital Xing Lai / SJTU School of Med, Tongren Hospital Shaoping Huang / SJTU School of Med, Tongren Hospital		
11:00	Magnetic robots for wireless biosensing Mengdi Han / Peking Univ, CN		
11:20	Shape morphing microrobots and their biomedical applications Jizhai Cui / Fudan Univ, CN		
11:40	Multifunctional microrobots for cell sensing and manipulation Qingkun Liu / Shanghai Jiao Tong Univ, CN		
12:00	Biomedical sensing Ping Wang / Zhejiang Univ, CN		
12:20	Novel mass spectrometry omics technology for ophthalmic disease detection Jingjing Wan / East China Normal Univ, CN		
Special session Room 4	Hybrid soft photonic robots (I) Organized by Sara Nocentini / Univ of Florence, IT Hao Zeng / Tampere Univ, FI		
11:00	Photonic robots and their friends Sara Nocentini / Univ of Florence, IT Hao Zeng / Tampere Univ, FI		
11:20	Designing light-driven microrobots: Dynamics, controlled transport, and microfluidic applications Dhruv Pratap Singh Indian Inst of Technology Bhilai, IN		
11:40	Retina electronic paper: Toward human eye-limit display resolution Kunli Xiong / Uppsala Univ, SE		
12:00	Microscale pH sensing using light-controlled multimaterial microrobots Ada-Ioana Bunea / Technical Univ of Denmark, DK		
12:20	Morphing polymer voxels for dynamic information display Mingchao Zhang / National Univ of Singapore, SG		

1. Day – July 28:		Parallel technical sessions	11:00 – 13:00
Special session Room 5		Magnetic micro/nanorobotic systems: Actuation platforms, swarm control, and biomedical translation (I) Organized by Zexi Liang / Cornell Univ, US (since July 2027 Westlake Univ, CN)	
11:00	Colloid-based magnetic microrobot and robotic sensors Tao Yang / Southeast Univ, CN		
11:20	Femtosecond laser-enabled functional integration of magnetic microrobots for biomedical applications Bing Han / Shanghai Jiao Tong Univ, CN		
11:40	Swarming micro/nanorobots for biomedical applications Fangzhi Mou / Wuhan Univ of Technology, CN		
12:00	Magnetic microrobot swarms for navigating intestinal environments Zihan Wang ^{a,b} , X. Fan ^a , Z. Yang ^a , X. Chen ^c , S. Misra ^b ^a Soochow Univ, CN; ^b Univ of Twente, NL; ^c Fudan Univ, CN		
12:20	Droplet robot: Creating a digital health monitoring ecosystem at the point-of-person Haisong Lin / Westlake Univ, CN		
Regular session Room 6		Micro/Nano robots (I) Chair: Aakanksha Mohan / Indian Inst of Technology Delhi, IN	
11:00	Frequency-selective actuation of programmed magnetic microrobots Fanpeng Zeng ^a , L. Xu ^a , H. Yi ^a , A. Wahab ^a , T. Yu ^b ^a South China Univ of Technology, CN; ^b Shanghai Jiao Tong Univ, CN		
11:20	High-throughput screening of helical microbot geometries in viscoelastic media Jyothi Kumari Mariyanna ^{a,b} , N. Schmitt ^{a,b} , A.-S. Müller ^{a,b} , M. Jeong ^a , R. Brindza ^{a,c} , K. Morozov ^d , A. Leshansky ^d , T. Qiu ^{a,b} ^a German Cancer Research Center, Dresden, DE; ^b Dresden Univ of Technology, DE; ^c Martin-Andersen-Nexö-Gymnasium, Dresden, DE; ^d Technion-IIZ, IL		
11:40	Photopatterned microswimmer collects environmental DNA Kentaro Nakamura ^a , R. J. Archer ^b , K. Abe ^a , H. Matsubayashi ^a , S. Murata ^a , Y. Hiratsuka ^c , S. M. Nomura ^a ^a Tohoku Univ, JP; ^b Inst of Sci Tokyo, JP; ^c Japan Advanced Inst of Sci & Tech, JP		
12:00	4D printed multimaterial microrobots as microscale pH indicators Shize Guan , M.P. Piekarczyk, D. Maher, A.-I. Bunea/Technical Univ of Denmark, DK		
12:20	Magnetoelectric nanorobots incorporated polymer microcapsules for breast cancer therapy / Aakanksha Mohan , S. Roy, S. Kumar, S. Minocha, S. Betal Indian Inst of Technology Delhi, IN		

1. Day – July 28:		Parallel technical sessions	11:00 – 13:00
Regular session		Measurement and characterization (I)	
Room 7		Chair: Yaxiaer Yalikun/ Nara Inst of Science and Technology, JP	
11:00	Adhesion and friction of individual nanoplastic particle under varying salt concentrations studied by colloidal probe atomic force microscopy Dipak Bhowmik , S. Fatikow / Univ of Oldenburg, DE		
11:20	Submicron particle–cell adhesion dynamics via Bayesian inference and Wasserstein analysis Houari Bettahar , Q. Zhou / Aalto Univ, FI		
11:40	MEMS platform for ex-situ micromechanical testing of silicon carbide nanowires Muhammad Muzammil ^a , J. L. Mead ^b , S. Z. Pakzad ^c , L. Ma ^b , U. Kerimzade ^a , S. Wang ^d , S. Fatikow ^b , B. E. Alaca ^a ^a Koç Univ, TR; ^b Univ of Oldenburg, DE; ^c Vienna Univ of Technology, AT; ^d Central South Univ, CN		
12:00	Measuring acoustic streaming in ultra-high frequency acoustic tweezers using a GelMA microsphere: A finite element study Jinzhe Wu , P. Yu, H. Shi, C. Su, L. Liu / Shenyang Inst of Automation, CAS, CN		
12:20	Microwave nondestructive testing and evaluation: Status and perspectives Kamel Haddadi ^a , M. Hached ^a , S. A. Enche Ab Rahim ^b , Z. Ismail Khan ^b ^a Univ of Lille, FR; ^b Universiti Teknologi MARA, MY		
12:40	Pressure-tunable all-glass microfluidic channel for high-throughput cellular mechanotyping D. Ma ^a , J. Kakehi ^b , N. Ota ^c , M. Taniguchi ^b , K. Okano ^b , N. Tanga ^b , Y. Hosokawa ^b , Y. Tanaka ^d , K. Yamamoto ^d , Yaxiaer Yalikun ^b ^a Osaka Univ, JP; ^b Nara Inst of Sci & Tech, JP; ^c Kyushu Univ, JP; ^d RIKEN, Kobe, JP		

1. Day – July 28:		Parallel technical sessions	14:00 – 16:00
Special session Room 1		Magnetic manipulation across scales: From nanometers to centimeters Organized by Zoran Cenev / Aarhus Univ, DK	
14:00	Position control of a magnetic microbead on a nonplanar air–water interface Zoran Cenev / Aarhus Univ, DK		
14:20	Characteristics of in-body wireless communication for teleoperation of endoscopic capsule Kenji Takeda ^a , T. Nishi ^a , B. Ma ^a , H. Sawada ^b , T. Matsumura ^b , F. Arai ^a ^a Univ of Tokyo, JP; ^b NICT, Kanagawa, JP		
14:40	Model-based trajectory control of FilMBot soft parallel robotic micromanipulator Jiangkun Yu, Q. Zhou / Aalto Univ, FI		
15:00	Scalable independent control of multiple silicone oil-based ferrofluid microrobots using a four-quadrant coil array Pu Liu, W. Wang / Shanghai Jiao Tong Univ, CN		
15:20	Dual tunable magnetic effector platform for precision manipulation of tethered, untethered, and swarm microrobots; Ali Hoshiar / Essex Univ, UK		
Special session Room 2		Embodied intelligence through structures and materials in miniature robots Organized by Florian Hartmann / Max Planck Inst for Intelligent Systems, DE Guoyong Mao / Zhejiang Univ, CN Chong Hong / Max Planck Inst for Intelligent Systems, DE	
14:00	Modular iontronic microrobots enable on-demand electrostimulation to accelerate intestinal wound healing Mengmeng Sun / National Univ of Singapore, SG		
14:20	Ingestible electrochemical robots for targeted cancer therapeutics in the gastrointestinal tract Siyeon Jang / ETH Zurich-Max Planck Inst for Intelligent Systems, DE		
14:40	Anomalous friction controlled by collective order in two-dimensional magnetically responsive surfaces Hongri Gu / Hong Kong Univ of Science and Technology, S.A.R., CN		
15:00	Biomimetic undulation in miniature soft robots Ziyu Ren / Beihang Univ, CN		
15:20	Miniature autonomous robots with flow-guided adaptive navigation Chong Hong / Max Planck Inst for Intelligent Systems, DE		

1. Day – July 28:		Parallel technical sessions	14:00 – 16:00
Special session Room 3	Micronano robotics: From fabrication to clinical applications (II) Organized by Guang-Zhong Yang / Shanghai Jiao Tong Univ, CN Qingkun Liu / Shanghai Jiao Tong Univ, CN Liping Ouyang / SJTU School of Med, Tongren Hospital Xing Lai / SJTU School of Med, Tongren Hospital Shaoping Huang / SJTU School of Med, Tongren Hospital		
14:00	Development and applications of multimodal acoustic functional imaging systems Li Lin / Zhejiang Univ, CN		
14:20	Acoustic holography, acoustic robotics, and acoustic manufacturing Song Liu / ShanghaiTech Univ, CN		
14:40	Nanobowl-supported liposome technology Chao Fang Shanghai Jiao Tong Univ School of Medicine, Tongren Hospital, CN		
15:00	Gastric-resident robots for gastrointestinal theranostics Kewang Nan / Zhejiang Univ, CN		
15:20	International Journal of Extreme Manufacturing: From submission to community building Yue Yao / Int Journal of Extreme Manufacturing, Editorial Office		
Special session Room 4	Hybrid soft photonic robots (II) Organized by Sara Nocentini / Univ of Florence, IT Hao Zeng / Tampere Univ, FI		
14:00	CMOS-compatible intelligent microrobots Wei Wang / Westlake Univ, CN		
14:20	Multifunctional, adaptive, and sustainable robotic materials towards general utility Hedan Bai / ETH Zurich, CH		
14:40	3D printed soft microrobotics: From motion generation paradigm to complex microrobots Wissem Haouas / Université Marie & Louis Pasteur; FEMTO-ST, FR		
15:00	4D microprinting of soft microactuators Yu-Chieh Cheng / National Taipei Univ of Technology, TW		
15:20	3D printing inside live human cells Matjaz Humar / Univ of Ljubljana, SI		

1. Day – July 28:		Parallel technical sessions	14:00 – 16:00
Special session Room 5		Magnetic micro/nanorobotic systems: Actuation platforms, swarm control, and biomedical translation (II) Organized by Zexi Liang / Cornell Univ, US (since July 2027 Westlake Univ, CN)	
14:00	Biohybrid microalgae microrobots for active pulmonary drug delivery and precision therapy Fangyu Zhang / Westlake Univ, CN		
14:20	Dexterous magnetic control at small-scales: Moving from global to distributed control approaches Veronica Iacovacci / Scuola Superiore Sant’Anna, IT		
14:40	Information-encoded magnetic micro self-assembly Zexi Liang / Westlake Univ, CN		
15:00	Synthesis of drug-loaded micromotors towards gastric cancer treatment A. Christ ^a , D. P. Rivas ^b , Sambeeta Das^b ^a Potomac School, US; ^b Univ of Delaware, US		
15:20	Closed-loop control of a dual-modal soft robot for blood vessel navigation C. Li ^a , Mengting Li^a , Z. Wang ^b , X. Yan ^a , I. S. M. Khalil ^c ^a Liaoning Technical Univ, Huludao, CN; ^b Soochow Univ, CN; ^c Univ of Twente, NL		
Special session Room 6		Theory and applications of drug-loaded microneedle robots Organized by Xin Zhao / Nankai Univ, CN	
14:00	Living therapeutic microneedles integrated with built-in metabolic engines for autonomous diabetic wound management Caihong Chen / Tongji Univ, CN		
14:20	Miniature continuum robots for medical applications Liu Yang Nankai Univ, CN		
14:40	In-situ heterogeneous bilayer membrane micro-actuator based on two-photon polymerization 4D printing technology Tianming Zhao / Shenyang Inst of Automation, CAS, CN		
15:00	Catching a ride: Nanoparticles harness skull immune cells for brain drug delivery Xize Gao / Tsinghua Univ, CN		
15:20	DLP bioprinting of bone-mimetic nanocomposite hydrogels for cranial tissue regeneration Bowen Chi / Beijing Tiantan Hospital, Capital Medical Univ, CN		

1. Day – July 28:		Parallel technical sessions	14:00 – 16:00
Regular session		Automation (I)	
Room 7		Chair: Takeshi Hayakawa / Chuo Univ, JP	
14:00	Automated laser-assisted immotile sperm selection via precise positioning of sperm tail tip H. Yang ^{a,b} , Y. Jin ^{a,b} , A. Jiang ^c , H. Feng ^a , Z. Liang ^a , G. Shan ^a , Y. Sun ^c , Zhuoran Zhang^{a,b} ^a Dalian Univ of Tech, CN; ^b Chinese Univ of HK, Shenzhen, CN; ^c Univ of Toronto, CA		
14:20	High-speed on-chip fluid control using partially fixed hydrogel microvalves Hiroki Wada^a , A. Watanabe ^a , Y. Yokoyama ^b , T. Hayakawa ^a ^a Chuo Univ, JP; ^b Toyama Industrial Technology R&D Center, JP		
14:40	LeviTask: Acoustic levitation for contactless manipulation of micro-devices Kieran D’Sena , L. Scanga, A. Agostini, L. Fitzhenry, O. Onaizah / McMaster Univ, CA		
15:00	High-throughput culturing and training system for engineered skeletal muscle tissues / Haojie Du^a , W. Liang ^a , L. Yang ^b , F. Nie ^b , D. Dang ^a , C. Zhang ^b ^a Shenyang Jianzhu Univ, CN; ^b Shenyang Inst of Automation, CAS, CN		
15:20	Focus measure evaluation and optimization for robotic embryo biopsy in bright-field microscopy J. Li, S. Liu, H. Li, Sheng Yao / Southern Medical Univ, CN		
Regular session		Design and fabrication (I)	
Room 8		Chair: Jakub Tureček / Univ of West Bohemia, CZ	
14:00	Modular multi-material and multi-resolution wafer-scale batch fabrication of high-performance AFM probes / Ayoub Glia^a , M. Deliorman ^a , M. A. Qasaimeh ^{a,b} ^a New York Univ Abu Dhabi, AE; ^b New York Univ, US		
14:20	Electro-permanent magnet-based control system for small-scale magnetic robots Jiajun Wang , J. Yan, O. Yasa / Hong Kong Univ of Sci & Tech, Guangzhou, CN		
14:40	Submillimeter laser steering thermal responsive optics for fiberbots based on two-photon polymerization / Xu Chen^{a,b} , M. Tian ^b , Y. Zou ^{a,b} , G.-Z. Yang ^{a,b} ^a SJTU School of Medicine, Tongren Hospital, CN; ^b Shanghai Jiao Tong Univ, CN		
15:00	Design and optimization of a terrestrial adaptive millirobot using near-field magnetic actuation Chengxiang Lu , L. Chen, S. Wang, C. Luo, C. Liu, J. Guo, M. Chen, Y. Tang, S. Zhang, J. Liu / Univ of Hong Kong, S.A.R., CN		
15:20	3D-printed soft pneumatic micro-gripper with switchable adhesion Jiawei Yi , W. Haouas, K. Rabenorosoa / FEMTO-ST, FR; UMLP, FR		
15:40	Snake-head-inspired electromagnetic soft gripper: Concept design and testing Jakub Tureček , F. Mach / Univ of West Bohemia, CZ		

Technical Program: 2. Day – July 29

2. Day – July 29: Plenary sessions Yongqian Theater	
09:00 – 09:10	Introduction of the agenda
09:10 – 10:30	Plenary talks Chair: Florian Hartmann / MPI for Intelligent Syst, DE
09:10	Robotic micromanipulation of cells and tissues Yu Sun / Univ of Toronto, CA
09:50	Advances in robotics and control for correlative in situ AFM-in-SEM microscopy Mokrane Boudaoud / Sorbonne Univ, FR
16:30 – 17:50	Plenary talks Chair: Sara Nocentini / Univ of Florence, IT
16:30	Micro-/Nanorobots for minimally-invasive surgery Tian Qiu / German Cancer Research Center; Tech Univ of Dresden, DE
17:10	Embedding intelligence into matter through neuromorphic and bio-inspired systems Nazek El-Atab / King Abdullah Univ of Science and Technology, SA

2. Day – July 29:		Parallel technical sessions	11:00 – 13:00
Special session Room 1		Fundamental theories and key technologies for medical micro/nanorobots Organized by Li Zhang / Chinese Univ of Hong Kong, S.A.R., CN Hui Xie / Harbin Inst of Technology, CN	
11:00	Magnetic frequency-controlled switchable-mode flexible microrobot enabling adaptive locomotion in biological channels for targeted drug delivery Hao Yang / Soochow Univ, CN		
11:20	Preparation, actuation, and drug delivery of diatom-based microrobots Niandong Jiao / Shenyang Inst of Automation, CAS, CN		
11:40	Magnetization-encoded soft millirobots: from programmable 3D printing to multimodal locomotion and biomedical functions Shishi Li / Harbin Inst of Technology, CN		
12:00	Magnetic microrobotic swarms for adaptive vertical wall climbing Shihao Yang / Chinese Univ of Hong Kong, S.A.R., CN		
12:20	Magnetic microrobots for translational biomedicine: From individual and modular designs to microswarms; Li Zhang / Chinese Univ of Hong Kong, S.A.R., CN		
Special session Room 2		Frontiers of molecular robotics Organized by Shogo Hamada / Institute of Science Tokyo, JP	
11:00	Frontiers of molecular robotics: From programmable reactive materials toward intelligent & autonomous molecular systems; Shogo Hamada /Inst of Sci Tokyo, JP		
11:20	Molecular robot explorers: Transdisciplinary basic research on molecular robots exploring real-world environments; Shin-ichiro M. Nomura / Tohoku Univ, JP		
11:40	Learning neural ODE models of molecular systems using parallel droplet microreactors; Yutaka Hori , M. Saita / Keio Univ, JP		
12:00	Active assembly of DNA networks by biomolecular nanomachines F. Afroze ^a , Richard J Archer ^{b,c} , M. Mustakim ^d , R. Das ^e , A. M. R. Kabir ^a , Y. Miura ^a , R. Rashid ^f , K. Sada ^a , T. Hiraiwa ^d , S. M. Nomura ^b , S. Hamada ^{c,g} , A. Kakugo ^{a,f} ^a Hokkaido Univ, JP; ^b Tohoku Univ, JP; ^c Inst of Science Tokyo, JP; ^d Inst of Physics, Academia Sinica, TW; ^e Max Planck Inst for the Physics of Complex Systems, DE; ^f Kyoto Univ, JP; ^g CBI Research Inst, JP		
12:20	Light-triggered actin polymerization drives rapid motility of synthetic cells in a lubricated space; Daichi Nakajima , K. Abe, S. Murata, H. T. Matsubayashi, S. M. Nomura / Tohoku Univ, JP		
12:40	Photostimulated control of enzymatic DNA hydrogel synthesis Riho Sugawara ^a , S. Hatanaka ^a , K. Fujimoto ^b , T. Hayakawa ^c , T. Tanihata ^c , S. Hamada ^{a,d} / ^a Inst of Science Tokyo, JP; ^b Japan Adv. Inst of Sci & Tech, JP; ^c Chuo Univ, JP; ^d CBI Research Inst, JP		

2. Day – July 29:		Parallel technical sessions	11:00 – 13:00
Special session		Robotic biomanipulation: Technologies and applications	
Room 3		Organized by Xinyu Liu / Univ of Toronto, CA	
11:00	Three-dimensional reconfigurable magnetic microswarms Xinyu Liu / Univ of Toronto, CA		
11:20	3D necroprinting: Leveraging biotic materials as nozzles for 3D printing Changhong Cao / McGill Univ, CA		
11:40	Fabrication of bio-integrated functional modules based on microrobotic manipulation; Huaping Wang / Beijing Inst of Technology, CN		
12:00	Reliable drive and active safety control of magnetic microrobots for precision medicine; Qigao Fan / Jiangnan Univ, CN		
12:20	Robotics enable precise manipulation and characterization of small model organisms; Peng Pan / Dalian Univ of Technology, CN		
12:40	Robotic full mode patch clamp system for brain science research Qili Zhao / Nankai Univ, CN		
Special session		Compliant mechanisms for cross-scale micro-assembly	
Room 4		Organized by Xianmin Zhang / South China Univ of Technology, CN	
11:00	Three-stage displacement amplification compliant constant force jaw for cross-scale manipulation Hao Xu, R. Wang, X. Zhang / South China Univ of Technology, CN		
11:20	Design of a compact XYZ flexure-based nanopositioning stage for silicon photonic coupling with a large moving platform and low cross-axis coupling Yang Shen, Z. Wu, J. Li, X. Zhang, B. Zhu / South China Univ of Technology, CN		
11:40	Modeling and control of a piezoelectric-driven compliant mechanism for cross-scale manipulation Yang Xu, Y. Zhang, J. Gan / China Univ of Geosciences, CN		
12:00	Bias and gravity parameter estimation of six-component force/torque sensor via nonlinear variable projection for small-part assembly Jia Lu, X. Zhang, Z. Huang, S. Liu, R. Wang / South China Univ of Technology, CN		
12:20	RMPflow-based collision avoidance with target decomposition for cross-scale micro-assembly system Tao Liu, X. Zhang, Y. Yang, H. Li / South China Univ of Technology, CN		
12:40	Large-range XY compliant platform decoupled based on reinforcement learning; Siyue Li, Z. Chen, W. Li, X. Zhang / South China Univ of Technology, CN		

2. Day – July 29:		Parallel technical sessions	11:00 – 13:00
Special session Room 5		Advances in mechanics, control and AI for several small-scale applications Organized by Zhipeng Ma / Zhejiang Univ, CN	
11:00	Modeling and validation of large deflection flexure hinges Kang Yang^a , F. Wang ^a , X. Zhao ^a , C. Liang ^a , B. Shi ^a , Y. Tian ^b ^a Tianjin Univ, CN; ^b Univ of Warwick, UK		
11:20	Permanent magnetic actuation technologies for medical applications Yanding Qin / Nankai Univ, CN		
11:40	Origami-inspired reconfigurable systems: From robots to space deployable structures Junlan Li / Tianjin Univ, CN		
12:00	Hyperspectral imaging and convolution neural network Pengchang Zhang / Xi'an Inst of Optics and Precision Mechanics, CAS, CN		
12:20	High-frequency revisit mission planning and replanning methods for large-scale heterogeneous constellations Xin Wang / Xi'an Technological Univ, CN		
Regular session Room 6		Micro/Nano robots (II) Chair: Farshad Arvin / Durham Univ, UK	
11:00	Acoustically actuated micro-clamprobot Yaxuan Xiao , J. Zhang / Xi'an Jiaotong Univ, CN		
11:20	Synchronously actuated miniature robotic manipulator for biohybrid interactions Hang Wang^a , H. Pan ^a , Y.-H. Su ^a , M. Stefanec ^b , J. Hu ^a , A. E. Turgut ^c , T. Krajník ^d , F. Arvin ^a / ^a Durham Univ, UK; ^b Univ of Graz, AT; ^c Middle East Technical Univ, TR; ^d Czech Technical Univ, CZ		
11:40	Lightweight, magnetically-driven miniature capsule with a gripping mechanism Zihan Zhao^a , J. W. Schmidt ^a , J. Liu ^a , D. D. Damian ^{a,b} , S. Miyashita ^{a,b} ^a Univ of Sheffield, UK; ^b Insigneo Inst for in silico Medicine, UK		
12:00	Toward tumor penetration: Preliminary barrier crossing of GUV-based microrobots in 3D environments Chiara Catania , E. Roberti, E. De Remigis, D. Cecchi, F. Poli, S. Palagi Scuola Superiore Sant'Anna, IT		
12:20	Hot snare enabled magnetic soft continuum robot for nasal polyp resection Sophia Aslanidis , G. Smith, B. van der Woerd, S. Khalife, O. Onaizah McMaster Univ, CA		

2. Day – July 29:		Parallel technical sessions	11:00 – 13:00
Regular session		Measurement and characterization (II)	
Room 7		Chair: Waqas Waheed / New York Univ Abu Dhabi, AE	
11:00	Development of an integrated scanning ion conductance microscope probe and its application in cell imaging Tong Yang ^{a,b} , Y. Xia ^{a,b} , D. Liu ^c , H. Shi ^a , X. Wang ^a , Q. Su ^a , L. Liu ^a ^a Shenyang Inst of Automation, CAS, CN; ^b Univ of the Chinese Acad of Sciences, CN; ^c Intelligent Robotics Shenyang Company Ltd, CN		
11:20	Wireless passive conformal sensors enabled by robotic in-situ direct writing on three-dimensional surfaces Dezhao Wang , S. Ma, F. Zhang, R. Wang, Y. Xiao Northeastern Univ, CN		
11:40	Parameter identification method of dynamics model for collaborative robots based on Lie group theory Z. He, Peiwen Zhu , X. Zhang, J. Zhou South China Univ of Technology, CN		
12:00	A study on the influence of TSV integration on MEMS sensor performance C. Yue ^a , J. Zhao ^a , J. Cheng ^a , J. Zhang ^a , H. Yan ^a , Y. Shen ^a , C. Liu ^a , Y. Gao ^a , W. Yang ^a , U. Fiadosenka ^b , G. Gorokh ^b , Linxi Dong ^a ^a Hangzhou Dianzi Univ, CN; ^b Belarusian State Univ of Informatics and Radioelectronics, BY		
12:20	Open microfluidic system with coplanar electrodes for multiplexed chemical stimulation of suspended cells Waqas Waheed ^a , P. Sukumar ^a , D. S. Ali ^{a,b} , M. A. Qasaimeh ^{a,b} ^a New York Univ Abu Dhabi, AE; ^b New York Univ, US		

2. Day – July 29:		Parallel technical sessions	14:00 – 16:00
Special session		Small-scale robotic systems for biomedical applications	
Room 1		Organized by Li Zhang / Chinese Univ of Hong Kong, S.A.R., CN	
14:00	Battery-free ingestible electronic capsule with programmable high-output soft actuation for active gastrointestinal interventions Hubiao Fang / Zhejiang Univ, CN		
14:20	Biomimetic microrobot swarms for biomedicine Jiangfan Yu Chinese Univ of Hong Kong (Shenzhen), CN		
14:40	Soft electronic materials for wearable and implantable medical devices Chengfeng Pan / Zhejiang Univ, CN		
15:00	Miniature magnetic soft materials with programmable magnetization profiles Neng Xia / Zhejiang Univ, CN		
15:20	Light-based manufacturing of microrobots and their biomedical applications Chen Xin / Univ of Science and Technology of China, CN		
Special session		Transfer printing technologies and applications	
Room 2		Organized by Changhong Cao / McGill Univ, CA	
14:00	Laser-driven transfer printing based on tunable adhesives Jizhou Song / Zhejiang Univ, CN		
14:20	Fluidic self-assembly as a massively parallel transfer approach for MicroLED display integration Daewon Lee / Hanyang Univ, KR		
14:40	Bio-inspired transfer printing at micro scale H. Hou ^a , Y. Zhao ^a , Z. Zhang ^a , D. Lee ^b , Y. Zhao ^c , J. Song ^a , Changhong Cao ^a ^a McGill Univ, CA; ^b Hanyang Univ, KR; ^c Western Univ, CA		
15:00	Optoelectronic-trap-based topological particle assembly with self-healing capability Ziang Ma ^a , B. Xu ^a , Y. Mao ^a , R. Fu ^a , H. Li ^a , K. Chen ^a , H. Xie ^a , H. Xie ^b , W. Xie ^b , S. Zhang ^a ^a Beijing Inst of Technology, CN; ^b OptoSeeker Biotechnology (Shenzhen), CN		
15:20	Ultragentle small-scale manipulation using capillary forces on a carbon nanotube-based nanoporous membrane Seong Jae Kim, T. Kim, H. J. Ryu, S. Kim Korea Advanced Inst of Science and Technology, KR		

2. Day – July 29:		Parallel technical sessions	14:00 – 16:00
Special session Room 3		Microscale acoustics and acoustic microrobots Organized by Paul Wrede / ETH Zurich, CH	
14:00	Physics and dynamics of ultrasound interactions with nanoparticles Nima Mahkam / ETH Zurich, CH		
14:20	Ultrasound activated microalgal biohybrid systems Saadet Baltaci Max Planck Inst for Intelligent Systems, DE		
14:40	Biohybrid micro/nanorobots: From functional interface engineering to acoustic microbubble robots Songsong Tang / Univ of Science and Technology of China, CN		
15:00	Miniature magneto-ultrasonic machines for wireless sensing and manipulation Hanchuan Tang Huazhong Univ of Science and Technology, CN		
15:20	Morphology dependent behavior of acoustic microrobots Paul Wrede / ETH Zurich, CH		
Special session Room 4		Microrobotics for measurement interaction with biological systems Organized by Xian Wang / Queen’s Univ, CA Onaizah Onaizah / McMaster Univ, CA Carlos Escobedo / Queen’s Univ, CA	
14:00	Investigation of microswimmers magnetotactic behaviour using organ-on-a-chip platforms Carlos Escobedo / Queen’s Univ, CA		
14:20	Magnetic microdrills for stable propulsion and vascular recanalization Onaizah Onaizah / McMaster Univ, CA		
14:40	Model and validation of acoustic microbubble microrobot for mechanical stimulation in tissue Ruicheng Li, C. Wang, Z. Wang, L. You, X. Wang / Queen’s Univ, CA		
15:00	In situ retrieval of magnetic nanoparticles using magnetic catheter Xian Wang / Queen’s Univ, CA		
15:20	Detachable micropole-enhanced magnetic actuation system wide-range viscosity measurement J. Xie ^a , Z. Wang ^b , J. Han ^a , J. Wang ^a , Y. Zhang ^a , X. Wang ^b , P. Zhao ^a , Na Liu ^a ^a Shanghai Univ, CN; ^b Queen’s Univ, CA		

2. Day – July 29:		Parallel technical sessions	14:00 – 16:00
Special session		Advances in MEMS/NEMS	
Room 5		Organized by Zhipeng Ma / Zhejiang Univ, CN	
14:00	Gas sensing based on 1D nano channel arrays Teng Ma / Beijing Inst of Technology, CN		
14:20	MEMS devices based on thermal reflow process Minjie Zhu / Instrumentation Technology and Economy Inst, CN		
14:40	Controllable activation and self-referenced sensing of NEMS internal-resonance phononic frequency combs Wei Yu / Jiangnan Univ, CN		
15:00	Acoustic wave interference in MEMS inertial sensors for small-scale robotic systems; Jianlin Chen / Shanghai Univ, CN		
15:20	Humidity-dependent adhesion energy of ZnO nanobelt bridges formed using optical microscope-assisted nanomanipulation Liang Ma ^a , N. Akhtar ^b , D. P. Rana ^a , S. Fatikow ^a , S. Wang ^c , J. L. Mead ^a ^a Univ of Oldenburg, DE; ^b Hunan Normal Univ, CN; ^c Central South Univ, CN		
Regular session		Automation (II)	
Room 6		Chair: Eugenia De Remigis / Scuola Superiore Sant’Anna, IT	
14:00	Mag-VLA: Vision-language-action model for bimanual magnetically actuated microrobot manipulation Yongchen Wang, K. Lu, L. Wei, D. Zhang / Imperial College London, UK		
14:20	Microscope image-based global mapping and task-level sequencing for cell micromanipulation Yun Long ^a , Y. Lin ^a , T. Weng ^a , D. Chen ^a , T. G. Chew ^a , U-X. Tan ^b , L. Yang ^a ^a Zhejiang Univ, CN; ^b Singapore Univ of Technology and Design, SG		
14:40	Low-cost automated drawing system for diameter-controlled fabrication of tapered optical fiber tweezers; Yu Chen, K. Liu, S. Yao / Southern Medical Univ, CN		
15:00	Deep learning-based extraction of nanowire peeling profiles from optical micrographs for adhesion energy estimation Divyang P. Rana ^a , M. Hudalla ^b , S. Wang ^c , S. Fatikow ^a , J. L. Mead ^a ^a Univ of Oldenburg, DE; ^b Univ of Applied Sci, Emden, DE; ^c Central South Univ, CN		
15:20	Blind navigation of crowded environments by vesicle-based microrobots: From feedback-free magnetic actuation towards active nanomotor-based autonomy Eugenia De Remigis ^a , O. Tricinci ^a , L. Paffen ^b , C. Verbiest ^b , F. Poli ^a , F. M. Dikbas ^c , V. Iacovacci ^a , T. Patiño Padial ^a , S. Palagi ^a / ^a Scuola Superiore Sant’Anna, IT; ^b Eindhoven Univ of Technology, NL; ^c Polytechnic Univ of Milan, IT		

2. Day – July 29:		Parallel technical sessions	14:00 – 16:00
Regular session		Manipulation (I)	
Room 7		Chair: Houari Bettahar / Aalto Univ, FI	
14:00	Observation of a backward sliding motion for rollers on surfaces in viscoelastic fluid Chengyu He , Y. Qiao, Y. Cao, B. Liu, Z. Qu, G. Li, X. Cao Shanghai Jiao Tong Univ, CN		
14:20	pFilMBot: A paper-based soft robotic micromanipulator Jiangkun Yu , H. Bettahar, Q. Zhou Aalto Univ, FI		
14:40	Phototactic oil droplets driven by TiO ₂ -induced internal convection on water surfaces Ayana Furukawa ^a , K. Abe ^a , H. Matsubayashi ^a , S. Murata ^a , H. Onoe ^b , S. M. Nomura ^a ^a Tohoku Univ, JP; ^b Keio Univ, JP		
15:00	Precise self-assembly of μm-to-mm components for heterogeneous integration G. Zhu ^a , Q. Zhang ^b , G. Lu ^a , F. Shi ^{a,b} , Mengjiao Cheng ^{a,b} ^a Beijing Univ of Chemical Technology, CN; ^b Shanghai Jiao Tong Univ, CN		
15:20	Localized mechanical stress application to 3D cell cultures by a magnetic microbot Yue Gao ^a , M. Jeong ^a , H. Liu ^{a,c} , Tian Qiu ^{a,b} ^a German Cancer Research Center, Dresden, DE; ^b Dresden Univ of Technology, DE; ^c ShanghaiTech Univ, CN		

Technical Program: 3. Day – July 30

3. Day – July 30: Plenary sessions Yongqian Theater	
09:00 – 09:10	Introduction of the agenda
09:10 – 10:30	Plenary talks Chair: Onaizah Onaizah / McMaster Univ, CA
09:10	Energy- and decision autonomous robots at the insect-scale Florian Hartmann / Max-Planck-Inst for Intelligent Systems, DE
09:50	Emergent functions of electrically induced bubbles in micro/nano-scale fluid engineering for biomedical applications Yoko Yamanishi / Kyushu Univ, JP
16:30 – 17:10	Plenary talk Chair: Shogo Hamada / Inst of Science Tokyo, JP
16:30	Manipulation at small scales: Strategies across deterministic, interfacial, and stochastic mechanisms Quan Zhou / Aalto Univ, FI
17:10 – 18:00	Closing & Awards ceremony
18:00 – 21:00	Conference banquet

3. Day – July 30:		Parallel technical sessions	11:00 – 13:00
Special session Room 1		Robotic micromanipulation: Emerging technologies and advanced applications Organized by Peng Pan / Dalian Univ of Technology, CN Qigao Fan / Jiangnan Univ, CN	
11:00	Selective actuation and cooperative control of microrobots Juntian Qu / Tsinghua Univ, CN		
11:20	Lithographic integration of ultrasoft bioelectronic neural interfaces Pengfei Xu / ETH Zurich, CH		
11:40	Modeling and simulation of a ferrofluidic droplet robot for navigation in confined environments Y. Wang, L. Quan, W. Ge, Z. Yang, Xinjian Fan Soochow Univ, CN		
12:00	Small-scale continuum robot for biomedical applications Haojian Lu / Zhejiang Univ, CN		
12:20	Intelligent organ-on-a-chip based on microenvironment control and sensing inside microfluidic platforms Tao Yue / Shanghai Univ, CN		
12:40	Label-free robotic mitochondria biopsy Yanmei Ma / Dalian Univ of Technology, CN		
Special session Room 2		Magnetic and acoustic small-scale robotics Organized by Li Zhang / Chinese Univ of Hong Kong, S.A.R., CN	
11:00	Untethered magnetic robots for endovascular interventions Xingzhou Du / Dalian Univ of Technology, CN		
11:20	Acoustic robotics – from sound modulation to actuation, manipulation and beyond Song Liu / ShanghaiTech Univ, CN		
11:40	Ultrasound-enabled removal and nucleation of surface micro- and nanobubbles in microfluidics Zibo Ren / Chinese Univ of Hong Kong, S.A.R., CN		
12:00	Precision delivery of magnetic swarming nanorobotics for endovascular therapy Qinglong Wang / Chinese Univ of Hong Kong, S.A.R., CN		
12:20	Micro/nanorobotic platforms for active binding with biological samples Changshun Hou / Beijing Inst of Technology, Zhuhai, CN		

3. Day – July 30:		Parallel technical sessions	11:00 – 13:00
Special session Room 3		Chemistry as the design language for functional micro/nanorobots Organized by Mario Palacios Corella / Univ of Barcelona, ES	
11:00	Sustained, reversible, and adaptive non-equilibrium steady states of a dissipative DNA-based system James Nicholas / Univ of Barcelona, ES		
11:20	Enzymatic active motion: From microrobot architecture to medium coupling Xavier Arqu� / ESPCI ParisTech – CNRS, FR		
11:40	Navigating complexity: Nanomotors in structured and heterogeneous fluids Miguel Alexandre Ramos Docampo / Aarhus Univ, DK		
12:00	Single-atom–based glucose-powered nanorobots for biomedical applications Xiaohui Ju / Mendel Univ, CZ		
12:20	Molecule-programmable nanomaterials for advanced static and dynamic applications; Jose M���� / Autonomous Univ of Barcelona, ES		
12:40	Building magnetic micro-robots from the bottom up: A chemical approach Xiangzhong Chen / Fudan Univ, CN		
Special session Room 4		Visual precision sensing for cross-scale micro-assembly Organized by Xianmin Zhang / South China Univ of Technology, CN	
11:00	Hybrid visual servoing method for cross-scale assembly based on macro-micro combined vision Wenxuan Huang, L. Zhang, Y. Wu, H. Li, X. Zhang / South China Univ of Tech, CN		
11:20	Telecentric-based active-passive composite micro-vision system for precision micro-assembly Zhu Liao, H. Li, Y. Zhong, L. Zhang, X. Zhang / South China Univ of Technology, CN		
11:40	Precise deformation perception of small flexible targets via sparse visual features integrating physical model Yu Pan, A. Chen, H. Li, X. Zhang / South China Univ of Technology, CN		
12:00	Dual-constrained compliant assembly strategy for micro thin-walled parts based on gripping and contact forces Jiahao Zeng, Z. Wang, R. Wang, X. Zhang / South China Univ of Technology, CN		
12:20	Output micro-moment noncontact measurement method for a novel compliant rotation reduction mechanism Weilin Chen, C. Chen, Q. Lu, J. Qiao, Q. Zhang, H. Wei, H. Zhang, L. Luo Foshan Univ, CN		

3. Day – July 30:		Parallel technical sessions	11:00 – 13:00
Special session		Biomedical imaging of microrobots	
Room 5		Organized by Paul Wrede / ETH Zurich, CH	
11:00	CARS microscopy as a tool for biomedical imaging of microrobots Tijana Miseljic / Technical Univ of Denmark, DK		
11:20	Gold nanoparticle-functionalized Zn/Au and Mg/Au Janus micromotors for multiplex SERS detection of anticancer drugs Erick Chica / Technical Univ of Denmark, DK		
11:40	Magnetic hydrogel for microrobots with sensor abilities monitoring pH conditions using magnetic particle spectrometry; Karoline Stoschek ^a , M. L. Finder ^a , M. Figat ^{b,c} , A. Ehsandoost ^a , M. Köhm ^{b,c} , A. C. Bakenecker ^a ^a Technical Univ of Darmstadt, DE; ^b University Hospital, Goethe Univ Frankfurt, DE; ^c Fraunhofer Inst for Translational Medicine and Pharmacology, DE		
12:00	Operational boundaries of ultrasound phase-analysis for microrobots tracking Luca Cinus, A. Menciassi, V. Iacovacci / Scuola Superiore Sant’Anna, IT		
12:20	Real-time ultrasound–photoacoustic imaging for magnetic microrobotic embryo transfer; Mariana Medina Sánchez / CIC NanoGune, ES		
12:40	MOF-functionalized microrobots for biomedical applications Gaoshan Huang / Fudan Univ, CN		
Regular session		Micro/Nano robots (III)	
Room 6		Chair: Dipak Bhowmik / Univ of Oldenburg, DE	
11:00	Active phage delivery with self-propelled microrobots for treatment of <i>Pseudomonas aeruginosa</i> lung infection Azin Rashidy Ahmady, F. Bayat, Z. Hosseinidoust, T. F. Didar / McMaster Univ, CA		
11:20	Fabrication of a Chlamydomonas-inspired microrobot and evaluation of its time-reversal symmetry / K. Hama ^a , Y. Yokoyama ^b , Takeshi Hayakawa ^a ^a Chuo Univ, JP; ^b Toyama Industrial Technology R&D Center, JP		
11:40	Multifunctional magnetic microrobots driven by a conical field for efficient treatment of infections within confined dental slits; Tieshan Zhang ^{a,b} , H. Zhao ^b , W. Shang ^a , Y. Shen ^b / ^a Shenzhen Univ, CN; ^b Hong Kong Univ of Sci & Tech, S.A.R., CN		
12:00	Temperature-responsive magnetically actuated hydrogel robot for vascular embolization; Weifeng Hu ^{a,b} , Y. Kanga ^a , S. Zheng ^b , M. Nan ^b , S.-jae Kim ^{a,b} , J. Lee ^b , T. Lee ^b , K. J. Heo ^a , H. Kim ^a , E. Choi ^c / ^a Chonnam National Univ, KR; ^b Korea Inst of Medical Microrobotics, KR; ^c Sogang Univ, KR		
12:20	Soft magnetic microrobots with remote shape sensing capability Minsoo Kim ^a , Q. Gao ^b , G. Cantarella ^c , S. Panéb, B. J. Nelson ^b / ^a Daegu Gyeongbuk Inst of Sci & Tech, KR; ^b ETH Zurich, CH; ^c Univ of Modena and Reggio Emilia, IT		

3. Day – July 30:		Parallel technical sessions	11:00 – 13:00
Regular session		Positioning and control	
Room 7		Chair: Ayoub Glia / New York Univ Abu Dhabi, AE	
11:00	Smooth motion control of microrobots based on micro-coil arrays Ding Huang , Y. Liu, Q. Fan Jiangnan Univ, CN		
11:20	Intelligent path planning and robust tracking of microrobots in complex vascular networks J. Wang ^a , C. Liu ^a , Hao Li ^a , L. Peng ^b ^a Shandong Univ, CN; ^b Weihai Municipal Hospital, CN		
11:40	Permanent magnet array-based closed-loop control of an intravascular millirobot Louis Quaire-Merlin , D. Dini, B. Ahmad, J. A. Kim / Imperial College London, UK		
12:00	Optoelectronic parallel and independent trajectory control of multiple electrically and magnetically self-propelled Janus particles S. Debata, I. Rachbuch, Gilad Yossifon Tel-Aviv Univ, IL		
12:20	Neural-band-controlled compliant laparoscopic instrument (NeuroFlex-Cam) for dexterous manipulation in MIS Ayoub Glia ^a , A. B. Al Tahhan ^a , M. Deliorman ^a , M. Milojkovic ^a , M. A. Qasaimeh ^{a,b} ^a New York Univ Abu Dhabi, AE; ^b New York Univ, US		

3. Day – July 30:		Parallel technical sessions	14:00 – 16:00
Special session		Biomimetic soft actuators and soft robots	
Room 1		Organized by Tian Qiu / German Cancer Research Center, Dresden, DE Dresden Univ of Technology, DE Zhichao Ma / Shanghai Jiao Tong Univ, CN	
14:00	Underwater soft robotics and flexible manipulation Juntian Qu / Tsinghua Univ, CN		
14:20	Towards autonomous robotic micro manipulation Mingchuan Zhou / Zhejiang Univ, CN		
14:40	Leveraging softness for a better shape morphing at small scales Veronica Iacovacci / Scuola Superiore Sant’Anna, IT		
15:00	Small-scale soft-bodied robot with multimodal locomotion Guo Zhan Lum / Nanyang Technological Univ, SG		
15:20	Fully-enclosed robotic bioreactor for 3D cell expansion via adaptive mechanostimulation; Tao Sun / Beijing Inst of Technology, CN		
15:40	Electrochemically actuated bioinspired microrobots: Toward intelligent fluidic pumping and locomotion Wei Wang / Westlake Univ, CN		
Special session		Magnetic microrobotic systems for in-vivo monitoring and active intervention	
Room 2		Organized by Li Zhang / Chinese Univ of Hong Kong, S.A.R., CN	
14:00	Ingestible magnetomotiliography for closed-loop intestinal motility management Jiaqi Zhu / Chinese Univ of Hong Kong, S.A.R., CN		
14:20	In vivo dynamic hotspot-enhanced Raman spectroscopy via reconfigurable swarming nanoprobe Dongfang Zhao / Chinese Univ of Hong Kong, S.A.R., CN		
14:40	Real-time physics-based simulation platform for magnetic microrobot swarms bridging virtual modeling and physical experiments Yihan Chen / Chinese Univ of Hong Kong, S.A.R., CN		
15:00	Ultrafast electro-modulated remagnetization for multi-microrobot endovascular collaboration; Junnan Xue / Chinese Univ of Hong Kong, S.A.R., CN		
15:20	Injectable magnetic sensors for aneurysm embolization and in situ monitoring Yusong Peng / Chinese Univ of Hong Kong, S.A.R., CN		

3. Day – July 30:		Parallel technical sessions	14:00 – 16:00
Special session Room 3	Biomedical miniature robots and micromanipulation systems Organized by Qingsong Xu / Univ of Macau, S.A.R., CN		
14:00	Design and testing of a novel selective triggering mechanism for magnetic capsule robot; Zehao Wu, M. Ye, Q. Xu / Univ of Macau, S.A.R., CN		
14:20	Design and fabrication of a magnetic-actuated miniature robot for digestive tract monitoring Yuanhe Chen, M. Ye, J. Lin, Q. Xu / Univ of Macau, S.A.R., CN		
14:40	Flexible robotic microinjection system featuring adaptive pose adjustment for zebrafish larval heart Zhongyi Guo, S. F. Wong, Q. Xu / Univ of Macau, S.A.R., CN		
15:00	Target-shape-driven inverse static model of multi-segment magnetic continuum robot; Xingyao Zhang, Q. Xu / Univ of Macau, S.A.R., CN		
15:20	Low-power focused ultrasound array for targeted thermal actuation of untethered soft robots in deep tissues Xuanping Qiu, Z. Wu, Q. Xu / Univ of Macau, S.A.R., CN		
Special session Room 4	Biomedical electric and mechanical technologies for diagnosis and therapy Organized by Yoko Yamanishi / Kyushu Univ, JP Yibo Ma / Taiyuan Univ of Technology, CN		
14:00	Research on the synchronous testing of mechanical-electrical characteristics of tumors; Jianping Li / Zhejiang Normal Univ, CN		
14:20	PINN-EIT-based dynamic decoupling method for coupled plantar pressure–impedance signals Yuyang Hao ^a , B. Sun ^a , Y. Wang ^a , M. Zhang ^a , J. Yao ^b , T. Zhao ^{a,c} ^a Xi'an Univ of Technology, CN; ^b Jinan Univ, CN; ^c Xinjiang Univ of Technology, CN		
14:40	A pH-responsive carbon quantum dot nanoplatfrom for mechanism-driven synergistic cancer therapy Qi Zhang, Y. Ma, Q. Duan, S. Sang / Taiyuan Univ of Technology, CN		
15:00	Electromechanical stimulation-induced physical cell transfection Yibo Ma ^{a,c} , W. Huang ^b , N. Ota ^c , Y. Yamanishi ^c ^a Taiyuan Univ of Tech, CN; ^b Kindai Univ Tech College, Mie, JP; ^c Kyushu Univ, JP		
15:20	Dual-mode electrosurgical device for selective tissue perforation via electrically-induced bubbles and discharge Yoko Yamanishi / Kyushu Univ, JP		

3. Day – July 30:		Parallel technical sessions	14:00 – 16:00
Special session Room 5	Biomedical measurement and automation Organized by Xiao Li / Xi'an Jiaotong Univ, CN Haitao Zhao / Northwestern Polytechnical Univ, CN		
14:00	Plasmonic nanotechnologies for precision disease diagnostics and monitoring Zhang Yan / Northwestern Polytechnical Univ, CN		
14:20	Structure-engineered flexible materials for physical and biochemical sensing Zhao Haitao / Northwestern Polytechnical Univ, CN		
14:40	Worm vision: Deep learning-based phenotypic quantification analysis of <i>C. elegans</i> locomotion Q. Shi, E. G. Lim, Pengfei Song / Xi'an Jiaotong-Liverpool Univ, CN		
15:00	From sorting to delivery: Microfluidic and acoustofluidic technologies for cells and nanovesicles Kangfu Chen / Beijing Inst of Technology, CN		
15:20	Advanced manufacturing of biomedical sensing structures Xiao Li / Xi'an Jiaotong Univ, CN		
15:40	All-printed hydrogel–metal interfaces for bioelectronics Yuxin Pan, Y. Gu, X. Li/ Xi'an Jiaotong Univ, CN		
Regular session Room 6	Design and fabrication (II) Chair: Liang Ma / Univ of Oldenburg, DE		
14:00	Silicon-based microgears enabled by Casimir interactions Bingdong Chang, A. Han / Technical Univ of Denmark, DK		
14:20	Manufacturing microstructures for directional dry adhesives Liang Ma, Y. Xue, W. Tan, Y. Wang, X. Luo, N. Xi / Univ of Hong Kong, S.A.R., CN		
14:40	2-DOF decoupled spherical voice coil motor with high torque density for robotic machining Guanwei He ^a , Y. Zhang ^a , Z. Wu ^b , M. Yang ^a , H. Huang ^a ^a Sun Yat-sen Univ, Shenzhen, CN; ^b Northeastern Univ, Foshan, CN		
15:00	Optimization of serpentine microfluidic chip integrated by sharp-corner-based microstructure Zijian Zhang ^a , W. Liang ^a , H. Qu ^{b,c} , D. Dang ^a , X. Yang ^a , C. Zhang ^b ^a Shenyang Jianzhu Univ, CN; ^b Shenyang Inst of Autom, CAS, CN; ^c Univ of CAS, CN		
15:20	Enhancing machine code for multimaterial printing of magnetic small scale robots Min Yi Liu, K. Clancy, O. Onaizah / McMaster Univ, CA		

3. Day – July 30:		Parallel technical sessions	14:00 – 16:00
Regular session		Manipulation (II)	
Room 7		Chair: Artur Kopitca / Aalto Univ, FI	
14:00	Digital twin framework for virtual visuo-haptic teleoperation of complex-shaped optical microrobots Zongcai Tan , L. Wei, D. Zhang Imperial College London, UK		
14:20	Programmable soft magnetic microrotors for active flow manipulation Siwen Xie , O. Onaizah McMaster Univ, CA		
14:40	Pneumatic micro-actuation platform for in-plane stretching and manipulation of adherent cells with real-time imaging Wael Othman ^a , W. Waheed ^b , M. Deliorman ^b , P. I. Diaz ^c , H. Hatzikirou ^a , M. A. Qasaimeh ^{b,d,e} ^a Khalifa Univ, AE; ^b New York Univ Abu Dhabi, AE; ^c Univ at Buffalo, US; ^d New York Univ, US; ^e NYU-KAIST Global Innovation and Research Inst, US		
15:00	Non-monotonic transport of microrobot droplet at the air–water interface through surface tension manipulation Sohan Ibna Muslim , M. F. Mehedi, M. M. Rahman Bowling Green State Univ, US		
15:20	3D manipulation of airborne objects using patterned airflow Artur Kopitca ^a , S. Haeri ^a , S. Iqbal ^a , X. Zang ^a , H. Zeng ^b , Q. Zhou ^a ^a Aalto Univ, FI; ^b Tampere Univ, FI		

