Technical Program: 1. Day – July 02

1. Day – July 02:	Plenary sessions	Auditorium
08:30 – 09:10	**Opening ceremony**	
09:10 – 10:30	**Plenary talks** Chair: Eric Diller / University of Toronto, CA	
09:10	AI nanomaterial E-skin sensors for human-metaverse interaction **Wen Jung Li** / City University of Hongkong, SAR, CN	
09:50	Active colloidal particles in nematics for reconfigurable materials and microrobotics **Kathleen J. Stebe** / University of Pennsylvania, US	
16:30 – 17:50	**Plenary talks** Chair: Berna Özkale Edelmann / TU Munich, DE	
16:30	Biomedical research in the era of microrobotics **Mahmut Selman Sakar** / Swiss Fed Inst of Tech Lausanne (EPFL), CH	
17:10	Microscale microrobots for cellular manipulation **Sambeeta Das** / University of Delaware, US	

1. Day – July 02:	Parallel technical sessions	11:00 – 13:00
Special session **Room 2**	**Frontiers in microrobotics:** **Propulsion, therapeutics, and advanced actuation** Organized & chaired by **Hongsoo Choi** / Daegu Gyeongbuk Inst of Sci & Tech (DGIST), KR **Carlos Franco Pujante** / ETH Zürich, CH	
11:00	Shape morphing of magnetoelectric nanomembrane kirigami **Minsoo Kim** / ETH Zürich, CH	
11:20	Piezoelectric nanoparticles activated by low Intensity pulsed ultrasound for tissue regeneration **Andrea Cafarelli** / Scuola Superiore Sant'Anna Pisa, IT	
11:40	From catalytic to fuel free micromotors for the next generation of biosensors **Beatriz Jurado** / Alcala Univ, ES	
12:00	Robust directional propulsion of microrobots by light and magnetic field **Chengzhi Hu** / Southern Univ of Science and Technology, CN	
12:20	Development of a high- frequency magnetic actuation system for precise generation of magnetic fields and forces **Hakjoon Lee** / Daegu Gyeongbuk Inst of Sci & Tech (DGIST), KR	
12:40	Artificial goosebump-driven microactuation **Mingchao Zhang** / Max Planck Inst for Intell. Systems, DE	
Special session **Room 3**	**Avatar cells:** **Live-cells mediating designed cell-cell communications (I)** Organized & chaired by **Yoko Yamanishi** / Kyushu Univ, JP **Takeshi Hayakawa** / Chuo University, JP	
11:00	Creating a society whose citizen's health is monitored by remote control of intracellular cybernetic avatars; N. Tsuruya, **Yoko Yamanishi** / Kyushu Univ, JP	
11:20	Cellular cyborgs (Cellborgs) for targeted medical interventions (**keynote talk**) **Hakan Ceylan** / Mayo Clinic, US	
11:40	Gene circuits for the designed communication between avatar cells **Yoshitaka Shirasaki** / Univ of Tokyo, JP	
12:00	AI-driven design of cell-cell communications in the avatar cells **Atsushi Hijikata** / Tokyo Univ of Pharmacy and Life Sciences, JP	
12:20	Spherical nucleic acid-based signal conversion and amplification for avatar cells **Maasa Yokomori** / Kyushu University, JP	
12:40	Designed lipid-based nanoparticles for gifting cybernetic avatars **Niko Kimura** / Tokyo Univ of Agriculture and Technology, JP	

1. Day – July 02:	Parallel technical sessions	11:00 – 13:00
Special session	**Advancements on continuum robotics for medicine**	
Room 4	Organized & chaired by **Kanty Rabenorosoa** / FEMTO-ST, FR	
11:00	Advances in concentric catheters simulation for placement of pacemaker leads and validation on a beating heart mannequin **Quentin Peyron** / INRIA, FR	
11:20	Miniaturization of vine growing robots with working channels **Cedric Girerd** / Univ de Montpellier, FR	
11:40	Characterization of flexural rigidity of bronchoscopy tools **Margaux Mannaerts** / Univ libre de Bruxelles, BE	
12:00	Exploration of tendon-actuated continuum robotics with optimized cross-section and tendon routing **Stijn Koppen**/ TU Delft, NL	
12:20	Advancements on continuum robotics for medicine **Kanty Rabenorosoa** / FEMTO-ST, FR	
Special session	**Life-like motile micro- and nanosystems**	
Room 5	Organized & chaired by **Tania Patiño** / Eindhoven Univ of Technology, NL	
11:00	Biomimicry of swarms of small swimmers by enzyme-nanomotors **Samuel Sánchez** / IBEC, ES	
11:20	Moving protocells at the onset of life **Nathalie Katsonis** / Univ of Groningen, NL	
11:40	Understanding self-propulsion of catalytic Janus particles to exploit them in cell-inspired microrobots **Gaia Petrucci** Scuola Superiore Sant'Anna Pisa, IT	
12:00	Robotic end-to-end fusion of microtubules powered by kinesin **Gadiel Saper** / Columbia Univ, US	
12:20	Exploiting dynamicity to induce motility: motion of membranized coacervate motors **Loai Abdelmohsen** / Eindhoven Univ of Technology, NL	
12:40	Nanomotors powered by polymers **Miguel Alexandre Ramos-Docampo**, B. Städler Aarhus Univ, DK	

1. Day – July 02:	Parallel technical sessions	11:00 – 13:00
Special session	**Next-Gen biomedical microfluidics (I)**	
Room 6	Organized & chaired by **Waqas Waheed** / New York Univ Abu Dhabi, AE	
11:00	Next generation microfluidics: Multiphysics probes, tactile sensing in surgery, and paper-based 3D cell cryopreservation **Mohammad A. Qasaimeh** / New York Univ Abu Dhabi, AE	
11:20	MicroFlow-through wool cartridge for 3D enrichment, rapid manipulation, and label-free detection of prostate cancer cells in urine **Muhammedin Deliorman**, B. Samara, A. Glia, F.K. Janahi, M.A. Qasaimeh New York Univ Abu Dhabi, AE	
11:40	Microscale fluidic manipulation on a paper platform for rapid multiplex detection of SARS-CoV-2 genes **Pavithra Sukumar**, A. Saleh, M. Deliorman, M.A. Qasaimeh New York Univ Abu Dhabi, AE	
12:00	LEGO-like microfluidic probe for concentration gradient discretization: Path toward complete modularization **Ayoub Glia**, M.A. Qasaimeh / New York Univ Abu Dhabi, AE	
12:20	Acousto-microfluidic probe for fluid and particle manipulation **Waqas Waheed**, M.A. Qasaimeh / New York Univ Abu Dhabi, AE	
Special session	**Advanced micro-systems for space applications**	
Room 8	Organized & chaired by **Huiquan Wang** / Zhejiang Univ, CN	
11:00	Enhanced performance of surface acoustic wave resonator with tunable interdigital transducers **Hao Sun** / SIMIT, CAS, CN	
11:20	Non-invasive blood pressure monitoring using a single-channel PPG sensor with adaptive Kalman algorithm and 4-LED arrayed structure **Linxi Dong** / Hangzhou Dianzi Univ, CN	
11:40	Research on the adaptability of flexible PPG sensors to complex environments W. Shi, L. Dong, **Haixia Yan**, W. Yang, Y. Gao, C. Liu / Hangzhou Dianzi Univ, CN	
12:00	Silicon resonant low-pressure sensor based on Au-Si eutectic bonding **Deyong Chen** / Aerospace Information Research Inst, CAS, CN	
12:20	3D heterogeneous integration of electrochemical and semiconductor devices on the chip **Xiaohong Wang** / Tsinghua Univ, CN	

1. Day – July 02:	Parallel technical sessions	11:00 – 13:00
Regular session **Room 7**	**Micro/Nano robots (I)** Chair: Yuki Hagiwara / Waseda Univ, JP	
11:00	Driving of biomimetic micro-gel robot with two flagella **Kanon Hama**[a], H. Sato[a], Y. Yokoyama[b], T. Hayakawa[a] [a]Chuo University, JP; [b]Toyama Industrial Technology R&D Center, JP	
11:20	Ultra-deformable magnetic microrobots navigating through obstacles **Eugenia De Remigis**, O. Tricinci, M. Ibrahimi, V. Iacovacci, S. Palagi Sant'Anna School of Advanced Studies, Pisa, IT	
11:40	Bi-material 3D printed soft microrobots: Proof-of-concept and demonstration **Mehdi Salah**[a], Y. Bordes[a], C. Clévy[a], G. Ulliac[a], V. Luzet[a], A. Chafai[b], M. Kadic[a], P. Lambert[b], K. Rabenorosoa[a] / [a]FEMTO-ST Inst, FR; [b]Univ Libre de Bruxelles, BE	
12:00	Molecular crystal actuators based on photothermally driven natural vibration **Yuki Hagiwara**[a], S. Hasebe[a], H. Fuisawa[b], J. Morikawa[b], T. Asahi[a], H. Koshima[a] [a]Waseda Univ, JP; [b]Tokyo Inst of Technology, JP	
12:20	Comparison of magnetic nanobot configurations for intracellular applications **Souravi Mukherjee**, N. Ahmed, R.V. Ramachandran, R. Bhat, D.K. Saini, A. Ghosh IIS Bangalore, IN	
12:40	Micro and nanorobots for biofilm eradication and microplastic remediation **Fatma Merve Yurtsever** / Central European Inst of Technology, CZ	
Regular session **Room 1**	**Automation (I)** Chair: Ron Pelrine / Pelrine Innovations LLC	
11:00	Independently controlled manipulation of nanobots based on visual feedback and controlled randomization; **Rahul Goyal**[a], J.P. Behera[b], A. Ghosh[b] [a]Max Planck Institute for Medical Research, DE; [b]IIS Bangalore, IN	
11:20	Ultrasound microrobots using reinforcement learning M. Schrage, **Mahmoud Medany**, D. Ahmed / ETH Zürich, CH	
11:40	Towards robotic mapping of a honeybee comb **Jiří Janota**[a], J. Blaha[a], F. Rekabi-Bana[b], M. Stefanec[c], L. Fedotoff[c], F. Arvin[b], T. Schmickl[c], T. Krajník[a] [a]Tech Univ Prague, CZ; [b]Durham Univ, UK; [c]Univ of Graz, AT	
12:00	Graph neural network-based real-time 3D tracking for micro-agent control **Yuxin Jin**[a], F. Pinan Basualdo[a], A. Marino[b], Y. Mei[c], C. Pacchierotti[b], P.R. Giordano[b], S. Misra[a] /[a]Univ of Twente,NL; [b]Univ de Rennes,FR; [c]Fudan Univ,CN	
12:20	Advances in circuit-driven milli robot systems **Ron Pelrine**[a], A. Hsu[b] / Pelrine Innovations LLC; [b]SRI International, US	

1. Day – July 02:	Parallel technical sessions	14:00 – 16:00
Special session **Room 2**	**Untethered microrobotics: From lab to clinics** Organized & chaired by **Debayan Dasgupta** / Theranautilus, IN **Ambarish Ghosh** / IIS Bangalore, IN	
14:00	Therapeutics in motion: How enzyme-powered nanobots became a spin-off **Samuel Sánchez** / IBEC, ES	
14:20	Main advantages of medical bacterial microrobots **Sylvain Martel** / Polytechnique Montréal, CA	
14:40	Medical microrobots in gynecologic oncology; **Mariana Medina-Sánchez** CIC nanoGUNE, ES; IFW Leibniz Dresden, DE; TU Dresden, DE	
15:00	Beyond the drill: Dentist's guide to the nanorobotic surgery **Shanmukh Peddi** / Theranautilus, IN	
15:20	Magnetically actuated transport of biocompatible carriers through tissue **Lucie Motyckova** Max Planck Inst for Medical Research, Heidelberg, DE	
Special session **Room 3**	**Avatar cells:** **Live-cells mediating designed cell-cell communications (II)** Organized & chaired by **Yoko Yamanishi** / Kyushu Univ, JP **Takeshi Hayakawa** / Chuo University, JP	
14:00	Functional materials and mobile microrobots (**keynote talk**) **Minsoo Kim**, Salvador Pané, Bradley J. Nelson ETH Zürich, CH	
14:20	Navigating the long journey from lab to patient (**keynote talk**) **Anton Ussi** European infrastructure for translational medicine (EATRIS)	
14:40	Chemical control of intracellular cybernetic avatars **Kosuke Dodo** / RIKEN Center for Sustainable Resource Science (CSRS), JP	
15:00	DNA-based membrane channels for avatar cells **Kan Shoji** / Nagaoka Univ of Technology, JP	
15:20	Microfluidic device for in-vitro evaluation of avatar cells **Takeshi Hayakawa** / Chuo University, JP	
15:40	High-speed on-chip cell sorting for purification of avatar cells **Shinya Sakuma** / Kyushu Univ, JP	

1. Day – July 02:	Parallel technical sessions	14:00 – 16:00
Special session **Room 4**	**Innovative materials and technologies for 3D printed microrobots in biomedical applications** Organized & chaired by **Carlotta Pucci** and **Omar Tricinci** Scuola Superiore Sant'Anna Pisa, IT	
14:00	3D printed microrobots: Versatile designs, complex materials, and innovative biomedical functionalities; **Hakan Ceylan** / Mayo Clinic, US	
14:20	3D printed microrobots powered by ultrasound **Amirreza Aghakhani** / Univ of Stuttgart, DE	
14:40	Microfabrication of biomimetic surfaces and bioinspired medical microrobots **Omar Tricinci**, G. Petrucci, R. Porta, Y. Singh Brar, E. De Remigis, V. Mattoli, S. Palagi / Scuola Superiore Sant'Anna Pisa, IT	
15:00	Optothermal microrobots for micromanipulation applications **Belal Ahmad** / Imperial College London, UK Presented by **Carlotta Pucci** (SSSA Pisa, IT) on behalf of Belal Ahmad	
15:20	Design and fabrication of miniaturized soft machines **Yu-Hsiang Lin**, Sarthak Misra / Univ of Twente, NL	
Special session **Room 5**	**Soft robotics for medical applications** Organized & chaired by **Pierre Lambert** / Université libre de Bruxelles, BE	
14:00	Investigating fused silica bending strength and damping characteristics on resonators fabricated through femtosecond laser-assisted wet etching: Experimental analysis **Loïc Amez-Droz**[a], M. Tunon de Lara[b], A. Amorosi[a], P. Lambert[c], C. Caucheteur[b], C. Collette[a] / [a]Univ de Liège, BE; [b]Univ de Mons, BE; [c]Univ libre de Bruxelles, BE	
14:20	PNIPAM/Gold nanoparticles hydrogel composites for biomedical applications **Esra Yalcinkaya** / Univ of Mons, BE	
14:40	Embodied intelligent gripping of soft tissues **Aimée Sakes** / TU Delft, NL	
15:00	Vacuum-powered artificial muscles **Emir Vela** / Univ of Engineering and Technology (UTEC), PE	
15:20	3D-Printed voxel-based soft actuators with selective actuation **Manon Cassignol** / Université libre de Bruxelles, BE	

1. Day – July 02:	Parallel technical sessions	14:00 – 16:00
Special session	**Next-Gen biomedical microfluidics (II)**	
Room 6	Organized & chaired by **Wael Othman** / New York Univ Abu Dhabi, AE	
14:00	Multiphysics microfluidic probe for single cell nano-biopsy **Waqas Waheed**, M.A. Qasaimeh / New York Univ Abu Dhabi, AE	
14:20	Hexagonal microfluidic mixing probe for flow concentration gradients on suspended sells; D. Ali, W. Waheed, **Ayoub Glia**, P. Sukumar, M.A. Qasaimeh New York Univ Abu Dhabi, AE	
14:40	Thermal wax transfer diffusion for fluid manipulation in porous filter paper **Pavithra Sukumar**, M. Deliorman, M.A. Qasaimeh / New York Univ Abu Dhabi, AE	
15:00	Single cell probing and manipulation of red blood cells in Type-2-Diabetes: Cell stretching, HbA1c, and BMI correlation study M. Deliorman[a], **Joseph W. Clark[b]**, M.A. Qasaimeh[a] [a]New York Univ Abu Dhabi, AE; [b]Purdue Univ, US	
15:20	Innovative multi-microchannel design for enhanced sensitivity in soft microfluidic force sensors; **Wael Othman**, M.A. Qasaimeh / New York Univ Abu Dhabi, AE	
Regular session	**Measurement and characterization (I)**	
Room 8	Chair: Guillaume J. Laurent / FEMTO-ST, FR	
14:00	Evaluation of adhesion forces of a molecular recognition for designing a modular microrobot; **Toshiya Wada[a]**, Y. Yokoyama[b], T. Hayakawa[a] [a]Chuo Univ, JP; [b]Toyama Industrial Technology R&D Center, JP	
14:20	Estimation of unknown stiffness using electromagnetic force balance and virtual input shaping for uncertainty calculation; **Sylvain Hernandez[a]**, J. Abadie[a], E. Piat[a], E. Lesniewska[b] / [a]FEMTO-ST, FR; [b]Univ of Bourgogne, FR	
14:40	Modeling and study of actuation of IPMC from the viewpoint of small-scale manipulator development; **Arko Biswas**, M.K. Singh, B. Bhattacharya / IIT Kanpur, IN	
15:00	Nano-scale fabrication and characterization of modified re-entrant structures with curved corners using EBL **Kaustav Bora**, U. Dey, S. Varshney, C. Kumar / IIT Kharagpur, IN	
15:20	Optical elastography using magnetic microrobots & laser speckle contrast imaging **Andrew Bickerdike[a]**, Y. Liu[a], S. Prasad[b] [a]Univ of Exeter, UK; [b]Royal Devon Univ Healthcare NHS Foundation Trust, UK	
15:40	6-DoF accuracy evaluation of a precision hexapod using digital holography B.Ahmad[a], P.Sandoz[b], **Guillaume J. Laurent[b]**; [a]Imperial College,UK; [b]FEMTO-ST,FR	

1. Day – July 02:	Parallel technical sessions	14:00 – 16:00
Regular session	**Positioning and control (I)**	
Room 1	Chair: Xianmin Zhang / South China Univ of Tech, CN	
14:00	Novel cross-scale nanopositioning stage based on dual piezoelectric stick-slip actuation with a shared flexible hinge **Siyuan Meng**[a], J. Zhu[b], Y. Wang[b], L. Shi[c], J. Yu[c], D. Wu[a], W. Dong[a], C. Ru[b] [a]Harbin Inst of Tech, CN; [b]Suzhou Univ of Sci & Tech, CN; [c]JITRI, Suzhou, CN	
14:20	Computational direct kinematics of a three-legged parallel micromanipulator with actuated fluid joints **Francisco Ortiz**, A. Bolopion, A. Barbot / FEMTO-ST, FR	
14:40	Regional template matching for occluded object tracking in micro-assembly **Li Zhang**, X. Zhang, H. Li, C. Zhao, R. Wang / South China Univ of Tech, CN	
15:00	Uncalibrated visual servo control of miniature magnetic robots on planar surface **Kadio Ettien Jean Koua**, M. Vítek, M. Juřík, J. Kuthan, F. Mach Univ of West Bohemia, CZ	
15:20	Magnetic-actuator based planar nano-positioning system **R. Krishna**, G. R. Jayanth / IIS, Bangalore, IN	
15:40	Enhanced motion control of magnetically and electrically powered hybrid micromotor: Open-loop and closed-loop control **Ido Rachbuch**, S. Park, G. Yossifon / Tel-Aviv Univ, IL	
Regular session	**Design and fabrication (I)**	
Room 7	Chair: Karl F. Böhringer / Univ of Washington, US	
14:00	Design of a displacement amplifier based on stepped beams and levers **Dung-An Wang** / National Chung Hsing Univ, TW	
14:20	Modeling and experimental validation of diamagnetic levitation system **Georges Nasr**, L. Petit, H. Al Hajjar, F. Lamarque / Univ de Tech de Compiègne, FR	
14:40	SonoPrint: An acoustic-assisted volumetric 3D (bio)printer **Prajwal Agrawal**, D. Ahmed / ETH Zürich, CH	
15:00	Aluminum U-shaped electro-thermally actuated microgripper: Simulation and fabrication; **Rodica Voicu** / IMT Bucharest, RO	
15:20	MEMS-integrated meta-optics for Imaging at the microscale **Karl F. Böhringer** / Univ of Washington, US	

Technical Program: 2. Day – July 03

2. Day – July 03:	Plenary sessions	Auditorium
08:30 – 10:30	**Plenary talks** Chair: Elizabeth Farrell Helbling / Cornell University, US	
08:30	A robotically assisted magnetic navigation system and a separable and recombinable magnetic robot for robotic endovascular intervention **Gunhee Jang** / Hanyang University, KR	
09:10	Exploring different physics for non-contact microrobotics **Aude Bolopion** / FEMTO-ST Institute, FR	
09:50	Engineering small scale soft robots: From shape-morphing to hyperelastic **Jinxing Li** / Michigan State University, US	
16:30 – 17:50	**Plenary talks** Chair: Shin-ichiro Nomura / Tohoku Univ, JP	
16:30	Robotic micro and nanomanipulation for basic science research **Xinyu Liu /** University of Toronto, CA	
17:10	Soft/wet microrobotics **Pierre Lambert** / Université libre de Bruxelles, BE	

2. Day – July 03:	Parallel technical sessions	11:00 – 13:00
Special session **Room 2**	**Robotic micromanipulation for cell and tissue mechanobiology** Organized & chaired by **Mahmut Selman Sakar** / EPFL, CH **Simone Schürle-Finke** / ETH Zürich, CH	
11:00	Magnetic matrix actuation for neuromuscular mechanobiology **Ritu Raman** / Massachusetts Inst of Technology, US	
11:20	Mechanically active 3D microgels for mechanobiology investigations at single cell resolution **Berna Özkale Edelmann** / TU Munich, DE	
11:40	Cell-scale mechanical data for 3D cell culture models of solid-tumor microenvironment **Juho Pokki** / Aalto Univ, FI	
12:00	Neomag: Soft magnetic substrates for 2D and 3D in-vitro assay **Clara Gomez Cruz** / Univ of Carlos III of Madrid, ES	
12:20	Synthetic and biological microactuators for connective tissue mechanobiology **Mahmut Selman Sakar** / EPFL, CH	
Special session **Room 3**	**New Materials for Robotics (I)** Organized & chaired by **Samuel Sánchez** / Inst for Bioengineering of Catalonia, ES **Maria Guix Noguera** / Univ of Barcelona, ES **Mariana Medina-Sánchez** CIC nanoGUNE, ES; IFW Leibniz Dresden, DE; TU Dresden, DE	
11:00	Protein-based chemical motors for modular propulsion of microrobots **Abdon Pena Francesch** / Univ of Michigan, US	
11:20	Let's face it! Are liquid crystalline materials even good for microrobotics? **Hamed Shahsavan** / Univ of Waterloo, CA	
11:40	CoffeeBots: Spent coffee ground-based micromotors for removal of dyes, oil spills, and microplastics from water; **Jeffrey Moran** / George Mason Univ, US	
12:00	Flexible magnetic materials as building blocks for innovative soft microrobots **Veronika Iacovacci** / Scuola Super. Sant'Anna Pisa, IT	
12:20	Microrobot's motion performance in cell-lining surfaces and ex- vivo tissue **Carla Ribeiro**[a], R. Nauber[a], A. Aziz[a], D. Castellanos Robles[a,b], F. Hebenstreit[a], M. Medina-Sánchez[a,b,c] [a]IFW Leibniz Dresden, DE; [b]TU Dresden, DE; [c]CIC nanoGUNE, ES	
12:40	Iridium Janus nanomotors for smart drug delivery **Diana Vilela** / Univ Complutense de Madrid, ES	

2. Day – July 03:	Parallel technical sessions	11:00 – 13:00
Special session **Room 4**	**Manipulation in spatially non-linear stochastic energy fields** Organized & chaired by **Quan Zhou** / Aalto Univ, FI **Veikko Sariola** / Tampere Univ, FI	
11:00	Three-dimensional self- assembly using dipolar interaction **Massimo Mastrangeli** / TU Delft, NL	
11:20	Acoustic manipulation of micrometer sized particles and cells **Alexander Edthofer** / Lund Univ, SE	
11:40	Machine learning algorithms for acoustic manipulation in microfluidics chips **Veikko Sariola** / Tampere Univ, FI	
12:00	Airflow-field based manipulation: Actuation, mechanism and properties **Shahriar Haeri** / Aalto Univ, FI	
12:20	Airflow-field based manipulation: Automation and applications **Artur Kopitca** / Aalto Univ, FI	
12:40	Dexterous control of optical microrobots in liquid medium **Sinan Haliyo** / Sorbonne Univ, FR	
Special session **Room 5**	**Manipulation of small objects:** **Towards macroscopic supramolecular assembly** Organized & chaired by **Feng Shi** / Beijing Univ of Chemical Tech, CN **Mengjiao Cheng** / Beijing Univ of Chemical Tech, CN	
11:00	Hydrogel-based macroscopic click chemistry **Xiaofan Ji** / Huazhong Univ of Science and Technology, CN	
11:20	Chiral nanocrystal assemblies mediated by supramolecular structures **Zhijie Yang** / Shandong Univ, CN	
11:40	Design and construction of biaxial nematic colloidal liquid crystals **Yang Yang** / Jilin Univ, CN	
12:00	Polyelectrolyte chain conformation matters in macroscopic supramolecular self-assembly **Qian Zhang**, M. Cheng, F. Shi / Beijing Univ of Chemical Tech, CN	
12:20	Construction of functional materials through macroscopic or mesoscopic supramolecular assembly **Sheng Zhang** / Sichuan Univ, CN	

2. Day – July 03:	Parallel technical sessions	11:00 – 13:00
Special session **Room 6**	**Multimodal characterization of two-dimensional materials** Organized & chaired by **Muhammad Yasir** / Univ of Oldenburg, DE	
11:00	Characterization of graphene: From nanoscale to macroscale **Muhammad Yasir** / Univ of Oldenburg, DE	
11:20	Characterization of graphene-based ink for RF applications D. Arcoraci, P. Zaccagnini, **Fabio Peinetti**, P. Savi Politecnico di Torino, IT	
11:40	Fabric-based sensors enabled with laser-induced graphene Y.Y. Gu, S. Li, Z. Zhao, **Xiao Li** / Xi'an Jiaotong Univ, CN	
12:00	Artificial enhanced image inpainting for broadband SMM M. Wieghaus, **Warda Saeed**, M. Yasir Univ of Oldenburg, DE	
12:20	Characterization of tunable multilayer graphene ink by a microstrip transmission line **Shakir Ullah**, W. Saeed, M. Yasir Univ of Oldenburg, DE	
Regular session **Room 8**	**Manipulation (I)** Chair: Sambeeta Das / Univ of Delaware, US	
11:00	Mobile microrobot grippers for cell spheroid micromanipulation **Aaron Davis**, M. Howard, E. Freeman, L. Solorio; D. Cappelleri Purdue Univ, US	
11:20	Lab-On-Chip device for the contactless micromanipulation of plastic micro-beads with negative DEP **Georgia Kritikou**, V. Moulianitis Univ of Peloponnese, GR	
11:40	3D Helmholtz coil system for magnetic suspension manipulation **Rahime Alsangur**[a], S. Doganay[b], I. Ates[a], A. Turgut[a], L. Çetin[b] [a]Dokuz Eylül Univ, TR; [b]İzmir Kâtip Çelebi Univ, TR	
12:00	Micromanipulation system for microscale magnetic component alignment and assembly O. Shindell, A. Davis, **David Cappelleri** / Purdue Univ, US	
12:20	Peanut shaped microrobots for anticancer therapy N.K. Dezfuli[a], A.F. Florez[b], D. Rivas[a], **Sambeeta Das**[a] [a]Univ of Delaware, US; [b]Harvard Medical School, US	

2. Day – July 03:	Parallel technical sessions	11:00 – 13:00
Regular session	**Positioning and control (II)**	
Room 1	Chair: Cameron Forbrigger / ETH Zürich, CH	
11:00	Magnetic nanorobot-assisted diagnosis in branch atheromatous disease **Jia Dong**[a], Y. Shen[a], T. Zhang[b], Z. Ling[a] [a]Hongkong Univ of Sci & Tech, SAR, CN; [b]City Univ of Hongkong, SAR, CN	
11:20	Design of a four degree-of-freedom macro-micro positioning stage based on corrugated flexure **Nianfeng Wang**, X. Liu, X. Zheng, G. Shang, X. Zhang /South China Univ of Tech, CN	
11:40	Kinematic modeling of a miniaturized configurable parallel robot with soft joints for real-time control M. Leveziel, G. Laurent, M. Gauthier, **Redwan Dahmouche** / FEMTO-ST, FR	
12:00	Strain-engineered thermal MEMS-actuators **William Wren**, H.V. Stafford, M. Halsall, T. Echtermeyer / Univ of Manchester, UK	
12:20	Theoretical considerations for the effect of rotating magnetic field shape on the workspace of magnetic microrobots **Cameron Forbrigger**, S. Schuerle / ETH Zürich, CH	

2. Day – July 03:	Parallel technical sessions	14:00 – 16:00
Special session **Room 2**	**Sensing, actuation, and control of insect-like robots** Organized & chaired by **Yufeng (Kevin) Chen** / Massachusetts Inst of Technology, US **Kaushik Jayaram** / Univ of Colorado Boulder, US	
14:00	Acrobatic maneuvers in insect-scale aerial robots **Yufeng (Kevin) Chen** / Massachusetts Inst of Technology, US	
14:20	Magnetic insect-like miniature robot **Wenqi Hu** / Max Planck Inst for Intell. Systems, DE	
14:40	Challenges in power and control autonomy for insect- scale vehicles **Elizabeth Farrell Helbling** / Cornell Univ, US	
15:00	Insect-inspired AI for tiny, autonomous drones **Guido De Croon** / TU Delft, NL	
15:20	Powerful, soft, micro-combustion actuators for insect-scale robots **Cameron Aubin** / Univ of Michigan, US	
15:40	Towards autonomy in insect- scale platforms moving in cluttered terrains **Kaushik Jayaram** / Univ of Colorado Boulder, US	
Special session **Room 3**	**New Materials for Robotics (II)** Organized & chaired by **Samuel Sánchez** / Inst for Bioengineering of Catalonia, ES **Maria Guix Noguera** / Univ of Barcelona, ES **Mariana Medina-Sánchez** CIC nanoGUNE, ES; IFW Leibniz Dresden, DE; TU Dresden, DE	
14:00	Optimization of smart microactuators utilizing 2D and 3D lithography S.T. Rahman[a], **David Castellanos Robles**[a,b], F. Rajabasadi[a], M. Medina-Sánchez[a,b,c] [a]IFW Leibniz Dresden, DE; [b]TU Dresden, DE; [c]CIC nanoGUNE, ES	
14:20	Artificial muscles powered by ultrasound **Daniel Ahmed** / ETH Zürich, CH	
14:40	Liquid crystalline elastomers, walkers, swimmers and fliers **Hao Zeng** / Tampere Univ, FI	
15:00	Developing strategies for incorporating functional materials into soft microrobots **Roger Sanchis Gual** / Inst of Molecular Science (ICMol), ES	
15:20	Enzyme-controlled mesoporous nanorobots for drug delivery **Beatriz Mayol** / Univ Complutense de Madrid, ES	
15:40	Engineering bioinspired and biohybrid magnetic microrobots using living and synthetic materials; **Simone Schürle-Finke** / ETH Zürich, CH	

2. Day – July 03:	Parallel technical sessions	14:00 – 16:00
Special session **Room 4**	**Soft matter robotics in complex chemical reaction network** Organized & chaired by **Subhabrata Maiti** / IISER Mohali, IN	
14:00	Motility, signal transfer and actuation in self-organizing dynamic filament networks **Peter Korevaar** / Radboud Univ Nijmegen, NL	
14:20	Chemically active polymer: Swelling to collapse transition and a tool for transportation **Snigdha Thakur** / IISER Bhopal, IN	
14:40	Marangoni self-propulsion of miniaturized devices for energy conversion G. Zhu, G. Lu, F. Shi, **Mengjiao Cheng** Beijing Univ of Chemical Technology, CN	
15:00	Sculpting lipid vesicles with active particles: Less is more **Hanumantha Rao Vutukuri** / Univ of Twente, NL	
15:20	Non-thermal active fluctuations and colloidal dynamics in crowded environments **Krishna Kanti Dey** / IIT Gandhinagar, IN	
15:40	Manipulation of autonomous fluid flow using supramolecular interfaces **Debabrata Patra** Inst of Nano Sci and Tech, Mohali, IN	
Special session **Room 5**	**Nano and micro motors: Motion fundamentals and applications** Organized & chaired by **Loai Abdelmohsen** / Eindhoven Univ of Technology, NL	
14:00	Chemo-mechanical transduction in enzyme-powered motors and pumps **Ayusman Sen** / Pennsylvania State Univ, US	
14:20	Magnetic Waxbots: Pushing the boundaries of nanomotors beyond chemotherapy and cancer applications **Ana Hortelao** / Int Iberian Nanotechnology Lab (INL), PT	
14:40	Moving living robots to the microscale **Maria Guix Noguera** / Univ of Barcelona, E	
15:00	Simultaneous actuation and imaging of sperm-particle clusters in a reproductive tract model **Veronika Magdanz** / Univ of Waterloo, CA	
15:20	DNA-based swimmers: motion dynamics and interactions at the biointerface **Tania Patiño** / Eindhoven Univ of Technology, NL	

2. Day – July 03:	Parallel technical sessions	14:00 – 16:00
Special session **Room 6**	**Transfer printing of micro-objects and others** Organized & chaired by **Changhong Cao** / McGill Univ, CA	
14:00	Advancing microLED displays: Next-generation microchip transfer via fluidic self-assembly **Daewon Lee** / Myongji Univ, KR	
14:20	On-chip integration of micron-scale semiconductor devices **Benoit Guilhabert** / Univ of Strathclyde, UK	
14:40	Picking and placing at small scale using vertically aligned carbon nanotubes **Sanha Kim** Korea Advanced Inst of Sci and Tech (KAIST), KR	
15:00	Micro acoustic transfer printing **Changhong Cao** / McGill Univ, CA	
15:20	Ferrofluid microrobot for material delivery **Xian Wang** / Queen's Univ, CA	
Regular session **Room 8**	**Automation (II)** Chair: Richard Nauber / IFW Leibniz Dresden, DE	
14:00	On-chip sorting of zebrafish embryos **Alioune Diouf**[a,b], F. Sadak[a,c], I. Fassi[d], M. Boudaoud[a], G. Legnani[b], S. Haliyo[a] [a]Sorbonne Univ, FR; [b]Univ of Brescia, IT; [c]Bartin Univ, TR; [d]STIIMA, IT;	
14:20	Engineering magnetic drive for optimizing the directionality of a nanorobot swarm **Sayanta Goswami**, A. Ghosh, N. Navarun, A. Jaiswar / IIS, Bangalore, IN	
14:40	Acoustically powered magnetic microrobots for cellular manipulation F.C. Kirmizitas[a], **Max Sokolich**[a], J. McNeil[b], A. Maaddi[a], S. Das[a] [a]Univ of Delaware, US; [b]Columbia Univ, US	
15:00	Towards SEM automation: Auto-deposition of nanosensors for glucose monitoring application C. Füger, **Rustam Gilyazev**, B. Stamm, A. Pfützner, P. Sharma Lifecare NanoBioSensors GmbH, Mainz, DE	
15:20	Influence of hyperparameters on the performance of deep learning-based microrobotic localization under phantom tissue **Johanna Hoppe**[a], R. Nauber[a], D. Castellanos Robles[a,b], J. Czarske[b], M. Medina-Sánchez[a,b,c] [a]IFW Leibniz Dresden, DE; [b]TU Dresden, DE; [c]CIC nanoGUNE, ES	

2. Day – July 03:	Parallel technical sessions	14:00 – 16:00
Regular session	**Design and fabrication (II)**	
Room 1	Chair: Fatemeh Rajabasadi / HETEROMERGE GmbH, DE	
14:00	Design and fabrication of a bi-stable micro structure using two-photon polymerization for micro robotic applications **Wiaam El Hakim**[a], M.U. Khan[a], H. Al Hajjar[a], M. Mozafari[b],A. Dietzel[b], F. Lamarque[a] [a]Univ de Technologie de Compiègne, FR; [b]Univ Braunschweig, DE	
14:20	Design optimization of polyarticulated robot for SEM micromanipulation **Spiro Dourbaly**, K. Rabenorosoa, J.-Y. Rauch, C. Clévy / FEMTO-ST, FR	
14:40	Genetic algorithm to optimize design of micro-surgical scissors F. Norouziani, V. Palanichamy, S. Gupta, **Onaizah Onaizah** / McMaster Univ, CA	
15:00	Energetically autonomous soft robots: Embodied actuation strategy by liquid metal metabolism **Jiahe Liao**[a], X. Bao[a], M. Park[a], M. Sitti[a,b] [a]Max Planck Inst for Intell Syst, Stuttgart, DE; [b]Koç Univ, TR	
15:20	Thermal bimorph microstructures with integrated nanophotonics actuation and control **Maziar P. Nezhad** / Univ of Salford, UK	
15:40	Advancing micro-fabrication technology through multi-material Two-Photon Polymerization **Fatemeh Rajabasadi**, P. Yemulwar, M.H. Wong, T. Saxena, J. Zscheile, R. Kirchner HETEROMERGE GmbH, DE	

Technical Program: 3. Day – July 04

3. Day – July 04:	Plenary sessions	Auditorium
08:30 – 10:30	**Plenary talks** Chair: Ambarish Ghosh / IIS Bangalore, IN	
08:30	Revolutionizing materials engineering and processing with microfluidic tools **Josep Puigmartí-Luis** / University of Barcelona, ES	
09:10	Multiscale robotic materials and platforms for biomedical and environmental applications **Donglei (Emma) Fan** / University of Texas at Austin, US	
09:50	Magnetic miniature robots for endoluminal intervention: From individual to collectives **Li Zhang** / Chinese University of Hongkong, SAR, CN	
16:30 – 17:10	**Plenary talk** Chair: B. Erdem Alaca / Koç University, TR	
16:30	Collective behavior of microrobotic swarms with long-range communications and decision-making **Igor Aronson** / Pennsylvania State University, US	
17:20 – 18:00	**Closing & Awards ceremony**	
18:30 – 22:00	**Conference banquet**	

3. Day – July 04:	Parallel technical sessions	11:00 – 13:00
Special session **Room 2**	**From soft materials to soft microrobots:** **Vibrating of soft matters in shape-morphing, sensing, propulsion and medical diagnostics at small scales (I)** Organized & chaired by **Tian Qiu** / German Cancer Research Center + TU Dresden, DE **Hao Zeng** / Tampere Univ, FI	
11:00	Ionic artificial muscles for delicate robotic applications **Rassoul Tabassian** / Aarhus Univ, DK	
11:20	Programming zwitterinoc hydrogels for small-scale robotics: From molecules to robots; **Hamed Shahsavan** / Univ of Waterloo, CA	
11:40	Interpenetrating network hydrogels: from trainable responses to feedback-controlled soft devices; **Hang Zhang** / Aalto Univ, FI	
12:00	Light-fueled self-sustained soft robotics **Zixuan Deng** / Tampere Univ, FI	
12:20	Ultra-soft microrobots for movement in confined environments **Stefano Palagi** / Scuola Superiore Sant'Anna Pisa, IT	
Special session **Room 3**	**Microrobotic force sensing and applications** Organized & chaired by **David J. Cappelleri** / Purdue Univ, US **Cédric Clévy** / FEMTO-ST Institute, FR	
11:00	Micro-force sensing mobile microrobots A. Davis, **David J. Cappelleri** / Purdue Univ, US	
11:20	Force sensing and force control in microrobotics for mechanical tests of fibrous material; **Ali Zarei**, P. Kallio / Tampere Univ, FI	
11:40	Overview of microrobotic systems for microforce sensing **Valentin Reynaud** / FEMTO-ST, FR	
12:00	Automated MEMS stages for investigating bending behavior of silicon nanowires S. Zare Pakzad, B. Ali, M. Muzammil, U. Kerimzade, **B. Erdem Alaca** / Koç Univ, TR	
12:20	Assessment of direct microrobotic gripping for single flax fibre tensile tests **Anouk Chevallier**[a], A. Zarei[b], O.Tanhuanpää[c], M. Kakkonen[c], L.Sukki[b], F. Boutenel[a], V. Guicheret[a], V. Placet[a], P. Kallio[b], C. Clévy[a] [a]FEMTO-ST, FR; [b]Tampere Univ, FI; [c]Fibrobotics, FI	
12:40	Path following control of an AFM driven by a piezoelectric inertia actuated robot inside an SEM; S. Liang[a], S. Régnier[b], **Mokrane Boudaoud**[b] [a]Inst of Computing Tech, CAS, CN; [b]Sorbonne Univ, FR	

3. Day – July 04:	Parallel technical sessions	11:00 – 13:00
Special session **Room 4**	**Applications of microrobots in medicine** Organized & chaired by **Veronika Magdanz** / Univ of Waterloo, CA **Islam S.M. Khalil** / Univ of Twente, NL	
11:00	3D printed untethered magnetic bulb for liquid biopsy and drug delivery Z. Li[a], C. He[b], A. Verma[a], **Eric Diller[a]** / [a]Univ of Toronto, CA; [b]Univ of Newcastle, AU	
11:20	Bacterial biohybrid microrobots for human health applications **Bahareh Behkam** / Virginia Tech, US	
11:40	Advanced vascular interventions: Precision hydrogel embolization via microfluidic microrobotic catheters **Carlos Franco Pujante** / ETH Zürich, CH	
12:00	Exploring ex vivo challenges and applications of microrobots **Islam S.M. Khalil** / Univ of Twente, NL	
12:20	Viscoelastic characterization of an agar tissue phantom using acoustic microelastography; **Bhas Karmarkar**, M. Sayed Ahmed, J. Reynolds, M. Bortner, S. Shahab, B. Behkam / Virginia Tech, US	
Special session **Room 5**	**Artificial intelligence meets active matter** Organized & chaired by **Maria Guix Noguera** & **Josep Puigmartí Luis**/ Univ of Barcelona, ES	
11:00	Navigating through the complex boundaries between high entropy materials, machine learning, and AI **Mario Palacios Corella** / Inst of Science and Techology Austria, AT	
11:20	Accelerated materials discovery with self-driving fluidic labs **Milad Abolhasani** / North Carolina State Univ, US	
11:40	Physics-inspired equation discovery for active nematic hydrodynamics **Matt Golden** / Georgia Tech, US	
12:00	Magnetoelectric microrobots for biomedical applications **Xiangzhong Chen** / Fudan Univ, CN	
12:20	Decentralised learning in a swarm of autonomous robots **Laura Natali** / Univ of Gothenburg, SE	
12:40	Photoacoustics-guided real-time closed-loop control of magnetic microrobots through Deep Learning **Richard Nauber[a]**, J. Hoppe[a], D. Castellanos Robles[a,b], M. Medina-Sánchez[a,b,c] [a]IFW Leibniz Dresden, DE; [b]TU Dresden, DE; [c]CIC nanoGUNE, ES	

3. Day – July 04:	Parallel technical sessions	11:00 – 13:00
Special session **Room 6**	**Acoustic manipulation & visualization of micro and nano-robots** Organized & chaired by **Amirreza Aghakhani**/ Univ of Stuttgart, DE **Paul Wrede** / Max Planck ETH Center for Learning Systems, DE	
11:00	Visualizing cellular functions in three dimensions with genetically encoded acoustic nanostructures; **David Maresca** / TU Delft, NL	
11:20	Acoustically-activated transformable micromachines and microrobots **Daniel Ahmed** / ETH Zürich, CH	
11:40	Smart microscopy slide for ultrasonic manipulation of particles and droplets in wet mounted samples **Kyriacos Yiannacou**, M. Pihlamäki, V. Sariola / Tampere Univ, FI	
12:00	Acoustic streaming for microswimmer propulsion - the road from simple models towards complex motion; **Sarah Cleve** / Univ of Lille, FR	
12:20	Sound solutions: Harnessing acoustics and multi-modal microrobots for advanced drug delivery and therapeutic treatments; **Nima Mahkam**/MaxPlanck ETH CLS,DE	
12:40	Acoustophoresis: Particle dynamics, chip characterization and applications **Thierry Baasch** / Lund Univ, SE	
Special session **Room 8**	**Advancements in magnetic microrobotics:** **Applications, analytical models, and actuation strategies** Organized & chaired by **Ali Kafash Hoshiar** / Univ of Essex, UK **Hongsoo Choi** / Daegu Gyeongbuk Inst of Sci & Tech (DGIST), KR	
11:00	3D printing of magnetic soft micromachines **Xinghao Hu** / Northwestern Polytechnical Univ, CN	
11:20	Magnetic concentric tube robots for medical interventions in confined space **Kanty Rabenorosoa** / FEMTO-ST, FR	
11:40	Dynamical analysis of a microrobot-vessel model for detecting cancer metastasis **Yang Liu** / Univ of Exeter, UK	
12:00	Ferrofluidic manipulator: Theoretical model for single-particle velocity **Zoran Cenev** / Univ of Aarhus, DK	
12:20	AI-driven magnetic microswarm control **Ben Jarvis** / Univ of Essex, UK	
12:40	Cell-based microrobot for cell delivery and neuronal differentiation **Dong-in Kim** / Daegu Gyeongbuk Inst of Sci & Tech (DGIST), KR	

3. Day – July 04:	Parallel technical sessions	11:00 – 13:00
Regular session **Room 1**	**Measurement and characterization (II)** Chair: Elsa Harris / California State Univ Long Beach, US	
11:00	Vision-based fast parameter identification in cell membrane force model for microinjection micro-force sensing **Zhong Chen**, X. Gao, Z. Liang, X. Zhang / South China Univ of Technology, CN	
11:20	Evaluating a triboelectric nanogenerator-based versus an inertial measurement unit-based system for human activity recognition **Elsa Harris**, I-H. Khoo, C. Yi, E. Demircan / California State Univ Long Beach, US	
11:40	Yield stress fluid as ball joints for magnetic miniature robots; **Jiyuan Tian**[a], M. Jeong[b], M. Zhang[a], T. Qiu[a] / [a]German Cancer Res Cent, DE; [b]Univ of Stuttgart, DE	
12:00	Real-time color flow mapping of bubble-based microrobots **Cornel Dillinger**, A. Rasaiah, A. Vogel, D. Ahmed / ETH Zürich, CH	
12:20	Characterization of low-cost and power-efficient UV-photomechanical MXene-polymer film actuator **Ken Iiyoshi**, G.Korres, S.Manohar, P.Naumov, M.Eid/New York Univ Abu Dhabi, AE	
12:40	High-throughput vibrational testing of silicon nanowires **Sina Zare Pakzad**, B. Ali, M. Muzammil, U. Kerimzade, B.E. Alaca / Koç Univ, TR	
Regular session **Room 7**	**Manipulation (II)** Chair: Qili Zhao / Nankai Univ, CN	
11:00	Robotic inside-out recording method based on vesicle rupture detection Y. Liu, R. Li, J. Qiu, Z. Wang, M. Li, X. Zhao, **Qili Zhao** / Nankai Univ, CN	
11:20	3D-printed centimeter-scale pneumatically actuated robotic manipulator for micro-manipulations **Xingwen Zheng**[a], H. Mo[b], H. Yao[b], F. Arai[b] / [a]Zhejiang Univ, CN; [b]Univ of Tokyo, JP	
11:40	Programmable assembly and navigation of gas-oil emulsion microrobots **Alexia Del Campo Fonseca**, N. Irniger, D. Ahmed / ETH Zürich, CH	
12:00	Manipulation of a ferrofluid mini-robot for wetting in 3D chip **Chaonan Zhang**, Z. Li / Open Univ of China, CN	
12:20	Design and control of a novel corkscrew clawbot for single cell manipulation **Subrahmanyam Cherukumilli**, F.C. Kirmizitas, D. Rivas, M. Sokolich, S. Das Univ of Delaware, US	
12:40	Development of an enhanced bilateral nanorobotic system using an X3D-based haptic interface for multi-scale manipulation within an SEM environment **Ujjal Dey**, C S Kumar / IIT Kharagpur, IN	

3. Day – July 04:	Parallel technical sessions	14:00 – 16:00
Special session **Room 2**	**From soft materials to soft microrobots:** **Vibrating of soft matters in shape-morphing, sensing, propulsion and medical diagnostics at small scales (II)** Organized & chaired by **Tian Qiu** / German Cancer Research Center + TU Dresden, DE **Hao Zeng** / Tampere Univ, FI	
14:00	Acoustic micromanipulation: From cell patterning to in vivo drug delivery **Zhichao Ma** / Shanghai Jiaotong Univ, CN	
14:20	Multicomponent integration for small scale autonomous swimming robot **Seung Hee Jeong** / Uppsala Univ, SE	
14:40	Vibro-impact capsule robots for lower gastrointestinal screening **Yang Liu** / Univ of Exeter, UK	
15:00	Light controlled plastic wings for passive flight modes **Jianfeng Yang** / Tampere Univ, FI	
15:20	Intelligent photonic materials for actuators and neural networks **Diederik Wiersma** / Univ of Florence, IT	
Special session **Room 3**	**Fabrication, actuation and tracking of magnetic microrobots** Organized & chaired by **Veronika Magdanz** / Univ of Waterloo, CA **Islam S.M. Khalil** / Univ of Twente, NL	
14:00	Magnetic control of small-scale robotics: From individual to collective behavior **Ali Hoshiar** / Univ of Essex, UK	
14:20	Magnetic actuation of small-scale soft robots **Afarin Khabbazian**, M.B. Khamesee, V. Magdanz / Univ of Waterloo, CA	
14:40	Fabrication of soybean oil-based, magnetic, helical milli-screws **Sarah Sparkes**, V. Magdanz / Univ of Waterloo, CA	
15:00	Fin-wave-inspired wireless small-scale soft robot for adaptive amphibious locomotion under single-mode magnetic field **Chen Wang**[a], S. Misra[a, b], V. Kalpathy Venkiteswaran[b] [a]Univ of Groningen, NL; [b]Univ of Twente, NL	
15:20	Real-time tracking and control of mini-robots using magneto-oscillatory localization; **Felix Fischer**[a], M. Jeong[b], T. Qiu[a] [a]German Cancer Research Center, DE; [b]Univ of Stuttgart, DE	

3. Day – July 04:	Parallel technical sessions	14:00 – 16:00
Special session Room 4	**Exploring the dynamics and self-organization of active soft matter** Organized & chaired by **Ho Cheung Shum** / Univ of Hongkong, SAR, CN **Xiaolai Li** / ABIC; Univ of Hongkong, SAR, CN	
14:00	Active transport in coacervate protocells **Tiantian Kong** / Shenzhen Univ, CN	
14:20	Manipulation of microbubbles/droplets driven by the Marangoni effect **Xiaolai Li**/ Advanced Biomed Instrum Centre; Univ of Hongkong, SAR, CN	
14:40	Mechanism, manipulation, and application of the bubble driven Janus micromotor **Xu Zheng** / Institute of mechanics, CAS, CN	
15:00	Interface dynamics driven by bacterial swarm **Song Liu** / Southern Univ. of Science and Technology, CN	
15:20	Cavitation bubble powered micromotors **Binglin Zeng** / Univ of Hongkong, SAR, CN	
15:40	Nature-inspired fluidics **Ho Cheung Shum** / Univ of Hongkong, SAR, CN	
Special session Room 5	**New nanomaterials for electromagnetic interference shielding** Organized & chaired by **Svetlana Jovanovic**/ Vinča Inst of Nuclear Sciences, RS	
14:00	New generation of graphene/polymer-based nanocomposites for electromagnetic shielding devices; **Marija Radoicic**[a], W. Saeed[b], M. Yasir[b], S. Jovanovic[a] [a]Vinča Inst of Nuclear Sciences, RS; [b]Univ of Oldenburg, DE	
14:20	Microwave electromagnetic shielding of free-standing composites of silver nanowires sandwiched between graphene oxide or reduced graphene oxide **Dejan Kepic**[a], A. Pantic[a], W. Saeed[b], M. Yasir[b], S. Jovanovic[a] [a]Vinča Inst of Nuclear Sciences, RS; [b]Univ of Oldenburg, DE	
14:40	Carbon-based nanomaterials in electromagnetic interference shielding: Graphene oxide, reduced graphene oxide, electrochemically exfoliated graphene & biomass-derivated graphene; **Svetlana Jovanovic**[a], M. Yasir[b], W. Saeed[b], Spanopoulos[c], Z. Syrgiannis[d], M. Milenkovic[a], Dejan Kepic[a] / [a]Vinča Inst of Nuclear Sciences, RS; [b]Univ Oldenburg, DE; [c]Univ of South Florida, US; [d]Northwestern Univ Evanston, US	
15:00	Microwave imaging with open-ended coaxial probes; **Kamel Haddadi**[a], C. Lenoir[a], M. Sebbache[a], C.-H. Lee[b], P. Burke[b] / [a]Univ of Lille, FR; [b]Univ of California Irvine, US	
15:20	Near-field SMM simulation using CST microwave studio **Kamel Haddadi**[a], A. Vangheluwe[a], J. Hoffmann[b] / [a]Univ of Lille, FR; [b]METAS, CH	

3. Day – July 04:	Parallel technical sessions	14:00 – 16:00
Special session **Room 6**	**Manipulation of micro- and nanomaterials and their applications** Organized & chaired by **Xian Wang** / Queen's Univ, CA **James L. Mead** / Univ of Oldenburg, DE	
14:00	Micro/nano materials for tissue mechanical measurement **Xian Wang** / Queen's Univ, CA	
14:20	Adhesive force sensing via the optical microscope readout of nanowires **James L. Mead** / Univ of Oldenburg, DE	
14:40	Robotic AI-based fiber threading **Houari Bettahar**, Q. Zhou / Aalto Univ, FI	
15:00	Magnetically actuated soft robots for minimally invasive surgery **Onaizah Onaizah** / McMaster Univ, CA	
15:20	Environmental-dependent adhesion energy of nanobelt bridges formed using optical microscope-assisted nanomanipulation; **Liang Ma**[a], J.L. Mead[a], S. Fatikow[a], S. Wang[b] / [a]Univ of Oldenburg, DE; [b]Central South Univ, CN	
Regular session **Room 8**	**Micro/Nano robots (II)** Chair: Seungmin Noh / DGIST, KR	
14:00	Microrobots controlled by optical tweezers for medical applications **Alaa M. Ali**[a], J.A.I. Martinez[a], G. Ulliac[a], E. Gerena[b], N. Inacio[b], S. Haliyo[b], A. Mohand-Ousaid[a], M. Kadic[a], A. Bolopion[a] / [a]FEMTO-ST, FR; [b]Sorbonne Univ, FR	
14:20	Micrometer-sized reverse vesicle with DNA membrane in oil H. Kariya, H. Matsubayashi T., **Shin-Ichiro Nomura** / Tohoku Univ, JP	
14:40	Biohybrid microrobots for deep tissue penetration of drug using jellyfish stinging capsules; **Sinwook Park**[a], N. Barak, T. Lotan, G. Yossifon[a] [a]Tel Aviv Univ, IL; [b]Univ of Haifa, IL	
15:00	Design, fabrication, and characterization of a helical multi-material microrobot with a detachable payload (HMMR-DP) Y. Yang, L. Tan, **Aaron Davis**, D. Cappelleri / Purdue Univ, US	
15:20	Development of cell-based microrobot for targeted cell therapy **Seungmin Noh** / Daegu Gyeongbuk Inst of Sci & Tech (DGIST), KR	
15:40	Photodriven self-excited hydrogel scillators **Chen Xuan**/ Xi'an Jiaotong-Liverpool Univ, CN	

3. Day – July 04:	Parallel technical sessions	14:00 – 16:00
Regular session	**Automation (III)**	
Room 1	Chair: Cindy Harnett / Univ of Louisville, US	
14:00	Reproducible fabrication of liquid metal droplet with FIB sputtering for contact angle measurement in SEM; **Yuning Lei**, S. Fatikow/ Univ of Oldenburg, DE	
14:20	Human sperm detection and tracking using event-based cameras and unsupervised learning; **Ferhat Sadak**[a], E. Gerena[b], C. Dupont[b], R. Lévy[b], S. Haliyo[b] [a]Bartin Univ, TR; [b]Sorbonne Univ, FR	
14:40	Toward automated formation of composite micro-structures using holographic optical tweezers **Tommy Zhang**, N. Werner, A.G. Banerjee/ Univ of Washington, US	
15:00	Bistability in magnetic nanorobots **Jyotiprakash Behera**, A. Ghosh / IIS Bangalore, IN	
15:20	High speed release dynamics of microfabricated hooks for fiber and wire grasping J. Beharic, **Cindy Harnett** / Univ of Louisville, US	
Regular session	**Design and fabrication (III)**	
Room 7	Chair: Wissem Haouas / FEMTO-ST, FR	
14:00	Modeling framework using bar-and-hinge model for small scale magnetic origami devices **Sam Tijhuis**, V. Kalpathy Venkiteswaran / Univ of Twente, NL	
14:20	Towards multi-material topology optimization: Application to piezoelectric structures **Peter Kipkemoi Rono**[a], A. Homayouni-Amlashi[a], J.B. Byiringiro[b], M. Gauthier[a], A. Mohand-Ousaid[a] / [a]FEMTO-ST, FR; [b]Dedan Kimathi Univ of Tech, KE	
14:40	3D bioprinting soft microrobotic "niches" for stem cell delivery **Cindy Cheng**[a], S. Ganguly, H. Shahsavan, S. Tang [a]Laurel Heights School, US; [b]Univ of Waterloo, CA	
15:00	Quantifying squeeze film damping in four-leaf clover-coupled micro-resonators: Comprehensive study under variable vacuum degrees **Shujun Ma**, D. Wang, D. Wang/ Northeastern Univ, CN	
15:20	Fully 3D-printed 4 DoF soft pneumatic hybrid robot C. Bricard, **Wissem Haouas**, P. Roux, K. Rabenorosoa/ FEMTO-ST, FR	