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November 23 (Mon)
Location: Noyori Conference Hall

Opening Remarks

Conference Room 1

Chairperson: *Fumihito Arai, Nagoya University*

09:00-9:20 *Prof. Toshio Fukuda, Meijo University, Japan (Honorary Chair)*
Prof. Tatsuo Arai, Osaka University, Japan (General Co-Chairs)
Prof. Fumihito Arai, Nagoya University, Japan (General Co-Chair)
Prof. Jun Ota, The University of Tokyo, Japan (General Co-Chair)

Plenary Talk

Conference Room 1

Chairperson: *Fumihito Arai, Nagoya University*

09:20-10:10 Plenary Talk 1
Polymer-Based Graphene Biosensors for Biomedical Analysis
Prof. Tianhong Cui, Department of Mechanical Engineering, University of Minnesota, USA

10:10-10:20 ***Coffee Break***

Chairperson: *Minoru Seki, Chiba University*

10:20-11:10 Plenary Talk 2
Cellular Hydrogel Biopapers: From 3D Cell Culture To Microfluidic Assays
Prof. Je Kyun Park, Department of Bio and Brain Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea

Chairperson: *Makoto Kaneko, Osaka University*

11:10-12:00 Plenary Talk 3
Mechanobio-Materials Manipulating Motility and Functions of Stem Cells
Prof. Satoru Kidoaki, Institute for Materials Chemistry and Engineering,

Kyushu University, Japan

12:00-13:00 **Lunch**

Poster session I**Poster Area(1st floor)**

Chairperson: *Masahiro Ohka, Nagoya University*
Seiichi Hata, Nagoya University
Yasuhisa Hasegawai, Nagoya University
Yasushi Mae, Osaka University

13:00-14:00

- MP-1 Research on and Education for Navigation Control of an Exploration Rover with Microwave Doppler Sensors
Masahiro Isogai, Yasuhiko Nawa and Toru Iijima, Aichi University of Technology
- MP-2 The Viscosity of the Mixture of Water / 2,6-dimethylpyridine / NaBPh₄ at Lamellar Phase and Disordered Phase
Hiroaki Maki, Koichiro Sadakane, Takahiro Kenmotsu, Naomichi Ito and Kenichi Yoshikawa, Doshisha University
- MP-3 Study on Diffusion Process of Nanoparticles in a PDMS Layer using SPT Technique
Ryo Iwao, Yu Matsuda, Hiroki Yamaguchi and Tomohide Niimi, Nagoya University
- MP-4 Vectorial Flow of Phase-separated Droplets in a Mixture of Water/Organic Solvent Generated by a Focused Laser
Shuto Kimura, Takehiro Minami, Koichiro Sadakane and Takahiro Kenmotsu, Doshisha University
- MP-5 Crystal structure induced by mixture of Water/Organic/Antagonistic Salts
Naomichi Ito, Koichiro Sadakane, Hiroaki Maki and Takahiro Kenmotsu, Doshisha University
- MP-6 Enhancement of Communication Between Persons and Robots Through Tri-axial Tactile Data
Yuya Oizumi, Kenji Sugiman and Masahiro Ohka, Nagoya University
- MP-7 A Study of Optimum Stimulus Condition for Inducing Kinesthetic Illusion
Yuki Kato, Koichi Akahori, Shunpei Yoshida, Masakazu Honda and Masahiro Ohka, Nagoya University
- MP-8 Design of a Positioning Device using Piezo Element and Investigation of a Simple Compensation Method
Kazuto Miyawaki, Kazuhiko Chiba and Hiromi Isobe, National Institute of Technology, Akita College

- MP-9 Proposal of Hearing Aid System for Unilateral Deafness Patients
Katsutoshi Oe, Takuya Nakano, Masahito Iwae and Kohji Kariya, Daiichi Institute of Technology
- MP-10 Adaptive Impedance Control with Variable Stiffness for Motion and Force Tracking System
Yanling Pei, Goro Obinata, YoungWoo Kim and Jaeryoung Lee, Chubu University
- MP-11 Development of a Measurement and Real-time Display System for Kinematics and Muscle Synergy of Gait.
Arito Yozu, Tetsuro Funato, Dai Owaki and Nobuhiko Haga, The University of Tokyo Hospital
- MP-12 Miniaturization of Wide-range QCR Load Sensor for Biosignal Sensing
Yuichi Murozaki, Shinya Sakuma and Fumihito Arai, Nagoya University
- MP-13 Dynamics-based Virtual Holonomic Constraint for PDAC Running
Taisuke Kobayashi, Tadayoshi Aoyama, Yasuhisa Hasegawa, Kosuke Sekiyama and Toshio Fukuda, Nagoya University
- MP-14 Effect of Visual Condition on Brain Activity and Motion Accuracy during Cane Usage
Yuji Ohmura, Naoki Arizono, Shiro Yano and Toshiyuki Kondo, International University of Health and Welfare
- MP-15 A Shooting Robot based on the Minimum Actuator / Sensor Realization
Mizuho Kawakami, Makoto Kaneko and Kouhei Ohnishi, Osaka University
- MP-16 Effect of Olfactory Stimulus on Simultaneous Learning of Conflicting Motor Tasks
Daichi Misawa, Toshiyuki Kondo and Shiro Yano, Tokyo University of Agriculture and Technology
- MP-17 Thin-film Thermoelectric Generator with Ball Lens for using Near-infrared Solar Energy
Yoshitaka Ito, Mizue Mizoshiri, Masashi Mikami, Tasuku Kondou, Junpei Sakurai and Seiichi Hata, Nagoya University
- MP-18 A Component-Based Framework for Molecular Robotic Development as Smart Drug System
Wibowo Adi and Kosuke Sekiyama, Nagoya University
- MP-19 Combinatorial Searching System for Electrolysis Catalytic Materials
Masashi Miyamoto, Akira Suzuki, Mizue Mizoshiri, Junpei Sakurai and Seiichi Hata, Nagoya University

MP-20 Fabrication of micro flexible electrode to Stimulate Peripheral Nerve for Rodent Model

Masato Sano, Masahiro Nakajima, Masaru Takeuchi, Yasuhisa Hasegawa, Shigeru Kurimoto, Tomonori Nakano, Hiroaki Shinkai and Hitoshi Hirata, Nagoya University

MP-21 Unconstraint Measurement of Vital Information Using Near-Infrared Light Sensor

Keisuke Takagi, Hisataka Maruyama and Fumihito Arai, Nagoya University

MP-22 Development of Muscle Biopsy Needle for Extracting Fibrous Muscular Tissue

Makoto Nokata and Akari Ushida, Ritsumeikan University

14:00-14:05 ***Coffee Break***

***Session MPI-1: (Organized Session) : Functional Interfaces in Micro-nanofluidics
Conference Room 1***

- Chairperson: *Yoko Yamanishi, Shibaura Institute of Technology
Shintaro Itoh, Nagoya University*
- 14:05-14:20 *Surface Interaction of Microbubbles and Applications of
Hydrogen-Bubble Method for Cleaning and Separation
Surface Interaction of Microbubbles and Applications of
Hydrogen-Bubble Method for Cleaning and Separation*
- 14:20-14:35 *Morphology Control of Protein Microparticles Produced Using
Microfluidic Droplets in a Non-equilibrium State
Masumi Yamada, Kazuma Takahashi, Ayaka Hori, Sari Sugaya and
Minoru Seki, Chiba University*
- 14:35-14:50 *Multiple-reagent Layer Laden High-speed Micro-bubbles in Extended
Two-dimensional Microchip
Yohei Hamano, Takuya Kambayashi and Yoko Yamanishi, Shibaura
Institute of Technology*
- 14:50-15:05 *Reduction of Viscous Friction by Photoaligned Liquid Crystals at
Interface
Shintaro Itoh, Yuichi Imura, Kenji Fukuzawa and Hedong Zhang, Nagoya
University*
- 15:05-15:20 *Expansion of a Linear Range of the Ion-concentration Measurement
System using Microfluidic Device with ISFET Sensors
Masashi Nobukuni, Akihiko Wakuda, Tsuyoshi Miura and Akira Yamada,
Aichi Institute of Technology*
- 15:20-15:35 *Analysis of Dynamic Cell Movement under AC Electric Field in 3D
Multi-layered Microchannel
Masashi Nobukuni, Akihiko Wakuda, Tsuyoshi Miura and Akira Yamada,
Aichi Institute of Technology*

Session MP2-1: (Organized Session) : Robot System Control and Its Software
Conference Room 2

- Chairperson: *Jaeryoung Lee, Chubu University*
Nichoas Melo, Federal University of Rio Grande do Norte (UFRN)
- 14:05-14:20 Evaluating Emotional Influence in communicating with a robot
Ryo Suzuki, Jaeryoung Lee, Goro Obinata, Takenori Suzuki and Kotaro Matsumoto, Chubu University
- 14:20-14:35 Experimental Study on Bilateral Control Method by Force and Position Fusion
Takuya Uesugi, Seisyou Sakoda, Yuusuke Hirama, Woong Choi, Youichi Shigematsu and Nobuto Hirakoso, National Institute of Technology, Gunma College
- 14:35-14:50 Influence of Different Gait Trajectories in an Lower Limb Active Orthosis Performance Based on User Metabolic Cost and Motors Usage
Nicholas de Bastos Melo, Pablo Javier Alsina, Carlos E.T. Dórea and Kassio J. Da Silva Eugenio, Federal University of Rio Grande do Norte
- 14:50-15:05 Interactive Educational Material for Children with ASD
Jaeryoung Lee and Goro Obinata, Chubu University
- 15:05-15:20 Effectiveness and Service Quality of Robot Museum through Visitors Experience: A Case Study of RoboLife Museum in South Korea
Min-Gyu Kim, Hyewon Lee, Jaeryoung Lee, Sonya S. Kwak and Younghwan Joo, Korea Institute of Robot and Convergence
- 15:20-15:35 Ortholeg 2.0 – A New Design for a Lower Limb Active Orthosis
Michal Gloger, Pablo J. Alsina and Nicholas B. Melo, Technical University of Ostrava
- 15:35-15:45 ***Coffee Break***

***Session MP1-2: (Organized Session) : Young Researchers in Micro-Nano Systems
Conference Room 1***

- Chairperson: *Hisataka Maruyama, Nagoya University
Yuta Nakashima, Kumamoto University*
- 15:45-16:00 Functional Vessel Model Having Temperature Indicator for Surgical Simulator
Hisataka Maruyama, Takafumi Watanabe, Takeshi Hayakawa, Tomohisa Tanaka, Taisuke Masuda and Fumihito Arai, Nagoya University
- 16:00-16:15 Cell Adhesion Control of Optically-Driven Microtool Using Thermo-Sensitive Gel and Laser Heating
Maki Kikukawa, Takeshi Hayakawa, Hisataka Maruyama and Fumihito Arai, Nagoya University
- 16:15-16:30 Development and Characterization of Dielectrophoretic Probe Array for Non-invasive Massively Parallel Manipulation of Single Cells
Ryosaku Sakamoto, Yuya Matsuse, Moeto Nagai and Takayuki Shibata, Toyohashi University of Technology
- 16:30-16:45 Measurement of Cell Mechanical Properties by Cell Compression Microdevice
Tairo Yokokura, Yuta Nakashima, Yukihiro Yonemoto, Yuki Hikichi and Yoshitaka Nakanishi, Kumamoto University
- 16:45-17:00 Influence of Droplet Size to Cell Viability in Flash Freezing Method
Masato Shinose, Akira Ueno, Shuichi Yamaguchi and Yoshitake Akiyama, Shinshu University

Session MP2-2 (Organized Session): Intelligent Robot Control**Conference Room 2**

- Chairperson: *Kenichi Ohara, Meijo University
Tomohito Takubo, Osaka City University*
- 15:45-16:00 Footstep Planning for Tripod Gait in Obstacle Environment
Yuya Atarashi, Tomohito Takubo and Atsushi Ueno, Osaka City University
- 16:00-16:15 Automatic Generation for Image Information Added Map Considering the Surface Shape
Hirofumi Takaishi, Tomohito Takubo and Atsushi Ueno, Osaka City University
- 16:15-16:30 Development of Multifunctional Robot Hand for Visual Inspection Equipped with 3D Force Sensing
Ryo Akiyama, Kazuto Kamiyama, Masaru Kojima, Mitsuhiro Horade, Yasushi Mae and Tatsuo Arai, Osaka University
- 16:30-16:45 Algal Growth Rate Modelling and Prediction Optimization Using Incorporation of MLP and PSO Algorithm
Wisnu Jatmiko, Dwi M J Purnomo, Machmud Alhamidi, Ari Wibisono, Hanif Wisesa, Petrus Mursanto, Anom Bowolaksono, Dian Hendrayanti and Fajar Addana, Universitas Indonesia
- 16:45-17:00 Manzai Robot System with Scalability based on Distributed Software Components
Tomohiro Umetani, Satoshi Aoki, Kazuhiro Akiyama, Ryo Mashimo, Tatsuya Kitamura and Akiyo Nadamoto, Konan University

17:00-17:05

Coffee Break**Plenary Talk**Chairperson: *Susumu Sugiyama, Ritsumeikan University*

17:05-17:55

Plenary Talk 4

MEMS Sensors and Robots

Prof. Yutaka Nonomura, Department of Mechatronics Engineering Faculty of Science and Technology, Meijo University, Japan

18:00-19:30

Beer Party

November 24 (Tue)
Location: Noyori Conference Hall

Session TA1-1: (Organized Session) : Bio-Assembler -1

Conference Room 1

- Chairperson: *Yasushi Mae, Osaka University*
Itsuki Ajiokai, Tokyo Medical and Dental University
- 09:00-09:15 3D-Cell Assembly by Control of Cell Surfaces
Michiya Matsusaki and Mitsuru Akashi, Osaka University
- 09:15-09:30 Highly Dynamic Self-Organizing SMG Morphogenesis in 3D Culture
Mahmoud Farahat, Gulsan Ara Sathi, Hiroaki Taketa, Masamitsu Oshima, Takuo Kuboki and Takuya Matsumoto, Okayama University
- 09:30-09:45 A Method to Reorganize the Bone Marrow-Like Tissue with Suspension of Bone Marrow Cells
Kanae Sayo, Shigehisa Aoki and Nobuhiko Kojima, Yokohama City University
- 09:45-10:00 Development of a Uniaxial Mechanical Loading Device to Evaluate Osteogenic Differentiation of Stem Cells Seeded on a Scaffold Material
Masakazu Yamada, Takahisa Anada, Taisuke Masuda, Teruko Takano-Yamamoto and Osamu Suzuki, Tohoku University
- 10:00-10:15 Biological and Biomaterial Engineering Approaches for Injured Brain Regeneration
Itsuki Ajioka, Tokyo Medical and Dental University (TMDU)

Session TA2-1: (Organized Session) : Bio-manipulation and Its Applications-1
Conference Room 2

Chairperson: *Masahiro Nakajima, Nagoya University*
Futoshi Iwata, Shizuoka University

09:00-09:15 Inducing Blood Vessel Formation Using Cubic Eggshell with Patterned Surface
Wenjing Huang, Fumihito Arai and Tomohiro Kawahara, Kyushu Institute of Technology

09:15-09:30 Measurement of Shear Force and Adhesion Force of a Single Adhesion Cell using Atomic Force Microscopy with a Self-sensitive Cantilever
Shigetaka Hashimoto and Futoshi Iwata, Shizuoka University

09:30-09:45 Diffusion of Particles Adhering to Liposomes
Kazuki Shigyou, Ken H. Nagai and Tsutomu Hamada, Japan Advanced Institute of Science and Technology

09:45-10:00 Behavior of a Single Muscle Cell Bioactuator on a Biocompatible Fiber String Structure
Kohta Ogawa, Kaoru Uesugi and Keisuke Morishima, Osaka University

10:00-10:15 In situ Nanomanipulation with 3D SEM-CT Observation inside Environmental SEM
Masahiro Nakajima, Masaru Takeuchi, Toshio Fukuda, Yasuhisa Hasegawa and Qiang Huang, Nagoya University

10:15-10:25 ***Coffee Break***

Session TAI-2: (Organized Session) :Bio-Assembler -2**ConferenceRoom 1**

- Chairperson: *Masaru Kojima, Osaka University
Shinji Sugiura, AIST*
- 10:25-10:40 Stem Cell Separation using Thermoresponsive Copolymer Brushes having Cationic Charge
Kenichi Nagase, Yuri Hatakeyama, Tatsuya Shimizu, Katsuhisa Matsuura, Masayuki Yamato, Naoya Takeda and Teruo Okano, Tokyo Women's Medical University
- 10:40-10:55 Micropatterned Three-Dimensional Culture in Click-Crosslinkable and Photodegradable Gelatin Hydrogels
Masato Tamura, Fumiki Yanagawa, Shinji Sugiura, Toshiyuki Takagi, Kimio Sumaru and Toshiyuki Kanamori, National Institute of Advanced Industrial Science and Technology (AIST)
- 10:55-11:10 Cell Adhesion Control using Microstructured Meshes Induces Self-Assembly-Mediated Organoid Formation by Human iPS Cells
Kennedy O. Okeyo, Osamu Kurosawa, Satoshi Yamazaki, Hidehiro Oana, Hidetoshi Kotera and Masao Washizu, The University of Tokyo
- 11:10-11:25 A new Method for Fabricating Cell-embedded ECM Capsules and ECM-loaded Spheroids
Fumiya Tao and Nobuhiko Kojima, Yokohama City University
- 11:25-11:40 Fabrication of Hepatic Lobule Model based on Electrodeposition
Zeyang Liu, Masaru Takeuchi, Masahiro Nakajima, Toshio Fukuda, Yasuhisa Hasegawa and Qiang Huang, Nagoya University
- 11:40-11:55 Automatic stage construction for the support of micro object grasping
Kotaro Yamamoto, Masaru Kojima, Mitsuhiro Horade, Kazuto Kamiyama, Yasushi Mae and Tatsuo Arai, Osaka University

Session TA2-2: (Organized Session) : Human Assistive Technologies

Conference Room 2

- Chairperson: *Jian Huang, Huazhong University of Science and Technology*
Takahiro Ikeda, Meijo University
- 10:25-10:40 Indoor Localization with Incomplete Observation using Set-membership Filter
Yuan Wang and Jian Huang, Huazhong University of Science and Technology
- 10:40-10:55 Automatic Fetal Head Approximation Using Particle Swarm Optimization Based Gaussian Elliptical Path
M. Anwar Ma'sum, N. Rahmah, H. R. Sanabila, H. A. Wisesa and W. Jatmiko, Universitas Indonesia
- 10:55-11:10 Japanese Syllabary Identification Using Myoelectric Potential of Neck Muscles
Kentaro Suzuki and Yasuhisa Hasegawa, University of Tsukuba
- 11:10-11:25 Wearable Input Device by Fingertip Motion
Osamu Asai and Yasuhisa Hasegawa, University of Tsukuba
- 11:25-11:40 Pilot Study on Control of One DoF Manipulator on Quadcopter for Hammering Check
Takahiro Ikeda, Kenichi Ohara, Akihiko Ichikawa and Toshio Fukuda, Meijo University
- 11:55-12:55 **Lunch**

Poster session II

Poster Area(1st floor)

Chairperson *Masahiro Ohka, Nagoya University*
Seiichi Hata, Nagoya University
Yasushi Mae, Nagoya University
Qi An, The University of Tokyo

12:55-13:55

- TP-01 Construction of Engineered Liver Cancer Tissues with Multichannel Collagen Gel
Kazuya Furusawa, Masayuki Tsuchida and Saki Yahata, Hokkaido University
- TP-02 Fabrication of Functional Liver Tissues by Cell Sheet-based Bioassembler Technologies
Jun Kobayashi, Yoshikatsu Akiyama, Masayuki Yamato and Teruo Okano, Tokyo Women's Medical University
- TP-03 Generation of Biped Stance Motion in Consideration of Neurological Time Delay through Forward Dynamics Simulation
Ping Jiang, Ryosuke Chiba, Kaoru Takakusaki and Jun Ota, The University of Tokyo
- TP-04 Investigation of Oxygen Consumption for Micropatterns of Contractile Myotubes by Scanning Electrochemical Microscopy
Yuki Igaki, Fumio Mizutani and Tomoyuki Yasukawa, University of Hyogo
- TP-05 One-Step Microfluidic Spinning of Collagen Microfibers and Their Application to Cell Cultivation
Sakiko Enomoto, Yuya Yajima, Yuki Watabe, Masumi Yamada, Kazuya Furusawa and Minoru Seki, Chiba University
- TP-06 Estimation of Stress During Car Race with Factor Analysis
Daisuke Tomoi, Wen Wen, Hiroshi Yamakawa, Shunsuke Hamasaki, Kaoru Takakusaki, Qi An, Yusuke Tamura, Atsushi Yamashita and Hajime Asama, The University of Tokyo
- TP-07 Observation of the Permeation on the Subcutaneous during the Administration of Drug and Design of a Needle
Kento Kawata, Kazuyoshi Tsuchiya, Kagemasa Kajiwara and Minoru Kimura, Tokai University
- TP-08 A New Method for Continuous Sorting of Cells/Particles Using Lattice-shaped Dual-depth Microchannels
Takuma Yanai, Masumi Yamada, Wataru Seko and Minoru Seki, Chiba University

- TP-09 Transportation of cm-sized Solid Substrate by Laser
K. Koyoshi, K. Sadakane, T. Kenmotsu and K. Yoshikawa, Doshisha University
- TP-10 Bayesian Model of the Sense of Agency in Normal Subjects
Shiro Yano, Toshiyuki Kondo, Yuichi Yamashita, Tsukasa Okimura, Hiroshi Imamizu and Takaki Maeda, Tokyo University of Agriculture and Technology
- TP-11 On-chip Monitoring of Megakaryocytes in Shear Flow environment
Kazuya Tashiro, Shinya Sakuma, Keitaro Ito, Sou Nakamura, Koji Eto, Toshio Fukuda and Fumihito Arai, Nagoya University
- TP-12 Auditory Foot: A Novel Auditory Feedback System Regarding Kinesthesia
Dai Owaki, Yusuke Sekiguchi, Akio Ishiguro and Shin-Ichi Izumi, Tohoku University
- TP-13 Stiff consideration of a micro painless needle with polygon section
Hideaki Kimoto and Kazuyoshi Tsuchiya, Tokai University
- TP-14 Search of the Best Slot Rate of the Slot Addition Type PZT Actuator in a Hollow Tube Micro Pump
Hiromasa Suzuki, Kazuyoshi Tsuchiya and Yasutomo Uetsuji, Tokai University
- TP-15 A Questionnaire-Based Survey Therapist's Response on Emotions Gestures using Humanoid Robot for Autism
Mohd Azfar Miskam, Syamimi Shamsuddin, Hanafiah Yussof, Ilmi Mohd Ariffin and Abdul Rahman Omar, Universiti Teknologi MARA
- TP-16 Mechanical Characterization of Floating Cell using Whole Chip Deformation Mechanism
Keitaro Ito, Shinya Sakuma, Makoto Kaneko and Fumihito Arai, Nagoya University
- TP-17 Automated Platform For Rare Cell Isolation And Pick-up Using Air-liquid Interface Control
Woneui Song, Taisuke Masuda, Hayao Nakanishi and Fumihito Arai, Nagoya University
- TP-18 Ellipse Detection on Embryo Image Using Modification of Arc Particle Swarm Optimization (ArcPSO) Based Arc Segment
Arie Rachmad Syulistyo, Hanif Arief Wisesa, Aprinaldi, Anom Bowolaksono, Budi Wiweko and Wisnu Jatmiko, Universitas Indonesia

- TP-19 Evaluating Effect of Sense of Ownership and Sense of Agency on Body Representation Change of Human Upper Limb
Shunsuke Hamasaki, Qi An, Wen Wen, Yusuke Tamura, Hiroshi Yamakawa, Atsushi Yamashita, Hajime Asama, Satoshi Shibuya and Yukari Ohki, The University of Tokyo
- TP-20 Automated Construction System for Cellular Tissue Based on Laminar Flow Fibers
Masaru Kojima, Mitsuhiro Horade, Akira Fukushima, Kenichi Ohara, Sinji Sakai, Kazuto Kamiyama, Yasushi Mae and Tatsuo Arai, Osaka University
- TP-21 Origami Microfluidics Integrated with Gold Micropatterns
Fumiaki Tomoike, Florian Larramendy and Shoji Takeuchi, The University of Tokyo
- TP-22 On-chip Fabrication of Bio-degradable Microstructures
Ryota Sakakibara, Masaru Takeuchi, Akihiko Ichikawa, Kenichi Ohara, Masahiro Nakajima, Yasuhisa Hasegawa and Toshio Fukuda, Meijo University

13:55-14:00 **Coffee Break**

Plenary Talk

Conference Room 1

Chairperson: *Ota Jun, The University of Tokyo*

14:00-14:50 Plenary Talk 5
What Role Motion Plays in Human-robot Interaction? Understanding Non-verbal Communication in HRI
Prof. Gentiane Venture, Department of Mechanical systems Engineering, Tokyo University of Agriculture and Technology, Japan

Chairperson: *Osamu Suzuki, Tohoku University*

14:50-15:40 Plenary Talk 6
Engineering Biogenesis of Human Platelet on Chip System
Prof. Koji Eto, Center for iPS Cells Research and Application, Kyoto University, Japan

15:40-15:45 **Coffee Break**

Session Session TP1-1: (Organized Session) : Bio-manipulation and Its Applications -2

Conference Room 1

- Chairperson: *Masaru Takeuchi, Nagoya University*
Shinji Deguchi, Nagoya Institute of Technology
- 15:45-16:00 Microchannels Fabrication by Alginate Fiber Molding Method
Masaru Takeuchi, Masahiro Nakajima, Toshio Fukuda and Yasuhisa Hasegawa, Nagoya University
- 16:00-16:15 Gene Delivery to Animal and Plant Cells using a Nano-needle Array-shaped Photooxidative Cell Membrane Perforator
Yukihiro Akiyama, Shunsuke Sakai, Yoshiyuki Suzuki, Shuhei Kashiwazaki, Shogo Unuma, Kei Innomata, Hiroetsu Wabiko and Takashi K. Saito, Akita Prefectural University
- 16:15-16:30 Molecular Dynamics of Orientation Controlled Muscle Tissue on a Chip
Yuki Okino, Toshifumi Asano and Keisuke Morishima, Osaka University
- 16:30-16:45 Photocontrollable Fusion of Lipid Vesicles
Y. Suzuki, K. Shigyo, K. H. Nagai, A. Zinchenko and T. Hamada, Japan Advanced Institute of Science and Technology
- 16:45-17:00 Characterizing the Biophysical Properties of Individual Actin Stress Fibers
Shinji Deguchi and Tsubasa S. Matsui, Nagoya Institute of Technology

Session TP2-1:(Organized Session): Embodied-Brain Systems Science

Conference Room 2

- Chairperson: *Shinya Aoi, Kyoto University*
Toshiyuki Kondo, Tokyo University of Agriculture and Technology
- 15:45-16:00 Modelling Methodology in Embodied-brain Systems Science
Jun Ota, Hajime Asama, Toshiyuki Kondo, Hirokazu Tanaka, Shiro Yano, Jun Izawa, Shinya Aoi and Ryosuke Chiba, The University of Tokyo
- 16:00-16:15 A computational Approach to Detect a Meta-learning of the Cortical Basis Function during a Motor Adaptation Study.
Daichi Sasaki, Jun Izawa and Masahiko Morita, University of Tsukuba

- 16:15-16:30 Improvement of Operability of Extra Robotic Thumb Using Tactile Feedback by Electrical Stimulation
Masafumi Sobajima, Yuichiro Sato, Wang Xufeng and Yasuhisa Hasegawa, Nagoya University
- 16:30-16:45 Dynamical model of the Body Sway of Bipedally Standing Rat with Rat with Olivo-cerebellar Dysfunction
Sekiya Noro, Tetsuro Funato, Yota Sato, Yamato Sato, Dai Yanagihara, Shinya Aoi and Kazuo Tsuchiya, The University of Electro-Communications
- 16:45-17:00 Kinematic Analysis of Low Dimensional Structure in Walking and Running
Shuntaro Ishiduka, Hiroko Oshima, Shinya Aoi, Tetsuro Funato, Nozomi Tomita, Nobutaka Tsujiuchi, Akihito Ito and Kazuo Tsuchiya, Doshisha University
- 17:00-17:10 ***Coffee Break***

Session TP1-2: (Organized Session) : Bio Assembler -3

Conference Room 1

- Chairperson: *Kenichi Ohara, Meijo University*
Chia-Hung Dylan Tsai, Osaka University
- 17:10-17:25 Frequency Responses of On-chip Pressure Sensor with Different Size of Deformation Chamber
Chia-Hung Dylan Tsai and Makoto Kaneko, Osaka University
- 17:25-17:40 Mechanical Measurement of in vitro Tissue by Atomic Force Microscopy
Ryosuke Tanaka and Takaharu Okajima, Hokkaido University
- 17:40-17:55 Development of High Speed Measurement System for Cell-scaffold Interaction
Yu Hirano, Masaru Kojima, Mitsuhiro Horade, Kazuto Kamiyama, Yasushi Mae and Tatsuo Arai, Osaka University
- 17:55-18:10 A method to Measure Displacement of Microscale Structures with High Resolution and Large Stroke for Cellular Characterization
Hiroataka Sugiura, Shinya Sakuma, Makoto Kaneko and Fumihito Arai, Nagoya University
- 18:10-18:25 Cellular Force Measurement by Load Sensor Using Quartz Crystal Resonator
Ayaka Sato, Shinya Sakuma, Kou Nakahara, Yuichi Murozaki and Fumihito Arai, Nagoya University

Session TP2-2: Cognitive Robotics

Conference Room 2

Chairperson: *Naoyuki Kubota, Tokyo Metropolitan University*
Hiroyuki Masuta, Toyama Prefectural University

17:10-17:25 Robot Interaction for Driving Support in Micro Electric Vehicle
Hiroyuki Masuta, Yoshikazu Okajima, Masatoshi Okumura, Tatsuo Motoyoshi, Ken'ichi Koyanagi, Toru Oshima and Eiichi Takayama, Toyama Prefectural University

17:25-17:40 Human Behavior Modeling for Multimodal Interaction with Robot Partner
Takenori Obo, Loo Chu Kiong and Naoyuki Kubota, University of Malaya

17:40-17:55 Gaze Estimation Driven Solution for Interacting Children with ASD
Haibin Cai, Xiaolong Zhou, Hui Yu and Honghai Liu, University of Portsmouth

18:10-18:25 Content-based Conversation for Robot Partners Based on Life Hub
Jinseok Woo, Chiaki Kasuya and Naoyuki Kubota, Tokyo Metropolitan University

18:35-20:35 **Reception Party** **Universal Club**

November 25 (Wed)
Location: Noyori Conference Hall

***Session WA1-1: (Organized Session) : Young Researchers in Biomedical Engineering
Conference Room 1***

- Chairperson: *Taisuke Masuda, Nagoya University
Akihiko Ichikawa, Meijo University*
- 09:00-09:15 Mechanical Characterization of Oocyte Using an Opened Microchannel Environment
Kou Nakahara, Shinya Sakuma, Takeshi Hayakawa and Fumihito Arai, Nagoya University
- 09:15-09:30 Mechanical Characterization of a Single Synechocystis sp. PCC 6803
Takayuki Hasegawa, Shinya Sakuma, Kei Nanatani, Nobuyuki Uozumi and Fumihito Arai, Nagoya University
- 09:30-09:45 Human Sperm Tracking using Particle Swarm Optimization combined with Smoothing Stochastic Sampling on Low Frame Rate Video
Aprinaldi, Grafika Jati, Alexander A S Gunawan, Anom Bowolaksono, Silvia Werdhy Lestari and Wisnu Jatmiko, Universitas Indonesia
- 09:45-10:00 Local Melting of Hydrogel for Microchannels Fabrication in Cell Structures
Tomoyuki Oya, Masaru Takeuchi, Akihiko Ichikawa, Kenichi Ohara, Masahiro Nakajima, Yasuhisa Hasegawa and Toshio Fukuda, Meijo University
- 10:00-10:15 Evaluation System for Mechanobiology of Three-dimensional Tissue Multilayered In Vitro
Kaoru Uesugi, Akihiro Nishiguchi, Michiya Matsusaki, Mitsuru Akashi and Keisuke Morishima, Osaka University

Session WA2-1: Robotics and Mechatronics

Conference Room 2

- Chairperson: *Kosuke Sekiyama, Nagoya University*
Takahiro Ikeda, Meijo University
- 09:00-09:15 Vision Tracking Application for Mobile Navigation Using Humanoid Robot Nao
Ilmi Mohd Ariffin, Ahmad Ismat Hakam Mohamed Rasidi, Hanafiah Yussof, Mohd Azfar Miskam and Abdul Rahman Omar, Universiti Teknologi MARA
- 09:15-09:30 Implementation of Grid Mapped Robot Planning Algorithm in a Continuous Map for Fire Fighting Robot
Sumarsih Condroayu Purbarani, Qurrotin A'yunina MOA, Grafika Jati, Muhammad Anwar Ma'sum, Hanif Arif Wisesa and Wisnu Jatmiko, Universitas Indonesia
- 09:30-09:45 Feasibility Study of Wearable Robot Control based on Upper and Lower Limbs Synergies
Modar Hassan, Hideki Kadone, Tomoyuki Ueno, Kenji Suzuki and Yoshiyuki Sankai, University of Tsukuba
- 09:45-10:00 In-Vitro DNA-based Finite State Machine
Rizki Mardian and Kosuke Sekiyama, Nagoya University
- 10:15-10:25 **Coffee Break**

