



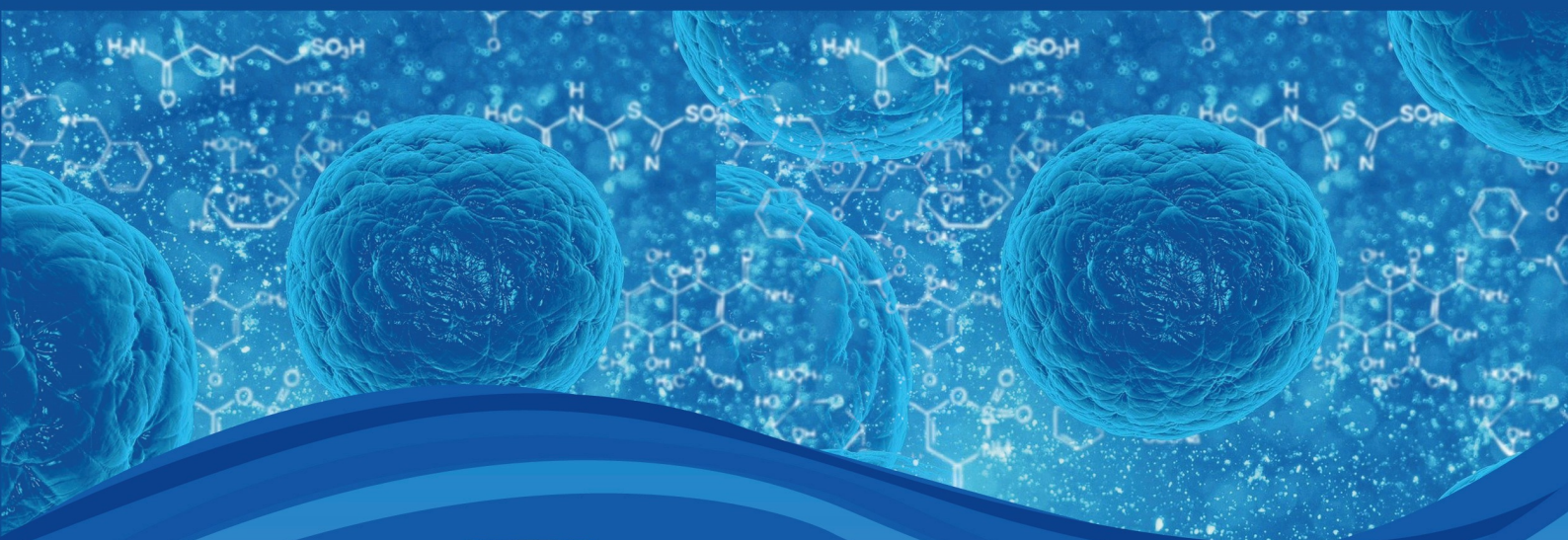
BEB
Conference on Biomedical
Engineering and Biotechnology

ICBEB 2024

**The 13th International Conference on
Biomedical Engineering and Biotechnology**

Conference Program

November 12-15, 2024 Singapore



BMEF

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Part I Conference Schedule Summary

Tuesday, November 12th, 2024

Location: Foyer, 3rd Floor, Holiday Inn Express & Suites Singapore Novena

14:00-20:00

Onsite Registration

Notes for registration:

* Please show us your paper number such as BEB1234 for registration.

* Please pick up all the conference materials at the registration desk (Name Card, Conference Program, Lunch & Dinner Tickets, Tour ticket etc.).

Wednesday, November 13th, 2024

Location: Sugarcane Room, 3rd Floor, Holiday Inn Express & Suites Singapore Novena

Welcome Speech and Keynote Speeches Chaired by:

Prof. Lung-Kwang Pan, Central Taiwan University of Science and Technology, Chinese Taichung

09:00-09:05

WELCOME SPEECH

Prof. Eddie Yin-Kwee Ng, General Chair, Nanyang Technological University, Singapore

09:05-09:45

Keynote Speech 1: Improving Dual-Frequency Sonothrombolysis Outcomes Through Phase Shifting

Prof. Eddie Yin-Kwee Ng, Nanyang Technological University, Singapore

09:45-10:25

Keynote Speech 2: Depression and AD Assessment Using Wearable Devices and AI Technology

Prof. Chengyu Liu, Southeast University, China

10:25-10:50

GROUP PHOTO & COFFEE BREAK

10:50-11:30

Keynote Speech 3: Translational Cancer Research: Advancements and Challenges

Dr. William Cho, Queen Elizabeth Hospital, Hong Kong SAR, China

11:30-12:10

Keynote Speech 4: Molecular Basis of Sleep Apnea Syndrome (SAS): Intermittent Hypoxia (IH)-Induced Changes of Gene Expression in Cells Related to Diabetes, Hypertension, and Cardiovascular Diseases and Its Mechanisms

Prof. Shin Takasawa, Nara Medical University, Japan

12:20-13:30	LUNCH BREAK – The Great Room, 1st Floor
14:00-17:00	Oral Session 1: Biomedical Imaging, Signal Processing & Medical Informatics
17:00-17:40	Poster Presentations – Foyer, 3rd Floor
18:00-20:00	Welcome Banquet – Lime Room, 3rd Floor

Thursday, November 14th, 2024

Location: Sugarcane Room, 3rd Floor, Holiday Inn Express & Suites Singapore Novena

09:00-12:00	Oral Session 2: Cell Biology & Medicinal Chemistry
12:00-13:00	LUNCH BREAK – The Great Room, 1st Floor
14:00-17:00	Oral Session 3: Biomechanical Engineering & Biotechnology

Friday, November 15th, 2024

Singapore

09:00	Gather in the lobby of the Holiday Inn Express & Suites Singapore Novena <u>Set off on time at 09:00</u>
09:00-16:30	One-day Field Visit in Singapore (with Field Visit Ticket)
16:30	Back to the venue hotel, Holiday Inn Express & Suites Singapore Novena

Part II Keynote Speeches

Keynote Speech 1: Improving Dual-Frequency Sonothrombolysis Outcomes Through Phase Shifting



Prof. Eddie Yin-Kwee Ng

Ph.D., FNAT [USA], AEUAS & AEASA [EU], FAIMBE & FASME [USA], FAIA, FIETI & FAP TSA [HK], DFIDSAI [CN], FIET [UK]

Nanyang Technological University, Singapore

Biography: Dr. Eddie obtained Ph.D. at Cambridge Univ. with a Cambridge Commonwealth Scholarship.

He is elected as:

- Fellow (inaugural) for National Academy of Technology (USA);
- Academician for European Academy of Sciences and Arts (EU-Austria);
- Academician for European Academy of Sciences (EU-Greece);
- Fellow (Life) of the American Society of Mechanical Engineers (USA);
- Fellow of Institute of Engineering and Technology (United Kingdom);
- Fellow of Industry Academy: International Artificial Intelligence Industry Alliance (HK),
- Fellow of International Engineering and Technology Institute (Hong Kong),
- Fellow of Asia-Pacific Technological Sciences Academy (Hong Kong),
- Distinguished Fellow for Institute of Data Science and Artificial Intelligence, (China), and,
- Fellow of the American Institute for Medical and Biological Engineering (USA) with his citation reads: “For outstanding contributions in non-contact, early detection of human-health abnormality non-invasively with infrared-physics-technology”.

Eddie received the 2022 Alumni Highly Commended Award from the VC of Newcastle University, UK for his contributions to the society and achievements as academia. Winner of the 2024 2nd IETI (International Engineering and Technology Institute) Ramesh Agarwal Lifetime Achievement Award in Science, Engineering or Technology. This award honors individuals with lifetime achievements in research, education, and service towards the advancement of any discipline of engineering and technology.

Since 1992, he works as Faculty in the School of Mechanical & Aerospace Engineering in Nanyang Technological University, Singapore. He is the: Lead Editor-in-Chief for the ISI Journal of Mechanics in Medicine and Biology for dissemination of original research in all fields of mechanics in medicine and biology since 2000; & Lead Editor-in-Chief for the ISI Journal of IET – AI in Surgery for dissemination of original research in integrating of artificial intelligence, surgery, and biomedical engineering, since 2024; <https://www.worldscientific.com/page/iet/ai-surgery>.

He is included in the Stanford list of the World's top 2% Scientists since 2019 (ranked <80 out of 64,425 as 0.001% in the field of Biomedical Engineering). The ranking method is calculated by removing the self-citation of the literature. His Google Scholar (h-index: 73+) can be found in: [<http://scholar.google.com.sg/citations?user=9QW1LYAAAAAJ>].

Abstract. Sonothrombolysis is a technique to remove blood clot from vessels by using ultrasound waves to induce acoustic cavitation (formation of microbubbles). Recent studies have demonstrated improved sonothrombolytic efficacy when using two ultrasound waves of different frequencies (dual-frequency ultrasound). Nevertheless, our recent study [1-5] suggested that an improper selection of the ultrasound frequency, specifically when one frequency is an integer multiplier of another, can weaken the cavitation intensity and the flow-induced shear stress, leading to poor sonothrombolysis outcomes. This is due to the destructive interference at these frequencies, which reduces the pressure amplitude of the resultant waves that incident on the microbubble. In this study, we investigated the hypothesis that destructive interference due to improper frequency selection can be alleviated by shifting the phase between the two ultrasound waves. To that end, a finite element model of the microbubble undergoing ultrasound-induced oscillation was developed. When ultrasound of 0.5 MHz was paired with 1 MHz, a phase shift of 270° led to shear stress of 22.5 kPa, which was one order of magnitude higher than the case without phase shift. The results obtained showed that a correctly chosen phase shift can overcome the weakened cavitation of two ultrasound waves with frequencies being an integer multiplier of another. In contrast, non-integer multipliers of frequency pairings did not show significant influence of phase shift on cavitation and shear stress. Findings from this study provide new insights into the biomechanics behind sonothrombolysis with dual-frequency ultrasound. This allows an excellent starting point for future advancement and optimization of this treatment.

References:

- [1]. ZQ Tan, EH Ooi, YS Chiew, JJ Foo, EYK Ng, ET Ooi, "Enhancing sonothrombolysis outcomes with dual-frequency ultrasound: insights from a microbubble dynamics study", **Computers in Biology and Medicine**, (2024), Vol. 181, pp. 109061 (11 pages), (IF: 7.7, Q1, Rank: 19/93 in Biology), <https://doi.org/10.1016/j.compbimed.2024.109061>.
- [2]. ZQ Tan, EH Ooi, YS Chiew, JJ Foo, EYK Ng, ET Ooi, "Delineating the effects of ultrasound and microbubble parameters on the outcome of sonothrombolysis: a computational analysis on the microbubble dynamics", **Biocybernetics and Biomedical Engineering**, (2024), 44(2), pp. 358-368, <https://doi.org/10.1016/j.bbe.2024.04.003>.
- [3]. Zhi Q Tan, Ean H Ooi, Yeong S Chiew, Ji J Foo, EYK Ng, ET Ooi, "A computational framework for the Multiphysics simulation of microbubble-mediated sonothrombolysis using a forward-viewing intravascular transducer", **Ultrasonics**, Vol. 131, (2023), pp. 106961, (12 pages), <https://doi.org/10.1016/j.ultras.2023.106961>.
- [4]. ZQ Tan, EH Ooi, YS Chiew, JJ Foo, EYK Ng, ET Ooi, "Competing Effect of Jetting During Microbubble-Mediated Sonothrombolysis", M.J.M. Mokhtarudin et al. (eds.), Proceedings of the Annual Congress of the Asia-Pacific Society for Artificial Organs, **Lecture Notes in Bioengineering**, Springer Nature, Singapore, https://doi.org/10.1007/978-981-97-1920-4_2.
- [5]. ZQ Tan, EH Ooi, YS Chiew, JJ Foo, EYK Ng, ET Ooi, "A Computational Study on the Use of Phase Shift to Improve Dual-Frequency Sonothrombolysis Outcomes", 8th **IEEE-EMBS Conference on Biomedical Engineering and Sciences (IECBES2024)**, 11-13th Dec 2024, Penang, Malaysia. (accepted) paper #1571061932.

Keynote Speech 2: Depression and AD Assessment Using Wearable Devices and AI Technology



Prof. Chengyu Liu

*Professor, Dean of School of Instrument Science and Engineering,
Southeast University, Nanjing, China*

*Director, Wearable Heart-Sleep-Emotion Intelligent Monitoring
Lab, Southeast University, Nanjing, China*

Biography: Dr. Liu received his B.S. and Ph.D. degrees in Biomedical Engineering from Shandong University, China, in 2005 and 2010 respectively. Dr. Liu completed the Postdoctoral trainings at Shandong University, Newcastle University in UK (2013-2014) and Emory University in USA (2015-2017). He is now the Dean of the School of Instrument Science and Engineering in Southeast University, a Professor of the State Key Laboratory of Digital Medical Engineering, and the founding Director of Wearable Heart-Sleep-Emotion Intelligent Monitoring Lab in Southeast University, leading the research works on medical big-data processing, medical device development and clinical applications. He is now a member of Federation Journal Committee of International Federation for Medical and Biological Engineering (IFMBE), a Council member of Chinese Society of Biomedical Engineering (CSBME), and serve as an Executive Editorial Board member for Physiological Measurement, an Deputy Editor for Medical & Biological Engineering & Computing, an International Advisory Editorial Board member for Journal of Medical and Biological Engineering, an Associate Editor for IEEE Transactions on Instrumentation and Measurement, etc. He has published more than 300 original Journal/Conference papers and holds more than 30 patents as an inventor. His research topics include: mHealth and intelligent monitoring, machine learning and big data processing for physiological signals, early detection and device development for cardiovascular diseases, sleep quality and emotion status monitoring.

Abstract. As two important challenges to emotional health issues, depression and Alzheimer's disease (AD) are becoming more pronounced. Early detection of depression and AD, continuous daily monitoring outside clinical settings is crucial. Thus, the integration of wearable healthcare systems and artificial intelligence (AI) technologies demonstrates significant potential. This talk summarizes the technology challenges exist in the research domain, including real-time signal quality assessment, robust & accurate feature detection, AI-based disease detection model development, high-quality database for training reliable and generalizable models, as well as the useful practice application refers to the specially designed clinical study with the close cooperation with doctors. The combination of wearable monitoring and AI-based technologies provides a robust means for the early detection of depression and AD. It helps to catch the early signs of the disease, provide timely intervention and treatment programs, and effectively reduce the risk of disease progression.

Keynote Speech 3: Translational Cancer Research: Advancements and Challenges



Dr. William Cho

Ph.D., RCMP, FHKIMLS, FHKSMDS, Chartered Scientist (UK), FIBMS (UK)

Department of Clinical Oncology, Queen Elizabeth Hospital, Hong Kong SAR, China

Biography: Dr. William Cho primarily focused on cancer studies with the aim of identifying biomarkers for cancer diagnosis, treatment prediction, and prognosis. As a seasoned researcher, Dr. Cho has contributed over 600 peer-reviewed papers to reputable journals including Lancet, Lancet Oncology, Annals of Oncology, Advanced Science, Journal of Thoracic Oncology, Nature Communications, Cancer Communications, PNAS, Science Advances, Journal of the National Cancer Institute, Journal of Extracellular Vesicles, Clinical Cancer Research, Molecular Cancer, and Theranostics, among others. These publications cover a wide range of topics including cancer biomarkers, non-coding RNAs, extracellular vesicles, drug repurposing and Chinese medicine. Additionally, Dr. Cho has crafted over three dozen books, including "MicroRNAs in Cancer Translational Research", "An Omics Perspective on Cancer Research", "Supportive Cancer Care with Chinese Medicine", "Drug Repurposing in Cancer Therapy: Approaches and Applications", "Resistance to Anti-CD20 Antibodies and Approaches for Their Reversal", and "Biochemical and Molecular Pharmacology in Drug Discovery" to name a few.

Dr. Cho published papers have garnered more than 30,000 citations and Dr. Cho is being listed in the top 2% most influential scientists in the world since 2017. Recently, Dr. Cho is also listed in the Highly Cited Researchers in 2023 by Clarivate.

Abstract. Cancer continues to be a major global health concern, affecting millions of lives worldwide. However, translational cancer research has emerged as a crucial approach in the fight against cancer, bridging the gap between laboratory discoveries and clinical applications. This presentation begins by introducing precision medicine and emphasizing the role of cancer biomarkers. The use of proteomic and genomic profiling, along with molecular diagnostics, is essential for identifying cancer subtypes, predicting treatment response, and determining personalized strategies.

Liquid biopsies, which involve the analysis of circulating tumor DNA and other biomarkers in liquid samples, have shown promise for non-invasive cancer detection, monitoring treatment response, and identifying resistance mechanisms. This approach has the potential to revolutionize cancer diagnosis and monitoring.

Despite significant advancements, challenges such as resistance and tumor heterogeneity pose obstacles to long-term treatment success. This presentation will cover research topics such as drug repurposing, artificial intelligence, and the utilization of Chinese medicine in cancer treatment.

Keynote Speech 4: Molecular Basis of Sleep Apnea Syndrome (SAS): Intermittent Hypoxia (IH)-Induced Changes of Gene Expression in Cells Related to Diabetes, Hypertension, and Cardiovascular Diseases and Its Mechanisms



Prof. Shin Takasawa

Department of Biochemistry, Nara Medical University, Japan

Biography: Dr. Shin Takasawa was born in 1958 in Kashiwazaki, Nigata, Japan. He qualified as a medical doctor at the age of 25 years in Yamagata University and has completed his PhD at the age of 30 years from Tohoku University School of Medicine. He has been engaged in biochemical and molecular biological research on diseases such as diabetes in Tohoku University Graduate School of Medicine as a staff of Department of Biochemistry. In the process, he found cyclic ADP-ribose as a second messenger in glucose-induced insulin secretion from pancreatic β -cells and Reg (regenerating gene)-Reg receptor system in β -cell regeneration. In 2007, he moved to professor & chairman of Department of Biochemistry, Nara Medical University and performed molecular research concerning sleep apnea syndrome (SAS)/intermittent hypoxia (IH). He has published more than 200 papers in reputed journals and has been serving as an editorial board member of Life Sci. & Int. J. Mol. Sci.

Abstract. Sleep apnea syndrome (SAS) is characterized by recurrent episodes of oxygen desaturation and reoxygenation (intermittent hypoxia [IH]), and it is a risk factor for insulin resistance/type 2 diabetes, hypertension, and cardiovascular diseases. However, the mechanisms linking IH and the diseases remain elusive. We used in vitro IH system to expose pancreatic β -cells, adipocytes, hepatocytes, skeletal muscle cells, neuronal cells, enteroendocrine cells, vascular smooth muscle cells, vascular endothelial cells, juxtaglomerular cells, cardiomyocytes to IH or normoxia for analyzing changes of gene expression and the mechanisms. We found that IH induced (1) attenuation of glucose-induced insulin secretion via downregulation CD38, (2) upregulation of adipokines via downregulation of microRNA (miR)-452, (3) upregulation of hepatokine via downregulation of miR-203, (4) upregulation of myokines via OCT1- and NRF2-mediated mechanism, (5) vascular smooth muscle cell proliferation via upregulation of EGF family, (6) upregulation of ESM1 and ICAM-1 in vascular endothelial cells via downregulation of miR-181a1, (7) upregulation of renin in juxtaglomerular cells via downregulation of miR-203, (8) upregulation of catecholamine-metabolizing enzymes in catecholamine synthesizing neuronal cells via downregulation of miR-375, and (9) downregulation of components for the CD38-cyclic ADP-ribose signal system in cardiomyocytes via upregulation of Pten. In SAS, cells throughout the body are exposed to IH, which affects various cells related to diabetes, hypertension, and heart disease, which are complications frequently seen in SAS. We have clarified the effects of IH exposure through molecular biological methods. In the future, it will be important to develop good animal models and use them to develop treatment and prevention methods.

Keywords: Diabetes, Hypertension, SAS, IH, CD38-cADPR Signal System, Reg-Reg Receptor System

Part III Poster Presentations

Poster Presentation Guidelines

Materials Provided by the Conference Organizer:

- ✚ X Racks & Base Fabric Canvases
- ✚ Adhesive Tapes or Clamps

Materials Provided by the Presenters:

- ✚ Home-Made Posters
- ✚ Posters Printed by ICBEB 2024 Committee

Requirements for the Posters:

- ✚ Material: not limited, can be posted on the Canvases
- ✚ Size: 160cm (height) × 60cm (width)
- ✚ Horizontal Head: please indicate the ICBEB logo and your paper number 'BEB****' as the head of the poster in order to make all the posters unified.



X-Rack

Best Poster Presentation Selection Procedure

Selection Criteria:

- Research Quality
- Presentation Skill
- Design

Samples of Stickers



Selection Procedure:

- Professors and experienced researchers selected by Technical Program Committee (TPC) will be invited to serve as the judges to review the posters (Note: A judge would not have a poster or know the participant exhibiting a poster).
- 2 red stickers and 2 green stickers will be provided to each judge. The red sticker stands for “Research Quality” with a value of 2 points; the green sticker stands for “Presentation Skill and Design” with a value of 1 point.
- Each judge will go around the poster session and give the stickers to the poster which he/she thinks is of high quality or well designed and well presented. Please be noticed that one judge cannot give 2 red or 2 green stickers to the same poster (one red and one green sticker are acceptable).
- After the poster session, the conference secretary will count the points from each poster, and **TWO** best poster presentations with more points will be selected. If there is a tie, the one with more red (Research Quality) stickers wins; if there is still a tie, the Chair will make the final decision.

Nature of the Award

- This award consists of free registration to ICBEB 2025 and a certificate.
- **Two Best Poster Presenters** will be selected after the session finishes, awarded certificates onsite, and announced on the ICBEB 2025 website.

List of Poster Presentations

Time: 17:00-17:40 Wednesday, November 13th, 2024

Location: Foyer, 3rd Floor

BEB7435	Effects of Inaudible Theta Binaural Beat on Brain Waves <i>Mr. Kyu-Beom Kim, Konkuk University, South Korea</i>
BEB7459	Effects of Infant Care Posture and Weight on Static Postural Balance <i>Prof. Ji-Won Kim, Konkuk University, South Korea</i>
BEB7526	lncRNA CASC11 Stabilizes NUPR1 mRNA by Recruiting SRSF1 to Promote Bladder Cancer Progression <i>Dr. Zebin Shi, The Affiliated Changzhou Second People's Hospital of Nanjing Medical University, China</i>
BEB7527	Long Non-Coding RNA SNHG3 Regulates miR-326/PAX5 Signal to Promote Proliferation and Invasion of Prostate Cancer <i>Dr. Lifeng Zhang, The Affiliated Changzhou Second People's Hospital of Nanjing Medical University, China</i>
BEB7531	Medical Big Data and Machine Learning: Application of Data Science and Acoustic Virtual Reality in Developing Machine Learning for Audiological Rehabilitation <i>Dr. Rhoddy Viveros-Muñoz, Universidad Técnica Federico Santa María, Chile</i>
BEB7533	Filum Disease Behind Fibromyalgia: A Preliminary Study <i>Dr. Miguel B. Royo-Salvadora, Institut Chiari & Siringomielia & Escoliosis de Barcelona, Spain</i>
BEB7541	Odor Recognition with Molecular Fingerprints and Graphs Through Machine Learning <i>Assoc. Prof. Fengfei Wang, Jiangsu University of Technology, China</i>
BEB7544	Reduction of Dental Metallic Artifacts in Cone-Beam CT Images: Value of A Newly Developed Algorithm for Metal Artifact Reduction <i>Mr. Yingchen Ji, Jiangsu Province Hospital of Chinese Medicine, Affiliated Hospital of Nanjing University of Chinese Medicine, China</i>
BEB7551	Red Light Promotes Repair of Inflammatory Dental Pulp Through Oxidative Stress Response of Dental Pulp Stem Cells <i>Dr. Dan Zhao & Assoc. Prof. Sijing Xie, Nanjing Stomatological Hospital, Affiliated Hospital of Medical School of Nanjing University, China</i>
BEB7571	Chest Disease Multi-Label Classification and Visualization on X-ray Images Based on the ConvNeXt Model with Asymmetric Loss <i>Dr. Junling Wen, Shanghai University of Traditional Chinese Medical, China</i>
BEB7577	Improving the Image Quality of Clinical Computed Tomography Angiography of Cerebral Vasculature Using Taguchi Dynamic Analysis Method <i>Assoc. Prof. Lung-Fa Pan, Central Taiwan University of Science and Technology, Chinese Taichung</i>

BEB7578	Evaluating Serum Valproic Acid Effective Concentrations in Epileptic Patients Using Artificial Intelligence Reverse Computation Iterative Method <i>Ms. Ya-Hui Lin, Central Taiwan University of Science and Technology, Chinese Taichung</i>
BEB7588	Value of ¹⁸ F-PSMA PET/CT in Precise Staging and Identification of Clinical Features in Prostate Cancer <i>Dr. Shurui Zhang, Second Hospital of Dalian Medical University, China</i>
BEB7589	Trillin Inhibits NF-κB/COX-2/MAPK Signaling Pathways Through Upregulation of miR-145-5p in Castration-Resistant Prostate Cancer <i>Dr. Yanlong Wang, Second Hospital of Dalian Medical University, China</i>
BEB7626	Search and Identification of Important Fluxes for Experimental Measurements with Flux Sampling <i>Dr. Yuki Kuriya, National Institutes of Biomedical Innovation, Health and Nutrition, Japan</i>
BEB7677	PTGES3 Proteolysis Through the Liposome Peptide-PROTAC Approach <i>Dr. Shiwei Liu, Southeast University, China</i>
BEB7679	A Simple Non-Powered Hand Rehabilitation Device Capable of Adjusting the Individual Finger Load: A Pilot Study <i>Prof. Jin-Seung Choi, Konkuk University, South Korea</i>
BEB7732	Metabolic and Enzymatic Engineering Approach for the Production and Degradation of Biopolymer <i>Assoc. Prof. Shuhei Noda, Kobe University, Japan</i>
BEB7739	Effects of Virtual Reality-Based Walking-in-Place Exercise (VR-WIPE) on Step Count and Balance Control Ability in the Elderly <i>Prof. Seong-Gil Kim, Korea National University of Transportation, South Korea</i>
BEB7743	An Integrated Tool for Analyzing Relationships from Variants to Genes to Proteins <i>Prof. Rayoung Park, Chonnam National University, South Korea</i>
BEB7756	Mechanical Forces Facilitate the Functional Maturation and Structural Complexity of Cardiac Organoids During <i>in vitro</i> Cardiogenesis <i>Prof. Yongdoo Park, Korea University, South Korea</i>
BEB7759	A Study on Stimulation Waveforms for Reducing Muscle Fatigue in FES Gait Training <i>Mr. Min Seok Kim, Kyungpook National University, South Korea</i>
BEB7574	A Correlational Study on Improving Patients' Cognition of Diabetes by AI Devices and Long-Term Reversal Rate of Diabetes <i>Dr. Gugen Xu and Dr. Kejing Zeng, Guangdong Second Provincial General Hospital, China</i>

BEB7768	Advancing Noninvasive Bed-Based Heart Rate Monitoring Through Ballistocardiography Measurement System <i>Dr. Chang Yan, Southeast University, China</i>
BEB7625	Fatty Acid Profile of Seed Oil of <i>Ricinodendron heudelotii</i> (Baill.) Heckel, a Native Food Plant from Africa <i>Prof. Haluk Ozparlak, Selcuk University, Turkey</i>
BEB7622	Comparison of Dose Distributions for Different Intensity Modulated Radiotherapy Planning Techniques for Rectal Cancer <i>Asst. Prof. Osman Vefa Gul, Selcuk University, Turkey</i>
BEB7623	Investigation of Antibiotic Resistance and Biofilm Properties of <i>Streptococcus agalactiae</i> Isolates Isolated from Clinical Samples <i>Prof. M. Onur Aladag, Selcuk University, Turkey</i>

Part IV Oral Presentations

General Guidelines

- ✚ Duration for Invited Oral Presentation: 20 Minutes, including 2-3 Minutes of Q&A;
- ✚ Duration for Regular Oral Presentation: 15 Minutes, including 2-3 Minutes of Q&A;
- ✚ All presenters are requested to reach the Session Room prior to the schedule and complete their presentation on time;
- ✚ Presenters are required to prepare PowerPoint or PDF Files for Presentation with Paper ID (BEB****) marked on the first/last page;
- ✚ Signed and stamped presentation certificates would be issued after the presentations.

Devices Provided by the Conference Organizer:

- ✚ Laptops (with MS-Office & Adobe Reader)
- ✚ Projectors & Screen: Ratio 4:3
- ✚ Laser Sticks
- ✚ Microphones
- ✚ Please send us the PowerPoint once it is ready and have the PPT back up in a U-disk. For presenters who do not send the PowerPoint, please save it in the laptop of the corresponding session 15 mins in advance. Kindly tell the Session Chair (before the start of your session) that you are present.

Best Oral Presentations Selection Guidelines

Selection Criteria:

ONE best presentation will be selected from EACH session based on the following criteria:

- ✓ Research Quality
- ✓ Presentation Performance
- ✓ Presentation Language
- ✓ PowerPoint Design
- ✓ Effective Communications

Selection Procedure:

- ✓ An assessment sheet (see the picture) will be distributed to the audience before the session starts.
- ✓ When the session finishes, each audience member is required to fill out the sheet (they can vote for two excellent presentations) and give it to the Session Chair.
- ✓ The Session Chair will count the votes and select the best oral presentation with more votes. In the event of a tie, the Session Chair will make the final decision.

Nature of the Award:

- ✓ This award consists of free registration to ICBEB 2025 and a certificate.
- ✓ **Best Oral Presenters** will be selected after the session finishes, awarded certificates onsite, and announced on the ICBEB 2025 website.

Assessment Sheet Sample

ICBEB 2024 Oral Presentation Assessment

Dear participants,

Thanks for your support. Kindly read the instructions below for the best oral presentation selection:

- You could select the two best oral presentations with this form, and kindly fill in the form when all the speakers finish the presentations;
- To ensure the fairness of the selection, one person could fill in only one form, kindly fill in the form by yourself and fill in your paper/abstract ID;
- The Session Chair will count the votes from each presentation and select **ONE** Best Oral Presentation in this session. If there is a tie, the Session Chair will make the final decision.
- The winner will be announced at the official website after the conference.

You can refer to the following Criteria for best oral selection:

Items	Assessment
Content	Right, Logical, Original, Well-Structured
Language	Standard, Clear, Fluent, Natural
Performance	Spirited Appearance, Dress Appropriately, Behaves Naturally
PowerPoint	Layout, Structure, Typeset, Animation, Multimedia
Interaction	Build a Good Atmosphere, Speech Time Control Properly

Please write down the paper ID and give reasons for your recommendation:

Paper ID	Reasons

Evaluated by: _____ (Paper ID: _____)

Note: Please fill it out and give it to the Session Chair or conference secretary so that the Best Oral Presentation in this session can be selected.

Oral Session 1: Biomedical Imaging, Signal Processing & Medical Informatics

Time: 14:00-17:00 Wednesday, November 13th, 2024

Location: Sugarcane Room, 3rd Floor

Session Chair: Prof. Qun Wei, Keimyung University, South Korea

14:00-14:20	BEB7754 (Invited)	Brain Age Prediction via Cross-Stratified Ensemble Learning <i>Prof. Xufeng Yao, Jiading District Central Hospital Affiliated Shanghai University of Medicine and Health Sciences, China</i>
14:20-14:35	BEB7682	CTSnet: A Multi-Modal Inputs 1dCNN-Transformer Network for Sleep Staging Classification <i>Dr. Hongji Xu, Shanghai Lehuoyuan Medical Technology Co., Ltd, China</i>
14:35-14:50	BEB7627	Prediction of Diabetic Peripheral Vasculopathy in Patient's Extremities Using Inverse Problem Algorithm and Taiwan Population-Based Clinical Data <i>Ms. Shih-Hsun Huang, Central Taiwan University of Science and Technology, Chinese Taichung</i>
14:50-15:05	BEB7660	Application of Infrared Thermography to the Inspiratory Gas Temperature Monitoring in Neonatal Mechanical Ventilation <i>Dr. Keisuke Hamada, Nagasaki University, Japan</i>
15:05-15:20	BEB7654	Association Between Poor Sleep Behaviours and Angina: Results from the NHANES 2015-2020 Pre and Mendelian Randomization Analyses <i>Ms. Qingjia Zeng and Prof. Hongpu Hu, Chinese Academy of Medical Sciences & Peking Union Medical College, China</i>
15:20-15:40	Coffee Break	
15:40-15:55	BEB7659	A Novel Lung Ultrasound Video Analysis Model by Integrating Efficient Video Compression and Spatial-Temporal Characterization Algorithms <i>Dr. Wenyu Xing, Fudan University, China</i>
15:55-16:10	BEB7553	Harnessing Deep Learning for Cardiovascular Disease Prediction from Retinal Scans <i>Mr. Sparsh Rastogi and Ms. Khushboo Modi, Thapar Institute of Engineering & Technology, India</i>
16:10-16:25	BEB7645	Breast Phantom Enhancement: Taguchi-Type Optimization for CT Scan Imaging Quality and Additive Manufacturing Realization <i>Ms. Ching-Hsiu Ke, Central Taiwan University of Science and Technology, Chinese Taichung</i>
16:25-16:40	BEB7718	Disease-Drug-Inspection Knowledge Graph Construction: Medical Relation Extraction <i>Ms. Wanqing Zhao, Chinese Academy of Medical Sciences & Peking Union Medical College, China</i>
16:40-17:00	BEB7566 (Sponsor)	Ventilator Testing <i>Mr. Sam Teta, IMT Analytics AG, Switzerland</i>

Oral Session 2: Cell Biology & Medicinal Chemistry

Time: 09:00-12:00 Thursday, November 14th, 2024

Location: Sugarcane Room, 3rd Floor

Session Chair: Dr. William Cho, Queen Elizabeth Hospital, Hong Kong SAR, China

09:00-09:20	BEB7735 (Invited)	Structure and Function of a Revolving Asymmetric Hexameric ATPase for dsDNA Genome Packaging, RNA Nanotech, Single-Pore Sensing, Drug Delivery, and Cancer mRNA Vaccines <i>Prof. Peixuan Guo, The Ohio State University, USA</i>
09:20-09:35	BEB7770 (Invited)	Intelligent Diagnostics and Therapeutics for Cancer Management – in the era of Medical Robotics <i>Prof. Sunita Chauhan, Plaksha University, India</i>
09:35-09:50	BEB7587	Comparative Efficacy of 18F-PSMA PET/CT versus Whole-Body Bone Scintigraphy in Detecting Bone Metastases in Prostate Cancer Patients <i>Dr. Shurui Zhang, Second hospital of Dalian Medical University, China</i>
09:50-10:05	BEB7610	Screening of Plasma-Specific Biomarkers in Patients with Gastric Cancer and Its Clinical Applications <i>Assoc. Prof. Neng Shen, Chongqing University Cancer Hospital, China</i>
10:05-10:20	BEB7753	Assembly Drives Reaction in Biomedical Applications <i>Ms. Qiaochu Jiang, Southeast University, China</i>
10:20-10:40	Coffee Break	
10:40-11:00	BEB7755 (Invited)	Mapping the Phospho-Catalytic Dependencies of Therapy-Resistant Tumors Reveals Actionable Vulnerabilities <i>Assoc. Prof. Jean-Philippe Coppé, University of California San Francisco, USA</i>
11:00-11:15	BEB7742	Exogenous Hydrogen Sulfide (H ₂ S) Suppresses Traumatic Stress-Induced Changes of HMGB1 and Endoplasmic Reticulum Stress (ERS) in Rat Liver and Lungs <i>Dr. Jianfeng Lu, Guangzhou Medical University Affiliated Stomatological Hospital, China</i>
11:15-11:30	BEB7760	Tandem Targeting and Dual Aggregation of an AIEgen for Enhanced Near-Infrared Fluorescence Imaging of Tumors <i>Ms. Yu Deng, Southeast University, China</i>
11:30-11:45	BEB7546	Construction of Bilingual Knowledge Graph for Coronavirus Based on LLMs <i>Ms. Pei Lou, Chinese Academy of Medical Sciences & Peking Union Medical College, China</i>
11:45-12:00	BEB7624	Antiviral Activities of <i>Teucrium orientale</i> var. <i>glabrescens</i> and <i>Teucrium orientale</i> var. <i>orientale</i> against Human Respiratory Syncytial Virus (HRSV) and Herpes Simplex Virus Type-1 (HSV1) <i>Prof. Hasan Hüseyin Doğan, Selcuk University, Turkey</i>

Oral Session 3: Biomechanical Engineering & Biotechnology

Time: 14:00-17:00 Thursday, November 14th, 2024

Location: Sugarcane Room, 3rd Floor

Session Chair: Prof. Franz E. Weber, University of Zurich, Switzerland

14:00-14:20	BEB7559 (Invited)	Osteoconduction and Bone Augmentation: When Design Meets Bone Biology <i>Prof. Franz E. Weber, University of Zurich, Switzerland</i>
14:20-14:35	BEB7687	Neurodegenerative Disease Research Using Spatial Transcriptomics <i>Dr. Ying Zhou, Southeast University, China</i>
14:35-14:50	BEB7611	Presentation of the Chilean Sharvard Corpus. A Linguistic and Audiological Resource to Improve the Assessment of Hearing Loss Through Acoustic Virtual Reality <i>Dr. Carla E. Contreras-Saavedra, Universidad San Sebastian, Chile</i>
14:50-15:10	BEB7576 (Invited)	Antimicrobial Ability of HAp/Col by Loading Gentamicin or Ag Nanoparticles <i>Prof. Masanori Kikuchi, National Institute for Materials Science, Japan</i>
15:10-15:25	BEB7542	Monitoring Effects of Propionic Acid on Neurons by Microelectrode and Platinum Resistor Array Chips <i>Mr. Yongxu Ju, Southeast University, China</i>
15:25-15:45	Coffee Break	
15:45-16:00	BEB7549	The Impact of Coaxiality of LuX-Valve Prosthetic Valve Implantation on Post-TTVR Thrombosis Risk <i>Dr. Tingting Yang, Xi'an Jiaotong University, China</i>
16:00-16:15	BEB7688	Study of the Development Potential of Human Preimplantation Embryos Using Organs on Chip <i>Dr. Zhihui Li, Southeast University, China</i>
16:15-16:30	BEB7561	Dietary Supplementation of Selenium Nanoparticle-Enriched <i>Lactobacillus casei</i> ATCC393 Alleviates the Gut Barrier Dysfunction Induced by DON Exposure in Mice by Alleviating Endoplasmic Reticulum Stress and Regulating Gut Microbiota <i>Dr. Xiaofan Song, Northwestern Polytechnical University, China</i>
16:30-16:45	BEB7543	Nanobubbles Fabricated by Continuous Repeated Compression Method <i>Mr. Tiandong Chen, Southeast University, China</i>
16:45-17:00 (Video)	BEB7548	SCFE Screw Trajectory Designing Method Integrating Greedy Algorithm and Genetic Algorithm Based on 3D CT Images <i>Mr. Weihang Tao, Beijing University of Posts and Telecommunications, China</i>

Part V Conference Venue

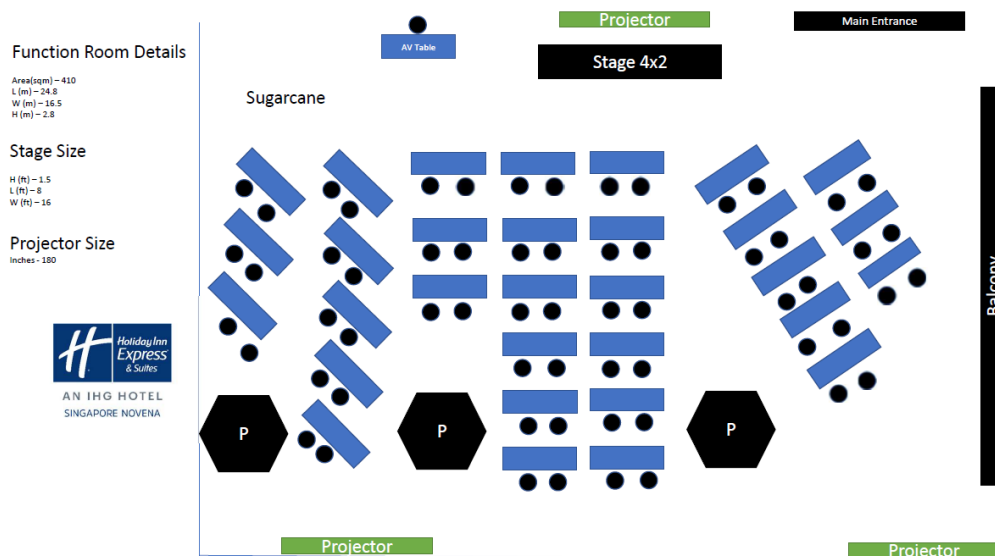
Venue: Holiday Inn Express & Suites Singapore Novena

Address: 201 Balestier Road, Singapore 329926

Website: <http://www.holidayinnexpress.com/novena>

Contact Front Desk: 65-6355-9988

Email: contact@hiexsnovena.com



Sugarcane Room, 3rd Floor, Holiday Inn Express & Suites Singapore Novena

Access to the Venue

From Singapore Changi Airport to Holiday Inn Express & Suites Singapore Novena

Distance: about 20 KM

By Taxi or Ride-Hailing Service

- Taxi stands are conveniently located at each terminal of Changi Airport.
- Inform the taxi driver you are heading to Holiday Inn Express & Suites Singapore Novena.
- The journey typically takes around 25-30 minutes, depending on traffic conditions.
- The fare should be metered, with additional charges such as airport surcharge and peak hour surcharges possibly applicable.

Tips

- **Taxi Estimate:** Fares from Changi Airport to Novena range from SGD 20 to SGD 40, excluding surcharges.
- **Ride-Hailing Apps:** [Grab](#) is a popular ride-hailing app in Singapore that offers another convenient option for transportation.

By Subway (MRT)

Route:

- **Start at Changi Airport MRT Station (CG2)**, located either at **Terminals 2 or Terminals 3**. If you arrive at Terminal 1 or 4, take the free Skytrain or shuttle bus to Terminals 2 or 3 to take the MRT.
- **Board the East-West Line (Green Line)** towards **Tanah Merah station (EW4)** for **2 stops**.
- **Alight at Tanah Merah station (EW4)**, **transfer** to a city-bound train towards Joo Koon or Tuas Link for **9 stops**.
- **Transfer at City Hall Station (EW13)** to **North-South Line (Red Line, NS25)** towards Jurong East for **5 stops**.
- **Disembark at Novena Station (NS20)** and **exit the station**.
- **Walk about 16 minutes or take a short taxi ride** to Holiday Inn Express & Suites Singapore Novena, located at 201 Balestier Road.

Tips

- **Fares:** You can use an EZ-Link card, Singapore Tourist Pass, or pay by contactless credit/debit card for the MRT.
- **MRT Operating Hours:** The earliest train from Changi Airport on weekdays is at 5:31 AM and on Sundays at 5:59 AM. The last train departs around midnight.



← (Scan the QR code to get information about the **Rail Network** in Singapore.)

By Public Bus

Taking the bus directly from Changi Airport to Novena might involve multiple transfers and can be less straightforward than taking the MRT. However, a common option involves taking a bus to the nearest MRT station and continuing by train, as described above.

NOTES: The organizing committee never authorizes any third parties for airport transfer. Please arrange it by yourself or by public transportation (taxi or subway).

Part VI Acknowledgements

On behalf of the ICBEB 2024 Organizing Committee, we would like to take this opportunity to express our sincere gratitude to our participants. Without their support and contributions, we would not be able to hold the conference successfully. We also would like to express our acknowledgements to the Technical Program Committee members who have given their professional guidance and valuable advice as reviewers. Special thanks are also expressed to the sponsors, *IMT Analytics AG* and the scientific journal *BMEF (BME Frontiers)*.

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For those who contribute to the success of the conference organization without listing the name below, we would like to say thanks as well.

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