9th Asan International Biomedical Engineering Symposium (AIBES) 2021

New Look at the Barriers Surrounding Digital Medicine

2021. 11. 3. (Wed), 09:00~17:50

- Virtual Symposium
- Pre-registration : www.medi-webinar2.com

PLENARY SESSION | 9:00 ~ 10:40

09:00~09:10	Welcome remark	Director, BMERC **Jaesoon Choi**
	Congratulatory remark	Chair, AILS **Chong Jai Kim**
09:10~ 09:30	Medical Imaging and AI	Asan Medical Center **Joon Beom Seo**
09:30~ 09:50	AI application for diagnosis of head and neck cancer	Ajou University College of Medicine **Chul-Ho Kim**
09:50~ 10:10	Retianl based Cardiovascular Risk Assessment SW	MediWhale **Kevin Choi**
10:10~ 10:40	Pannel Discussion	Moderated by Jaesoon Choi

SESSION 1 | 11:00~12:30

Room 1 Peripheral Nerve Interface with Powered Limb Prosthesis — Chairperson : **Paul Stephen Cederna** (Michigan University Hospital), **Joon Pio Hong** (Asan Medical Center)

11:00~11:30	Updates in TMR	Northwestern University Hospital **Jason Hyunsuk Ko**
11:30~12:00	Updates in RPNI	Michigan University Hospital **Paul Stephen Cederna**
12:00~12:30	Now in AMC	Asan Medical Center **John Changsik Pak**

Room 2 Physiologic Measurement and Biosignal Analysis : Theory and Application — Chairperson : **Hangsik Shin** (Chonnam National University), **Sung Hoon Kim** (Asan Medical Center)

11:00~11:20	Cardiovascular monitoring in sleep	University of Washington **Younghoon Kwon**
11:20~11:40	Oscillometric blood pressure measurement: theory and recent advances	University of Pittsburgh **Ramakrishna Mukkamala**
11:40~12:00	Ballistocardiogram: theory and application to cardiovascular health monitoring	University of Maryland at College Park **Jin-Oh Hahn**
12:00~12:20	From Clinical Problems to New Medical Technologies: The Process of Needs-Based Innovation	Edwards Lifesciences **Farzad Azimpour**
12:20~12:30	Q&A	

Room 3 Understanding FDA — Chairperson : **Jaesoon Choi** (Asan Medical Center)

11:00~12:30	Strategic Approach for FDA Registration	K-Bio Solutions **Kyungyoon Kang**

Room 4 AI in otolaryngology field — Chairperson : **Yoon Se Lee** (Asan Medical Center)

11:00~11:20	Application of deep learning in laryngology	Asan Medical Center **Seung Ho Choi**
11:20~11:40	Machine learning and radiomics for head and neck cancer prognostication	Ajou University Hospital **Jeon Yeob Jang**
11:40~12:00	Personalized 3D reconstruction of head & neck tumor models : from thyroid to oral cavity	National Cancer Center **Jungirl Seok**
12:00~12:20	Machine learning application in Rhinology field	Asan Medical Center **Myeong Sang Yu**
12:20~12:30	Q&A	

12:30~13:30	Lunch

SESSION 2 | 13:30~14:50

Room 2 Understanding Body-Machine Interface Technology — Chairperson : **Deok Hee Lee** (Asan Medical Center)

13:30~14:00	Unconventional Bio-integrated Electronics towards Human-machine Interfaces	Yonsei University **Ki Jun Yu**
14:00~14:30	Fiber-based Bio and Neural Interfaces	KAIST **Seongjun Park**
14:30~15:00	Noninvasive Brain-Computer Interfaces for Communication and Control	Hanyang University **Chang-Hwan Im**

Room 3 Understanding Clinical Evaluation — Chairperson : **Jaesoon Choi** (Asan Medical Center)

13:30~14:00	Clinical evaluation: Understanding IMDRF principle	Soonchunhyang University **You Kyoung Lee**
14:00~14:30	CER in real world	Dongguk University **Ki Chang Nam**
14:30~15:00	Discussion	

Room 4 Soft Rehabilitation Robots — Chairperson : **Youngjin Moon** (Asan Medical Center)

13:30~13:55	Bio-Inspired Soft Robotics for Healthcare Applications	Seoul National University **Yong-Lae Park**
13:55~14:20	Fabric muscle and its application to suit-type soft wearable robot	KIMM **Cheol Hoon Park**
14:20~14:45	Soft Wearable Sensors for Metaverse and Digital Healthcare	UNIST **Joonbum Bae**

SESSION 3 | 15:00~16:20

Room 1 AI Applications in AMC — Chairperson : **June-Goo Lee** (Asan Medical Center)

15:00~15:20	ENT application	Asan Medical Center **Jong Woo Chung**
15:20~15:40	Ophthalmology application	Asan Medical Center **Yoon Jeon Kim**
15:40~16:00	Endoscopy application	Asan Medical Center **Do Hoon Kim**
16:00~16:20	Neuroimaging application	Asan Medical Center **Ji Eun Park**

Room 2 The new horizons of lymphatic research — Chairperson : **Jae Yong Jeon** (Asan Medical Center)

15:00~15:20	The role of exercise in lymphedema	Asan Medical Center **Ma Nessa Gelvosa**
15:20~15:40	The novel lymphatic graft sheet to prevent lymphedema in axillary lymph node dissection	Asan Medical Center **Hwayeong Cheon**
15:40~16:00	The biological impact assessment of terahertz electromagnetic waves and biomedical optics to diagnose of lymphatic disease	Yonsei Univ. College of Medicine **Seung Jae Oh**
16:00~16:20	Terahertz nano-metamaterial sensor for early detection of lymphedema	Kumoh National Institute of Technology **Sang-Hun Lee**

Room 3 Digital Twin, the Medical Applications — Chairperson : **Jaesoon Choi** (Asan Medical Center)

15:00~15:30	In silico in treatment of chest wall deformity; patient-tailored	Busan National University **Hosek Lee**
15:30~16:00	Technology fusion of simulation modeling and machine learning for high reliability digital twin implementation	Pukyong National University **Seon Han Choi**
16:00~16:30	The value and necessity of computational modeling and simulation for digital innovation of medical technology : Medical device applications	Tae Sung S&E **Hyeryung Na**

Room 4 AMC-DGIST Joint Seminar — Chairperson : **Chol Song** (DGIST), **Youngjin Moon** (Asan Medical Center)

15:00~15:15	Super-resolution ultrasound imaging: Beyond the acoustic diffraction limit	DGIST **Jaesok Yu**
15:15~15:30	Smart Planning for Dental Implant Robot	Asan Medical Center **Namkug Kim**
15:30~15:45	Flexible Surgical Robots, AI-assisted Surgery	DGIST **Minho Hwang**
15:45~16:00	Development of Dysphagia Evaluation via Video Analysis Based on Deep Learning Method in Neonates and Infants and Correlation Between the Evaluation and the Development	Asan Medical Center **Eun Jae Ko**
16:00~16:15	Confocal endomicroscopy towards AI diagnosis	DGIST **Cheol Song**

SESSION 4 | 16:30~17:50

Room 1 AI Technical Update — Chairperson : **Namkug Kim** (Asan Medical Center)

16:30~16:50	Generative models	Promedius Inc. **Hyun Jin Bae**
16:50~17:10	COVID application development	KAIST **Jong Chul Ye**
17:10~17:30	Severance updates	Severance Hospita **Hwiyoung Kim**
17:30~17:50	MR sequence generation with BlochGAN	Yonsei University **Dosik Hwang**

Room 2 Biomedical Approach to Obesity and Metabolic Disorders — Chairperson : **Hwoon-Yong Jung** (Asan Medical Center)

16:30~16:50	Gastrointestinal intervention for treatment of obesity and metabolic diseases: Based on the mechanism	Seoul ST. Mary's Hospita **Jae Myung Park**
16:50~17:10	Highly functional duodenal stent with controlled radical oxygen species release for the treatment of metabolic diseases	Severance Hospita **Moon Jae Chung**
17:10~17:30	Endoscopic photodynamic therapy and high functional device in obesity-related metabolic syndrome	Catholic University of Korea **Kun Na**
17:30~17:50	Currently Available Devices for Endoscopic Bariatric Intervention	Asan Medical Center **Do Hoon Kim**

Room 3 Bootcamp for newcomers in BME research — Chairperson : **Ji Wan Kim** (Asan Medical Center)

16:30~16:55	Wise Ideation Life.	Seoul National University Bundang Hospital **Chan Yeong Heo**
16:55~17:20	Robotics crossing the border	DGIST **Se Hoon Oh**
17:20~17:50	The inevitable steps as a BME researcher: designing research and projects	Chonnam National University **Hangsik Shin**

Room 4 Surgery Robot Current Update — Chairperson : **Jaesoon Choi** (Asan Medical Center)

16:30~16:50	Flexible instruments for transoral surgery	KIST **Keri Kim**
16:50~17:10	Laparoscopic surgery assist robot	Pusan National University **Sangrok Jin**
17:10~17:30	Surgical navigation for surgical robot system	University of Ulsan **Sungmin Kim**
17:30~17:50	Oblique micro-injection by a handheld robotic system	DGIST **Cheol Song**



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