Friday 19th, November 2021

10:00 ~ 12:00 Session 1B Room B

Biomaterials I

10:00 ~ 10:30

Keynote Speaker's topic title

Name of Keynote Speaker

10:30 ~ 10:45

#100 Characterization of a nanostructured hydroxyapatite/gelatin composite on Mg Alloy for Bioresorbable Orthopedic Implants

Duong-Thuy Tran and Ming-Long Yeh* (Department of Biomedical Engineering, National Cheng Kung University, Taiwan.)

10:45 ~ 11:00

#104 Development and applications of iontophoresis transdermal Chinese herbal patch for pregnancy and facilitating sexual desire

Nga Yin Sadonna Lau, Takashi Sato and Shyh Ming Kuo* (Department of Biomedical Engineering, I-Shou University, Kaohsiung, Taiwan.)

11:00 ~ 11: 15

#186 Hyperthermia induced by near-infrared laser-irradiated CsWO3 nanoparticles disintegrates preformed lysozyme amyloid fibrils

Po-Sheng Hu[1,*], Natalia Tomasovicova[2], Hsiu-Jen Chou[1], Meng-Chang Li[1], Katarina Zakutanska[2], Josefina Majorosova[2], and Peter Kopcansky[2] ([1]College of Photonics, National Yang Ming Chiao Tung University, Tainan City, Taiwan; [2] Institute of Experimental Physics, Slovak Academy of Sciences, Watsonova 47, Kosice, Slovakia.)

11:15 ~ 11:30

#224 Engineering prevascularized collagen-based hydrogel to accelerate regenerative repair of volumetric muscle loss injury

Ting-Lun Hsu, Wei-Lin Chen, and Ying-Chieh Chen* (Department of Materials Science and Engineering, National Tsing Hua University, Taiwan.)

11:30 ~ 11:45

#264 製備混合中藥材之 GelMA 細胞支架與體外生物相容性評估

劉卓壹 Cho-Yi Liu[1], 吳伊茹 Yi-Lu Wu[1], 楊智傑 Zhi-Jie Yang[1], 楊思緯 Si-Wei Yang[1],

陳建璋 Chien-Chang Chen[2], 謝明佑 Ming-You Shie[2,3], 蔡明慈 Ming-Tzu Tsai[1]* ([1] Department of Biomedical Engineering, Hungkuang University, Taichung City, Taiwan; [2] x-Dimension Center for Medical Research and Translation, China Medical University Hospital, Taichung City, Taiwan; [3] School of Dentistry, China Medical University, Taichung City, Taiwan.)

11:45 ~ 12:00

#284 Promotion of Cell interaction by Pollen-Mimetic MOFs with Tunable SpikeLike Nanostructures for Improvement of Humoral Immunity

Po-Kai Luo, Po-Ming Chen, Min-Chun Chiang, Wan-An Chang, Hsing-Wen Sung*

(Department of Chemical Engineering and Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, Taiwan.)

10:00 ~ 12:00 Session 1C Room C

Biomedical imaging and Signal Processing I

10:00 ~ 10:30

Keynote Speaker's topic title

Name of Keynote Speaker

10:30 ~ 10:45

#44 以控制衰減係數驗證超音波散射統計影像診斷脂肪肝之效能

黃淑蘋 S. P. Huang[1], 崔博翔 P. H. Tsui[1,2], 王蕎茵 C. Y. Wang[2] ([1]Graduate Institute of Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan; [2]Department of Medical Imaging and Radiological Sciences, College of Medicine, Chang Gung University, Taoyuan, Taiwan.)

10:45 ~ 11:00

#45 利用參考頻率法發展超音波衰減影像用於脂肪肝診斷

曾詩喬 S.C. Tseng, 崔博翔 P. H. Tsui

(Department of Medical Imaging and Radiological Sciences, College of Medicine, Chang Gung University, Taoyuan, Taiwan.)

11:00 ~ 11: 15

#89 發展基於開源和分散式架構開發之綜合性醫學影像研究資料庫

李沁霖 [1], 李建興 [1], 陳增澤 [2], 朱唯勤 [2], 孫英洲 [3], 連中岳 [1]*

([1] 國立台北護理健康大學資訊管理系; [2] 國立陽明交通大學生物醫學工程學系; [3] 臺北榮民總醫院放射線部。)

11:15 ~ 11:30

#163 自動導正焦點位置的磁共振導航技術：應用於高能聚焦超音波原發性震顫手術

梅長生 Chang-Sheng Mei*, 劉呈泓 Cheng-Hong Liu

(Department of Physics, Soochow University.)

11:30 ~ 11:45

#170 光學解析度光聲顯微術用於大體積腦連結體造影

王豐連 Feng-Lien Wan[1], 施文弘 Wen-Hong Shih[1], 陳壁彰 Bi-Chang Chen[3,4], 李夢麟 Meng-Lin Li[123]*

([1]Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan; [2]Institute of Photonics Technologies, National Tsing Hua University, Hsinchu, Taiwan; [3]Brain Research Center, National Tsing Hua University, Hsinchu, Taiwan; [4]Research Center for Applied Sciences, Academia Sinica, Nankang, Taipei, Taiwan.)

11:45 ~ 12:00

#175 使用頻域延遲相乘加總技術改進對比及解析度之光聲成像

劉峻宇 Jun-Yu Liu[1], 李夢麟 Meng-Lin Li[1,23]*

([1]Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan; [2]Institute of Photonics Technologies, National Tsing Hua University, Hsinchu, Taiwan; [3]Brain Research Center, National Tsing Hua University, Hsinchu, Taiwan.)

10:00 ~ 12:00 Session 1D Room D

Biomechanics

10:00 ~ 10:30

Keynote Speaker's topic title

Name of Keynote Speaker

10:30 ~ 10:45

#31 Effects of Visual and Auditory Cues on Movement Performance during Baduanjin Exercise in Elderly

Kanjana Chaitika, Chien-Ju Lin, Hsiao-Feng Chieh and Fong-Chin Su*

(Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan.)

10:45 ~ 11:00

#46 Mechanical characterization of porcine carotid arteries using uniaxial ring tests: the contribution of an abluminal watertight lining

Yu-Zhe Huang and Jin-Jia Hu

(National Yang Ming Chiao Tung University.)

11:00 ~ 11: 15

#133 Study of Cancer Cell Deformability in a PDMS Microchannel with integrated

Micro-Pillars

Chun-Chieh Chang[1], Heng-Ai Chang[1], Wen-Tai Chiu[1], Hong-Chen Chen[2], Han-Sheng Chuang[1,3]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Institute of Biochemistry and Molecular Biology, National Yang Ming Chiao Tung University, Taipei, Taiwan.)

11:15 ~ 11:30

#183 Developing worm on a chip for anti-sarcopenia drug prescreening

Thi Thanh Huong Pham[1], and Han-Sheng Chuang[1, 2]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Core Facility Center, National Cheng Kung University, Tainan, Taiwan.)

11:30 ~ 11:45

#219 Microfluidic Devices for Investigation of Endothelial Cell Sprouting into 3D Matrix under Oxygen Gradients

Heng-Hua Hsu[1,2], Ping-Liang Ko[2,3] and Yi-Chung Tung[2,]*

([1]Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan; [2]Research Center of Applied Science, Academia Sinica, Taipei, Taiwan; [3]Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan.)

11:45 ~ 12:00

#366 單平面椎弓螺釘用於治療脊椎骨折復位之生物力學研究

劉柏毅 [1], 林峻立 [2], 陳敬仁 [1], 賴伯亮 [1,*]

([1] 林口長庚醫院骨科部 骨骼關節研究中心; [2] 國立陽明大學 生物醫學工程學系。)

10:00 ~ 12:00 Session 1E Room E

Bioinformatics

10:00 ~ 10:30

Keynote Speaker's topic title

Name of Keynote Speaker

10:30 ~ 10:45

#28 Accurate thoracic endovascular repair for acute Type A aortic dissection using 3D surgical plan to perform covered seal tri-stents

Wei-Ling Chen[1], Yi Lee[2], Tsung-Lung Yang[3], Chung-Dann Kan[4,*]

([1]Institute Food and Drug Administration, Ministry of Health Welfare Taipei County, Taiwan. [2]College of Medicine, National Cheng Kung University Tainan, Taiwan. [3]KSVGH Originals & Enterprises Kaohsiung Veterans General Hospital Kaohsiung County, Taiwan. [4]Division of Cardiovascular Surgery, Department of Surgery National Cheng Kung University Hospital, College of Medicine, National Cheng University Tainan.)

10:45 ~ 11:00

#148 無接觸防疫 AI 手勢辨識之研究

王家鍾 Jia-Jung Wang, 涂立翰 Li-Han Tu*, 李廷恩 Ting-En Li*

(Department of Biomedical Engineering, I-Shou University.)

11:00 ~ 11: 15

#177 應用迴歸模型實現 COVID-19 疫情預測

蘇勁愷 Chin-Kai Su[1], 黃千育 Qian-Yu Huang[2], 阮唯紘 Wei-Hong Ruan[3], 李懿恩 I-En Lee[4], 趙國爲 Kuo-Wei Chao[5], 趙苡筑 Yi-Chu Chao[6], 蘇治滙 Chih-Hui Simon Su[7,*], 龔存雄 CihunSiyong Alex Gong[7], 李明心 Ming-Xin Lee[8], 陳柏源 Po-Yuan Chen[3], 邱緯航 Wei-Hang Chiu[1]

([1]Fudan High School Department of Vehicle Engineering, [2]National Taipei University of Technology; [3]Department of Biological Science and Technology, China Medical University; [4]Department of Mechatronic Engineering, National Taiwan Normal University; [5]Department of Mechanical Engineering, National Cheng Kung University; [6]Department of Public Health, National Taiwan University; [7]Department of Electrical Engineering, Chang Gung University; [8]Institute of New Drug Development, China Medical University.)

11:15 ~ 11:30

#178 Acoustic Filtering for Flow Energy Analysis

Wei-Hong Ruan[1], I-En Lee[2], Chin-Kai Su[3], Qian-Yu Huang[4], Kuo-Wei Chao[5], Yi-Chu Chao[6], Chih-Hui Simon Su[7,*], Cihun-Siyong Alex Gong[7], Po-Yuan Chen[1], Ming-Xin Lee[8] and Wei-Hang Chiu[3]

([1]Department of Biological Science and Technology, China Medical University, Taichung, Taiwan; [2]Department of Mechatronic Engineering, National Taiwan Normal University, Taipei, Taiwan; [3]Fudan High School, Taoyuan, Taiwan; [4]Department of Vehicle Engineering, National Taipei University of Technology, Taipei, Taiwan; [5]Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan; [6]Department of Public Health, National Taiwan University, Taipei, Taiwan; [7]Department of Electrical Engineering, Chang Gung University, Taoyuan, Taiwan; [8]Institute of New Drug Development, China Medical University, Taichung, Taiwan.)

11:30 ~ 11:45

#240 應用卷積神經網絡於簽名與腦波之雙重身份辨識系統

王智弘 Zhi-Hong Wang, 楊佳燕 Chia-Yen Yang*

(Department of biomedical engineering, Ming Chuan University.)

11:45 ~ 12:00

#369 結合機器學習與電腦視覺技術開發細胞品質評估輔助工具

孫瑜蔓 Yu-Man Sun[1], 江青芬 Ching-Fen Jiang[1,*],

徐善慧 Shan-hui Hsu[2]

([1]Department of Biomedical Engineering, I-Shou University; [2]Institute of Polymer Science and Engineering, National Taiwan University.)

10:00 ~ 12:00 Session 1F Room F

Biosensors I

10:00 ~ 10:30

Keynote Speaker's topic title

Name of Keynote Speaker

10:30 ~ 10:45

#32 A Multifunctional Microfluidic Device for Blood Typing and Blood Diseases Screening

You-Mao Liao[1], Hao Yuan[1], Chun-Yen Chang[1], Ping-Yeh Chiu[1,2], and Chien-Fu Chen[1,*]

([1]Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan; [2]Department of Orthopaedic Surgery, Bone and Joint Research Center, Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Taoyuan, Taiwan.)

10:45 ~ 11:00

#33 To detect point mutation for circulating tumor cells through real-time electrochemical platform

Yi-Chen Huang[1], Wan-Hsin Lu[1], Sheng-Wen Chen[3], Chung-Er Huang[3], Sheng-Tung Huang[2], Yi-Chiuen Hu[1]

([1]Taiwan Instrument Research Institute, National Applied Research Laboratories, Zhubei City, Hsinchu County, Taiwan; [2]Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei; [3]CytoAurora Biotechnologies, Inc., Zhubei City, Hsinchu County, Taiwan.)

11:00 ~ 11: 15

#113 Developing a Self-compensated Algorithm on Bead-Based Diffusometry for Highly Stable Biosensing

Wei-Long Chen[1], and Han-Sheng Chuang[2,*]

([1]Department of Biomedical Engineering National Cheng Kung University, Tainan, Taiwan; [2]Medical Device Innovation Center National Cheng Kung University, Tainan, Taiwan.)

11:15 ~ 11:30

#173 Studying the interaction of carbohydrate-protein by triboelectric nanosensor and its use for label-free bacterial detection

Yu-Zih,Lin[1], Yu-Ping,Pao[1], Zong-Hong,Lin[1]

([1]Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan.)

11:30 ~ 11:45

#217 A Microfluidic Device for Plant Pathogen DNA Extraction and Detection

Min-Yen Hsin[1], Po-Hsuan Chao[1], Wen-Pin Hung[2] and Nien-Tsu Huang[1,3]*

([1]Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; [2]Biomass Materials Systems Technology Department, Industrial Technology Research Institute (ITRI) Central Region Campus, Hsinchu, Taiwan; [3]Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan.)

11:45 ~ 12:00

#258 Detection of coronavirus spike protein using magnetic nanoparticles and disposable carbon electrodes

Pravanjan Malla[1], Hao-Ping Liao[1], Chi-Hsien Liu[1]*

([1]Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan City.)

13:10 ~ 15:10 Session 2C Room C

Medical Devices and Instrumentation

13:10 ~ 13:40

Keynote Speaker's topic title

Name of Keynote Speaker

13:40 ~ 13:55

#125 Triboelectric Nanogenerator (TENG) based Self-Powered Synaptic Sensor for Biomedical Applications

Ravi Ranjan Kumar[1], Akhilesh Kumar Gupta[1], and Shu-Ping Lin[1]

([1]Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung, Taiwan.)

13:55 ~ 14:10

#135 Thermocatalytic ROS Generation and antibacterial activity of Bi2Te3 Nanoplates with High Seebeck-Coefficient

Imran Khan[1] and Z. H. Lin[2]

([1]Institute of NanoEngineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan; [2]Institute of Biomedical Engineering, National Tsing Hua University,

Hsinchu, Taiwan.)

14:10 ~ 14:25

#174 Validation and Performance Tests of Novel Dry Electrode for High-Definition Transcranial Electrical Stimulation

D.V.A. Vo[1], S.M. Wang[1] and Jia-Jin Chen[1]*

([1]Biomedical Engineering Department, National Cheng Kung University, Tainan, Taiwan.)

14:25 ~ 14:40

#212 Measuring pH drop during the LAMP reaction to detect Dengue type II infection

Peng-Wen Liu[1], Yong-Li, Pan[1], Ko-Lun Yen[3], Yun-Syuan, Lin[3], Shainn-Wei Wang[3], Guey-Chuen Perng[2,3], Hsien-Chang Chang[1] *

([1]Department of the Biomedical Engineering, National Cheng Kung University; [2]Department of Microbiology and Immunology, National Cheng Kung University, Tainan, Taiwan; [3]Institute of Basic Medical Sciences, College of Medicine, National Cheng Kung University, Tainan, Taiwan.)

14:40 ~ 14:55

#248 具電池驅動、智聯網監控多個可拋針之手持式、無線電熱磁消融刀

羅詩凱 Shi-Kai Luo[1], 李柏寬 Po-Kuan Li[1], 陳柏寰 Bo-Huan Chen[1], 江承恩 Cheng-En Jiang[1], 陳儒楷 Ru-Kai Chen[1], 謝振傑 Jen-Jie Chieh[1]*

([1]Institute of Electro-Optical Engineering National Taiwan Normal University.)

14:55 ~ 15:10

#396 基於傅爾電針原理之雲端穴位電檢裝置

李家慧 Jia-Hui Li[1], 吳昕諭 Xin-Yu Wu[1], 王智昱 Chih-Yu Wang[1]*

([1]Department of Biomedical Engineering, I-Shou University, Kaohsiung, Taiwan.)

13:10 ~ 15:10 Session 2D Room D

Bioelectronics

13:10 ~ 13:40

Keynote Speaker's topic title

Name of Keynote Speaker

13:40 ~ 13:55

#99 Artificial Self-Powered devices as Intelligent Neuromorphic and E-Skin Sensor Applications

Akhilesh Kumar Gupta[1], Sreekanth Ginnaram[2], Advaita Ghosh[1] and Shu-Ping Lin[1]

([1]Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung, Taiwan; [2]Department of Material Science and Engineering, National Chung Hsing University, Taichung, Taiwan.)

13:55 ~ 14:10

#193 Triboelectrification of Cholesteric Liquid Crystals for Self-Powered Applications

Y.-H. Chen[1], P.-Y. Lin[2], T.-W. Wang[1], N. Tiwari[1], Y.-C. Hsiao[2,*] and Z.-H. Lin[1,*]

([1]Institute of Biomedical Engineering, Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; [2]Institute of Biomedical Optomechatronics, Taipei Medical University and Cell Physiology and Molecular Image Research Center, Taipei Medical University, Taipei, Taiwan.)

14:10 ~ 14:25

#230 Neuromodulation Effects of Theta Burst Stimulation on Motor Excitability in Freely Moving Rats

C.Y. Chen[1], C.W. Wu[2], C.W. Peng[2], and J.J. Chen[1]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]School of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan.)

14:25 ~ 14:40

#239 Central Thalamic Stimulation Modulates Gut Microbiota-Brain Map Profile and Restores Social Behaviors in Autistic Animal Model

Chih-Yu Chen[1], Ting-Chun Lin[1], Ting-Chieh Chen[1], Yi-Chen Lin[1], Chih-Yu Wang[1], Yen-Ting Wu[1], Yu-Chun Lo[2]*, and

YouYin Chen[1, 2]*

([1]Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan; [2] The Ph.D. Program for Neural Regenerative Medicine, Taipei Medical University, Taipei, Taiwan.)

14:40 ~ 14:55

#272 運用小波卡爾曼濾波及擬合參數峰自動偵測聽性腦幹反應第五波

楊明修 Ming-Xiu Yang[1]，彭康政 Kang-Cheng Peng[2]，吳炤民 Chao-Min Wu[3]*

([1,2,3]Nation Central University. [2]Taipei Veterans General Hospital Department of Otorhinolaryngology-Head and Neck Surgery.)

14:55 ~ 15:10

#342 An Aptamer-based Magnetic Flow Cytometer

Chih-Cheng Huang[1,]*

(Institute of Nanoengineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan.)

13:10 ~ 15:10 Session 2E Room E

Rehabilitation and Assistive Technology

13:10 ~ 13:40

Keynote Speaker's topic title

Name of Keynote Speaker

13:40 ~ 13:55

#14 電腦輔助客製化護具設計軟體開發

許軒懷 Hsuan-Huai Shu[1],蕭諭璟 Yu-Ching Hsiao[1]，方晶晶 Jing-Jing Fang[1]*

([1]Department of Mechanical Engineering, National Cheng Kung University.)

13:55 ~ 14:10

#85 NIRS modulation of Interhemispheric Phase Synchronization by Electrical Theta-burst Stimulation (eTBS)

Van-Truong Nguyen [1], Jia-Jin Jason Chen [1,2]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan.)

14:10 ~ 14:25

#293 虛擬實境滑板訓練中腳跟著地與腳尖著地策略之關節角度差異：前驅研究

Phunsuk Kantha[1], Dar-Ming Lai[2], Wei-Li Hsu[1,3,]*

([1]School and Graduate Institute of Physical Therapy, College of Medicine, National Taiwan University, Taiwan; [2]Division of Neurosurgery, Department of Surgery, National Taiwan University Hospital, Taiwan; [3]Physical Therapy Center, National Taiwan University Hospital, Taiwan.)

14:25 ~ 14:40

#394 Decoding Egocentric Boundary with Composable Boundary Perceptron from Neural Activity in Animal Retrosplenial Cortex

Nai-Yu Tong[1], Jia-Wei Chen[1], Han-Lin Wang[1], Chin-Yu Chou[1], Yun-Ting Kuo[1], Yi-Chen Lin[1], Hao-Cheng Chang[1], Bo-Wei Chen[1], Yu-Chun Lo[2], Ching-Fu Wang[1], and You-Yin Chen[1, 2]*

([1]Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan; [2] The Ph.D. Program for Neural Regenerative Medicine, Taipei Medical University, Taipei, Taiwan.)

14:40 ~ 14:55

#424 Temporal Causal Manipulation for FVS-Recurrent Neural Network to Decode Forelimb Trajectory

Ju-Hsuan Li[1], Shih-Hung Yang[2], Chao-Hung Kuo[1,3], Yu-Chieh Lin[1], Chin-Yu Chou[1], Yi-Chen Lin[1], Yun-Ting Kuo[1], Yu-Chun Lo[4]*, Po-Chuan Chen[5], and You-Yin Chen[1, 4]

([1]Department of Biomedical Engineering, Yang Ming Chiao Tung University, Taipei, Taiwan; [2]Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan; [3]Department of Neurosurgery, Neurological Institute, Taipei Veterans General Hospital, Taipei, Taiwan; [4]The Ph.D. Program for Neural Regenerative Medicine, Taipei Medical University, Taipei, Taiwan; [5]School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, USA.)

14:55 ~ 15:10

#439 Hippocampal Spatial Decoding with Intrinsically Motivated Reinforcement Learning Utilized Hierarchical Approach

Yi-Ming Wang[1], Bo-Wei Chen[1], Jia-Wei Chen[1], Ching-Fu Wang[1], Shih-Hung Yang[2]*, Chin-Yu Chou[1], Yi-Chen Ling[1],

Yun-Ting Kuo[1], Yu-Chun Lo[3], Po-Chuan Chen[4], and You-Yin Chen[1, 3]*

([1]Department of Biomedical Engineering, Yang Ming Chiao Tung University, Taipei, Taiwan; [2]Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan; [3] The Ph.D. Program for Neural Regenerative Medicine, Taipei Medical University, Taipei, Taiwan; [4]School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, USA.)

13:10 ~ 15:10 Session 2F Room F

Tissue Engineering and Regenerative Medicine I

13:10 ~ 13:40

Keynote Speaker's topic title

Name of Keynote Speaker

13:40 ~ 13:55

#8 Shockwave therapy modulates the expression of BMP2 for prevention of bone and cartilage loss in the lower limbs of postmenopausal osteoporosis rat model

Shan-Ling Hsu[1,2,3], Wen-Yi Chou[1,2], Chieh-Cheng Hsu[1,2], Jih-Yang Ko[1,2], Shun-Wun Jhan[1,2], Ching-Jen Wang[1,2], Meng-Shiou Lee[5], Tsai-Chin Hsu[1,2] and Jai-Hong Cheng[1,4,6]*

([1]Center for Shockwave Medicine and Tissue Engineering, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan; [2]Department of Orthopedic Surgery, Sports Medicine, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan; [3]Fooyin University, School of Nursing, Kaohsiung, Taiwan; [4]Medical Research, Kaohsiung Chang Gung Memorial Hospital and Chang Gung University College of Medicine, Kaohsiung, Taiwan; [5]Department of Chinese Pharmaceutical Science and Chinese Medicine Resources, China Medical University, Hsueh-Shih Road, Taichung, Taiwan; [6]Department of Leisure and Sports Management, Cheng Shiu University, Kaohsiung, Taiwan.)

13:55 ~ 14:10

#73 Facile Fabrication of SU-8 Nanodots by Nanosphere Lens Lithography for the Enhancement of PC12 Neuronal Differentiation

Lester U. Vinzons[1], Chun-Ting Lin[2] and Shu-Ping Lin[2,]*

([1]Ph.D. Program in Tissue Engineering and Regenerative Medicine, National Chung Hsing University, Taichung, Taiwan; [2]Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung, Taiwan.)

14:10 ~ 14:25

#121 Effect of Random and Aligned Silica Nanofibers on Femur Bone Repair in Mice

Hung-Hsin Huang, Wen-Tyng. Li*

(Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan City, Taiwan.)

14:25 ~ 14:40

#166 A Phenyl Isothiocyanate-Modified Gelatin-based Ink for Rapid Hemostasis

W. C. Chang[1] and Yi-Chen Ethan Li[1,]*

([1]Department of Chemical Engineering, Feng Chia University, Taichung, Taiwan.)

14:40 ~ 14:55

#229 An Integrated Smart Electroactive Dressing that Promotes Wound Healing and Noninvasively Monitors Healing Progress

Nhien Nguyen[1,2], Zong-Hong Lin[3], Snigdha Roy Barman[3], Chiranjeevi Korupalli[2], Ni-Xuan Song[2], Hsing-Wen Sung[2]* and Yu-Jung Lin[1] *

([1]Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan; [2]Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan; [3]Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan.)

14:55 ~ 15:10

#232 Viscous Fingering 3D Patterning Technique for Fabricating Vascularized Tissues in a Short Time

Min-Chun Tsai, Ying-Chieh Chen*

(Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan.)

15:30 ~ 17:30 Session 3B Room B

Nanomedicine and Nanotechnology I

15:30 ~ 16:00

Keynote Speaker's topic title

Name of Keynote Speaker

16:00 ~ 16:15

#167 Exosome brain delivery of checkpoint inhibitor conjugates to locally recruit immune cells for glioma immunotherapy

Shang-Wen Lin[1], Jui-Chen Tsai[1] and Yan-Jye Shyong[1,*]

([1]School of Pharmacy and Institute of Clinical Pharmacy and Pharmaceutical Sciences, National Cheng Kung University, Tainan, Taiwan.)

16:15 ~ 16:30

#191 A Polyphenol-containing Gelatin Based Nonwoven Mat with Synergistic Function for Reducing Air pollutants

Ting-Teng Wang[a], Meng-Yi Bai[a,b]*

([1]Graduate Institute of Biomedical Engineering and Biomedical Engineering Program, Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Taipei, Taiwan; [2]Adjunct Appointment to the National Defense Medical Center, Taipei, Taiwan.)

16:30 ~ 16:45

#222 Dual-targeted Nanoreactor for Triple-negative Breast Cancer Chemodynamic Therapy and Immunotherapy

Ying-Xiang Luo[1], Shih-Hsuan Chan[2], Hung-Wei Yang[1]*

([1]Institute of Medical Science and Technology, National Sun Yat-sen University, Kaohsiung, Taiwan; [2]Graduate Institute of Integrated Medicine, China Medical University, Taichung, Taiwan.)

16:45 ~ 17:00

#226 An Oral Drug Delivery System That Can Noninvasively Penetrate Blood-Brain Barrier for Treating Brain Tumors

S.H. Chuang, H.M. Tai, Y.B. Miao, K.H. Chen, and H.W. Sung*

(Department of Chemical Engineering and Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, Taiwan)

17:00 ~ 17:15

#341 Lectin-Triggered Aggregation of Glyco-Gold Nano-probes for Detection of Hydrogen Peroxide

Che-Ming Yeh [1], Jyun-Wei Chen [1], Ming-Chun Chen [1] and Chian-Hui Lai [1,2]*

([1]Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung, Taiwan; [2]Department of Medicinal and Applied Chemistry, Kaohsiung Medical University, Kaohsiung, Taiwan.)

17:15 ~ 17:30

#347 Prevention of Brain Tumor Recurrence using 3D Printed Scaffold Coated with Fenton Nano-Agent MOF

Thrinayan Moorthy[1], Shang-Hsiu Hu[1,*]

([1]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan.)

15:30 ~ 17:30 Session 3C Room C

Biosensors II

15:30 ~ 16:00

Keynote Speaker's topic title

Name of Keynote Speaker

16:00 ~ 16:15

#273 Development of a bead-based agglutination assay combined with image analysis for risk prediction of severe dengue

Sy Kurt[1], Jia-Hao Ruan[1], Ya-Lan Lin[2], Tzong-Shiann Ho[2,5], Yi-Ju Chen[3], Ko-Lun Yen[3], Guey-Chuen Perng[3,4,5], Hsien-Chang Chang[1,6] *

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Department of Pediatrics, National Cheng Kung University, Tainan, Taiwan; [3]Department of Microbiology and Immunology, National Cheng Kung University, Tainan, Taiwan; [4]Institute of Basic Medical Sciences, College of Medicine, National Cheng Kung University, Tainan, Taiwan; [5]Center of Infectious Disease and Signaling Research, National Cheng Kung University, Tainan, Taiwan; [6]Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan.)

16:15 ~ 16:30

#289 Development of Functional Near-infrared Spectroscopy System for Middle Cerebral Artery Occlusion

Jing-Pu Li[1], Chun-I Wu [1], Chun-Wei Wu[2], Jia-Jin Chen[1]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]School of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan.)

16:30 ~ 16:45

#363 Detection of SARS-CoV-2 Viral RNA in Human Saliva Using EDL-FET Biosensors

Akhil K Paulose [1], Chih-Cheng Huang [1]*, and Yu-Lin Wang[1]*

(Institute of NanoEngineering and Microsystems, National Tsing Hua University, Hsinchu, Taiwan.)

16:45 ~ 17:00

#385 Lable-Free Protein Detection by Using A Three-Electrode Copper PhosphateDeposited Chip and Molecular Weight Cut-Off Filters for Disease Diagnosis of Periparturient Cows

Fang-Wei Kan[1], Chien-Kai Wang[2] and Ching-Chou Wu[1,]*

([1]Department of Bio-industrial Mechatronics Engineering, National Chung Hsing University, Taichung, Taiwan; [2]Department of Animal Science, National Chung Hsing University, Taichung, Taiwan.)

17:00 ~ 17:15

#400 Study of Diffusometry Enabled Rapid Antimicrobial Susceptibility Testing with Blood-borne Bacterium

Ting-Yi Lin[1], Zeng-Weng Chen[2] and Han-Sheng Chuang[1,3,]*

([1]Department of Biomedical Engineering National Cheng Kung University, Tainan, Taiwan; [2]Agricultural Technology Research Institute, Hsinchu City, Taiwan; [3]Core Facility Center, National Cheng Kung University, Tainan, Taiwan.)

17:15 ~ 17:30

#449 整合極低頻電磁場抑制癌細胞生長元件與癌細胞阻抗分析系統之研製

王明浩 Min-Haw Wang[1]，張凌昇 Ling-Sheng Jang[2]，劉展邑 Chan-Yi Liu[2]，戴元萱 Yuan-Hsuan Tai[3]，and 陳俊宏 Chun-Hong Chen [3]*

([1]Department of Electrical Engineering, Chinese Culture University, Taipei, Taiwan; [2]Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan; [3]Department of Electrical Engineering, Tunghai University, Taichung, Taiwan.)

15:30 ~ 17:30 Session 3D Room D

Others

15:30 ~ 16:00

Keynote Speaker's topic title

Name of Keynote Speaker

16:00 ~ 16:15

#3 Open innovation importation factors in Med-tech Innovation process

Wei Chih Lu[1], Nattana Teerawanidsan[2], Si Ru Chen[1], Peng Ting Chen[1] *

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan; [2]Arix CNC machine Co., Ltd., Tainan City, Taiwan.)

16:15 ~ 16:30

#4 Implementation Strategy of Medical Digital Transformation: Orthodontic Service Process study

I-Ching Tsai[1], Hui-Chi Wei[1], Te-Ai Tang[1], Peng-Ting Chen, Ph.D[1]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan City.)

16:30 ~ 16:45

#6 Transformation Strategy for Reverse Healthcare Frugal Innovation

Kuan Chung Wang[1], Tieu Nguyen Minh Duy[1], Yi-Jing Lin[1], Hsin Hsiung Huang[1], and Peng Ting Chen[1,]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan.)

16:45 ~ 17:00

#17 遠端股骨最適鎖定式骨板選用及其適位分析系統

周秉諭 Ping-Yu Chou[1]，吳顯佑 Hsien-Yu Wu[1]，陳彥守 Yan-Shou Chen[1]，方晶晶 Jing-Jing Fang[1]*

([1] 國立成功大學機械工程學系。)

17:00 ~ 17:15

#36 Development of a tetrazolium-derived paper-based diagnostic device as an alternative screening tool for asymptomatic bacteriuria during pregnancy

Michael Muljadi, and Chao-Min Cheng

(Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan.)

17:15 ~ 17:30

#399 機械刺激模擬腕隧道症候群發病機制及可行治療方法研究

Ting-Ching Hu[1,3], Tai-Hua Yang[1,2,3]*

([1]Department of Biomedical Engineering, [2]Department of Orthopaedic Surgery, National Cheng Kung University Hospital, College of Medicine; [3]Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan.)

15:30 ~ 17:30 Session 3E Room E

Clinical Engineering

15:30 ~ 16:00

Keynote Speaker's topic title

Name of Keynote Speaker

16:00 ~ 16:15

#35 利用血流動力學參數和脈波特徵透過 XGBoost 估測左心室射血分數

楊志凱 Zhi-Kai Yang[1], 劉省宏 Shing-Hong Liu[1], 潘利國 Kuo-Li Pan[2]

([1]Department of Computer Science and Information Engineering, Chaoyang University of Technology, Taichung, Taiwan; [2]Division of Cardiology, Chiayi Chang Gung Memorial Hospital, Chiayi City, Taiwan.)

16:15 ~ 16:30

#50 Deep Learning Technology and System Development in application to Gynecologic Oncology

Ching-Wei Wang[1,2]*, Yi-An Liou[1], Yi-Jia Lin[3,4], Cheng-Chang Chang[5,6], Pei-Hsuan Chu[4], YuChing Lee[2], Chih-Hung Wang[7], and Tai-Kuang Chao[3,4]

([1]Graduate Institute of Biomedical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan; [2]Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Taipei, Taiwan; [3]Department of Pathology, Tri-Service General Hospital, Taipei, Taiwan; [4] Institute of Pathology and Parasitology, National Defense Medical Center, Taipei, Taiwan; [5]Department of Gynecology and Obstetrics, Tri-Service General Hospital, Taipei, Taiwan; [6]Graduate Institute of Medical Sciences, National Defense Medical Center, Taipei, Taiwan; [7]Department of Otolaryngology-Head and Neck Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan.)

16:30 ~ 16:45

#129 Development and Phantom Tests of Intraoperative MRI-Guided Stereotactic Robot

C.-K. Chen[1], M.-S. Ju[1], C.-Y. Huang[2], C.-C.K. Lin[3]

([1]Dept. of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Institute of Clinical Medicine, National Cheng Kung University, Tainan, Taiwan; [3]Dept. of Neurology, College of Medicine, National Cheng Kung University, Tainan, Taiwan.)

16:45 ~ 17:00

#195 醫療警報管理在內科加護病房急重症生理監視器的應用

林依潔 Yi-Chieh Lin[1]*, 陳韋成 Wei-Cheng Chen[2], 陳信泰 Hsin-Tai Chen[2]

([1]China Medical University. [2]China Medical University Hospital.)

17:00 ~ 17:15

#327 超聲波法分離基質血管細胞群之外泌體對於傷口癒合之影響

黃念齊 Nien-Chi Huang[1], 康嵐雅 Lan-Ya Kang[1], 丁柏茹 Po Ju Ting[2], 林品妤 Pin Yu Lin[2], 傅耕彥 Keng-Yen Fu[1], 謝百善 Pai-Shan Hsieh[1], 王鐘毅 Chung-Yih Wang[2]*, 戴念梓 Niann-Tzyy Dai[1]*

([1]Division of Plastic and Reconstructive Surgery, Department of Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei; [2]Department of Chemical Engineering and Biotechnology, Tatung University, Taipei.)

17:15 ~ 17:30

#372 The Impact of the Excessive Noise Exposure on the Damage to the Basilar Membrane: Finite Element Analysis

余祐丞 You-Cheng Yu[1], 王堂權 Tang-Chuan Wang[2,3,4], 施子卿 Tzu-Ching Shih[1,5]*

([1]The PhD Program for Medical Engineering and Rehabilitation Science, College of Biomedical Engineering, China Medical University, Taichung, Taiwan; [2]School of Medicine, College of Medicine, China Medical University, Taichung, Taiwan; [3]Department of Public Health, College of Public Health, China Medical University, Taichung, Taiwan; [4]Department of Otolaryngology-Head and Neck Surgery, China Medical University Hsinchu Hospital, Zhubei City, Hsinchu County, Taiwan; [5]Department of Biomedical Imaging and Radiological Science, College of Medicine, China Medical University, Taichung, Taiwan.)

15:30 ~ 17:30 Session 3F Room F

Smart Healthcare: AI, IoT, Big data

15:30 ~ 16:00

Keynote Speaker's topic title

Name of Keynote Speaker

16:00 ~ 16:15

#5 Enhancement Strategy for Mobile Health Application User Engagement

Kuan Chung Wang[1], Vu Thi Mai[1], Chun Yin Lai[1], and Peng Ting Chen[1,]*

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan.)

16:15 ~ 16:30

#184 智慧語音辨識情緒機器人

廖友禎 Yu Chen Liao, 楊佳燕 Chia Yen Yang*

(Department of Biomedical Engineering, Ming Chuan University)

16:30 ~ 16:45

#249 以卷積神經網路建構誘導性多能幹細胞分化之分類模型

陳增澤 [1], 朱唯勤 [1], 邱士華 [2], 連中岳 [3]*

([1] 國立陽明交通大學生物醫學工程學系; [2] 臺北榮民總醫院醫學研究部; [3] 國立臺北護理健康大學資訊管理系)

16:45 ~ 17:00

#335 Machine-learning-based Frozen Shoulder Rehabilitation Exercise Monitoring System using Wearable Inertial Measurement Units

Chih-Chun Lai[1], Kai-Chun Liu[2], Chien-Pin Liu[1], Chia-Yeh Hsieh[1,3], Yu Tsao[2] and Chia-Tai Chan[1,]*

([1]Department of Biomedical Engineering National Yang Ming Chiao Tung University, Taipei, Taiwan; [2] Research Center for Information Technology Innovation Academia Sinica, Taipei, Taiwan; [3]Bachelor's Program in Medical Informatics and Innovative Applications, Fu Jen Catholic University, New Taipei City, Taiwan.)

17:00 ~ 17:15

#362 雙通道 Unet 配合區域增強管狀濾波器應用於 CCTA 冠狀動脈重建

簡祥秦 Hsiang-Chin Chien[1,2], 王慶萍 Ching-Ping Wang[1,2], 鄭景陽 Jing-Yang Zheng[1], 陳佑銓 Yu-Chuan Chen[3], 陳中明 Chung-Ming Chen[3], 李佳燕 Chia-Yeh Lee1*

([1]National United University; [2]National Yang Ming Chiao Tung University; [3]National Taiwan University.)

17:15 ~ 17:30

#426 Development of Medical Wearable Device for Screening Arrhythmia and Structural Heart Diseases Based on Pulse Audiogram with Time Frequency Transformation and Deep Learning Classifier

Che-Wei Lin[1,4,*], You-Liang Xie[1], Chou-Ching K. Lin[2,4], Ju-Yi Chen[3], Liang-Miin Tsai[3,5], Yung Chang[1], Chao-Wen Lee[1], Xin-Rong Lin[1], Yu-Hsiu Yen[1], Tzu-Chien Wen[1], Yin-Chen Lee[1], YuCheng Ko[1]

([1]Department of Biomedical Engineering, College of Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Department of Neurology, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan; [3]Division of Cardiology, Department of Internal Medicine, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan; [4]Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan; [5]Department of Internal Medicine, Tainan Municipal Hospital, Tainan, Taiwan.)

Friday 20th, November 2021

8:30 ~ 10:30 Session 4B Room B

Nanomedicine and Nanotechnology II

8:30 ~ 9:00

Keynote Speaker's topic title

Name of Keynote Speaker

9:00 ~ 9:15

#119 新型仿貽貝結構導電水凝膠電極應用於腦電圖量測

黃耀弘 Yao-Hong Huang, 林遠彬 Yuan-Pin Lin* , 楊閎蔚 Hung-Wei Yang

(Institute of Medical Science and Technology, National Sun Yat-sen University)

9:15 ~ 9:30

#252 Synthesis of multifunctional particles for biosensing based on Molecularly Imprinted Polymer

Chun-Jui Chen[1] , Han-Sheng Chuang[1,2,*]

([1]Department of Biomedical Engineering National Cheng Kung University, Tainan, Taiwan; [2]Core Facility Center, National Cheng Kung University, Tainan, Taiwan.)

9:30 ~ 9:45

#345 Preparation of Multi-function Nanomaterials in Application to Malignant Tumor Treatment

Tzu-Chien Wu, Chiao-Ling Lai, Keng-Fang Hsu and Chian-Hui Lai *

(Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung, Taiwan.)

9:45 ~ 10:00

#346 高分子奈米微粒自組裝 mRNA 藥物應用於典型骨缺陷治療

張旭欣 Hsu-Hsin Chang[1], 吳承欣 Cheng-Xin Wu[1] and 林進裕 Chin-Yu Lin[1] *

(Institute of New Drug Development, China Medical University, Taichung, Taiwan.)

10:00 ~ 10:15

#352 Development of Indocyanine Green and PD-L1 Inhibitor Co-Loaded Perfluorocarbon Double Nanoemulsions for Photoimmunotherapy of Breast Cancer

N.T.U Pham[1] and Yu-Hsiang Lee [1,2]*

([1]Department of Biomedical Sciences and Engineering, National Central University, Taoyuan, Taiwan; [2]Department of Chemical & Materials Engineering, National Central University, Taoyuan, Taiwan.)

10:15 ~ 10:30

#356 Marginative Delivery of Covalent Organic Frameworks (COFs) Nanoplates as an Antigen-Capturing Platform for Lung Metastasis Immunotherapy

T. H. Wu, S. H. Hu*

(Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan)

8:30 ~ 10:30 Session 4C Room C

Tissue Engineering and Regenerative Medicine II

8:30 ~ 9:00

Keynote Speaker's topic title

Name of Keynote Speaker

9:00 ~ 9:15

#260 Negative pressure treated adipose-derived stem cells enhanced adipogenic differentiation in adipose tissue regeneration

Ming Huei Cheng[1], Li-Heng Feng, Jia-Wei Liu, Hui-Yi Hsiao[2]*

([1]Plastic and Reconstructive Surgery, Chang Gung Memorial Hospital, Taoyaun, Taiwan; [2]Center for Tissue Engineering, Chang Gung Memorial Hospital, Taoyaun, Taiwan.)

9:15 ~ 9:30

#379 積層製造摻鋰矽酸鈣支架於骨軟骨再生應用

郭庭佑 T.Y. Kuo[1,2], 林彥宏 Y.H. Lin[2,3], 周筠庭 Y.T. Chou[2,4], 謝明佑 M.Y. Shie[2,5]*

([1] 生物醫學工程碩士學位學程，中國醫藥大學; [2] 多維列印醫學研究及轉譯中心，中國醫藥大學附設醫院; [3] 醫學工程與復健科技產業博士學位學程，中國醫藥大學; [4] 牙醫學系口腔醫學產業碩士班，中國醫藥大學; [5] 牙醫學系，中國醫藥大學。)

9:30 ~ 9:45

#410 載有人類軟骨細胞之去細胞化 ECM 生物墨水結合機械力刺激 對軟骨形成相關標誌物之表現具協同作用

林彥宏 Y.H. Lin[1,2], 賴友和 Y.H. Lai[2,3], 林家立 G. Lin[3], 謝明佑 M.Y. Shie[2,4], 陳怡文 Y.W. Chen[2,5]*

([1] 醫學工程與復健科技產業博士學位學程，中國醫藥大學; [2] 多維列印醫學研究及轉譯中心，中國醫藥大學附設醫院; [3] 化學系，國立中興大學; [4] 牙醫學系，中國醫藥大學。 [5] 生物醫學研究所，中國醫藥大學。)

9:45 ~ 10:00

#411 可吸收性支架熔融沉積成型與軟骨修補應用

謝明發 Ming-Fa Hsieh[1]*, 王嘉榮 Jia-Rong Wang[1], Lassina Barro[1], 廖川傑 Chuan-Chieh Liao[2]

(1Department of Biomedical Engineering, Chung Yuan Christian University; [2]Department of Mechanical Engineering, Chung Yuan Christian University.)

10:00 ~ 10:15

#432 具關節炎專一追蹤特性之胜肽序列定性與分析及應用於外泌體遞送小分子核糖 核酸治療骨關節炎之可行性研究

李炘杰 Hsin-Chieh Lee[1], 陳姿尹 Tzu-Yin Chen[1] and 林進裕 Chin-Yu Lin[1]*

([1]Institute of New Drug Development, China Medical University, Taichung, Taiwan)

10:15 ~ 10:30

#452 開發生物列印導電神經導管於周邊神經再生應用

高浚瑋 C.W. Kao[1,2], 廖昭凱 C.K. Liao[1,2], 陳悅生 Y.S. Chen[3], 謝明佑 M.Y. Shie[2,4]*

([1] 醫學工程學院生物醫學工程碩士學程學位，中國醫藥大學; [2] 多維列印醫學研究及轉譯中心; 中國醫藥大學附設醫院; [3] 醫學工程學院，中國醫藥大學; [4] 牙醫學系，中國醫藥大學。)

8:30 ~ 10:30 Session 4D Room D

Biomaterials II

8:30 ~ 9:00

Keynote Speaker's topic title

Name of Keynote Speaker

9:00 ~ 9:15

#290 Mussel-Inspired Injectable Self-Healing Microspheres for CNS Repair Following TBI

C.H.Huang[1], S.H.Hu[2]

(Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan.)

9:15 ~ 9:30

#378 A fast estimation platform of anticancer drugs for personal precision medicine by using double reaction hydrogel droplet and dielectrophoretic separation technique

Yi-Xuan Lan[1], and Hui-Min David Wang[1,]*

([1]Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung City, Taiwan.)

9:30 ~ 9:45

#388 Microfluidic Circulatory Platform for in vitro Cell Culture Studies

Ping-Liang Ko[1,2], Heng-Hua Hsu[1,3], Chien-Kai Wang[2], Wei-Hao Liao[1] and Yi-Chung Tung[1,]*

([1]Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan; [2]Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan. [3]Department of Engineering and System Science, National Tsing Hua University, Hsinchu, Taiwan.)

9:45 ~ 10:00

#412 以靛青綠/白蛋白複合物作為次世代短波紅外醫用顯影劑之特性探討

孫翊堂 Yi-Tang Sun[1], 張翊謙 Yi-Cian Jhang[1,2], 江晨寧 Jiang-Chen Ning[1,2], 莊宜靜 I-Ching Chuang[1,2], 張惠涵 Huei Han Zhang[1,2], 陳民樺 Min-Hua Chen[4], 林政鞍 Lin,Cheng-An[4]*

(Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan.)

10:00 ~ 10:15

#433 Influence of P2O5 nucleating agent on mechanical properties and in vitro biocompatibility of CaSiO3 glass-ceramics

G.Y. Hung[1], P.Y. Chen[1,2], Y.T. Huang[3], C.S. Chen[4], P.L. Lai[5], C.Y. Wang[1,2], Y.L. Lin[3], C.S. Tu[1,6]* and K.C. Feng[1,2]*

([1]International Ph.D. Program in Innovative Technology of

Biomedical Engineering and Medical Devices, Ming Chi University of Technology, New Taipei City, Taiwan; [2]Department of Mechanical Engineering, Ming Chi University of Technology, New Taipei City Taiwan; [3]School of Medicine, Fu Jen Catholic University, New Taipei City, Taiwan; [4]Department of Mechanical Engineering, Hwa Hsia University of Technology, New Taipei City Taiwan; [5]Department of Orthopedics Surgery, Bone and Joint Research Center, Chang Gung Memorial Hospital at Linkou, Taoyuan, Taiwan; [6]Department of Physics, Fu Jen Catholic University, New Taipei City.)

10:15 ~ 10:30

#444 陽極氧化純鈦進行微波水熱奈米表面處理與聚多巴胺塗層改質

郭馥禎 Fu Zhen, Guo[1], 林殿傑 Dan Jae, Lin[2,3]

([1]Department of Biomedical Imaging and Radiological Science, China Medical University; [2]School of Dentistry, China Medical University. [3]The Master Program for Biomedical Engineering, China Medical University.)

8:30 ~ 10:30 Session 4E Room E

Biomedical Imaging and Signal Processing II

8:30 ~ 9:00 **Keynote Speaker's topic title**

Name of Keynote Speaker

9:00 ~ 9:15

#176 僅單發射通道及雙接收通道之超音波超快陣列成像

蕭丞智 Cheng-Chih Hsiao1, 李夢麟 Meng-Lin Li[1,2,3]*

([1]Department of Electrical Engineering, National Tsing Hua University, Taiwan; [2]Institute of Photonics Technologies, National Tsing Hua University, Taiwan; [3]Brain Research Center, National Tsing Hua University, Hsinchu, Taiwan.)

9:15 ~ 9:30

#196 Development of Novel Methods to Assess Cerebral Autoregulation Using Diffuse Correlation Spectroscopy and Pulse Transit Time

Fan-Yu Yen[1], Pei-Yi Lin[2], Jason Sutin[2] and Jia-Jin Chen[1,*]

([1]Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Fetal-Neonatal Neuroimaging and Development Science Center, Division of Newborn Medicine, Boston Children's Hospital, Harvard Medical School, Boston, USA.)

9:30 ~ 9:45

#28 肺癌切片檢體影像中肺腺癌與鱗狀細胞癌之分類

彭辰皓 Chen-Hao Peng[1,2], 程大川 Da-Chuan Cheng [1,2]*, 李易展 Yi-Jang Lee[3]

([1]Department of Biomedical Imaging and Radiological Science, China Medical University, Taichung, Taiwan; [2]AI in Medical Care Program, China Medical University, Taichung, Taiwan; [3]Department of Biomedical Imaging and Radiological Sciences, Yang-Ming Jiao-Tung University, Taipei, Taiwan.)

9:45 ~ 10:00

#295 Deep-Learning Ultrasound Imaging Optimization

Chieh-Jui Hsu[1], Chia-Lun Yeh[2] and Geng-Shi Jeng[1]

([1]Department of Electronics Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; [2]Foxconn Technology Group, Taipei, Taiwan.)

10:00 ~ 10:15

#397 A Platform for Measuring Extracellular Stimuli on Transmembrane Potential using Extended-gate Electric-double-layer (EDL) Field-effect Transistors

Shu-Yi Tsai[1], Po-Hsuan Chen[2], Adarsh Tripathi[3], Chia-Che Wu[2], Yu-Lin Wang[1,2,*], Jung-Chih Chen[4,5,6]

([1]Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; [2]Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan; [3]Institute of Molecular Medicine, National Tsing Hua University, Hsinchu, Taiwan; [4]Institute of Biomedical Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; [5]Department of Electrical and Computer Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; [6]Department of Biological Science and Technology, National Yang Ming Chiao Tung University, Hsinchu, Taiwan.)

10:15 ~ 10:30

#402 基於平面波複合技術之超音波統計參數影像

詹憲融 H. J. Chan[1], 謝寶育 B. Y. Hsieh[1], 崔博翔 P. H. Tsui[1]

([1]Department of Medical Imaging and Radiological Sciences, College of Medicine, Chang Gung University, Taoyuan, Taiwan.)

13:00 ~ 15:00 Session 5C Room C

MOST Oral Presentation I

13:00 ~ 13:12

#2 Portable Optical Immunoassay Platform for Instant Acute Coronary Artery Disease Detection

Yi-Chien Chen[1], Z.Y. Liao[1], T.Y. Lin[2] and Chen-Han Huang[1,*]
([1]Department of Biomedical Sciences and Engineering, National Central University, Taoyuan, Taiwan; Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan.)

13:12 ~ 13:24

#25 開發多孔隙電漿子瓊脂糖凝膠與聚合物進行局部表面電漿共振與表面增強拉曼光譜分子檢測

陳韻竹 Yun-Chu Chen, 楊宗恩 Tsung-En Yang, 陳奕帆 Yih-Fan Chen
(Institute of Biophotonics, National Yang Ming Chiao Tung University, Taipei 112, Taiwan.)

13:24 ~ 13:36

#53 智慧型尿路結石多參數微感測系統之開發與應用(II)

鍾文耀 Wen-Yaw Chung[1]*, 蔡芳生 Vincent F. Tsai[2], 盧思博 Roozbeh F. Ramezani[1], 李政新 C.H. Li[1], 黃琳順 L.S. Huang[1], 吳冠毅 C. Wu[1], 王宜巧 Y. Wang[1], 鍾芯彤 M. Mayeni[1]
([1]Electronic Engineering Department, Chung-Yuan Christian University; [2]Urology, Ten-Chen Medical Group.)

13:36 ~ 13:48

#69 Multifunctional Glutathione-Dependent Hydrogel Eye Drops with Enhanced Drug Bioavailability for Glaucoma Therapy

Jui-Yang Lai[1,*]
([1,*]Graduate Institute of Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan.)

13:48 ~ 14:00

#76 整合型微流體系統於抗生素自動化篩選及個人化醫療之應用

Wen-Bin Lee[1], Chun-Chih Chien[2], Huey-Ling You[2], Feng-Chih Kuo[3], Mel S. Lee[3,4] and Gwo-Bin Lee[1]*
([1]Department of Power Mechanical Engineering, National Tsing Hua University, Taiwan; [2]Department of Laboratory Medicine, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University, Taiwan; [3]Department of Orthopaedic Surgery, Kaohsiung Chang Gung Memorial Hospital, Chang Gung University, Taiwan; [4]Department of Surgery, Paochien Hospital, Taiwan.)

14:00 ~ 14:12

#81 銀髮族安養與養護機構照護系統建置計畫第一年計畫成果報告

柴昌維 [1]*, 趙增偉 [2], 林大智 [1]
([1] 中國文化大學; [2] 世新大學。)

14:12 ~ 14:24

#149 Development of self-powered wearable sensing system and its application in sweat detection

Zong-Hong Lin*
(Institute of Biomedical Engineering, Department of Power Mechanical Engineering, Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, Taiwan.)

14:24 ~ 14:36

#159 Metallic glass coating for enhancing the performance of tattoo needles

Jinn P. Chu, Wen-Che Liao, Pakman Yiu, Ying-Tai Chuang, Yi-Feng Sun
(Department of Materials Science and Engineering National Taiwan University of Science and Technology.)

14:36 ~ 14:48

#205 利用多通道生理與慣性感測技術並整合非同步與自適性演算法研製新一代穿戴 式孕婦智慧監控裝置

杜翌群 Yi-Chun Du[1]*, 邱緯翔 Wei-Siang Ciou[1], 林美燕 Lim Bee Yen[1], 郭保麟 Pao-Lin Kuo[2]
([1]Department of Biomedical Engineering, NCKU, Taiwan; [2]Department of Obstetrics and Gynecology, College of Medicine, NCKU, Taiwan.)

14:48 ~ 15:00

#227 Individual diagnosis using brain connectomical information and machine learning approach for patients with migraine

Chen-Yuan Kuo[1], Pei-Lin Lee[2], Fu-Chi Yang[3], Shuu-Jiun Wang[4], Ching-Po Lin[2,5], Kun-Hsien Chou[2,5]*

([1]Aging and Health Research Center, National Yang Ming Chiao Tung University, Taipei, Taiwan; [2]Institute of Neuroscience, National Yang Ming Chiao Tung University, Taipei, Taiwan; [3]Departments of Neurology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan; [4]Department of Neurology, Taipei Veterans General Hospital, Taiwan; [5]Brain research center, National Yang Ming Chiao Tung University, Taipei, Taiwan.)

13:00 ~ 15:00 Session 5D Room D

MOST Oral Presentation II

13:00 ~ 13:12

#254 Ki-67 免疫組織染色切片之自動細胞計數、分割與判讀

王慶萍 Ching-Ping Wang[1,2], 張忠軒 Zhong-Xuan Chang[1], 葉鴻 Hung Yeh[1,2], 葉奕成 Yi-Chen Yeh[3], 李佳燕 Chia-Yeh Lee[1]*

([1]National United University; [2] 國立陽明交通大學, National Yang Ming Chiao Tung University; [3] 臺北榮民總醫院, Taipei Veterans General Hospital.)

13:12 ~ 13:24

#294 銀髮族智慧個人化腰背護具之研究與開發(智慧銀髮鐵布衫)

游忠煌 [1,*], 王協源 [2], 吳鴻章 [1], 鄒年城 [2], 吳孝觀 [1], 吳泓熠 [1], 陳博因 [1]

([1] 國立陽明交通大學物理治療暨輔助科技學系; [2] 國立陽明交通大學資訊工程學系。)

13:24~ 13:36

#309 開發耳內式腦波感測與迷走神經刺激裝置於偏頭痛預測與治療

Li-Wei Ko[1,2,3,4]*, Sandeep Vara Sankar Diddi[1,4], Congying He[2,4], Yu Chi Wu[3,4], Shuu-Jiun Wang[5]

([1]International Ph.D. Program in Interdisciplinary Neuroscience, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; [2]Institute of Bioinformatics and Systems Biology, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; [3]Department of Biological Science & Technology, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; [4]Center for Intelligent Drug Systems and Smart Bio-Devices (IDS2B), National Yang Ming Chiao Tung University, Hsinchu, Taiwan; [5]Brain Research Center and School of Medicine, National Yang Ming Chiao Tung University, Taipei, Taiwan.)

13:36~ 13:48

#317 Ultra-fast and Sensitive Detection of E. Coli Enabled by Rotational Diffusometry in Combination with Loop Mediated Isothermal Amplification

Dhrubajyoti Das[1], Wei-Long Chen[1] , Han-Sheng Chuang [1,2,*]

([1]Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; [2]Medical Device Innovation Centre, National Cheng Kung University, Tainan, Taiwan.)

13:48~ 14:00

#322 Developing Monocyte-Targeting Peptide Liposomes for Targeted Drug Delivery

Shih-Hsun Huang[1], Hsien-Ming Lee[2,*] and Bill Cheng[1,*]

([1]Graduate Institute of Biomedical Engineering, National Chung-Hsing University, Taichung, Taiwan; [2]Institute of Chemistry, Academia Sinica, Taipei, Taiwan.)

14:00~ 14:12

#339 Study Tumor Oxygen Microenvironments in vitro within Microfluidic Devices Using Frequency-Domain Fluorescence Lifetime Imaging Microscopy

H.-M. Wu[1], W.-J. Chang[1,2], C.-C. Peng[1], and Yi-Chung Tung[1,*]

([1]Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan; [2] Institute of Biophotonics, National Yang Ming Chiao Tung University, Taipei, Taiwan.)

14:12~ 14:24

#344 以足壓深度學習網路建構巴金森氏症步態異常分類研究

詹曉龍 Hsiao-Lung Chan[1,5]*, 陳柔賢 Rou-Shayn Chen[2], 黃英儒 Ying-Zu Huang[2] 陳瓊珠 Chiung-Chu Chen[2], 張雅如 Ya-Ju Chang[3], 廖駿偉 Jiunn-Woei Liaw[4,6], 黎明富 Ming-Fu Li[1,5], 歐陽源 Yuan Ouyang[1], 郭政忠 Cheng-Chung Kuo[1], 許文彥 Wen-Yen Hsu[1], 廖國勝 Kou-Sheng Liaw[1], 賴彥宏 Yen-Hung Lai[1]

([1] 長庚大學電機系; [2] 長庚醫療財團法人神經內科; [3] 長庚大學物理治療學系; [4] 長庚大學機械系; [5] 長庚醫療財團法人神經科學研究中心; [6] 長庚醫療財團法人分子影像與轉譯中心。)

14:24~ 14:36

#403 智慧型坐壓與下肢運用感測與分析－應用於脊髓損傷者之懸吊橢圓機訓練

詹曉龍 Hsiao-Lung Chan[1,6]*, 張雅如 Ya-Ju Chang[2,6], 陳嘉玲 Chia-Ling Chen, 廖駿偉 Jiunn-Woei Liaw[4,7], 陳思文 Szi-Wen Chen[5,6], 歐陽源 Yuan Ouyang[1,8], 郭政忠 Cheng-Chung Kuo[1], 許文彥 Wen-Yen Hsu[1], 沈婉萍 Wan-Ping Shen1, 林琬婷 Wan-Ting Lin[1], 陳昱聰 Yu-Tsung Chen[1]

([1] 長庚大學電機系; [2] 物理治療學系; [3] 早期療育研究所; [4] 機械系; [5] 電子系; [6] 長庚醫療財團法人神經科學研究中心; [7] 分子影像與轉譯中心; [8] 神經內科。)

14:36~ 14:48

#451 搭載中藥奈米載體結合生物列印做為皮膚損傷修復之研究

謝明佑 M.Y. Shie[1,2]*

([1] 牙醫學系，中國醫藥大學; [2] 多維列印醫學研究及轉譯中心，中國醫藥大學附設醫院。)

14:48~ 15:00

#455 開發奈米纖維膜/高分子材料複合微流體平台實現快速細胞活性及蛋白質表現分析

李健峰 Kin Fong Lei

(Master Program in Nano-Electronic Engineering and Design.)