

SMIT2018-IBEC2018 Joint Conference

November 8 - 10 | Grand Walkerhill Hotel, Seoul, Korea

Medical Technology for Human Values



[SMIT2018-IBEC2018] Scientific Program

Named Talks

S3. Gerhard Buess Lecture				November 8 14:00-14:20 Walkerhill Theatre (B1F)
Chair	Alberto Arezzo	Università di Torino, Italy		
	Young Woo Kim	National Cancer Center, Korea		
Speaker	Young Soo Kim	Hanyang University, Korea	A Novel Surgical Robot for Stereotactic Neurosurgery	
S20. John Wickham Lecture				November 9 14:00-14:20 Walkerhill Theatre (B1F)
Chair	Andreas Melzer	University of Dundee, UK		
	Kyoung Joung Lee	Yonsei University, Korea		
Speaker	Jun-Gi Kim	Catholic University of Korea, Korea	30 Years of the journey for laparoscopic surgery	
S21. Earl Owen Lecture				November 9 14:20-14:40 Walkerhill Theatre (B1F)
Chair	Jenny Dankelman	Delft University of Technology, Netherlands		
	Hyung-Ho Kim	Seoul National University, Korea		
Speaker	Yuan-Ting Zhang	City University of Hong Kong, China	Health Engineering: from Robotic Limbs Control to Wearable 'MINDS'	
S39. John Abele Lecture				November 10 11:40-12:00 Walkerhill Theatre (B1F)
Chair	Amir Szold	Surgical Structure Ltd., Israel		
	Dae Kyung Sohn	National Cancer Center, Korea		
Speaker	Byoung Goo Min	Seoul National University, Korea	Application of artificial technology to life supporting device	

Scientific Sessions

S1. Human Interface Technology				November 8 9:00-10:20 Walkerhill Theatre (B1F)
Chair	Chengli Song	University of Shanghai for Science and Technology, China		
	Seok-ki Kim	National Cancer Center, Korea		
Speaker	Maki Sugimoto	The University of Tokyo, Japan	VR/AR/MR, holography, and arterial intelligence for personalized data-driven precision surgery	
	Seok-ki Kim	National Cancer Center, Korea	Basic Clinical Issues of Smart Glasses	
	Chengli Song	University of Shanghai for Science and Technology, China	Applications of Bulk Metallic Glasses for Minimally Invasive Surgery	
S2. Artificial Intelligence 1				November 8 10:40-12:00 Walkerhill Theatre (B1F)
Chair	Jae Sung Lee	Seoul National University, Korea		
Speaker	Sungroh Yoon	Seoul National University, Korea	Deep learning in biomedical research: genomics, imaging, and EMR	
	Sang Wan Lee	KAIST, Korea	AI to boost task performance of human experts	
	Jae Sung Lee	Seoul National University, Korea	TBA	
Tae Gyu Kim	Deepnoid, Korea	Introduction of medical image artificial intelligence platform		
S4. Medical Device Development				November 8 15:10-16:30 Walkerhill Theatre (B1F)
Chair	Kiyokazu Nakajima	Osaka University, Japan		
	Kwang Gi Kim	Gachon University, Korea		
Speaker	Kiyokazu Nakajima	Osaka University, Japan	Integration of laparoscopy and endoscopy into next generation endoscopic intervention	
	Jenny Dankelman	Delft University of Technology, Netherlands	High quality and affordable instruments for global (minimally invasive) surgery	
	Jaebum Son	Medical Device Development Center, Korea	Surgical Snake Robot Platform: From Perspective of Mechanisms	
Bongkyun Kim	Lutronic, Korea	Time-resolved optical sensing of laser-tissue interaction		
S5. Medical Device & Robot				November 8 16:40-18:00
Chair	Gernot Kronreif	Austrian Center for Medical Innovation and Technology, Austria		
	Han-Kwang Yang	Seoul National University, Korea		

Speaker	Arianna Menciassi	The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy	Robotic solutions from endoscopy to minimally invasive surgery	Walkerhill Theatre (B1F)
	Gernot Kronreif	Austrian Center for Medical Innovation and Technology, Austria	A novel sensor system for total knee arthroplasty: concept and first clinical results	
	Paul Wetter	University of Miami, USA	Medical Apps the Greatest Medical Innovation. How they will soon change healthcare	
S6. Medical Robot 1				
Chair	Hee Chan Kim	Seoul National University, Korea		November 8 9:00-10:20 Room1 (B1F)
	Lorenzo De Michieli	IIT - Istituto Italiano di Tecnologia, Italy		
Speaker	Elena De Momi	Politecnico di Milano, Italy	Programmable bevel-tip needle for precise minimally invasive neurosurgery: from smart planning to pre-clinical testing	
	Byung-Ju Yi	Hanyang University, Korea	3D Image-Guided Approach to Trans-nasal Robotic Surgery	
	Lorenzo De Michieli	IIT - Istituto Italiano di Tecnologia, Italy	From humanoid robots to humans: new exoskeletons and prosthetic devices	
	Philip Chiu	The Chinese University of Hong Kong, Hong Kong	Application of Robotics in Endoscopy	
S7. Medical Robot 2				
Chair	Arianna Menciassi	The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy		November 8 10:40-12:00 Room1 (B1F)
	Byung-Ju Yi	Hanyang University, Korea		
Speaker	Paolo Fiorini	University of Verona, Italy	Data driven robotic surgery: implications for skill training, task execution and performance assessment	
	Joonho Seo	Korea Institute of Machinery and Material, Korea	Design and development of a telemedicine system for robot-assisted cooperative ultrasound imaging	
	Leonardo De Mattos	IIT - Istituto Italiano di Tecnologia, Italy	Robotic systems for precision medical treatments	
S8. Biomedical Optics				
Chair	Myunghwan Choi	Sungkyunkwan University, Korea		November 8 15:10-16:30 Room1 (B1F)
Speaker	Jeon Woong Kang	MIT, USA	Optical Sensor for Medical Needle Guidance	
	Yookyung Jung	Korea University, Korea	TBA	
	Jung-Hoon Park	UNIST, Korea	Shaping light for imaging through turbid media	
S9. The New Strategy of Global Medical Device Industry				
Chair	Sunguk Kuh	Yonsei University, Korea		November 8 16:40-18:00 Room1 (B1F)
Speaker	YongTae Kim	Georgia Institute of Technology, USA	Microfluidic Technologies for Advanced Medical Devices	
	Sunguk Kuh	Yonsei University, Korea	The 4th Industry Revolution and Changes in the Future Medical Education	
	Seojoong Kwon	SIEMENS Healthineers, USA	Future strategy of Global Medical Device Industry	
	Mina Oh	National Institute of Medical Device Safety Information, Korea	Overview of Medical Device Adverse Event (AE) Vigilance System and Management	
S10. Hospital Design				
Chair	Paul Barach	Wayne State University, USA		November 8 10:40-12:00 Room2 (B1F)
	Wang-Jun Lee	Myongji Hospital, Korea		
Speaker	Shigeki Nakayama	Chiba University, Japan	Innovations in hospital design in the past decade in Japan	
	Gelun Mona	University of Beijing architecture and civil engineering, China	Challenges and Innovation for 22 New General hospitals of Beijing	
	Hyung Jin Yoon	Dong Seoul University, Korea	Changes from MERS : New setting of National designated isolation unit wards(NDIUs)	
S11. In Vitro Diagnostics				
Chair	Kyung Min Byun	Kyung Hee University, Korea		November 8 15:10-16:30 Room2 (B1F)
Speaker	Sung Jin Kim	Konkuk University, Korea	Microfluidic chip using surface-tension-driven flow control for bioassays	
	Dokyoung Kim	Kyung Hee University, College of Medicine, Korea	Organic-Nano-Hybrid Materials for Disease Diagnosis and Bio-imaging	
	Sungbo Cho	Gachon University, Korea	TBA	
S12. High Speed Biomedical Imaging				
Chair	Chulhong Kim	Pohang University of Science and Technology, Korea		November 8 16:40-18:00 Room2 (B1F)
	Hyongsuk Yoo	University of Ulsan, Korea		
Speaker	Chulhong Kim	Pohang University of Science and Technology, Korea	One Step Forward to Clinical and Commercial Photoacoustic Imaging	
	Joon Yul Choi	Seoul National University, Korea	Rapid MRI acquisition and reconstruction for multicontrast neuroimage	
	Dongchan Kim	Gachon University, Korea	Simultaneous Multi Slice Imaging Technique for Radial Trajectory Using Inter-slice Shifting Gradient	
	Woo June Choi	Chung-Ang University, Korea	High-speed multi-parametric OCT imaging of cerebral ischemic stroke in vivo	
S13. Artistic Visualization of Medical Science				
Chair	Junsun Ryu	National Cancer Center, Korea		November 8 10:40-12:00 Room3 (B1F)
	Kwan Hyun Youn	Incheon Catholic University, Korea	Two ways to become a medical artist	

Speaker	Dong-Su Jang	Yonsei University, Korea	The best way to organize paper figures with Adobe tools	November 8 16:40-18:00 Room3 (B1F)
	Sang Youn Kim	Incheon Catholic University Graduate School, Korea	Creating medical information using OpenVDB(Volume modeling)	
S14. Interventional Radiology				
Chair	Hyun-Ki Yoon	Asan Medical Center, Korea		November 8 16:40-18:00 Room3 (B1F)
	Man Deuk Kim	Yonsei University, Korea		
Speaker	Jong Yun Won	Yonsei University, Korea	ROBOTIC INTERVENTION: A NEW ERA IN INTERVENTIONAL RADIOLOGY?	
	Terumitsu Hasebe	Tokai University Hachloji Hospital, Japan	TBA	
	Ji Hoon Shin	Asan Medical Center, Korea	Development of Metallic Ureteral Stent	
	Takuji Yamagami	Kochi University, Japan	Prediction of the ablated area prior to radiofrequency ablation for hepatocellular carcinoma under CT fluoroscopic guidance	
S15. Endoscopy 1				
Chair	Jin-Seok Jang	Dong-A University, Korea		November 8 9:00-10:20 Room4 (3F)
	Kazuki Sumiyama	Jikei University, Japan		
Speaker	Weon Jin Ko	CHA Gumi Medical Center, Korea	Current of Endoluminal Surgery	
	Hyuk Soon Choi	Korea University, Korea	Emerging technology trends of endoscopic treatment in metabolic obesity	
	Kazuki Sumiyama	Jikei University, Japan	Future perspective of endoluminal surgery	
S16. Endoscopy 2				
Chair	Joo Young Cho	CHA University, Korea		November 8 10:40-12:00 Room4 (3F)
	Yutaka Saito	National Cancer Center, Japan		
Speaker	Chan Gyoo Kim	National Cancer Center, Korea	Endoscopic Full-thickness Resection for Gastric Tumors	
	Yutaka Saito	National Cancer Center, Japan	Clinical application of JNET classification and endoscopic EMR/ESD for colorectal cancer	
	Hyunsoo Chung	Seoul National University, Korea	Endoscopic Anti-Fibrotic Therapy in GI Tract	
S17. Daegu MDDC				
Speaker	Joong Hyun Kim	Daegu MDDC, Korea	Nanomaterial aided isothermal signal amplifications for a point of care precision diagnostics	November 8 15:10-18:00 Room4 (3F)
	Bongsu Jung	Daegu MDDC, Korea	Novel Biomimetic Optical Nanomaterials Composed of Genome-Depleted Brome Mosaic Virus Doped with a Near Infrared Chromophore for Targeted Imaging of Cancer Cell	
	Juyoung Park	Daegu MDDC, Korea	Brain applications of MR-guided Focused Ultrasound	
	Jaebum Son	Daegu MDDC, Korea	Introduction of Cyber-Physical System Technology to Smart Operating Room	
	Sungmin Seung	Daegu MDDC, Korea	MR-compatible Surgical Robot for Pituitary Tumor Surgery	
	Semi Jeong	Daegu MDDC, Korea	Development of Cardiology Intervention Virtual Training Simulator	
S18. Artificial Intelligence 2				
Chair	Chang-Hwan Im	Hanyang University, Korea		November 9 8:30-9:50 Walkerhill Theatre (B1F)
	Yoav Mintz	Hadassah Hebrew University Medical Center, Israel		
Speaker	Young Jae Kim	Gachon University, Korea	Deep Learning Applications in Medical Imaging	
	Yoav Mintz	Hadassah Hebrew University Medical Center, Israel	Artificial intelligence for surgery. What do we need?	
	Ozanan Meireles	Massachusetts General Hospital, USA	TBA	
S19. Image Guided Surgery				
Chair	Jaesung Hong	DGIST, Korea		November 9 10:00-11:20 Walkerhill Theatre (B1F)
	Si Young Song	Yonsei University, Korea		
Speaker	Michele Diana	IHU Strasbourg, France	Hybrid smart operative rooms for precision therapies	
	Jaesung Hong	DGIST, Korea	Surgical Navigation based on AR/VR Technology	
	Hyejin Kim	Kyungpook National University, Korea	ICG-guided re ctal cancer surgery	
	Won-Jin Yi	Seoul National University, Korea	Image-Guided Orthognathic Surgery	
S22. ESUT-SMIT: Robots for Endoscopic Surgery				
Chair	Koon Ho Rha	Yonsei University, Korea		November 9 15:00-16:20 Walkerhill Theatre (B1F)
	Jens Rassweiler	SLK-Kliniken Heilbronn GmbH, Germany		
Speaker	Koon Ho Rha	Yonsei University Severance Hospital, Korea	Experience of Korean Surgical Robot Revo-i at Yonsei University	
	Jens Rassweiler	SLK-Kliniken Heilbronn GmbH, Germany	The actual state of European robotic surgical systems	
	Eric Barret	Institut Mutualiste Montsouris, France	The actual state of the SPORT-system for single-port surgery	
	Joris Jaspers	University Medical Center Utrecht, Netherlands	The actual state of the LAPARA-device	

S23. ESUT-SMIT: Robots for Endoscopic Surgery				
Chair	Amir Szold	Surgical Structure Ltd., Israel		November 9 16:30-17:50 Walkerhill Theatre (B1F)
	Jens Rassweiler	SLK-Kliniken Heilbronn GmbH, Germany		
Speaker	Amir Szold	Surgical Structure Ltd., Israel	Bed-side solutions for Laparoscopy	
	Silvana Perretta	IHU Strasbourg, France	Robotics in Gastroenterology	
	Marcel Fiedler	SLK-Kliniken Heilbronn GmbH, Germany	Roboflex Avicenna - a device for retrograde intra-renal surgery (RIRS)	
S24. Minimally Invasive Surgery 1				
Chair	Norihito Wada	Keio University, Japan		November 9 8:30-9:50 Room1 (B1F)
	Ho-Seong Han	Seoul National University, Korea		
Speaker	Seong-Ho Kong	Seoul National University, Korea	Fluorescence-guided gastric surgery	
	Ramon Vilallonga	Universitary Hospital Vall Hebron, Spain	TBA	
	Norihito Wada	Keio University, Japan	Flexible Endoscopic Surgery System (FESS) beyond the limit of rigid robotic surgery	
	Aviram Nissan	The Chaim Sheba Medical Center, Israel	Peritoneal Surface Malignancy:Current practice and future directions	
S25. Minimally Invasive Surgery 2				
Chair	Chung-ngai Tang	Pamela Youde Nethersole Eastern Hospital, Hong Kong		November 9 10:00-11:20 Room1 (B1F)
	Sang-Mok Lee	Kyung Hee University, Korea		
Speaker	Yoshihiro Muragaki	Tokyo Women's Medical University, Japan	The Smart Cyber Operating Theater (SCOT) -Supporting Surgical Decision Making-	
	Chung-ngai Tang	Pamela Youde Nethersole Eastern Hospital, Hong Kong	Personal experience of Robotic HBP Surgery	
	Cüneyt Kayaalp	Inonu University, Turkey	Laparoscopic surgery combined with natural orifice specimen extraction (NOSE)	
S26. Nano & Microtechnology 1				
Chair	Honggu Chun	Korea University, Korea		November 9 15:00-16:20 Room1 (B1F)
Speaker	Sunghoon Kwon	Seoul National University, Korea	Life-Saving Rapid Antibiotic Test for Fighting Sepsis	
	Noo Li Jeon	Seoul National University, Korea	High-Throughput 3D Microfluidic Platform for Vascularized Micro Physiological System Applications	
	Aram Chung	Korea University, Korea	Manipulating and Measuring Cell Mechanics from Inertial Microfluidics	
S27. Nano & Microtechnology 2				
Chair	Tae-Eun Park	UNIST, Korea		November 9 16:30-17:50 Room1 (B1F)
	Jungmok Seo	KIST, Korea		
Speaker	Jinmyoung Joo	Asan Medical Center, Korea	Biodegradable luminescent silicon nanoparticles for targeted nanomedicine	
	Jae-Byum Chang	KAIST, Korea	Super-resolution tissue imaging via expansion microscopy	
	Sungyun Jeon	KAIST, Korea	Investigation of human cancer cell metastasis using microfluidic system	
	Wooram Park	CHA University, Korea	Image-guided local drug delivery technology with nanoparticles for cancer treatment	
S28. Medical Device				
Chair	Gunnar Ahlberg	Karolinska Institutet, Sweden		November 9 8:30-9:50 Room2 (B1F)
	YongTae Kim	Georgia Institute of Technology, Korea		
Speaker	Seojoong Kwon	SIEMENS Healthineers, USA	From medical invention to medical product	
	YongTae Kim	Georgia Institute of Technology, USA	Microengineered Physiological Systems: Farewell to Animal Studies.	
	Gunnar Ahlberg	Karolinska Institutet, Sweden	Funding in start up companies - from the entrepreneurs as well as from the investors perspective	
S29. Simulation & Training 1				
Chair	Calin Tiu	Municipal Hospital Câmpina, Romania		November 9 10:00-11:20 Room2 (B1F)
	Byung Jo Jung	Yonsei University, Korea		
Speaker	Calin Tiu	Municipal Hospital Câmpina, Romania	Common Standards based on Technical Enhanced Learning in Surgical Training	
	Youngjun Kim	KIST, Korea	3D simulation software technology for medicine	
	Konrad Karcz	University of Munich, Gemany	TBA	
	Pascal Fuchshuber	UCSF, USA	The FUSE Program: why all surgeons need to know about electrosurgical safety.	
S30. Simulation & Training 2				
Chair	Youngjun Kim	KIST, Korea		November 9 15:00-16:20 Room2 (B1F)
	Konrad Karcz	University of Munich, Gemany		
	Jinah Park	KAIST, Korea	Virtual Haptic Interaction and Guidance with Real-world Spatial Data	

Speaker	Junsun Ryu	National Cancer Center, Korea	Combining Art and Science: Medical illustration as a Powerful Education Tool	
	Young Lae Moon	Chosun University Hospital, Korea	IT and BT applications in musculoskeletal disease	
S31. 3D-Printing 2				
Chair	Chung-Hwan Baek	Samsung Medical Center, Korea		
	Kyu Back Lee	Korea University, Korea		
Speaker	Sang Jun Kim	Samsung Medical Center, Korea	Application of 3D Modelling and Printing Techniques in the Orthotic Fields : "Orthosis made by Just Simple Clicking"	November 9 16:30-17:50 Room2 (B1F)
	Guk Bae Kim	Asan Medical Center, Korea	TBA	
	Beomseok Ko	Asan Medical Center, Korea	TBA	
	Kyu Won Shim	Yonsei University, Korea	TBA	
S32. 3D-Printing 1				
Chair	Hyun Guy Kang	National Cancer Center, Korea		
	Hongki Yoo	Hanyang University, Korea		
Speaker	Dongho Choi	Hanyang University, Korea	TBA	November 9 10:00-11:20 Room3 (B1F)
	Junhee Lee	KIMM, Korea	TBA	
	Jinah Jang	POSTECH, Korea	TBA	
S33. Applied Biophysics and Oriental Medicine				
Chair	Jae Uk Kim	Korea Institute of Oriental Medicine, Korea		November 9 8:30-9:50 Room4 (3F)
Speaker	GunWoong Bahng	The State University of New York, Korea	Water memory effect and heterogeneous structure of water	
	Wonsik Ahn	Yang-Saeng Research Institute, Korea	TBA	
	Sanghoon Lee	Korea Institute of Oriental Medicine, Korea	TBA	
S34. Organ Preservation Surgery				
Chair	Eiji Kanehira	AMG Endosurgery Academy, Ageo Central Hospital, Japan		November 9 10:00-11:20 Room4 (3F)
	Jun-Gi Kim	The Catholic University of Korea, Korea		
Speaker	Kil Yeon Lee	Kyunghee University, Korea	Organ (Rectum) Preservation Surgery	
	Eiji Kanehira	AMG Endosurgery Academy, Ageo Central Hospital, Japan	Surgical Techniques to Minimize Sacrifice of Healthy Part of Stomach in the Treatment of Benign or Low-grade Malignant Tumors	
	Alberto Arezzo	Università di Torino, Italy	The Road Ahead for Endoluminal Intervention	
S35. Osong MDDC				
Chair	Kwang Gi Kim	Gachon University, Korea		November 9 15:20-16:40 Room4 (3F)
Speaker	Joong-Hyun Kim	Osong MDDC, Korea	Introduction and Support Program Of OSONG Medical Innovation Foundation	
	Seok-Won Lee	Osong MDDC, Korea	THE ROLE OF THE KBIO LABORATORY ANIMAL CENTER IN THE DEVELOPMENT OF DRUGS AND MEDICAL DEVICES	
	Yong-Hoon Jeong	Osong MDDC, Korea	Case of Technical Transfer in KBIO-Type II Anodization on Ti-6Al-4V Alloy as Biomaterials	
	Young-Jun Song	Osong MDDC, Korea	Future medical device world with OSONG Medical Device Development Center	
S36. Korea Medical Device Clinical Trials Study Group				
Chair	Taegun Kang	Korea Medical Device Clinical Trials Study Group, Korea		November 9 16:50-18:10 Room4 (3F)
Speaker	Eun-Sung Song	Korea Medical Device Clinical Trials Study Group, Korea	Dental Device Idea Commercialization Center	
	Kyu-Sung Lee	Korea Medical Device Clinical Trials Study Group, Korea	The development of holistic R&D platform based on connecting the core infrastructures for implantable medical devices	
	Myoung-Hwan Ko	Korea Medical Device Clinical Trials Study Group, Korea	Translational Research & Clinical Trial Center for Medical Device of Chonbuk National University Hospital Leading the Future Medical Technology	
	Seung-June Oh	Korea Medical Device Clinical Trials Study Group, Korea	Introduction of Medical Device Innovation Center, Seoul National University Hospital	
S37. Artificial Intelligence 3				
Chair	Hwiyoung Kim	Yonsei University, Korea		November 10 8:30-9:50 Walkerhill Theatre (B1F)
	Sung Min Park	POSTECH, Korea		
Speaker	Harn Gid Cho	Vuno, Korea	TBA	
	Heung-il Suk	Korea University, Korea	Generating and Exploiting Artificial Data in Biomedical Engineering	
	Choong-Wan Woo	Sungkyunkwan University, Korea	Developing an fMRI connectivity-based signature for tonic pain	
	DukYong Yoon	Ajou University, Korea	Development of clinical outcome prediction model with bio-signal data	
S38. MeDiF 3: Standardization of medical data for AI				
Chair	Byoung Wook Choi	Yonsei University, Korea		November 10 10:00-11:20 Walkerhill Theatre (B1F)
	Hwiyoung Kim	Yonsei University, Korea	Data preparation for AI in medicine	

Speaker	Kyunghwa Han	Yonsei University, Korea	Statistical considerations for AI in medicine	
	Hyo Min Cho	KRISS, Korea	Data standardization for AI in medicine	
S40. Development of Robot				
Chair	Pietro Valdastri	University of Leeds, UK		November 10 13:40-15:00 Walkerhill Theatre (B1F)
	Yung Ho Jo	National Cancer Center, Korea		
Speaker	Pietro Valdastri	University of Leeds, UK	Capsule robots for gastrointestinal endoscopy	
	Joonhwan Kim	KAIST, Korea	Flexible Endoscopic Surgery Robots	
	Byungkyu Kim	Korea Aerospace University, Korea	Toward the robotic colonoscope	
S41. Future Operating Room & Safety				
Chair	Andreas Melzer	University of Dundee, UK		November 10 8:30-9:50 Room1 (B1F)
	Young Soo Kim	Hanyang University, Korea		
Speaker	Andreas Melzer	University of Dundee, UK	TBA	
	Amir Szold	Surgical Structure Ltd., Israel	The future O.R robots	
	Fernando Foo	Olympus Corporation Of Asia Pacific Limited, Hong Kong	TBA	
S42. NeuroSurgery				
Chair	Uwe Spetzger	Städtisches Klinikum Karlsruhe Neurochirurgische Klinik, Germany		November 10 10:00-11:20 Room1 (B1F)
	Dong-Pyo Jang	Hanyang University, Korea		
Speaker	Fady T. Charbel	University of Illinois at Chicago, USA	Virtual Reality Simulation in Neurosurgery: Opportunities and Challenges	
	Uwe Spetzger	Städtisches Klinikum Karlsruhe Neurochirurgische Klinik, Germany	Modern Neurosurgical Education and Training Using Computer-assisted Tools	
	Doo-Sik Kong	Samsung Medical Center, Korea	Advances in the neuroendoscopic technique	
S43. Biomedical Instrument				
Chair	Tong In Oh	Kyung Hee University, Korea		November 10 13:40-15:00 Room1 (B1F)
	Ivan Wall	Aston University, UK		
Speaker	Ivan Wall	Aston University, UK	Process Development to Scale-Up 3D Cell Culture for Regenerative Medicines	
	Brian Lee	PBS Biotech, USA	A Novel Single-Use Bioreactor System for Scalable Manufacturing of Cell Therapy Products	
	Tong In Oh	Kyung Hee University, Korea	Feasibility of Cervical Cancer Screening Device using Multiple Electrodes based Impedance Spectroscopy	
	Sehoon Jeong	Inje University, Korea	Organ-on-a-chip for brain research	
S44. MeDiF 1: Dentist / Dentistry				
Chair	Sang-Wan Shin	Korea University, Korea		November 10 8:30-9:50 Room2 (B1F)
	Jong Ho Lee	Seoul National University, Korea		
Speaker	Ki-Bong Hyun	Dr.Pik Co.,Ltd., Korea	Vacuum oral care	
	HyungBong Lim	HASS Corporation, Korea	Current status and clinical applications of dental glass-ceramics	
	Kyu-Bok Lee	Kyungpook National University, Korea	The Clinical Significance of Customized Abutment: Which Implant Abutment Do You Choose?	
	Jung-Bo Huh	Pusan National University, Korea	3D printed scaffold with bioactive materials for implant surgical guide stent and bone graft	
Ji-Man Park	Yonsei University, Korea	Dentlral application of intraoral & facial scanners		
S45. MeDiF 4: Stent / Spine				
Chair	Dong Ki Lee	Gangnam Severance Hospital, Korea		November 10 10:00-11:20 Room2 (B1F)
	Sunguk Kuh	Gangnam Severance Hospital, Korea		
Speaker	Dong Ki Lee	Yonsei University, Korea	Korean biliary stent: Endeavour to overcome unmet needs	
	Myung Ho Jeong	Chonnam National University, Korea	Development of New Drug-eluting Coronary Stents to Prevent Thrombosis and Restenosis	
	Su Bin Im	Soon chun Hyang University, Korea	Current application of various metal 3-d printed implant for spine surgery.	
Seong Yi	Yonsei University, Korea	Roadmap and Development of Brand New Spine Surgery Robot in Korea		
S46. Neural Engineering				
Chair	Jong-Mo Seo	Seoul National University, Korea		November 10 13:40-15:00 Room2 (B1F)
	Sangmin Lee	Kyung Hee University, Korea		
Speaker	Young Min Shon	Sungkyunkwan University, Korea	Neurostimulation for the treatment of refractory epilepsy	
	Dong-Pyo Jang	Hanyang University, Korea	Tracking Tonic Dopamine Levels in vivo using Multiple Cyclic Square Wave Voltammetry	
	Euiheon Chung	GIST, Korea	Neurophotonic reading and writing for translational medicine	

	Sang Beom Jun	Ewha Womans University, Korea	Current Status of Next-Generation Cochlear Implant	
S47. MeDiF 2: Rehabilitation				
Chair	Jei Cheong Ryu	Rehabilitation Engineering Research Institute of KCOMWEL, Korea		November 10 8:30-9:50 Room3 (B1F)
	Sung-Jae Kang	Rehabilitation Engineering Research Institute of KCOMWEL, Korea		
Speaker	Chang-Yong Ko	Rehabilitation Engineering Research Institute of KCOMWEL, Korea	Adaptation of joint coordination in Lower limb amputees	
	Se-Hoon Park	Rehabilitation Engineering Research Institute of KCOMWEL, Korea	Adaptation of joint coordination in Lower limb amputees	
	Jungsu Choi	Sogang University, Korea	Design and Control of a Powered Exoskeleton for Enabling Complete Paraplegics to Walk	
	Jee-Hwan Ryu	KOREATECH, Korea	Twisted String Actuator and Its Application to Exo-Suit	
S48. MeDiF 5: Medical Imaging / X-ray / Ultrasound / MR				
Chair	Chang-Hyun Oh	Korea University, Korea		November 10 10:00-11:20 Room3 (B1F)
	Tai-Kyong Song	Sogang University, Korea		
Speaker	Chang-Hyun Oh	Korea University, Korea	Fusion Technology of Medical Imaging and Therapy	
	Seung-Kyun Lee	Sungkyunkwan University, Korea	MR-Based Tissue Electrical Properties Mapping	
	Changhan Yoon	Inje university, Korea	Photoacoustic imaging toward clinical translation	
	Seungryoung Cho	KAIST, Korea	Cone-Beam CT: Practices and Challenges in Various Applications in Medicine	