December 10 (Mon)

Location: Noyori Conference Hall

**Opening Remarks**

Chairperson: Fumihito Arai, Nagoya University

9:00-9:20

Prof. Toshio Fukuda, Meijo University, Japan (Honorary Chair)
Prof. Fumihito Arai, Nagoya University, Japan (General Co-Chair)
Prof. Jun Ota, The University of Tokyo, Japan (General Co-Chair)

**Plenary Talks**

Chairperson: Fumihito Arai, Nagoya University

9:20-10:05

Plenary Talk 1
Functionalized Light Robotics
Jesper Glückstad, Technical University of Denmark

10:05-10:20

Coffee Break

**Session MA1-1: (Organized Session 8) : Micro-Nano Bio Platform and Its Applications**

Chairperson: Masaru Kojima, Osaka University

10:20-10:50

Robotic Microscope System for Studying the Basic Principles of Brain Function
Koutarou D. Kimura and Koichi Hashimoto, Nagoya City University
Implementation of Local Environmental Control System on the Microhand
Kazuma Koshide, Masaru Kojima, Yasushi Mae and Tatsuo Arai, Osaka University

Strategies of Stable Grasp and Accurate Release for Dual-finger Micromanipulator
Xiaoming Liu, Junnan Chen, Yuqing Lin, Masaru Kojima, Qing Shi, Qiang Huang, Toshio Fukuda and Tatsuo Arai, Beijing Institute of Technology

Mechanical Characterization of a Single Yeast Cell using a Robot Integrated Microfluidic Chip
Di Chang, Shinya Sakuma and Chihiro Uehara, Nobuyuki Uozumi and Fumihito Arai, Nagoya University

Separated Co-culture of Heterotypic Cells using Microfabricated Thin ECM Membranes
Hideki Iwadate, Naoki Kimura, Rina Hashimoto, Yuya Yajima, Masumi Yamada, Rie Utoh and Minoru Seki, Chiba University

Session MA2-1: (Organized Session6)
Human Assistive Technology
Conference Room 2

Chairperson: Yasuhisa Hasegawa, Nagoya University

Clinical Neuro-mechanics for Design and Analysis of Motor Assistive Devices
Hideki Kadone, University of Tsukuba

Cooperative Movement in Grasping and Development of Grasping-training Robot
Shotaro Okajima, Fady S Alnajjar, Shingo Shimoda and Yasuhisa Hasegawa, Nagoya University

An Exoskeleton Brake Unit for Children with Crouch Gait Supporting the Knee Joint During Stance
Takumi Yamada, Hideki Kadone, Yukiyo Shimizu and Kenji Suzuki, University of Tsukuba

Development of Vietnamese Voice Chatbot with Emotion Expression
Thanh Nhu Vo and Hideyuki Sawada, The University of Danang - University of Science and Technology
11:50-12:50  \textit{Lunch}

\textit{Poster Session I}  \hspace{1cm} \textit{Poster Area (1st Floor)}

Chairperson: \textit{Ohka Masahiro, Nagoya University}
\textit{Yasuhiro Hasegawa, Nagoya University}

12:50-13:50

MP-01 Patients Simulator for Transsphenoidal Surgery
\textit{Taisuke Masuda, Seiji Omata, Akio Morita, Taichi Kin, Nobuhito Saito,}
\textit{Juli Yamashita, Kiyoyuki Chinzai, Akiyuki Haswagawa, Toshio Fukuda and}
\textit{Harada Kanako, Nagoya University}

MP-02 Ultrafast Fabrication of Microneedle Array for Transdermal Ion Detection
\textit{Ganesh Kumar Mani, Dhivyam Ponnusamy and Kazuyoshi Tsuchiya, Tokai University}

MP-03 Vanadium Oxide Nanoparticles for Dimethylamine Vapour Detection
\textit{Veena Mounasamy, Ganesh Kumar Mani, Sujitha Sukumaran, Dhivyam Ponnusamy, Kazuyoshi Tsuchiya, Arun K Prasad and Sridharan Madanagursamy, Tokai University}

MP-04 Skin Adhesive Type pH Sensor for Heatstroke Detection
\textit{Yuka Nimura, Ganesh Kumar Mani, Dhivyam Ponnusamy and Kazuyoshi Tsuchiya, Tokai University}

MP-05 Development of Intranasal Sensor for Lung Cancer Detection
\textit{Yuta Isono, Ganesh Kumar Mani, Dhivyam Ponnusamy and Kazuyoshi Tsuchiya, Tokai University}

MP-06 Analysis of Nanba Walking
\textit{Masahiro Isogai, Masashi Suzuki and Kazuto Miyawaki, Aichi University of Technology}

MP-07 CAHT for Habilitation of Children with Disorders
\textit{Tomoya Tanaka, Yuki Handa, Taku Miyamura, Hiroaki Matsutani, Toshiyuki Asahi and Toshio Fukuda, Aichi High School of Technology and Engineering Advanced Course}
Research on Walking Support Method using Cooperative Motion of Cane Robot
Masafumi Kojima, Masahiro Kato, Kento Yamada, Takahiro Ikeda, Akihiko Ichikawa, Masanori Tanimoto, Izumi Kondo and Toshio Fukuda, Meijo University

Stabilization of Walking with Walking-Aid Cane Robot Applying Light Touch Effect
Masahiro Kato, Akihiko Ichikawa, Izumi Kondo and Fukuda Toshio, Meijo University

Experimental Evaluation of Haptic Visualization Interface for Robot Teleoperation using Onomatopoeia in a Haptic Recognition Task
Maika Ando, Jotaro Chiba, Shunki Itadera, Jun Nakanishi, Tadayoshi Aoyama and Yasuhisa Hasegawa

Human Detection by a Load Sensor using Quartz Crystal Resonator
Yuichi Murozaki, Takuya Nishi and Fumihito Arai, Nagoya University

Development of Light Weight 3Dof Manipulator on UAV System for Infrastructure Inspection
Satoshi Minamiyama, Kenichi Ohara, Takahiro Ikeda, Akihiko Ichikawa, Satoshi Asizawa, Takeo Oomichi and Toshio Fukuda, Meijo University

Verification Concerning Load Distribution for Distributed Control Actuation Module
Kenichi Ohara and Ryota Hamanaka, Meijo University

Development of Pasted Sheet Sensor using P(VDF-TrFE)
Yuya Kumakiri, Ganesh Kumar Mani and Kazuyoshi Tsuchiya, Tokai University

Cell Stiffness Measurement by Two-fingered Micro-hand System with Plate Shaped End Effector
Masaru Kojima, Taisei Tanaka, Yasushi Mae, Toshihiko Ogura and Tatsuo Arai, Osaka University

Tongue Training Robot Development for Swallowing Rehabilitation
Junpei Kumagai, Makoto Sasaki, Katuhiro Kamata and Atsushi Nakayama, Iwate University

Development of Tongue Movement Training Device using a Pneumatic Balloon Actuator
Makoto Sasaki, Tatsuya Watanabe and Isamu Shibamoto, Iwate University
A Wearable Finger Exoskeleton based on the Crank-Rocker Mechanism for Rehabilitation
Ang Ke, Jian Huang, Luyao Chen and Jiping He, Huazhong University of Science and Technology

Optimized Convolutional Gabor using Particle Swarm Optimization
Bariqi Abdillah, Grafiqka Jati, Machmud Roby Alhamidi and Wisnu Jatmiko, Faculty Computer Science-Universitas Indonesia Depok, Indonesia

Development and Evaluation of an Electric Walking Machine
Kazuto Miyawaki, Ryo Saito, Ayako Saito, Yoshikazu Kobayashi, Satoru Kizawa and Goro Obinata, National Institute of Technology, Akita College

A Study on Joint Trajectory Planning of Multilegged Robot with Redundant Degrees of Freedom Legs using the Screw Theory
Yoichi Shigematsu, Naoya Yoshinaga, Hitoshi Inabe, Ryoichiro Tamura, Tomoya Fujii, Souta Okada and Nobuto Hirakoso, National Institute of Technology, Gunma College

Development of the Experimental System that can Acquire the Gait Data Online in a Quadruped Robot
Yuichiro Ishii, Hiroki Yamamoto, Sungi Kim and Yusuke Ikemoto, Meijo University

Brain Signal Acquisition Methods in BCIs to Estimate Human Motion Intention – a survey
Sanjaya Bandara and Kazuo Kiguchi, Kyushu University

Variational Mode Decomposition with Nonlocal Means Technique for Robust Denoising ECG Signal
Indra Hermawan, Grafiqka Jati and Wisnu Jatmiko, Universitas Indonesia

In-Situ Observation of Fracture Behavior of Silicon in a Transmission Electron Microscope
Kohei Okada, Syugo Tanaka, Kensuke Nakata, Masahiro Nakajima and Taeko Ando, Ritsumeikan University
Plenary Talks

Chairperson: Kenji Fukuzawa, Nagoya University

13:50-14:35  Plenary Talk 2
Strength of Single-walled Carbon Nanotubes: Size and Structure Dependence
Takahiro Namazu, Aichi Institute of Technology

14:35-14:50  Coffee Break

Session MP1-I: (Organized Session 5)
Functional Interfaces and Hydro-Electrochemical Mechatronics

Conference Room 1

Chairperson: Yoko Yamanishi, Kyushu University
Akira Yamada, Aichi Institute of Technology

14:50-15:20  Robots based on Chemical System
Shingo Maeda, Shibaura Institute of Technology

15:20-15:35  Printed Self-oscillatory Mechanism Inspired by an Electric Bell
Hiroki Shigemune, Shingo Maeda, Akihiro Imai, Shuji Hashimoto, Shigeki Sugano and Hideyuki Sawada, Waseda University

15:35-15:50  Study of Low Energy Micro EHD Pump by Designed Electric Field
Tasuku Sato, Shingo Maeda and Yoko Yamanishi, Kyushu University

15:50-16:05  Evaluation of the Strength Characteristics of Biodegradable Polymer Structures Fabricated by a 3D Printer using Different Nozzle Scan Patterns
Miho Suzuki, Asahi Yonezawa, Kohei Takeda and Akira Yamada, Aichi Institute of Technology

16:05-16:20  Uniform Transfection: Shock Wave Generation in Laser Ablation and Microcontact Printing
Harsh Gupta, Naoki Iwasaki, Keisuke Funahashi, Toshiki Minemura, Shin Sawai, Pallavi Shinde, Tuhin Subhra Santra, Takayuki Shibata and Moeto Nagai, Toyohashi University of Technology
Session MP2-1: (Organized Session 14)
Cognitive Robotics

Conference Room 2

Chairperson: Naoyuki Kubota, Tokyo Metropolitan University

14:50-15:20 Intelligent Technology for Socially Embedded Robot Partners
Jinseok Woo and Naoyuki Kubota, Tokyo Metropolitan University

15:20-15:35 Human Elbow Joint Motion Change Induced by Tonic Vibration Reflex with Vibration Stimulation
Koki Honda and Kazuo Kiguchi, Kyushu University

15:35-15:50 Body Parts Estimation for Motion Capture System using Multiple Depth Sensors
Ryuichiro Sakata, Futoshi Kobayashi and Hiroyuki Nakamoto, Kobe University

15:50-16:05 Self-Generation of Reward by Inputs from Multi Sensors -Integration of Evaluations for Inputs to Avoid Danger-
Masaya Ishizuka and Kentarou Kurashige, Muroran Institute of Technology

16:05-16:20 An Episodic Memory Model with Slow Features Extraction for Topological Map Building
Wei Hong Chin, Yuichiro Toda, Jinseok Woo, Naoyuki Kubota and Chu Kiong Loo, Tokyo Metropolitan University

Session MP1-2: (Organized Session 3)
Cytoanalysis and Biomonitoring

Conference Room 1

Chairperson: Taisuke Masuda, Nagoya University
Seiji Omata, Nagoya University

16:35-17:05 Toward the Development of in Vitro Bioassay Systems Integrated with Electrochemical Biosensors
Kikuo Komori, University of Tokyo

17:05-17:20 Spatiotemporal Control of Cell Culture Microenvironment by Microfluidic Probe Integrated Device
Kenta Shinha and Hiroshi Kimura, Tokai University
A Pillar-based Microfluidic Chip for Detection of T-cells and B-cells using Machine Learning
Bilal Turan, Taisuke Masuda, Wu Lei, Anas Mohd Noor, Koji Horio, Toshiki Saito, Yasuyuki Miyata and Fumihito Arai, Nagoya University

A Cellular Contractility Monitoring System Allowing For High-throughput and Long-term Analysis
Tsubasa S. Matsui and Shinji Deguchi, Osaka University

Reconstituting a Bilayer Cellular System using an Artificial Matrigel Basement Membrane Achieved by the Micromesh Technique
Kennedy Omondi Okeyo, Kai Yamada, Osamu Kurosawa, Hidehiro Oana and Masao Washizu, Kyoto University

Estimation of Bound Water Ratio in Extracellular Matrices using Terahertz Time-domain Spectroscopy
Tetsuri Kuwazuru, Atsushi Tsujimoto, Ayaka Kamada, Katsuko Furukawa, Seiji Nishizawa and Takashi Ushida, The University of Tokyo

Session MP2-2: (Organized Session 7)
Intelligent Robot System
Conference Room 2

Chairperson: Kenichi Ohara, Meijo University

Perception and Decision Making for the Autonomous Driving System
Tsuyoshi Tasaki, Meijo University

Intoning Speech Performance of the Talking Robot for Vietnamese Language Case
Thanh Nhu Vo and Hideyuki Sawada, The University of Danang - University of Science and Technology

Enhanced Bayesian Tracker for Various Condition using Thermal Infrared Imagery
Umi Chasanah, Grafika Jati and Wisnu Jatmiko, Universitas Indonesia

Improvement CNN Performance by Edge Detection Preprocessing for Vehicle Classification Problem
Bariqi Abdillah, Grafika Jati and Wisnu Jatmiko, Universitas Indonesia
17:50-18:05 Improvement of Contact Condition between Bridge Inspecting Aerial Manipulator by Applying Compliance Mechanism
Takahiro Ikeda, Shogo Yasui, Kenichi Ohara, Akihiko Ichikawa, Satoshi Ashizawa, Akihisa Okino, Takeo Oomichi and Toshio Fukuda, Meijo University

18:30-19:30 Beer Party
December 11 (Tue)
Location: Noyori Conference Hall

**Plenary Talks**

Chairperson: Hisataka Maruyama, Nagoya University

9:00-9:45 Plenary Talk3
Bio-Cyber Systems: Enabling Next -Gen Analytical Tools from Monitoring Mini-Organs to Fitbits for Plants
*Michael A. Daniele, NC State University*

**Session TAI-1: (Organized Session 1-1)**

**Advanced Micro-Nano Systems for Biomedical Applications**

*Conference Room 1*

Chairperson: Akihiko Ichikawa, Meijo University

10:00-10:30 Cell Injection Microrobot Development and Evaluation in Microfluidic Chip
*Qiang Zhou, Bin Song, Yanmin Feng and Lin Feng, Beihang University*

10:30-10:45 Microscopic Laser Interferometry to Measure the Displacement of Micromechanical Objects
*Hirotaka Sugiura, Shinya Sakuma and Fumihito Arai, Nagoya University*

10:45-11:00 Extended Flow Reduction Mechanism
*Shinya Sakuma, Yusuke Kasai and Fumihito Arai, Nagoya University*

11:00-11:15 Nano-Dispenser: A Microfluidic Liquid Handler with the Help of a Pneumatic Controlled Transparent Micronozzle Array
*Gaurav Pandey, Rohit Bhardwaj, Kentaro Tanagi, Takayuki Shibata and Moeto Nagai, Toyohashi University of Technology*

11:15-11:30 Sequential Trapping and Parallel Ejection of Droplets Through Pneumatically Controlled Micronozzle Array for 3D Single Cell Assembly
*Rohit Bhardwaj, Kentaro Tanagi, Gaurav Pandey, Takayuki Shibata and Moeto Nagai, Toyohashi University of Technology*
11:30-11:45 Studying Making Micro Structure with Biodegradable Materials
Taro Kozuka, Masaru Takeuchi, Akiyuki Hasegawa, Eunhye Kim, Akihiko Ichikawa and Toshio Fukuda, Meijo University

11:45-12:00 Micro Channel Design for Cancer Screening using C.elegnas
Satoshi Tomita, Masaru Takeuchi, Akihiko Ichikawa, Akiyuki Hasegawa and Toshio Fukuda, Meijo University

Session TA2-1: (Organized Session1-2)
Advanced Micro-Nano Systems for Biomedical Applications
Conference Room 2

Chairperson: Hisataka Maruyama, Nagoya University

10:00-10:15 Patch-type Wireless Forehead Vital Sensing Device
Hiroki Ota, Yutaka Isoda and Go Inamori, Yokohama National University

10:15-10:30 Fabrication of Micro-gel Robot Having a Soft-rigid Hybrid Structure
Tomoki Watanabe, Yoshiyuki Yokoyama and Takeshi Hayakawa, Chuo University

10:30-10:45 Preparation of Microvasculature-embedding Porous Hydrogels for 3D-Cell Culture
Aruto Hori, Yuki Watabe, Yuya Yajima, Masumi Yamada, Rie Utoh and Minoru Seki, Chiba University

10:45-11:00 Construction of Detection System for Intracellular Changes using a Micro Single-sided Transient Hot Rectangle Method
Yoshiyuki Takashima, Yuta Yagami, Takashi Katayama, Kaoru Uesugi and Keisuke Morishima, Osaka University

11:00-11:15 Multimodal Measurement of Cell Culture Conditions using Hydrogel Culture Substrate having Fluorescence Microsensors
Hisataka Maruyama, Seiji Omata, Taisuke Masuda and Fumihito Arai, Nagoya University

11:15-11:30 Application of Stimulation to Biological Sample using Flexible Structure Deformation
Hiroki Miyashiro, Kaoru Uesugi and Keisuke Morishima, Osaka University

11:30-12:00 Biomechanical Force Measurement of Hierarchical Living Materials
Kaoru Uesugi and Keisuke Morishima, Osaka University
12:00-13:00  
Lunch

**Poster Session II**  
**Poster Area (1st Floor)**

Chairperson:  
*Ohka Masahiro, Nagoya University*  
*Seiichi Hata, Nagoya University*

13:00-14:00

**TP-01**  
Effect of PPh4Cl on Micro-nano Vesicles Structure induced by Antagonistic Salts  
*Takushi Higashiyama, Kyouhei Doai, Kazuma Nakajima, Ryo Kato, Hiroyuki Maki, Takahiro Kenmotsu, Kenichi Yoshikawa and Koichiro Sadakane, Doshisha University*

**TP-02**  
Constructing Stable Cellular Assemblies in the Presence of Biopolymer: Application of Laser Tweezing in a Crowding Medium  
*Takehiro Yamazaki, Koichiro Sadakane, Takahiro Kenmotsu and Kenichi Yoshikawa, Doshisha University*

**TP-03**  
Specific Localization of Living Cells in Water/Water Microdroplets toward the Spontaneous Generation of 3D Cell-assembly: Experiments with Red Blood Cells and NAMRU Mouse Mammary Gland Epithelial Cells  
*Yusuke Hoda, Tadashi Fujimoto, Kenichi Yoshikawa and Kanta Tsumoto, Doshisha University*

**TP-04**  
Cultured Muscles with Tendon Structures for Modular Bio-Actuators  
*Takuto Nomura, Masaru Takeuchi, Akihiko Ichikawa, Eunhye Kim, Akiyuki Hasegawa and Toshio Fukuda, Meijo University*

**TP-05**  
A Soft Robot Mimicking Snail’s Foot  
*Jun Takeyama, Akihiko Ichikawa, Akiyuki Hasegawa, Eunhye Kim and Toshio Fukuda, Meijo University*

**TP-06**  
Aggregation of Charged Microgels by Relatively Diamagnetic Assembly  
*Hisae Suenaga, Haruka Minato, Daisuke Suzuki and Yoshitake Akiyama, Shinshu University*

**TP-07**  
Newly Established Three Dimensional Magnetically Controlling System  
*Yuguo Dai, Lin Feng and Abdulrahman Mousa, Beihang University*
TP-08 Intraoral pH Measurement: A Cool Way to Recognize Stress  
Yuki Ito, Ganesh Kumar Mani, Yutaka Yasoda and Kazuyoshi Tsuchiya, Tokai University

TP-09 Characteristic Cracking Pattern Generated on Tissue Slice as a Useful Index for Medical Diagnosis  
Natsumi Okoso, Keisuke Danno, Naohiko Nakamura, Kohta Iguchi, Masaya Ikegawa, Takahiro Kenmotsu and Kenichi Yoshikawa, Doshisha University

TP-10 Design and Production Method of Diameter 1mm ONE PART Grasping Forceps for Catheter  
Kyoya Ichiraku and Makoto Nokata, Ritsumeikan University

TP-11 Photo-oxidative Cell Membrane Perforation and Applied Cellular Level Neural Interface and Electrophysiological Recording in Animal Cells  
Mizuki Fujiwara, Kyoichi Ono and Takashi K. Saito, Akita Prefectural University

TP-12 Evaluation of Living Tissue Model based on Force Measurement  
Keisuke Uchida, Akihiko Ichikawa, Akiyuki Hasegawa, Eunhye Kim, Masaru Takeuchi and Toshio Fukuda, Meijo University

TP-13 Study of a Precise Dura Mater Model for Precise Human Analogue Model  
Shusaku Hayakawa, Akihiko Ichikawa, Akiyuki Hasegawa, Masaru Takeuchi and Toshio Fukuda, Meijo University

TP-14 Fabrication of the Brain Model with Soft Material for Surgical Simulator  
Naoki Kotani, Akihiko Ichikawa and Akiyuki Hasegawa, Masaru Takeuchi and Toshio Fukuda, Meijo University

TP-15 Eye Surgery Simulator for Evaluation of Surgical Technique  
Seiji Omata, Kazuki Ohashi, Kanako Harada, Mamoru Mitsuishi, Koichiro Sugimoto, Takashi Ueta, Kiyoto Totsuka, Fumiuki Araki, Muneyuki Takao and Makoto Aihara, Nagoya University

TP-16 Grasps under Artificially-limited Thumb's Joint Range of Motion --Posture Analysis with ROM Boundary and Muscle Loads--  
Reiko Takahashi, Natsuki Miyata, Yusuke Maeda and Koji Fujita, Yokohama National University

TP-17 Motor Learning through Cooperative Motor Experience  
Kotaro Nishimura, Yoshikatsu Hayashi, Shiro Yano and Toshiyuki Kondo, Tokyo University of Agriculture and Technology
TP-18 A Three-dimensional Evaluation of Body Representation Change of Human Upper Limb Focused on Sense of Ownership and Sense of Agency
Shunsuke Hamasaki, Athushi Yamashita and Hajime Asama, The University of Tokyo

TP-19 Analysis of Rockers during the Stance Phase of Gait for Feature Extraction
Kaito Tsunetomo, Shouhei Shirafuji and Jun Ota, The University of Tokyo

TP-20 How does Antagonistic Salt Exhibit Surfactant-like Characteristics in Water?
Kyohei Doai, Takushi Higashiyama, Kazuma Nakajima, Ryo Kato, Takahiro Kenmotsu, Yoshikawa Kenichi and Koichiro Sadakane, Doshisha University

TP-21 Estimation of Mechanism for Esophageal Speech Method Aimed to Realize the Esophageal Speech Training System
Katsutoshi Oe, Ryoya Nakamura and Kazutaka Hosokawa, Daiichi Institute of Technology

TP-22 Weight Scale using Quartz Crystal Resonator Having Wide Dynamic Range
Yusuke Nakanishi, Yuichi Murozaki and Fumihito Arai, Nagoya University

Plenary Talks

Chairperson: Toshiyuki Kondo, Tokyo University of Agriculture and Technology

14:00-14:45 Plenary Talk4
Dynamics-driven Control Laws for Robust and Fast Adaption in Reaching Tasks
Yoshikatsu Hayashi, University of Reading, UK

14:45-15:00 Coffee Break
Session TP1-1: (Organized Session2)
Bionic Humanoid and Surgical Systems

Conference Room 1

Chairperson: Fumihito Arai, Nagoya University
             Mamoru Mitsuishi, The University of Tokyo

15:00-15:30 Machine Learning for Intelligent Medical Devices
            Kensaku Mori, Nagoya University

15:30-15:45 Design of Micro-hole Array for Fixing Ultra-thin Membrane in Tensile Tests based on Fluid Analysis
            Yuhao Gao, Shinya Sakuma, Yuichi Murozaki and Fumihito Arai, Nagoya University

15:45-16:00 Surgical Simulator for Training of Minimally Invasive Glaucoma Surgery
            Mahmoud Gallab, Seiji Omata, Fumihito Arai, Kanako Harada, Mamoru Mitsuishi, Kiyohito Totsuka, Fumiyuki Araki, Muneyuki Takao and Makoto Aihara, Nagoya University

16:00-16:15 Development of a Precision-grip based Interface for 4-Dof Articulated Forceps
            Keisuke Ohara, Jacinto E. Colan Zaita, Daisuke Uozumi, Tadayoshi Aoyama, Jun Nakanishi and Yasuhisa Hasegawa, Nagoya University

16:15-16:30 Haptic Virtual Fixtures to Assist Endonasal Micro Robotic Surgery through Virtual Reality Simulation
            Saul Alexis Heredia Perez, Kanako Harada and Mamoru Mitsuishi, The University of Tokyo

Session TP2-1: (Organized Session12)
Micro-Nano Structures and Instrumentation Technology

Conference Room 2

Chairperson: Masaru Takeuchi, Nagoya University
             Futoshi Iwata, Shizuoka University

15:00-15:30 Evaluation of Delamination Strength of Bonded Micro-components:a Nano-indenter Technique Combined with Environmental Microscopy
            Yoshimasa Takahashi, Kanako Kishimoto, Kimitaka Higuchi, Yuta Yamamoto, Shigeo Arai and Shunsuke Muto, Kansai University

15:30-15:45 Micro Fabrication Technique for Three-dimensional Structures based on
Localized Electrophoretic Deposition using a Scanning Ion Conductance Microscope
*Masayoshi Yoshioka and Futoshi Iwata, Shizuoka University*

15:45-16:00  
Surface Potential Measurement of a Silicon Fast Recovery Diode under Applied Bias Voltages by Kelvin Probe Force Microscopy  
*Takeshi Uruma, Nobuo Satoh, Hidekazu Yamamoto and Futoshi Iwata, Shizuoka University*

16:00-16:15  
Evaluation of Local Dielectric Constant of Biomaterial Based on the Force-distance–curve Measured by Microwave Atomic-force Microscope  
*Minji Zhao, Bo Tong, Yuuki Toku, Yasuyuki Morita and Yang Ju, Nagoya University*

16:30-16:45  
**Coffee Break**

**Session TP1-2: (Organized Session13)**

**Technologies for Time-resolved Characterization of Single Cell, Cell Community and Tissues**

*Conference Room 1*

Chairperson:  
*Shinya Sakuma, Nagoya University  
Yositaka Shirasaki, The University of Tokyo*

16:45-17:15  
Bio Heritage: Enucleation of Red Blood Cell  
*Makoto Kaneko, Osaka University*

17:15-17:30  
Measurement of the Cell Migration and Cytokine Secretion Activity with Real-time Imaging System  
*Yumiko Tanaka, Nobutake Suzuki, Kazuyo Moro, Jun Mizuno, Shuichi Shoji, Sotaro Uemura and Yoshitaka Shirasaki, The University of Tokyo*

17:30-17:45  
A Bioreactor Utilizing High-resolution Three Dimensional Microchannel for On-chip Platelet Production  
*Hiroki Kumon, Shinya Sakuma, Yusuke Kasai, Sou Nakamura, Koji Eto and Fumihito Arai, Nagoya University*

17:45-18:00  
High-speed On-chip Mixing Utilizing Vortex Generation by Ultra-high-speed Local Flow  
*Yusuke Kasai, Shinya Sakuma and Fumihito Arai, Nagoya University*

18:00-18:15  
Size Separation Method of Microparticles based on Vibration-induced Flow  
*Naoki Kitada and Takeshi Hayakawa, Chuo University*

**Session TP2-2: (Organized Session4)**
Embody-brain Systems Science  
Conference Room 2

Chairperson:  Shinya Aoi, Kyoto University

16:45-17:15  Application of Computational Neuroscience to Robotic Rehabilitation: a Conceptual Study  
Jun Izawa, University of Tsukuba

17:15-17:30  Musculoskeletal Simulations to Investigate Influences of Muscle Weakness and Sensory Noise to Postural Control with High Stiffness  
Kohei Kaminishi, Ryosuke Chiba, Kaoru Takakusaki and Jun Ota, The University of Tokyo

17:30-17:45  Construction of Experimental Environment for Muscle Synergy Analysis of Bipedal Walking in Rats  
Ryutaro Sakai, Tetsuro Funato, Soichiro Fujiki, Akira Konosu, Shinya Aoi and Dai Yanagihara, The University of Electro-Communications

17:45-18:00  Investigation of Phase Resetting Effect on Phase Response Curve in Human Walking using a Neuromusculoskeletal Model  
Daiki Tamura, Shinya Aoi, Tetsuro Funato, Soichiro Fujiki, Kei Senda and Kazuo Tsuchiya, Kyoto University

18:00-18:15  Towards the Exploitation of External Constraints with Robots Actuated by Pneumatic Artificial Muscles  
Arne Hitzmann, Shuhei Ikemoto and Koh Hosoda, Osaka University

19:00-21:00  Reception

December 12 (Wed)
Location: Noyori Conference Hall

Session WA1-1: (Organized Session II)
Micro-Nano Sensing/Manipulation and Its Biological Applications

Conference Room 1

Chairperson: Masaru Takeuchi, Nagoya University
Tadayoshi Aoyama, Nagoya University

9:00-9:30 Force-visualization based Sensing System Facilitates Medical Operation in Deep Area
Tetsuyou Watanabe, Kanazawa University

9:30-9:45 Microscopic Image Presentation Apparatus for Micro Manipulation based on the View Expansion Microscope System
Sarau Takeno, Tadayoshi Aoyama, Masaru Takeuchi, Yasuhisa Hasegawa and Idaku Ishii, Nagoya University

9:45-10:00 Peripheral Nerve Stimulation Device Enabling Adjustment of Stimulation Voltage
Takahiro Miyamoto, Masaru Takeuchi, Tadayoshi Aoyama, Yasuhisa Hasegawa, Tomonori Nakano, Shigeru Kurimoto and Hitoshi Hirata, Nagoya University

10:00-10:15 Toward High-throughput Sorting of Single Spheroids Based on Mechano-index on a Microfluidic Chip
Kou Nakahara, Shinya Sakuma and Fumihito Arai, Nagoya University

10:15-10:30 Magnetic Assembly of Hydrogel Fiber for Constructing Three-dimensional Hepatic Lobule-like Channel Network
Eunhye Kim, Masaru Takeuchi, Taro Kozuka, Takuto Nomura, Ryohei Sakurai, Akiyuki Hasegawa, Akihiko Ichikawa and Toshio Fukuda, Meijo University

Session WA2-1: (Organized Session 10)
Micro-Nano Processing and Devices
Chairperson: Junpei Sakurai, Nagoya University
Mizue Mizoshiri, Nagaoka University of Technology

9:00-9:30 Laser Lift-off Process for Additive Micropatterning of Functional Particles and Films
Aiko Narazaki, Tadatake Sato, Hiroyuki Niino, Yoshiki Nakata, Tatsuya Shoji, Yasuyuki Tsuboi, Ayako Oyane and Hirofumi Miyaji, National Institute of Advanced Industrial Science and Technology (AIST)

9:30-9:45 Basic Research on Micro Processing Characteristics of Reverse Lift-off Process
Yuki Nakagawa, Kyohei Yamada, Mizue Mizoshiri, Chiemi Oka, Junpei Sakurai and Seiichi Hata, Nagoya University

9:45-10:00 Fabrication of Plasmon Filters for Highly Sensitive Observation of Magnetic Domains by Magneto-optical Kerr Effect
Takumi Hasegawa, Mizue Mizoshiri, Kenta Takagi and Kimihiro Ozaki, Nagoya University

10:00-10:15 Hydrogel Heart Model Having Temperature Indicating Function
Yuki Yokota, Hisataka Maruyama and Fumihito Arai, Nagoya University

10:15-10:30 Fabrication of Miniaturized Capacitive Pressure Sensor using Thin Film Metallic Glass
Shohei Uejima, Chiemi Oka, Seiichi Hata and Junpei Sakurai, Nagoya University

Plenary Talks

Chairperson: Yasuhisa Hasegawa, Nagoya University

10:45-11:30 Plenary Talk 5
3S Laser Processing: Integrating Soft Materials and Metal Microstructures
Mitsuhiro Terakawa, Keio University

11:30-11:45 Coffee Break
11:45-12:10  Award Ceremony

12:10-13:30  Lunch

13:30-15:00  Laboratory Tour (at Nagoya University)