

Program

Time: based on UTC+9 (KR & JP) - 1:00 (UTC+8: CN & SG & TW) - 2:00 (UTC+7: TH)		Program Detail	
09:30-09:40	Opening Ceremony Yung-ho Jo (National Cancer Center, Korea)		
Time (KR)	Oral Session I 09:40~10:30 (KR&JP) / 08:40~09:30 (CN&SG&TW) / 07:40~08:30 (TH) Surgical robotics and Instrumentation (1) Prof. Minho Hwang (DGIST, Korea)	Oral Session II 09:40~10:30 (KR&JP) / 08:40~09:30 (CN&SG&TW) / 07:40~08:30 (TH) Image Processing and Visualization Dr. Longfei Ma (Tsinghua Univ., China)	
09:40-09:45	[OS_I-01] Robotic Rodent Experiment: Cutting experiments Using an AR-based Predictive Display under Delay Yuzuki Toyama (Univ. of Tokyo, Japan)	[OS_II-01] A research of the improvement of sparse ICP registration in Mandible using curvature Ruiqi Zhang (Tokyo Medical and Dental Univ., Japan)	
09:45-09:50	[OS_I-02] Electromagnetic System for Wireless Manipulation of Micro/Nano Objects Nader Latifi Gharamaleki (DGIST, Korea)	[OS_II-02] Close observation and depth perception using liquid lens for the laparoscope Fan Mao (Tsinghua Univ., China)	
09:50-09:55	[OS_I-03] MagMAPS: An economical, lego-like, reconfigurable real-time 3D magnetizing mapping system Awais Ahmed (DGIST, Korea)	[OS_II-03] Surface Scanning with Visual Feedback Control for Tissue Endomicroscopy Xingfeng Xu (Tianjin Univ., China)	
09:55-10:00	[OS_I-04] Towards Automation and Optimization of Robotic Cutting for Pathology Grossing Hung-Ching Lin (Univ. of Tokyo, Japan)	[OS_II-04] A Graph-based Diffusion Radiomics Model for Genotype Prediction of Brainstem Gliomas Ne Yang (Tsinghua Univ., China)	
10:00-10:05	Small Discussion		
10:05-10:10	[OS_I-05] Toward Needle Passing Assistance in Robotic Pediatric Thoracoscopic Surgery Naoki Koda (Univ. of Tokyo, Japan)	[OS_II-05] Optical characteristics of OCT images about laser ablation on animal tissue Yingwei Fan (Beijing Institute of Technology, China)	
10:10-10:15	[OS_I-06] Simulation Study of a Tele-Operated Surgical System in a Vitreoretinal Environment Tomonori Murakami (Univ. of Tokyo, Japan)	[OS_II-06] Mixed Reality for Immersive Robot-Assisted Laparoscopic Surgeries Tengyue Wang (Zhejiang Univ., China)	
10:15-10:20	[OS_I-07] Initial experience of newly designed navigation and robot system for neurosurgery Jung- Il Lee (Sungkyunkwan Univ, Korea)	[OS_II-07] Endoscopic Video Specular Highlight Removal Based on Optical Flow Guided Method Jialin Kang (Tsinghua Univ., China)	
10:20-10:25	[OS_I-08] Efficacy and safety of robotic assistance in renal stone removal: An in-vivo animal study Joonhwan Kim (EasyEndo Surgical Inc., Korea)	[OS_II-08] An Unsupervised Non-rigid Registration Network for Fast Medical Shape Alignment Jinyang Shi (Nanjing Univ., China)	
10:25-10:30	Small Discussion		
10:30-10:40	Coffee Break		

Plenary Talk I 10:40~11:20 (KR&JP) / 09:40~10:20 (CN&SG&TW) / 08:40~09:20 (TH)	
10:40-11:20	Application of Production and Digital Technologies to the Biomedical Area Prof. Mamoru Mitsuishi (Univ. of Tokyo, Japan)
Rising Star Session I 11:20~12:20 (KR&JP) / 10:20~11:20 (CN&SG&TW) / 09:20~10:20 (TH)	
11:20-11:40	Development of support system for doctors and nurses in smart operating room Prof. Kaori Kusuda (Tokyo Women's Medical Univ., Japan)
11:40-12:00	Development of MRI compatible prostate biopsy robot including biopsy needle Prof. Jung Ki Jo (Hanyang Univ., Korea)
12:00-12:20	AI and AR-based image processing, navigation and robotics in cranio-maxillofacial surgery Prof. Xiaojun Chen (Shanghai Jiao Tong Univ., China)
12:20-14:00	Lunch
Rising Star Session II 14:00~15:20 (KR&JP) / 13:00~14:20 (CN&SG&TW) / 12:00~13:20 (TH) Prof. Chee-Kong Chui (National Univ. of Singapore, Singapore)	
14:00-14:20	Clinical application of new imaging technologies in the field of plastic and reconstructive surgery Prof. Hiroki Kajita (Keio Univ., Japan)
14:20-14:40	Transurethral Robotic System for Tissue Resection Dr. Junchen Wang (Beihang Univ., China)
14:40-15:00	Flexible endoscopic surgery robot: Next step toward endoscopic surgery Dr. Joonhwan Kim ((EasyEndo Surgical Inc., Korea)
15:00-15:20	Gynecology Robotic Assisted Surgery System: Soft-body Cadaveric Testing Prof. Daranee Hormdee (Khon Kaen Univ., Thailand)
Plenary Talk II 15:20~16:00 (KR&JP) / 14:20~15:00 (CN&SG&TW) / 13:20~14:00 (TH) Dr. Keri Kim (KIST, Korea)	
15:20-16:00	Various magnetic microrobots for stem cell delivery and active control of guidewire for the Rapid and Precise Treatment of Vascular Diseases Prof. Hongsoo Choi (DGIST, Korea)
Invited Session: Pandemic Control System 16:00~16:40 (KR&JP) / 15:00~15:40 (CN&SG&TW) / 14:00~14:40 (TH)	
16:00-16:20	Development of Robot-assisted Swab Sampling System for Respiratory Diseases Dr. Joonho Seo (KIMM, Korea)
16:20-16:40	Tele-Operative Low-Cost Robotic Lung Ultrasound Scanning Platform for Triage of COVID-19 Patients Dr. Ryosuke Tsumura (AIST, Japan)
16:40-16:50	Coffee Break
	Oral Session III 16:50~18:25 (KR&JP) / 15:50~17:25 (CN&SG&TW) / 14:50~16:25 (TH) Surgical robotics and Instrumentation (2)
	Oral Session IV 16:50~18:25 (KR&JP) / 15:50~17:25 (CN&SG&TW) / 14:50~16:25 (TH) Deep Learning and AI for CAS

16:50-16:55	[OS_III-01] A knee arthroscopy robot system based on RCM master-slave teleoperation Zhaoyi Guan (Shanghai Jiaotong Univ., China)	[OS_IV-01] Segmentation of the central gland and peripheral zone on MR images using attention Res-Unet Guobin Zhang (Tianjin Univ., China)
16:55-17:00	[OS_III-02] Development of Control Framework for Spine Surgery Robot Using EtherCAT Veysi ADIN (KIST, Korea)	[OS_IV-02] Free-Breathing Organ Motion Models of 3D Abdominal MRI with Conditional Generative Adversarial Networks Hee Guan Khor (Tsinghua Univ., China)
17:00-17:05	[OS_III-03] Modelling of Hyper-elastic Deformation of NiTi for a Surgical Manipulator Heran Wang (Kyushu Univ., Japan)	[OS_IV-03] Preliminary Use of Multi-CycleGAN for Synthetic-to-Real Surgical Instrument Translation in Monocular Endoscope Images Sota Oizumi (Univ. of Tokyo, Japan)
17:05-17:10	[OS_III-04] A novel 2-DoF feeder mechanism for buckling prevention of the catheterization robot Hyunwoo Baek (KAIST, Korea)	[OS_IV-04] Position Control of Gradient Type Magnetic Microrobot using Reinforcement Learning Sarmad Ahmad Abbasi (DGIST, Korea)
17:10-17:15	[OS_III-05] Tool exchanging device for the cassette-type flexible surgical system Kenta Kuwana (Tokyo Denki Univ., Japan)	[OS_IV-05] The Design of Pill Classification and 3-dimensional Visualization System based on Deep-Learning Juhui Lee (Gachon Univ., Korea)
17:15-17:20	Small Discussion	Small Discussion
17:20-17:25	[OS_III-06] Pilot study on biocompatibility and surface modification of medical soft robots Shangqi Dai (Tsinghua Univ., China)	[OS_IV-06] Computed tomography vertebral segmentation from multi-vendor scanner data Chaewoo Kim (KIST, Korea)
17:25-17:30	[OS_III-07] An Ergonomic Workspace Analysis of RoboticLaparoscopic Surgery Master Manipulator Donghoon Kang (KAIST, Korea)	[OS_IV-07] Inference aortic valve motion series images from motion-blurred CT images via deep learning Yawu Long (Univ. of Tokyo, Japan)
17:30-17:35	[OS_III-08] easyArthro: Safe Assistive Robot System for Arthroscopy Chang-Kyun Kim (KAIST, Korea)	[OS_IV-08] The effects of Grid Size for Automatic Suture Thread Detection with an Image Classifier Kyotaro Horio (Univ. of Tokyo, Japan)
17:35-17:40	[OS_III-09] Design of a novel master haptic manipulator for NOTES Yuesheng Qu (Tianjin Univ., China)	[OS_IV-09] Development of Deep Learning Algorithm for Autonomous Vascular Intervention Robot System Hwa-Seob Song (Hanyang Univ., Korea)
17:40-17:45	[OS_III-10] Direct Teaching of End Effector for Surgical Assistant Robot Based on Force Free Control Youqiang Zhang (Pusan National Univ., Korea)	[OS_IV-10] An Unsupervised Convolution Neural Network for Deformable Registration of Mono/Multi-Modality Medical Images Xianyu Wang (Tsinghua Univ., China)
17:45-17:50	Small Discussion	Small Discussion
17:50-17:55	[OS_III-11] Design of a 2-DoF Continuum Manipulator for Endoscopic Surgery Weihaohuang (Tianjin Univ., China)	[OS_IV-11] Image-Based 3D Ultrasound Freehand Reconstruction with Optical Flow Yanting Xie (Nanjing Univ., China)
17:55-18:00	[OS_III-12] Mechanical Design toward a Disposable Compliant Multi-degree-of-freedom Robotic Forceps Akari Minami (Kyushu Univ., Japan)	[OS_IV-12] Sparse View CT Reconstruction using Invertible Neural Network Wenfeng Tian (Tsinghua Univ., China)
18:00-18:05	[OS_III-13] A Soft Robot Using Magnetic-pneumatic Hybrid Actuation that Functions in Unstructured Environments Zhuxiu Liao (Tsinghua Univ., China)	[OS_IV-13] Medical Instrument Detection in Laparoscopic Surgery: Using Deep Learning Apiwat Boonkong (Khon Kaen Univ.,

		Thailand)
18:05-18:10	[OS_III-14] Towards Computational Design for Remote-Center-of-Motion in Minimally Invasive Procedures Shenwei Chen (Zhejiang Univ., China)	[OS_IV-14] A Single-port Robotic System for Gynecologic Surgery: Soft-body Cadaveric Testing Amornthep Sonsilphong (Khon Kaen Univ., Thailand)
18:10-18:15	[OS_III-15] A double bending continuum instrument for endoscopic surgery Chi Zhang (Tianjin Univ., China)	[OS_IV-15] Robotic Uterine Manipulation System: Soft-body Cadaveric Testing Songphon Namkhun (Khon Kaen Univ., Thailand)
18:15-18:20	[OS_III-16] Robotic Compliant Joint Based Endoscopic Surgery System for Bone Cyst Surgery Rene Solzbacher (DIGIST, Korea)	[OS_IV-16] KKU Robotic Assisted System in Gynecologic Surgery: Soft-body Cadaveric Testing Daranee Hormdee (Khon Kaen Univ., Thailand)
18:20-18:25	Small Discussion	Small Discussion
18:25-18:50	Award & Closing Ceremony 18:25~18:50 (KR&JP) / 17:25~17:50 (CN&SG&TW) / 16:25~16:50 (TH) Yung-ho Jo (National Cancer Center, Korea)	