

Friday 19th, November 2021

08:40 ~ 13:00 Session 1

1F Lobby

Others

#161 Ultrasound Mediated Microbubble Smart Gel Cavitation for Inner Ear Drug Delivery

Jui-Hsun Hsieh^{1,2}, Ai-Ho Liao^{1*}, Ho-Chiao Chuang², Cheng-Ping Shih³, Chih-Hong Wang³

(¹National Taiwan University of Science and Technology; ²National Taipei University of Technology; ³National Defense Medical Center Tri-Service General Hospital)

#179 Improvement Plan for Adverse Events of Medical Materials- Example as Artificial Kidney

Miao-Yueh Lu¹, Chao-Ping Tsai¹, Mei-Ling Lai¹

(¹戴德森醫療財團法人嘉義基督教醫院資材室)

#275 The Development of Automated Waste Needle Recycling System

Shao-Chieh Liao¹, Jiun-Hung Lin², Pei-Yin Chen^{1*}

(¹Computer Science and Information Engineering, National Cheng Kung University; ²College of Electrical Engineering and Computer Science, National Kaohsiung University of Science and Technology)

#282 Development of Bedside Loudspeaker System in Intensive Care Unit

Shao-Chieh Liao, Min-Hui Hsu, Jiun-Hung Lin³, Pei-Yin Chen^{1*}

(¹Computer Science and Information Engineering, National Cheng Kung University; ²National Tainan Second Senior High School; ³College of Electrical Engineering and Computer Science, National Kaohsiung University of Science and Technology)

#296 The New System of Human Body Measurement :the Ying and Yang Inch in Human Body

Chih-I Tsai^{1,2,3}, Yu Chien Lin², Yi-Da Lee²

(¹Rolor Electronic Int'l Corp. Clinical Branch; ²Health-Up Health Management Institute; ³Taiwan Asia-Pacific Health Management Association)

#306 Design and Development of Atmospheric Low-Temperature Plasma Equipment for Water Sterilization

Dong Jin Li, Guan Yi Li, Chia Wei Hsu, Ming Chen Wang^{*}

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

#364 Evaluation the Inhibitory Effect of Probiotics on Helicobacter Pylori Infection by Using a Dynamic Gastric Simulator via 3D Technique

Chun-Chih Hsu¹, Yung-Ching Huang¹, Chen-Yu Kao^{1,2*}

(¹Graduate Institute of Biomedical Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan; ²Biomedical Engineering Research Center, National Defense Medical Center, Taipei, 11490, Taiwan)

08:40 ~ 13:00 Session 1

1F Lobby

Nanomedicine and Nanotechnology

#37 採用一階段自組裝程序製備具有 pH 應答功能 PEGylated chitosan/PLGA 奈米複合微粒以增強疏水性 DOX 之抗癌效果

Sheng-Jyun Huang, Ming-Hung Hsieh, Tzu-Hao Wang, Ya-Hsuan Chou, Wen-Hsuan Chiang^{*}

(Department of Chemical Engineering, National Chung Hsing University, Taichung 402, Taiwan;)

#55 O-nitrobenzene-β-D-galactopyranoside Nanoparticles Enhance Anti-glioblastoma and Immunoactivation Efficacy of PD-L1 Inhibitor

Shu-Chin Chiang¹, Yu-Cheng Chin², Chih-Chia Huang², Fei-Ting Hsu¹

(¹Department of Biological Science and Technology, China Medical University; ²Department of Photonics, National Cheng Kung University)

#112 Harnessing the Tunable Cavity of Nanoceria for Enhancing Y-27632-mediated alleviation of Ocular Hypertension

Chia-Jung Yang¹, Jui-Yang Lai^{1,*}

(¹Graduate Institute of Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan)

#118 Marginative Delivery-Mediated T Cell Infiltration in Lung Metastasis by Biomimetic Nano-Raspberry

W. T. Shen, S. H. Hu*

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

#165 Preparation and Evaluation of Cannabidiol Loaded Polythioketal Nanoparticles and Microparticles

Yu-Jia Peng¹, Cheng-Chia Yu², Shiao-Pieng Lee^{3,4}, Chen-Yu Kao^{1,5*}

(¹Graduate Institute of Biomedical Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan; ²Institute of Oral Science, Chung Shan Medical University, Taichung, 40201, Taiwan; ³Tri-Service General Hospital, Division of Oral & Maxillofacial Surgery, Taipei, 11490, Taiwan; ⁴Graduate Institute of Dental Science, National Defense Medical Center, Taipei, 11490, Taiwan; ⁵ Biomedical Engineering Research Center, National Defense Medical Center, Taipei, 11490, Taiwan)

#228 Toward Understanding the Purely Geometric Effects of Silver Nanoparticles on Potential Application as Ocular Therapeutics via Treatment of Bacterial Keratitis

Ting-Yi Lin¹, Jui-Yang Lai^{1*}

(¹ Graduate Institute of Biomedical Engineering, Chang Gung University, Taoyuan 33302, Taiwan)

#235 Magnetic Drug Delivery System for Breast Cancer Therapy

Jen-Chieh Cheng¹, Hsiu-Min Chen², Cherng-Jyh Ke^{2*}

(¹China Medical University, Department of Biological Sciences and Technology; ² China Medical University Hospital, Biomaterials Translational Research Center)

#244 Study of Photocurable Bioprinted Bioinks Using PEGDA/GelMA/HAMA Hybrid Hydrogel for Myogenesis

Atturu Pavanchandh¹, Chih-Kuang Wang^{2*}

(^{1,2*}Department of Medicinal and Applied Chemistry, Kaohsiung Medical University, Taiwan)

#308 Development of a Nanoparticle-PDMS Trap to identify SERS Spectra of Cell Lines

Hao-Jui Tseng¹, Yung-Chieh Chan², Cheng-Chung Chang^{1,2*}

(¹Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taiwan; ²Intelligent Minimally-Invasive Device Center, National Chung Hsing University, Taiwan)

#360 Penetrated Delivery of CuS Nanoplates-Loaded pH-Responsive Polymeric Micelles to Brain Tumor Through Convection Enhanced Delivery

Y. J. Chen, S. H. Hu*

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

#371 Liposome Delivery of Therapeutic Substances for Alzheimer's Disease Therapy

Wei-Chieh Tseng^{1,#}, Hsin-Hua Li^{2,#}, Chih-Li Lin^{2,*}, Yi-Tzu Yang¹, KuoChih Liao^{1,*}

(¹Graduate Institute of Biomedical Engineering, National Chung Hsing University; ²Institute of Medicine, Chung Shan Medical University)

#377 Influences of Gold Nanoparticle Surface Modifications and Sizes on Lesion Malignancy Screening with Computed Tomography

Jing Shi¹, Wei-Ting Lin¹, Guo-Sheng Lin¹, Shan-Ru Ye^{1,2}, Teng-Yuan Chang¹, Kuo-Chih Liao^{1,*}

(¹Graduate Institute of Biomedical Engineering, National Chung Hsing University; ²Department of Radiology, Taichung Veterans General Hospital)

#389 A Study of Alginate-Chitosan-Nanoparticles Loaded with Resveratrol to Inhibit Melanoma Cells

Chi-Hung Hsiao, Hong-Min Lin, Wen-Ren Chen¹, Pei-Ru Chen^{*}, Yun-Ju Chuang^{*}

(Department of Biomedical Engineering, Ming Chuan University, Taoyuan, Taiwan)

08:40 ~ 13:00 Session 1

1F Lobby

Rehabilitation and Assistive Technology

#128 Development of Contact Lens Database and Searching Program

Huang, Chia-Hua, Yang, Yu-Fen, Wu, Yu-Ting, Wu, Yi-Shan, Ho, Mao-Chang, Chou, Kuo-Feng
(Department of Biomedical Engineering, Yuanpei University of Medical Technology)

#145 Evaluation of Thermal and Depression Functions of Wheelchair Cushions

Wei, Yu-Ting , Huang, Wei-Young , Wu, Ming-Yang , Lai, Yi-He, Zheng, Xin-Ru , Chou, Kuo-Feng
(Department of Biomedical Engineering, Yuanpei University of Medical Technology)

#152 Flexible, Wearable, and Self-Powered Device Design toward Wound Healing Applications

Shih-Min, Huang^{1,2} , Shih-Min, Wei¹, Chih-Wei, Peng² , Po-Kang, Yang^{1*}
(¹National Central University ; ²Taipei Medical University)

#194 Effectiveness of a New 3D-Printed Dynamic Hand-Wrist Splint in Chronic Stroke Patients: a Randomized Controlled Trial

Yu-Sheng Yang¹, Chi-Hsiang Tseng², Wei-Chien Fang³, Shyh-Chour Huang^{2*}
(¹Department of Occupational Therapy, Kaohsiung Medical University, Kaohsiung, Taiwan ; ²Mechanical Engineering Department, National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan; ³Rehabilitation Medicine Department, Kaohsiung Municipal United Hospital, Kaohsiung, Taiwan)

#214 The Target Speech Enhancement System for Learning Environment Using Computer Vision and Auditory Localization Technology

Hsuan Kuei¹, Wei-Siang Ciou¹, Yi-Chun Du^{1,*}
(¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan)

08:40 ~ 13:00 Session 1

1F Lobby

Smart Healthcare: AI, IoT, Big data

#13 Using Wireless System to Improve Vital Sign-Recording in Wards

Cheng, Chihung¹, Tzeng, Mingji¹, Chiang, Hongsen^{1*}
(¹Department of Biomedical Engineering, National Taiwan University Hospital, Taipei, Taiwan)

#38 Malignant and Benign Lung Nodule Classification Based on Low Dose CT Images

Ch en-Hao¹, Chia Chia -Chi ², Fu -Zong Wu², Da -Chuan Cheng ^{1*}
(中國醫藥大學生物醫學影像暨放射科學學系; ²高雄榮民總醫院放射線部)

#43 A Machine Learning Based Medication Analysis for Sepsis Patients

Yen-Jung Chiu¹, Chao-Chun Chuang², Shih-Tsang Tang^{3*}
(¹Institute of Biomedical Informatics, National Yang Ming Chiao Tung University, Taipei, Taiwan; ²National Center for High-Performance Computing, Hsinchu, Taiwan; ³Department of Biomedical Engineering, Ming Chuang University, Taoyuan, Taiwan)

#52 Time- and Frequency- Related EEG Features for Multi-Category Classification Using Deep Learning Method

Wei Wang, Chunyu Chen, Poren Chen, Chun-chuan Chen
(¹Laboratory of Computational Neuroscience, National Central University, Taoyuan, Taiwan)

#70 Gesture Recognition through a Dual-Stream Model of 3DCNN+ConvLSTM and LSTM

Hao-Chuan Chu ¹, Yong-Xian Wang¹, Ting-Yu Wang², Tzu-Hao Chang², Yen-Ching Chang^{1*}
(¹Chung Shan Medical University; ²Chung Shan Medical University Hospital)

#117 Using Artificial Intelligence to Optimize Classification and Exploration of Lung Nodules Computerized Tomography Images

Yi-Wen Huang¹, Huai-Lu Zhang^{1,2} , Qi-Ming Gu^{3,*} , Tzong-Rong Ger⁴
(¹ Chung Yuan Christian University Department of Biomedical Engineering ; ² Taoyuan General Hospital, Ministry of Health and Welfare)

#153 Self-Powered Sensing of Chemical Analytes at the Robotic Fingertips

S. Roy Barman¹, Y.J. Lin¹, N. Tiwari¹, K.M. Lee¹, A. Pal¹, Z.H. Lin^{1,2,3,*}

(¹Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, 30013, Taiwan; ²Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, 30013, Taiwan; ³Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu 30013, Taiwan)

#185 An Identification System of Mobile Gaming Addiction Using EEG Based on Machine Learning Algorithms

Ting-Hsuan Sung, Chia-Yen Yang^{*}
(Department of Biomedical Engineering, Ming Chuan University, Taoyuan, Taiwan)

#197 Improving the Two-dimensional Surface Dose Measurement Efficiency in Proton Therapy Patient Specific Quality Assurance Procedure: Using Head and Neck Cancer Patients

Yu-Syuan Liou¹, Hong-Jhih Huang¹, Yi-Chen Lin¹, Yang-Wei Hsieh^{1,2}, Yu-Hao Chiu¹, Zi-Xiang Su¹, Pei-Ju Chao^{1,2}, Yu-Jie Huang², Tsair-Fwu Lee^{1,3,4,*}

(¹ 國立高雄科技大學電子工程系醫學物理與資訊實驗室; ² 高雄長庚紀念醫院放射腫瘤科; ³ 高雄醫學大學生物醫學工程博士學位學程; ⁴ 高雄醫學大學醫學影像暨放射科學系)

#299 Echocardiography Object Detection of Congenital Heart Disease

Shih-Hsin Chen, Jo-Hsin Shih, Wen-Ru Li, Ru-Yi Zhang, Yun-Chiao Chen, Wan-Ru Tsai, Yi-Hui Chen
(Tamkang University; Chang Gung University)

#323 Ensemble of Coarse-fine CNN and GRU Networks for Wearable-Based Fall Detection

Chien-Pin Liu¹, Kai-Chun Liu², Chia-Yeh Hsieh¹, Yu Tsao², Steen Jun-Ping Hsu³ and Chia-Tai Chan^{1,*}

(¹Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei 11221, Taiwan; ²Research Center for Information Technology Innovation, Academia

Sinica, Taipei 11529, Taiwan; ³Department of Information Management, Minghsin University of Science and Technology,)

#328 Neural Network Models for Cancer Detection Based on Gene Expression

Yen-Ju Tsui¹, Feng-Sheng Tsai^{1,2*}

(¹Master Program for Biomedical Engineering, China Medical University; ²Research Center for Interneural Computing, China Medical University Hospital)

#337 Using Sentence Bidirectional Encoder Representations from Transformers for Identification of Chest X-Ray Cardiomegaly Cases from Free-Text Reports

Cheng-Ching Huang¹, Hung-Hsuan Liao¹, Adam Huang¹

(¹NCU, Department of biomedical sciences and engineering)

#367 2.5D Ensemble Learning Framework for Intracranial Tumor Segmentation

Chih-Fan Kuo¹, Feng-Sheng Tsai^{2,3,*}

(¹Graduate Institute of Biomedical Sciences, China Medical University; ²Master Program for Biomedical Engineering, China Medical University; ³ Research Center for Interneural Computing, China Medical University Hospital)

#395 A Research on Applying Wearable Devices to Detect Common Mistakes in Basketball Shooting Skills of Beginners

Liang-Hsin Chen¹, Jing-Min Liang¹, Wen-Lan Wu^{1*}

(¹Department of Sports Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan)

#401 Wearable Electronic Stethoscopes

Hsu Chun Chieh¹

(¹Feng Chia University; ²Node.Health)

#409 Home Tongue Diagnosis App with Deep Learning to Detect Hypoxia

Teng-Bin Chang¹, Ping-Yu Wu³, Shao-Hung Lu², Wen-Chen Lin³, Kang-Ping Lin^{1,3*}

(¹Dept. of Electrical Engineering, Chung Yuan Christian University; ²Dept. of Biomedical Engineering Chung Yuan Christian University; ³Technology Translation Center for

Medical Device, Chung Yuan

Christian University)

#414 A Machine Learning Search for Novel Biomarkers of Triple Negative Breast Cancer

Jie-Rui Tien^{1,2}, Chih-Hsun Wu^{1,3}, Ming-Jing Hwang^{1,*}

(¹Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan; ²Department of Biomedical Engineering, I-Shou University, Kaohsiung, Taiwan; ³Department of Obstetrics, Taipei Veterans General Hospital, Taipei, Taiwan)

#434 A Research on Applying Wearable Devices to Identify Basketball Skills

Ching Chen¹, Liang-Hsin Chen¹, Jing-Min Liang¹, Wen-Lan Wu¹

(¹Department of Sports Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan)

08:40 ~ 13:00 Session 1

1F Lobby

Biomechanics

#26 Kinematic and Kinetic Difference between the Healthy Young and Elderly at Similar Gait Speed During Level Walking

Po-Chih Lin¹, Yun-Lin, Tsai¹, Chih-Hsiu Cheng^{1,2}

(¹School of Physical Therapy and Graduate Institute of Rehabilitation Science, Chang Gung University, Taiwan; ²Bone and Joint Research Center, Chang Gung Memorial Hospital, Taiwan)

#40 Evaluations of EMG Complexity in Response to Different Walking Regulations by Using Multiscale Entropy Analysis

Chi-Wen Lung^{1,2}, Yih-Kuen Jan², Song Wang³, Ben-Yi Liao^{4,*}

(¹Department of Creative Product Design, Asia University, Taichung, Taiwan; ²Rehabilitation Engineering Lab, Department of Kinesiology and Community Health University of Illinois at Urbana-Champaign, Champaign, Illinois, USA; ³Department of Chinese Medicine, Asia University Hospital, Taichung, Taiwan; ⁴Department of Biomedical Engineering, Hungkuang University, Taichung, Taiwan)

#66 Biomechanical Analysis of the Clavicular Hook Plate with Different Posterior Hook Offsets in the Acromioclavicular Joint

Kuo-Chih Su^{1,*}, Li-Kun Hung², Cheng-Hung Lee²

(¹Department of Medical Research, Taichung Veterans General Hospital, Taichung, Taiwan, ²Department of Orthopedics, Taichung Veterans General Hospital, Taichung, Taiwan)

#105 Biomechanical Evaluation of Novel Expansive DHS Screws for Treatment of Osteoporotic Unstable Intertrochanteric Fractures - the Effects of Screw Design and Cement Augmentation

Ching-Lung Tai^{1,2*}, Che-Lun Hsu¹, Hsuan-Kai Kao²

(¹ Graduate Institute of Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan; ²Department of Orthopaedic Surgery, Bone and Joint Research Center, Chang Gung Memorial Hospital, Taoyuan, Taiwan)

#141 Effects of Walking Strategy of a Cross Slope Walking Surface on Gait Dynamics

Tung Yeh, Hsiao-Feng Chieh, Chien-Ju Lin, Fong-Chin Su*

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

#182 Biomechanical Study of Revision Screw Strategies for Failed Pedicle Screw Fixation

Ching-Lung Tai^{2*}, Y.C. Li¹, M.Y. Liu¹, P.L. Lai²

(¹Graduate Institute of Biomedical Engineering, Chang Gung University; ² Department of Orthopedic Surgery, Chang Gung Memorial Hospital)

#189 Comparison of Ping Shuai Gong and Arm Swing Exercise on Movement Strategies and Microcirculatory Blood Flow

Tzu-Ya Chen¹, Chien-Ju Lin^{1,2}, Hsiao-Feng Chieh^{1,2}, Fong-Chin Su^{1,2,*}

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

#276 Effects of Belt Speed on the Dynamic Stability of Control of Body's Center of Mass Relative to Center of

Pressure during Treadmill Walking

Hsuan-Lun Lu^{1,2}, Tung-Wu Lu^{1,3,*}

(¹Department of Biomedical Engineering, National Taiwan University; ²Department of Biomedical Engineering, Da-Yeh University; ³Department of Orthopaedic Surgery, School of Medicine, National Taiwan University)

#310 Investigation of the Press-Fit Effect of the Two-Stage Implant System When the Implant with and without a Porous Feature

Hung-Chih Chang¹, Chih-Han Chang², Yu-Tang Ji¹, Chen-Gyi Yang^{1*}

(¹Department of biomedical engineering, HungKuang University; ² Department of biomedical engineering, National Cheng Kung University)

#311 Effects of Posterior Cruciate Ligament Deficiency on Biomechanics of Uphill Walking

Shih-Wun Hong^{1,2}, Tung-Wu Lu^{3,4}, Jyh-Horng Wang⁴, Chung-Chao Liang⁵

(¹Department of Physical Therapy, Tzu Chi University, Hualien, Taiwan; ² Department of Chinese Medicine, Hualien Tzu Chi Hospital, Hualien, Taiwan; ³Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; ⁴Department of Orthopaedic Surgery, National Taiwan University, Taipei, Taiwan; ⁵ Department of Orthopedics and Rehabilitation, Hualien Tzu Chi Hospital, Hualien, Taiwan)

#321 Dose Cortex Window Size Affect the Cortex Strength in the Proximal Femur after Curettage and Bone Graft: the Finite Element Study

Yu-Kuan Lin^{1,2,3}, Po-Kuie Wu², Sai-Wei Yang^{3,*}

(¹Department of Orthopaedics and Traumatology, Taipei Veterans General Hospital, Taoyuan branch, Taiwan, ROC; ²Department of Orthopaedics and Traumatology, Taipei Veterans General Hospital, Taipei, Taiwan, ROC ; ³College of Biomedical science and engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan, ROC)

#326 A Finite Element Study on the Effects of Coupler Stiffness of Hybrid Performance Spinal Dynamic Stabilization System (HPS) on Intervertebral Disc Stress

with Different Degeneration Grade

Hao-Yuan Hsiao^{1,2*}, Chao-Ming Hsu², Yen-Wei Chiu¹, Yi-Jung Tsai¹, Chih-Kun Hsiao¹, Yuan-Kun Tu¹

(¹Department of Orthopedics, E-Da Hospital; ²Department of Mechanical Engineering; National Kaohsiung University of Science and Technology)

#329 Dynamic Stability of Locked Plating in Proximal Humeral Osteoporotic Fracture Augmented with an Intramedullary LCP Plate

Yen-Wei Chiu^{*}, Hao-Yuan Hsiao, Yi-Chen Li, Yi-Jung Tsai, Chih-Kun Hsiao, Yuan-Kun Tu

(Department of Orthopedics, E-Da Hospital)

#420 An Artificial Intelligence System with Wearable Devices for Correction of Inadequate Posture

H.Y. Tang¹, T.Y. Su², S.H. Tan², H.H. Chen^{2*}

(¹School of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan; ² Graduate Institute of Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan)

#459 Biomechanical Influence of Plate Thickness on the Reconstruction of Mandibular Symphysis Defect

Cheng-Yu Yan, Ting-Sheng Lin^{*}

(Department of Biomedical Engineering, I-Shou University)

08:40 ~ 13:00 Session 1

1F Lobby

Bioinformatics

#51 The Effect of Interference in Attention under 3D Virtual Reality Environments:An EEG Study

Tzu-Yun Yeh^{1,a}, Chun-Chuan Chen^{1,b}, Wei Wang^{1,c}, EricHsiao-Kuang Wu^{1,d}, Shih-Ching Yeh^{1,e}

(¹Laboratory of Computational Neuroscience, National Central University, Taoyuan, Taiwan)

#60 Streaming ECG Storage Basing on HL7 FHIR

Yuan-RongHong¹, Chia-Hung Hsiao², Shih-Tsang Tang³, Yuh-Show Tsai^{1*}

(¹ 中原大學生物醫學工程學系,桃園,台灣; ² 慈濟大學醫學資訊學系,花蓮,台灣; ³ 銘傳大學生物醫學工程系,桃園,台灣)

#210 Computational Investigation of Interactions between Hepatitis C Virus Core Protein and Toll-Like Receptors

Hemalatha Mani¹, Chun-Ning Tseng^{2,3}, Je-Wen Liou^{1,2,3,*}

(¹Institute of Medical Sciences, Tzu Chi University, Hualien, Taiwan; ²Master Program in Biomedical Science, School of Medicine, Tzu Chi University, Hualien, Taiwan; ³Department of Biochemistry, School of Medicine, Tzu Chi University, Hualien, Taiwan)

#268 The Influence of Mismatch Negative under the Probability of Deviation Stimulus

Chun-Jui Chen¹, Wen-Hung Chao²

(Department of Biomedical Engineering, Yuanpei University of Medical Technology)

#413 探討硫酸乙醯肝素與新冠病毒棘蛋白受體結合區作為抗病毒藥物開發位點之 In silico 研究:以台灣清冠一號為例

Yang-Zi Xin¹, Ming-Hon Hou², Ching-Ming Chien^{1,*}

(¹Department of Medical Sciences Industry, Chang Jung Christian University; ²Institute of Genomics and Bioinformatics, National Chung Hsing University)

08:40 ~ 13:00 Session 1

1F Lobby

Biomedical Imaging and Signal Processing

#18 A Study on the Wavelet Transform Technology Combined with a Respiratory Motion Compensation System for Application in Radiation Therapy

Sen-Ting Cheng, Chu-Wei Li, Ho-Chiao Chuang

(國立台北科技大學機械系)

#34 使用卷積神經網路透過光學反射流變技術檢測下肢深層靜脈的栓塞形成

Bing-Hao Zhang¹, Shing-Hong Liu¹

(朝陽科技大學資工系)

#54 Therapeutic Efficacy and Mechanism Investigation of Fluoxetine on Muscle Invasive Bladder Cancer via Nf-κB Reporter Gene Imaging System

Zhao-Lin Tan¹, Fei-Ting Hsu^{1*}

(¹Department of Biological Science and Technology)

#77 A Bioluminescence Tomography/Ultrasound Dual Modality Imaging System for Small Animals

Yun-Chen Lee¹, Shih-Po Su¹, Hsin-Yin Chi¹, Yuan-Zhen Yang¹, Huihua Kenny Chiang^{1*}

(¹ National Yang Ming Chiao Tung University)

#87 Constructing a Phantom of Paravertebral Block and Verifying by High-Frequency Ultrasound Needle

Shih-Hua, Wang^{1*}, Huihua Kenny Chiang, Ph.D.¹, Hsiao-Tung, Hsu¹

(¹國立陽明交通大學生物醫學工程研究所)

#88 The Root Length of Mandibular Molars and the Ratio of Root Lengths to the High of Mandibular Bone by Cone-Beam Computed Tomography

Ting-Chun Shen^{1*}, Jui-Ting Hsu², Heng-Li Huang², Lih-Jyh Fuh²

(¹China Medical University, Taichung, Taiwan; ²China Medical University, Taichung, Taiwan)

#92 The Crown-Root Angle of Maxillary Center Incisor in Taiwanese: a Cone-Beam Computed Tomography Study

Tai-Lien Wu¹, Jui-Ting Hsu^{2*}, Heng-Li Huang²

(¹Department of Biomedical Imaging and Radiological Science, China Medical University; ² School of Dentistry, China Medical University)

#93 The Relationships between the Root of Maxillary Canines and Inferior Wall of Maxillary Sinus

Ching-Wen Chuang¹, Jui-Ting Hsu², Heng-Li Huang², Jian-Hong Yu²

(¹Department of Biomedical Imaging and Radiological Science, China Medical University; ²School of Dentistry, College of Medicine, China Medical University)

#102 Evaluation of Hyperspectral Imaging in the Detection of Plantar Nerve Function in Diabetic Patients

Yi-Jing Sheen¹, Chiu-Chin Sung², Hsin-Che Wang³, Yu-Wen Fu², Yi-Hsuan Sun², Hsian-Min Chen^{2*}

(¹Division of Endocrinology and Metabolism, Department of

Internal Medicine, Taichung Veterans General Hospital; ² Department of Medical Research, Taichung Veterans General Hospital))

#136 Monitoring of High-Intensity Focused Ultrasound Treatment with Shear Wave Elastography

Wei-Cheng Hsiao¹, Bao-Yu Hsieh^{1,2,*}

(¹Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taoyuan, Taiwan; ²Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital, Taoyuan, Taiwan)

#154 Large Volume Photoacoustic Array Imaging for Connectome Imaging: Feasibility Study

Chun-Hsien Chiang^{1,2}, Bi-Chang Chen³, Meng-Lin Li^{1,2,4*}

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

#158 Phase Aberrated Ultrasound Point Spread Function Estimation with Convolution Neural Network

Wei-Hsiang Shen¹, Chieh-Sheng Cheng¹, Meng-Lin Li^{1,2,3*}

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

#231 Development of Innovative Devices for Interventional Cardiology

Ming-Che Lin¹, Yi -An Wang¹, Geng-Shi Jeng², Lung-Chun Lin³, Pai-Chi Li¹

(¹Institute of Biomed. Elec. and Bioinformatics., National Taiwan University; ²National Yang Ming Chiao Tung University; ³National Taiwan University Hospital)

#241 Evaluating Deep Convolution Neural Networks for Detection and Segmentation of Computed Tomography Mandible Reconstruction

Chun-Hsien Lee¹, Adam Huang¹, Chung-Wei Lee², Hon-Man

Liu^{2,3}

(¹NCU, Department of biomedical science and engineering; ² NTUH, Department of Medical Imaging; ³Fu Jen Catholic University Hospital, Department of Radiology)

#242 Efficacy of Deep Brain Band-limited Random Noise Stimulation on Suppressing Mesial Temporal Seizure in Mice

Peng-Hsiang Wang¹, Chou-Ching Lin², Ming-Shaung Ju^{1*}

(¹Department of Mechanical Engineering, National Cheng Kung University, ²Department of Neurology, National Cheng Kung University)

#251 A K-Space Reconstruction Method for Improving Accuracy of MR Thermometry

Chang-Sheng Mei^{1*}, Yi-Ting Chiu², Hsiang-Yu Pao², Chih-Ying Yi²

(¹Department of Physics, Soochow University; ² Department of Mathematics, Soochow University)

#269 A Study of Two Level Contingent Negative Variation Response under Different Auditory and Flash Stimulations

Yu-Zhu Liang¹, Wen-Hung Chao^{1,*}

(¹Department of Biomedical Engineering, Yuanpei University of Medical Technology, Hsinchu City, Taiwan)

#270 The Development of Wireless Stethoscope in Response to the Covid-19

Yi-Chieh, Wei¹, Meng-Dar, Shieh¹, Shuenn-Yuh, Lee², Ju-Yi, Chen³, Yi-Ting, Hsieh², Ming-Yueh, Ku², Kai-Ze, Lei²

(¹Department of Industrial Design, National Cheng Kung University; ²Department of Electrical Engineering, National Cheng Kung University; ³ Department of Internal Medicine, National Cheng Kung University Hospital)

#314 Study of A Deep Neural Network-Based Position Estimation Approach for Gamma Imaging Detectors

H.D. Liu¹, Z. Wang^{2,3}, M.W. Lee³, M.L. Jan^{3,4*}

(¹Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taoyuan City, Taiwan, ROC; ²Department of Electronic Engineering, Chang Gung University, Taoyuan City, Taiwan, ROC; ³Institute for

Radiological Research, Chang Gung University/ Chang Gung Memorial Hospital, Taoyuan City, Taiwan, ROC; ⁴Department of Radiation Oncology, Chang Gung Memorial Hospital, Taoyuan City, Taiwan, ROC)

#318 Automatic Lumen Segmentation of Cerebral Arteries in Black-Blood MRI Using Linear-Linear Models

Wen-Cherng Luo¹, Adam Huang¹, Hon-Man Liu²
(¹ NCU, Department of Biomedical Sciences and Engineering;
²Fu Jen Catholic University Hospital, Department of Radiology)

#333 Decrease of Integrity of White Matter of the Projection Tracts in the Brain in Patients with Spondylolisthesis and Stenosis

S.T. Chiang^{1,2}, P.F. Tang^{1,2}, W.Y. Tseng³, S.F. Wang^{1,2,*}, D.M. Lai^{4,*}
(¹School of Physical Therapy, NTU, Taipei, Taiwan, ROC;
²Center of Physical therapy, NTUH Taipei, Taiwan, ROC;
³Institute of Medical Device and Imaging, NTU, Taipei, Taiwan, ROC;
⁴Department of Neurosurgery, NTUH, Taipei, Taiwan, ROC)

#343 The Effect of a Dual-Frequency Acoustic Signal on the Inertial Cavitation Threshold in Various Soft Tissues

T. Filonets^{1,2}, M. Solovchuk^{1,2,*}
(¹Department of Engineering Science and Ocean Engineering, National Taiwan University, Taipei, Taiwan; ²Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Zhunan, Taiwan)

#350 Portable Electrical Impedance Tomography

Chang-Lin Hu^{1,*}, I-Cheng Cheng¹, Chien-Ju Li¹, Chii-Wann Lin^{1,2}
(¹Industrial Technology Research Institute, Hsinchu, Taiwan;
²Department of Biomedical Engineering, National Taiwan University, Taipei, Taiwan)

#351 Non-contact Optical Sensing of Ultrasound Using Fiber-Based Interferometer

Li-Yu Feng^{1,2}, Meng-Lin Li^{1,2,3*}
(¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan; ²Brain Research Center, National

Tsing Hua University, Hsinchu, Taiwan; ³Institute of Photonics Technologies, National Tsing Hua University, Hsinchu, Taiwan)

#361 Ultrafast Ultrasound Doppler Vector Imaging Using Speckle Tracking

Mo-Han Lin¹, Po-Syun Chen¹, Geng-Shi Jeng^{1*}
(¹Institute of Electronics, National Yang Ming Chiao Tung University)

#438 Preparation of Manuscript for 2021 Annual Symposium on Biomedical Engineering

M.-D. Ke^{2*}, C. R. You¹, C.-H. Lin¹
(¹Graduate School of Electronic Engineering, National Yunlin University of Science and Technology; ²Bachelor Program in Intelligent Robotics, National Yunlin University of Science and Technology)

#446 Intelligent Sarcopenia Diagnosis Based on Near-Infrared Spectroscopy and X-Ray Imaging

Chia-hsuan Lu, Po-Yuan Chen, Rui-Cheng Zeng, Yu-Pin Chen, Chia-Wei Sun^{*}
(¹Department of Photonics, National Yang Ming Chiao Tung University; ²Department of Photonics, National Yang Ming Chiao Tung University, Hsinchu, Taiwan)

Friday 19th, November 2021

13:10 ~ 15:30 Session 2

1F Lobby

Biosensors

#74 To Detect Envelope Gene of Covid-19 Virus Through Real-Time Electrochemical Platform

Yi-Chen Huang¹, Wan-Hsin Lu¹, Yi-Chiuen Hu¹
(¹Taiwan Instrument Research Institute, National Applied Research Laboratories, Zhubei City, Hsinchu County, Taiwan)

#114 Development of Smart Pillow for Detection and Assessment of Sleep Quality

Chuang-Chien Chiu¹, Shou-Jeng Yeh², Yin-Kai Huang^{1,*}, Hsuan-Chi Kuo¹
(¹Department of Automatic Control Engineering, Feng Chia University, Taiwan, R.O.C.; ²Section of Neurology and Neurophysiology, Cheng-Ching General Hospital, Taiwan,

R.O.C.)

#180 A Wearable Device for Detecting Breathing Underwater

Hung-Yu Cheng, Pei-Heng Tai, Yen-Ju Wu, Shih-Hao Huang*
(Department of Mechanical and Mechatronic Engineering,
National Taiwan Ocean University)

#221 To Detect BRCA Mutations from Circulating Tumor Cells in Ovarian Cancer Through Real-Time Electrochemical LAMP-Based Platform

Wan-Hsin Lu¹, Yi-Chen Huang¹, Sheng-Wen Chen², Chung-Er Huang², Yi-Chiuen Hu¹

(¹Taiwan Instrument Research Institute, National Applied Research Laboratories, Zhubei City, Hsinchu County, Taiwan;

²CytoAurora Biotechnologies, Inc., Zhubei City, Hsinchu County, Taiwan)

#274 Development of the Commercial Bacteria and Cell Biosensors—Field Effect Transistors Based Bacteria Detection Chip

Shi-Wei Lin¹, Yi-Chan Lee¹, Daisy Cheng¹, Shu-I Jen¹, Mei-Chih Liang¹, Shiow-Huey Hseu², Ming-Pei Lu³, Yuh-Shyong Yang^{1*}

(¹Department of Biological Science and Technology, National Yang Ming Chiao Tung University, Hsinchu, Taiwan;

²Department of Plant Protection Taiwan Agricultural Research Institute, FTHERS, Kaohsiung, Taiwan; ³Taiwan Semiconductor Research Institute, Hsinchu, Taiwan)

#312 Detection of Intact Protein Using Ion Trap Mass Spectrometer for Cytochrome C and Protein Ladder

Fang Hsu Chen^{1*}, Ming Long Yeh^{1*}, Szu Wei Chou², Chun Yen Cheng²

(¹Department of Biomedical Engineering, National Cheng Kung University; ²AcroMass Technologies, Inc., Hsinchu, Taiwan)

#331 ITO-coated Vertically Aligned Silicon Nanowires for The Real-Time Impedimetric Detection of Cardiac Troponin I

Yun-Lin Lu¹, Yuan-Po Yang^{2,3}, and Shu-Ping Lin^{1*}

(¹Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung 40227, Taiwan, R.O.C.;

²Ph.D. Program in Tissue Engineering and Regenerative Medicine, National Chung Hsing University, Taichung 40227, Taiwan, R.O.C.; ³ Changhua Christian Hospital, Changhua 50006, Taiwan, R.O.C)

#336 Cuffless Blood Pressure Measurement of Wearable Chest Device

En Chuang¹, Mei-Fen Chen³, Shao-Hung, Lu², Wen-Chen Lin³, Wen-Chi Lin³, Cheng-Lun Tsai^{2,3}, Kang-Ping Lin^{1,3*}

(¹Department of Electrical Engineering, Chung Yuan Christian University; ² Department of Biomedical Engineering, Chung Yuan Christian University; ³Technology Translation Center for Medical Device, Chung Yuan Christian University)

#368 Using Environmental Sensors to Develop Behavioral Biometrics and Application Assessment for Elder Care Services

I-Sheng Tu¹, Guan-Hsiung Liaw², Ke-Nung Huang³, Ching-Fen Jiang^{1*}

(¹Department of Biomedical Engineering I-Shou University; ²Department of Information Engineering I-Shou University; ³Department of Electronic Engineering I-Shou University)

#419 Electrochemical Sensing of Double-Stranded DNA Using Screen-Printed Carbon Electrodes

Ssu-Pin Liao¹, Pinpinut Kabinsing¹, Pravanjan Malla¹, Chi-Hsien Liu^{1*}

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

13:10 ~ 15:30 Session 2

1F Lobby

Biomaterials

#19 Innovative Silk Protein/Polydopamine Nanoparticles Mixed with Silk Protein to Form a Drug Depot System with Anti-Oxidation, Anti-Coagulation and Photothermal Effects

Yun-Huan Liu¹, Zheng-Yu Siah¹, Yu-Kang Su¹, Sheng-Wei Lin¹, Tze-Wen Chung¹

(¹Department of Biomedical Engineering, National Yang-Ming

Chiao-Tung University, Taipei, Taiwan)

#21 三種鈣基骨水泥的操作性質和生物相容性

Chang-Yin Yen¹, Shinn-Jyh Ding^{1,2*}, I-Ting Wu^{3*}

(¹Institute of Oral Science, Chung Shan Medical University;

²School of Dentistry, Chung Shan Medical University;

³Department of Periodontology, China Medical University Hospital)

#23 電噴霧矽酸鈣奈米鍍膜之鍵結強度及抗菌性能

Yu-Xuan Shi¹, Attila Csik², Shinn-Jyh Ding^{1,3*}, Chun-Cheng Chen^{3,4*}

(¹Institute of Oral Science, Chung Shan Medical University;

²Institute for Nuclear Research, Hungarian Academy of Sciences, Hungary; ³School of Dentistry, Chung Shan Medical University; ⁴Department of Stomatology, Chung Shan Medical University Hospital)

#67 聚己內酯表面層改善水熱合成 FHA 鍍層被覆 AZ91D 之抗腐蝕效應研究

Yan-Miao Chen¹, Shiung-Chen Shie¹, Chung-Wei Yang^{1,*}

(Department of Materials Science and Engineering, National Formosa University)

#79 Development of Reactive Oxygen Species Responsive and Shear-Thinning Injectable Vehicle for Treatment of Peripheral Arterial Disease

Hsin-Ho Chen¹, Ning-Ya Yu¹, Yung-Hsin Cheng^{1,*}

(¹Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan (R.O.C.))

#111 Long-Acting Mucoadhesive Thermogels for Improving Topical Treatments of Dry Eye Disease

Yun-Han Su¹, Jui-Yang Lai^{1,*}

(¹Graduate Institute of Biomedical Engineering, Chang Gung University, Taoyuan, Taiwan)

#124 Immunotherapeutic Gel-based Gauze for Post-Surgical Glioblastoma Treatment

Jia-Wei Jhou¹, Pin-Yuan Chen², Chiung-Yin Huang³, Kuo-

Chen Wei³, Hung-Wei Yang^{1*}

(¹Institute of Medical Science and Technology, National Sun Yat-sen University, Kaohsiung, Taiwan; ²Department of Neurosurgery, Keelung Chang Gung Memorial Hospital, Keelung, Taiwan; ³Department of Neurosurgery, New Taipei Municipal TuCheng Hospital, Chang Gung Medical Foundation, New Taipei, Taiwan.)

#181 Development an Intelligent Hydrogel Containing Antibiotics to Prevent Wound Infection and Potential Evaluation by Low Ultrasound Attenuation Coefficient

Tzu-Lung Liao¹, Do Tuyet Nhi¹, Ping-Ching Wu^{1, 2, 3*}

(¹Department of Biomedical Engineering, College of Engineering, National Cheng Kung University, Tainan, Taiwan;

²Center of Applied Nanomedicine, National Cheng Kung University, Tainan, Taiwan.; ³Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan)

#218 Preparation and Analysis of a Self-Sealing Coating Containing CeO₂ on ZK60 Magnesium Alloy for Orthopedic Applications

Chin-En Yen^{1*}, Guan-Lin Wu¹, Ming-Long Yeh¹

(¹Department of Biomedical Engineering, National Cheng Kung University)

#223 A Study of Comparing Different Concentrations of Chitosan Scaffold with IFPSC Embedding PNIPAAm Hydrogel for Cartilage Tissue Engineering

Yu-Hsuan Liu¹, I-Hsuan Lin¹, Ming-Long Yeh¹

(¹Department of Biomedical Engineering, National Cheng Kung University)

#233 攜帶脂肪幹細胞之載體於軟組織重建之研究

Hsin-I Chiu¹, Bing-Han Wan¹, Cherng-Jyh Ke^{2*}

(¹Department of Biological Sciences and Technology, China Medical University; ²Biomaterials Translational Research Center, China Medical University Hospital)

#237 Surface Modified of Silicone rubber by Atmospheric Pressure Plasma Jets and UV Induced-Graft Polymerization of Anti-Bacterial Hydrogels

Jhong-Kun Siao¹, Shu-Chuan Liao^{1,*}

(¹Department of Biomedical Engineering, Da-Yeh university Changhua, Taiwan)

#250 Xanthan Gum 應用於腎臟癌血管栓塞療法(RAE)與免疫促進之評估

Hung-Wei Cheng⁴, Ying-Jiun Hsieh¹, Hung-Yu Chen³, Ming-Wei Lee^{1,2,3*}

(¹Graduate Institute of Technology Management, National Chung Hsing University; ²Department of Speech and Language Pathology and Audiology, Chung Shan Medical University ³Department of Clinical Laboratory, Chung Shan Medical University Hospital; ⁴Materials Science and Engineering, National Chiao Tung University 300 Hsinchu, Taiwan)

#256 UV-Induced Grafting Polymerization of PEG/p(AAm-co-AAc) Hydrogel and Immobilization of Chinese Herb Extracts on PET Non-Woven

Qing-Xiu Shi¹、Shu-Chuan Liao^{1,*}

(¹ Department of Biomedical Engineering, Da Yeh University, Changhua, Taiwan)

#262 Preparation of Mesenchymal Stem Cells-Laden Vaterite/Gelatin-Methacryloyl Hydrogels for Bone Tissue Regeneration

C.C. Lai¹, and C.C. Ho^{1,2,*}

(¹Department of Bioinformatics and Medical Engineering, Asia University, Taichung, Taiwan; ² High Performance Materials Institute for xD Printing, Asia University, Taichung, Taiwan)

#277 Enhanced Cytotoxicity and Hemocompatibility of Pure Zinc through Zinc Phosphate Coating

Guan-Lin Wu^{1*}, Ming-Long Yeh¹

(¹Department of Biomedical Engineering, National Cheng Kung University)

#283 Evaluation of Biodegradable Dressings for Embedding Exosomes with Slow-Release

Po-Ju Ting¹, Pin-Yu Lin¹, Chung-Yih Wang¹, Niann-Tzyy Dai²

(¹Department of Chemical Engineering and Biotechnology, Tatung University, Taipei 104, Taiwan; ²Division of Plastic and Reconstructive Surgery, Department of Surgery, Tri-Service General Hospital, National Defense Medical Center, Taipei.)

#285 Influence of Nano-Structured Hyaluronic Acid on Chondrogenic Differentiation

Jen-Hao Tsai¹, Yong-Ji Chen¹, Ko-Hao Chiu², Kai-Chi Ku¹, Shwu-Jen Chang^{1*}

(¹Department of Biomedical Engineering, I-Shou University, Kaohsiung, Taiwan; ²Medical Education Department, Far Eastern Memorial Hospital, New Taipei City, Taiwan)

#288 An Injectable Self-Healing Hydrogel with Cell-Magnetically Guided and Glutathione-Controlled Release for Cartilage Repair

I-Yun Cheng¹, Jen-Hao Tsai², Yong-Ji Chen², Huai-En Lu^{4*} Shan-Wei Yang^{3*} San-Yuan Chen^{1*}, Shwu-Jen Chang^{2*}

(¹Department of Materials Science and Engineering, National Chiao Tung University, Hsinchu, Taiwan; ²Department of Biomedical Engineering, I-Shou University, Kaohsiung, Taiwan; ³Department of Orthopedics, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan; ⁴ Bioresource Collection and Research Center, Food Industry Research and Development Institute, Hsinchu, Taiwan)

#297 Effervescence-Based Oral Capsules That Enable Concurrent Delivery of Lipophilic and Hydrophilic Chemotherapeutics to Treat Pancreatic Cancers

Yu-Tzu Yu^{1,*}, Kuan-Hung Chen¹, and Hsing-Wen Sung¹

(¹ Department of Chemical Engineering/Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan (ROC))

#302 In-Vitro Biocompatible and Hemocompatible Evaluations of Electrospun Polyurethane Microfibers

Hui-Xuan Huang¹, Chia-Yun Chang¹, Shu-Ping Lin^{*}

(¹Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung 402, Taiwan)

#305 Evaluating the Effect of Tissue Selection on the Characteristics of Extracellular Matrix Hydrogels from Decellularized Porcine Bladders

Huynh-Quang-Dieu Nguyen¹, Yu-Chuan Weng², Sutatta Akrasirakul³ and Chen-Yu Kao³

(¹Graduate Institute of Applied Science and Technology,

National Taiwan University of Science and Technology, Taipei, Taiwan; ²Biomedical Engineering Research Center, National Defense Medical Center, Taipei, Taiwan; ³Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan)

#332 The Application of PLGA Scaffolds with Magnesium Hydroxide and Zinc Oxide in Cartilage Repair

Yu-Ting Tung¹, Guan-Lin Wu¹, Wan-Ching Hong¹, Ming-Long Yeh¹

(¹Department of Biomedical Engineering, National Cheng Kung University)

#365 Hydroxyapatite as a Sustained Release Carrier for Tariquidar to Improve Brain Penetration of Temozolomide

Cheng-Ping Yu¹, Yan-Jye Shyong¹

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

#370 3D Cell Building Blocks in Cancer Drug Evaluation Applications

Wan-Ni Huang¹, Yi-Wen Chen^{1,2}, Ming-You Shie^{1,3*}, Yu-Fang Shen^{4,5*}

(¹x-Dimension Center for Medical Research and Translation, China Medical University Hospital, Taichung City, Taiwan; ²Graduate Institute of Biomedical Sciences, China Medical University, Taichung City, Taiwan); ³School of Dentistry, China Medical University, Taichung City, Taiwan; ⁴Department of Bioinformatics and Medical Engineering, Asia University, Taichung City, Taiwan; ⁵High Performance Materials Institute for xD Printing, Asia University, Taichung City, Taiwan)

#373 3D Cell Building Blocks in the Application of Artificial Dermis

Yu-Hsiang Liao¹, Ming-You Shie^{2,3}, Yi-Wen Chen^{2,4*}, Yu-Fang Shen^{1,5*}

(¹Department of Bioinformatics and Medical Engineering, Asia University, Taichung City, Taiwan; ²x-Dimension Center for Medical Research and Translation, China Medical University Hospital, Taichung City, Taiwan; ³School of Dentistry, China Medical University, Taichung City, Taiwan; ⁴Graduate Institute

of Biomedical Sciences, China Medical University, Taichung City, Taiwan; ⁵High Performance Materials Institute for xD Printing, Asia University, Taichung City, Taiwan)

#374 Remdesivir-Loaded Nanostructured Lipid Carriers (NLC) for pulmonary inhalation

Yi-Hsuan Wen¹, Jui-Chen Tsai¹, Chian-Wei Chen², Yan-Jye Shyong¹

(¹Institute of Clinical Pharmacy and Pharmaceutical Sciences, School of Pharmacy, Medical College, National Cheng Kung University, Tainan, Taiwan; ²Department of Internal Medicine, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan)

#380 Enhanced Biological and Mechanical Performances of CaO-MgO-SiO₂ Glass-Ceramics Via Modulation of Temperature.

Yu-Jie Wua, Kuei-Chih Feng^{b,c}, Chi-Shun Tud,^{a,b}, Chi-Yun Wang^{a,g}, Po-Liang Lai^g, Cheng-Sao Chen^f, Yu-Ling Lin^e, Yu-Tzu Huang^{e,*}, and Pin-Yi Chen^{a,b,c,*}

(^aInternational Ph.D. Program in Innovative Technology of Biomedical Engineering and Medical Devices, Ming Chi University of Technology, Taiwan; ^bResearch Center for Intelligent Medical Devices, Ming Chi University of Technology, Taiwan; ^cDepartment of Mechanical Engineering, Ming Chi University of Technology, Taiwan; ^dDepartment of Physics, Fu Jen Catholic University, Taiwan; ^eSchool of Medicine, Fu Jen Catholic University, Taiwan; ^fDepartment of Mechanical Engineering, Hwa Hsia University of Technology, Taiwan; ^gBone and Joint Research Center, Chang Gung Memorial Hospital, Taiwan)

#383 Hypothesis of Degradation and Metabolism of Nanogold Materials- Discovery and verification of glutathione as a biodegradable molecule of gold nanoclusters

周曜生, 崔睿庚, 郭雅婷, 胡媿琹, 謝瑞嵐, 陳智偉, 林政鞍*

(中原大學生物醫學工程學系)

#406 The Study of Biodegradable Chitosan-Glycerol-Curcumin Composite Membrane for Skin Tissue

Engineering

Pei-Shin Chu, Yun-Ju Chuang*, Pei-Ru Chen*

(Ming Chuan University, Department of Biomedical Engineering, Taoyuan, Taiwan)

#408 Fabrication and characterization of injectable hydrogels derived from decellularized Pigskin

Ying Ju, Chen¹, Zu Ning, Liu¹, Yin Tze, Chang^{2,3}, Ching Cheng, Huang¹

(¹Department of Biomedical Engineering, Ming Chuan University; ²Nanhua University; ³Buster Biomedical Materials R&D Center)

#416 Low Temperature Atmospheric Pressure Plasma Jets Treatment and UV Induced-Graft Polymerization of Zwitterion Hydrogel for Immobilization of Hyaluronic Acid on PU Surface

Yu-De Wu¹, Shu-Chuan Liao^{1,*}

(¹Bachelor Program for Design and Materials for Medical Equipment and Devices, Da Yeh University, Changhua, Taiwan)

#427 Hydroxyapatite-Chitin Composite Microporous Bio-Scaffold Applied to The Development of Bone Tissue Engineering

Jun-Liang Chen, Zih-Wei Li¹, Pei-Ru Chen^{1*}, Yun-Ju Chung^{1*}

(Ming Chuan University, Department of Biomedical Engineering, Taoyuan, Taiwan)

#429 Comparison of The Characteristics for The Hydroxapatite Thin Films Deposited by Sol-Gel Spin Coating and Sputtering Ti-Alloy Substrates

Ying-Yu Chen¹, Hui-Jun You¹, Sin-Liang Ou^{1*}

(¹Department of Biomedical Engineering, Da-Yeh University, Taiwan)

#437 A Perspective on Imiquimod Microneedles for Treating Warts

Tsu-Man Chiu^{1,2,3}, Ping-Chun Hsu², Mohd Yaqub Khan², Cheng-An J. Lin², Chun-Hung Lee^{2,4}, Min-Hua Chen^{2,4,*}

(¹Department of Dermatology, Changhua Christian Hospital, Changhua County, Taiwan; ²Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan City,

Taiwan; ³Institute of Medicine, Chung Shan Medical University, Taichung City, Taiwan; ⁴Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Miaoli County, Taiwan)

#442 Development of Sonosensitizer for Sonodynamic Therapy

Chia-Feng Hsieh¹, Cheng-Chung Chang^{1,2}

(¹Graduate Institute of Biomedical Engineering, National Chung Hsing University; ²Intelligent Minimally-Invasive Device Center, National Chung Hsing University)

13:10 ~ 15:30 Session 2

1F Lobby

Bioelectronics

#83 Fabrication and Applications of Focused Ultrasonic Transducer Using Fresnel Lens

Lai, Yu-Jhou^{1*}, Huihua Kenny Chiang¹

(¹Department of BioMedical Engineering, National Yang Ming Chiao Tung University)

#91 Deep Learning Technology-Based Classification of Stenosis Degree of the Hemodialysis Vascular Access and Quantification of Its Stiffness and Clinical Application (2/3)

Jia-Jung Wang^{1*}, Thung-Lip Lee², Phoebe Tang¹, Charlie Tsai¹

(¹Department of Biomedical Engineering, I-Shou University;

²Department of Cardiology, E-Da Hospital)

#123 A Microprocessor-Based Eight-Arm Maze for Evaluating The Spatial Learning and Memory Functions of Alzheimer's Rats

Chi-Chun Chen^{1*}, Shu-Cing Wu¹, Shu-Yu Lin¹, Yu-Rui Hung¹, Ching-Ping Chang²

(¹Department of Electronic Engineering/National Chin-Yi University of Technology, Taichung, Taiwan; ²ChiMei Medical Center/ChiMei Hospital, Tainan, Taiwan)

#155 Using Laser Doppler Flowmetry to Evaluate The Effect of Photobiomodulation on Blood Circulation: A Pilot Study

An-Chi, Cheng¹, Chien-Jung, Chen¹, Chuan-Tsung, Su², Jih-Huah, Wu^{1*}

(¹Department of Biomedical Engineering, Ming Chuan University; ²Institute of Biomedical Engineering, College of Medicine and College of Engineering, National Taiwan University)

#206 Design of an Ultrasound Atomizer with Frequency Control for Biomedical Applications

Fei-Ling Jheng, Tung Chang, Ioannis Manousakas*

(Department of Biomedical Engineering, I-Shou University, Kaohsiung, Taiwan)

#267 Classification of Dialysis Fistula Blockage from Blood Flow Sound Images Using the Artificial Intelligence Technology

Jia-Jung Wang¹, Phoebe Tang¹, Charlie Tsai^{1,*}, Thung-Lip Lee²

(¹Department of Biomedical Engineering, I-Shou University;

²Department of Cardiology, E-Da Hospital)

#320 Application of Reinforced Isolation ICs for EMI Reduction

Yu-Lin Liu¹, Ioannis Manousakas^{1,*}

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

#391 Sensor Calibration for a Quantitative Dry Cupping System

Yu-Qi Liao, Ioannis Manousakas*

(Department of Biomedical Engineering, I-Shou University)

#392 Measuring Shear Wave Ultrasound Velocities in Aluminum Through Mode Conversion

Ming Xuan Lin, Ioannis Manousakas*

(Department of Biomedical Engineering, I-Shou University, Kaohsiung, Taiwan)

#430 Preliminary research on the Rapid Positioning of Laser Spot with Computer Vision

Xin-Yu Wu¹, Jia-Yu Ding¹, Jia-Hui Li¹, Kun-Chan Lan^{2,3}, Chih-Yu Wang^{1*}

(¹Department of Biomedical Engineering, I-Shou University, 824 Kaohsiung, Taiwan; ²Department of CSIE, National Cheng Kung University, 701 Tainan, Taiwan; ³School of Chinese

Medicine, China Medical University, 404 Taichung, Taiwan)

13:10 ~ 15:30 Session 2

1F Lobby

Tissue Engineering and Regenerative Medicine

#130 To Explore the Application of Temperature-Sensitive and Photosensitive Hydrogel in Cartilage Tissue Engineering

Hong, Wan Ching^{1*}, Yeh, Ming Long¹

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

#142 Injectable 3D Hybrid Cell Spheroid as a Platform for Replenishing Glomerular Podocyte

Li-Chi Chen¹, Wen-Yu Yang¹, Hsiang-Hao Hsu^{2*}, Chieh-Cheng Huang^{1*}

(¹Institute of Biomedical Engineering, National Tsing Hua University; ²Department of Nephrology, Linkou Chang Gung Memorial Hospital)

#143 3D ADSC Spheroids Enhance Immunomodulation and Promote Tendon Healing for Achilles Tendon Repair

Yun-Wei Lee¹, Yu-Jie Lin¹, Shih-Heng Chen^{2*}, Chieh-Cheng Huang^{1*}

(¹Institute of Biomedical Engineering, National Tsing Hua University; ²Department of Plastic and Reconstructive Surgery, Linkou Chang Gung Memorial Hospital)

#144 Three-Dimensional Schwann Cell Spheroids Show Enhanced Therapeutic Potential in Promoting Peripheral Nerve Regeneration

Hsin-Wen Wang¹, Yu-Jie Lin¹, Shih-Heng Chen^{2*}, Chieh-Cheng Huang^{1*}

(¹Institute of Biomedical Engineering, National Tsing Hua University; ²Department of Plastic and Reconstructive, Linkou Chang Gung Memorial Hospital)

#146 Semi-Automatic Assessment of PC12 Neuronal Differentiation on SU-8 Microgrooves Using ImageJ Analysis of Fluorescence Images

Lester U. Vinzon¹ and Shu-Ping Lin^{2,*}

(¹Ph.D. Program in Tissue Engineering and Regenerative

Medicine, National Chung Hsing University, Taichung, Taiwan;
²Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung, Taiwan)

#147 Three-Dimensional Mesenchymal Stem Cell Spheroids for Corneal Epithelial Wound Repair

Meng-Yu Tsai¹, Yang-Chun Shen¹, Hung-Chi Chen^{2*}, Chieh-Cheng Huang^{1*}

(¹ Institute of Biomedical Engineering, National Tsing Hua University; ²Department of Ophthalmology, Chang Gung Memorial Hospital, Linkou, Taiwan)

#225 Preparation and Evaluation of Alginate/dECM Scaffold Hydrogel Composite Membranes for 3D Bioprinting Materials.

Yu-Ting Jian, YI-Xuan Li, Yuan-Rong Lu, Mei-Jung Chen[#], Ching-Cheng Huang^{1*}

(Department of Biomedical Engineering, Ming Chuan University)

#238 3D Stem Cell Spheroid-Derived Decellularized Extracellular Matrixserves as a Bioactive Scaffold System for Tissue Engineering

C.-T. Ho¹, Y.-C. Kao², C.-E. Chiang¹, Y.-Q. Fang¹, Y.-C. Wang², C.-C. Huang^{1*}

(¹Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan; ²Interdisciplinary Program of Life Science, National Tsing Hua University, Hsinchu, Taiwan)

#255 Development of Hybrid Hydrogel Incorporated with Inorganic Nanostructure Crosslinker to Build a 3D Biomimetic Scaffold for Cartilage Tissue Engineering.

Swathi Nedunchezian^{1,2}, Chih-Kuang Wang^{1,2,*}

(¹ Department of Medicinal and Applied Chemistry, Kaohsiung Medical University, Kaohsiung, Taiwan.; ²Regenerative Medicine and Cell Therapy Research Center, Kaohsiung Medical University, Kaohsiung, Taiwan.)

#292 Multifunctional Radially-Aligned Collagen Scaffold for Enhancing Bone Healing Process

Cam-Hoa Mac¹, Hao-Yu Chan¹, Yu-Jung Lin², Yi-Hsuan Lin^{1,3}, and Hsing-Wen Sung^{1,*}

(¹Department of Chemical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ROC; ² Research Center for Applied Sciences, Academia Sinica, Taipei, Taiwan, ROC; ³ Department of Orthopaedic Surgery, Chang Gung Memorial Hospital at Linkou, Taoyuan, Taiwan)

#398 Preparation of Designed Decellularized Plants as Perfusable Tissue Engineering Scaffolds

Syuan-Jia Shin, Ya-Ching Chuang, Chia-Che Chiang, Ching-Cheng Huang^{*}

(Department of Biomedical Engineering, Ming Chuan University, Taoyuan, Taiwan)

#407 Negative Pressure Wound Treatment Adopts New Dressings

Ying-Ju Chen¹, Zu-Ning Liu¹, Yin-Tze Chang^{2,3}, Ching-Cheng Huang¹

(¹Department of Biomedical Engineering, Ming Chuan University; ²Nanhua University; ³Buster Biomedical Materials R&D Center)

#428 Preparation of Injectable dECM Scaffold Hydrogel and Evaluation of Its Application in Tissue Repair.

YI-Xuan Li, Yu-Ting Jian, Yuan-Rong Lu, Mei-Jung Chen[#], Ching-Cheng Huang^{1*}

(Department of Biomedical Engineering, Ming Chuan University)

13:10 ~ 15:30 Session 2

1F Lobby

Clinical Engineering

#80 Graphene-Silicone Composite Electrode for Out-of-Lab EEG Recording

L.W. Ko^{1*}, C.H. Su¹, P.L. Liao², J.T. Liang³ and S.H. Chen³

(¹Institute of Bioinformatics and Systems Biology, National Yang Ming Chiao Tung University, Hsinchu City, Taiwan; ²Institute of Biomedical Engineering, National Yang Ming Chiao Tung University, Hsinchu City, Taiwan; ³Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taipei City, Taiwan)

#150 Intelligent Risk Management System for Medical

Device - Emergency Room as An Example

Chung Chi Wu^{1,2}, Wen Tsung Cheng¹, Chin Chun Chen¹,
Shiang Lin Chu^{1,2}, Ming Chen Wang^{1,2}

(¹Medical Engineering Section, Cathay General Hospital, Taipei, Taiwan; ²Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan, Taiwan)

#307 Design and Development of Plasma Sterilization Equipment with Ultrasonic Probe

Guan Yi Li¹, Dong Jin Li¹, Chia Wei Hsu¹, Taso Min Lin², Ming Chen Wang^{1*}

(¹Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan, Taiwan; ²Ten Chen Medical Group, Taoyuan, Taiwan)

#390 Motion Sickness Induced by Navigating Information on See-Through Display

Chun kit Leung¹, Chien-Ju Lee², Ya-Ju Chang^{1,3}, Yu-Hsiang Tsa², Hen-Yu Lien^{1,4}

(¹School of Physical Therapy and Graduate Institute of Physical Therapy, College of Medicine, Chang Gung University, Taoyuan City, Taiwan; ²Electronic and Optoelectronic System Research Laboratories, Industrial Technology Research Institute, Hsinchu City, Taiwan; ³Neuroscience Research Center, Chang Gung Memorial Hospital, Linkou, Taoyuan City, Taiwan; ⁴Department of Physical Medicine and Rehabilitation, Chang Gung Memorial Hospital-Taoyuan Branch, Taoyuan City, Taiwan)

#421 Mimic in Laparoscopic Totally Extra-Peritoneal (TEP) Inguinal Hernia Repair

Pan Guan-Xin¹

(¹Chung Shan Hospital; ²Feng Chia University)

13:10 ~ 15:30 Session 2

1F Lobby

Medical Devices and Instrumentation

#24 Design a Rheotaxis-Based Microfluidic Chip for High-Quality Actively Motile Sperms Sorting

Chung-Hsien Huang¹, Teng-Kuan Huang¹ and Bor-Ran Li^{1,2*}

(¹Institute of Biomedical Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan; ²Center for Emergent

Functional Matter Science, National Yang Ming Chiao Tung University, Hsinchu, Taiwan)

#29 A wearable, Non-Invasive Hydrogel Patch for Natural Sweat Glucose Electrochemical Sensing

S.C. heu¹, P.H. Lin¹, and B.R. Li^{1,*}

(¹Institute of Biomedical Engineering, National Yang Ming Chiao Tung University, Hsinchu, Taiwan)

#78 Feasibility Study of High Frequency Ultrasound Needle-Knife in Trigger Finger Surgery

Yi-En, Tsai^{1*}, Huihua Kenny Chiang, Ph.D.¹, Yi-Ju, Tsai¹

(¹Department of BioMedical Engineering, National Yang Ming Chiao Tung University)

#127 Integration of High-Resolution Biological Pulsed Light Halide Perovskite Imaging of Clinical Hemodialysis in Microvascular Elasticity Research and Infrared Irradiation System

Jian-Chiun Liou¹, Jia-Feng Chang²

(¹School of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan; ²Division of Nephrology, Department of Internal Medicine, En Chu Kong Hospital, New Taipei City, Taiwan)

#301 Design and Implementation of a Wi-Fi Based Gateway for Multichannel Mechanocardiogram Measurement System

Yan-Lun Huang, Wen-Yen Lin

(Department of Electrical Engineering, Chang-Gung University)

#417 Development and Evaluation of Ultrasound Equipment to Remove Bladder Biofilm

Yi-Rong Lee¹, Tsu-Wang Shen^{2*}

(^{1,2}Department of automatic control engineering, Feng Chia University, Taichung, ROC.)

#9 Biomechanical Investigation of Lumbar Laminectomy for Fusion Segments and Stand-Alone Cage (MOST 109-2314-B-214-002)

Shih-Chieh Yang¹, Shi-Jie Ma², Pao-Hsin Liu^{2*}

(¹Department of Orthopedics, E-Da Hospital; ²Department of Biomedical Engineering, I-Shou University)

#10 C-terminus of Hsc70-Interacting Iroten (CHIP) Expression Enhances Survival, Anti-Senescence and Stemness Abilities in Human Wharton's Jelly Mesenchymal Stem Cell (MOST 107-2221-E-039-005-MY3)

Tung-Sheng Chen¹, Chun-Hsu Yao^{2*}

(¹School of Life Science, National Taiwan Normal University; ²Department of Biomedical Imaging and Radiological Science, China Medical University.)

#11 Development of Highly Sensitive and Fast Surface Acoustic Wave Sensors for Ammonia Detection(MOST-109-2221-E-214-001-MY2)

Cheng-Han Wang¹, Tien-Tsan Hung², Chi-Yen Shen^{*1}

(¹Department of Electrical Engineering, I-Shou University; ²Department of Chemical Engineering, I-Shou University)

#12 Surface-Enhanced Raman Scattering of Silver Dendritic Nanoforests and Its Application of Gene Detection(MOST 109-2221 -E-239 -018)

Ming-Hua Shiao¹, Tsunghsueh Wu², Hung-Ji Huang¹, Ching-Yi Peng³, Cheng-You Chen⁴, Yang-Wei Lin^{5*}, Yung-Sheng Lin^{3*}

(¹Taiwan Instrument Research Institute, National Applied Research Laboratories; ² Department of Chemistry, University of Wisconsin-Platteville; ³Department of Chemical Engineering, National United University; ⁴ Ph.D. Program in Materials and Chemical Engineering, National United University; ⁵ Department of Chemistry, National Changhua University of Education)

#16 Source Localization of Contact Heat Evoked Potential

in Patients with Peripheral Neuropathy (MOST 108-2221-E-010 -003 -MY3)

Chung-Wei Lee¹, and Ming-Chang Chiang^{1,*}

(¹Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan)

#20 Using Machine Learning Algorithm to Distinguish between Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder (MOST 109-2221-E-038-011)

I-Cheng Lin¹, Hung-Wen Chiu^{2*}, Tzu-Fang Pen²

(¹ Department of Psychiatry, Taipei Medical University-Shuang Ho Hospital; ²Graduate Institute of Biomedical Informatics, Taipei Medical University)

#22 Effect of Calcium Silicate on Mechanical Properties and in Vitro Osteogenesis of Zirconia Implants(MOST 108-2314-B-040-006-MY3)

Huei-Yu Jiang¹, Ting -Yi Chiang², Shinn -Jyh Ding^{1,3*}

(¹Institute of Oral Science, Chung Shan Medical University; ²Department of Dental Technology and Materials Science, Central Taiwan University of Science and Technology; ³Department of Stomatology, Chung Shan Medical University Hospital)

#27 Pseudo Computed Tomography Generation from Magnetic Resonance Images in the Knee Using Deep Learning(MOST109-2221-E-030-002-MY2)

Hao-Ho Kuo¹, Cheng-Chung Lin^{1,*},Tung-Wu Lu², Mei-Ying Kuo³, Horng-Chaung Hsu⁴ and Ting-Fang Shih⁵

(¹Department of Electrical Engineering, Fu Jen Catholic University, Taiwan; ²Department of Biomedical Engineering, National Taiwan University, Taiwan; ³Department of Physical Therapy, China Medical University, Taiwan; ⁴Department of Orthopaedic Surgery, China Medical University Hospital, Taiwan; ⁵Department of Radiology, College of Medicine, National Taiwan University, Taiwan)

#30 創建醫學 3D 互動擬真教學-以心臟血管疾病修復手術為例(MOST109-2221-E-006-214)

Wei-Ling Chen¹, Tsung-Lung Yang², Chung-Dann Kan^{3*}

(¹Food and Drug Administration, Ministry of Health Welfare, Taipei, Taiwan; ² KSVGH Originals & Enterprises Kaohsiung

Veterans General Hospital Kaohsiung County, Taiwan;
³Department of Surgery National Cheng Kung University Hospital, College of Medicine, National Cheng University Tainan.)

#41 A Study of Intelligent Brain Computer Interface Using EEG Control a Moving Car(MOST 110-2637-E-264-001)

Hung Chao^{1*}, uan-Huei Huang², Yong-Xiang Gao¹, Chun-Jui Chen¹, Yu-Zhu Liang¹

(¹Department of Biomedical Engineering, Yuanpei University of Medical Technology; ²Department of Surgery, Hsin-Chu Branch of National Taiwan University Hospital)

#42 開發具備主動腫瘤標靶及 Redox/pH 應答功能的奈米微粒以裝載 Zoledronic Acid 及 Doxorubicin 應用於具多重抗藥性的腫瘤治療 (MOST 108-2221-E-005-024-MY2)

Ya-Hsuan Chou, Yu-Ling Liu, Wen-Hsuan Chiang *

(國立中興大學化學工程學系)

#47 Spatial Exploration and Environment Recognition (SEER) System for the Visually Impaired and the Blind: Development and Validation (MOST 109-2222-E-218-001–MY2)

A.R. See^{1,*}, W.D. Advincula, L.V. Costillas, Y.J. Chen, and J.J. Huang

(¹Department of Electrical Engineering, Southern Taiwan University of Science and Technology, Tainan City, Taiwan)

#48 Development of Wearable Internet of Beings (IoB)-Capable Surface Electromyography (sEMG) for Low Back Pain (MOST 109-2221-E-006-107-)

Chun-Ting Chen¹, Yin Hsieh¹, Yu-Hsiu Huang¹, Cheng-Li Lin², Cheng-Feng Lin³, Jing-Jing Fang^{1*}

(¹Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan; ²Department of Orthopedics, National Cheng Kung University Hospital, Tainan, Taiwan; ³Department of Physical Therapy, National Cheng Kung University, Tainan, Taiwan)

#49 Ultrasound Scatteromics: an Innovative Strategy for the Diagnosis of Pediatric Hepatic Steatosis (1/3)(MOST 109-2223-E-182-001-MY3)

Po-Hsiang Tsui^{1,*}, Yi-Ping Chao², Ming-Wei Lai³, Hsun-Chin Chao³, and Chien-Chang Chen³

(¹Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taiwan; ²Department of Computer Science and Information Engineering, College of Engineering, Chang Gung University, Taoyuan, Taiwan; ³Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Children's Medical Center, Chang Gung Memorial Hospital at Linkou, Taoyuan, Taiwan)

#56 Discrimination of Parkinson's Disease Using Machine Learning Approaches from Resting State EEG (MOST 109-2221-E-130-003)

Chia-Yen, Yang*

(Department of Biomedical Engineering, Ming-Chuan University, Taoyuan, Taiwan)

#57 Transcranial Interfering Electric Field Stimulation Technology for the Rehabilitation Therapy in the Stroke (MOST 109-2221-E-038 -005 -MY3)

Chun-Wei Wu¹, Tsung-Hsun Hsieh², Chih-Wei Peng^{1*}

(¹School of Biomedical Engineering, College of Biomedical Engineering, Taipei Medical University; ²Department of Physical Therapy and Graduate Institute of Rehabilitation Science, College of Medicine, Chang Gung University)

#59 Evaluation of Bone Plate Biomechanics in Facial Defect Reconstruction (MOST 109-2221-E-214-004)

Pao-Hsin Liu^{1*}, Jehn-Shyun Huang²

(¹Department of Biomedical Engineering, I-Shou University; ²Institute of Oral Medicine, National Cheng Kung University)

#61 上顎前牙立即植牙之舌側骨寬厚度與門牙傾斜角度的 CT 臨床評估、角度支台體優化設計與三維生物力學分析 (第一年報告)(MOST 109-2221-E-039-002-MY2)

Chih-Ching Chi¹, Lih-Jyh Fuh¹, Yen-Wen Shen¹, Jui-Ting Hsu¹, Heng-Li Huang^{1*}

(¹ School of Dentistry, China Medical University, Taiwan; ² Prosthetic Dentistry Department, China Medical University Hospital, Taiwan)

#62 Development of Graphene/Polypyrrole

Nanocomposite-based Surface Acoustic Wave Sensors and Its Clinical Applications in Detection of Sub-ppm Ammonia (MOST-109-2221-E-214-001-MY2)

Cheng-Han Wang¹, Yao-Wei Chuang¹, Nga-Yin-Sadonna Lau², Chi-Yen Shen^{*1} (¹Department of Electrical Engineering, I-Shou University; ²Department of Biomedical Engineering, I-Shou University)

#63 Preparation of Stretchable Conductive Films with Thermosensitivity for Muscle Tissue Engineering Application (MOST 108-2628-E-008-002-MY3)

Yong-Zhi Zhong¹, Yun-Shan Tian¹, Wei-Wen Hu^{1*}
(¹National Central University)

#64 Using Resting-State Functional Magnetic Resonance Imaging to Detect Altered Brain Functional connectivity in Familial Amyloid Polyneuropathy (MOST 108-2221-E-010-003-MY3)

Yen-Lin Liu¹, Ming-Chang Chiang^{1*}
(¹Department of Biomedical Engineering, College of Biomedical Science and Engineering, National Yang Ming Chiao Tung University, Taipei, 112 Taiwan, ROC)

#65 Comparison of RR Interval Variability from ECG and PPG Signal in Familial Amyloid Polyneuropathy (MOST 108-2221-E-010-003-MY3)

Tsai-Jou Su¹, and Ming-Chang Chiang^{1,*}
(¹Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan)

#68 Construction of National Reference Phantoms with Sub-Organ Breast Models and Building National Breast Dose Assessment Platform (MOST 109-2221-E-010-007 -)

Yi-Ju Lai¹, Jay Wu^{1*}
(¹Department of Biomedical Imaging and Radiological Sciences, National Yang Ming Chiao Tung University)

#71 Development of a Dynamic, Static Balance Evaluation and AI-Based Exercise Prescription System for the Elderly (MOST 109-2221-E-305-001-MY2)

林伯星¹, 李依蓉¹, 林琪洲¹, 吳啟民¹, 李旻軒¹
(¹ National Taipei University, New Taipei City, Taiwan)

#72 Study on Ion-Sensitive Field-Effect Transistors with Honeycomb Channels (MOST 109-2221-E-260-003 -)

陳建亨教授¹, 曾士綸¹, 李子念¹, 黃佑宸¹
(¹國立暨南國際大學電機工程學系)

#75 Machine Learning Based Classification and Prediction of Heat Pain Sensitivity Using Resting-State EEG (MOST 109-2221-E-003-MY2)

Fu-Jung Hsiao^{1*}, Wei-Ta Chen^{1,3}, Shuu-Jiun Wang^{1,3}
(¹Brain Research Center, National Yang-Ming University, Taipei, Taiwan; ²School of Medicine, National Yang-Ming University, Taipei, Taiwan; ³Department of Neurology, Neurological Institute, Taipei Veterans General Hospital, Taipei, Taiwan)

#82 The Application of Deep Learning to Measure the Subsynovial Connective Tissue of Carpal Tunnel by Using the Magnetic Resonance Images (MOST 109-2221-E-153-001-)

Ming-Huwi Horng, Yung-Nien Sun, Tai-Hua Yang
(Department of Computer Science and Information Engineering, National Pingtung University; Department of Computer Science and Information Engineering, National Cheng Kung University; Department of Biomedical Engineering, National Cheng Kung University, Taiwan)

#84 Study on Smart Magnetic-Au-Cage NanoComposite Carrier for Combination Photo-Immunotherapy (MOST 108-2221-E-009-078-MY3) (MOST 109-2221-E-009-017-MY3)

Hsin-Yi Tsao¹, Hung-Wei Cheng¹, Chia-Chi Kuo¹, San-Yuan Chen^{1*}
(¹National Chiao Tung University, Department of Materials Science and Engineering)

#86 Quercetin/Fucoidan Multifunctional Gene Delivery Nanosystems Applied for Synthetical Lethal Synergistic Immunotherapy (MOST 109-2221-E-009- 017 -MY3)

Hung-Wei Cheng¹, Chih-Sheng Chiang², Hsin-Yao Ho¹, and San-Yuan Chen^{1*}
(¹Materials Science and Engineering, National Yang Ming

Chiao Tung University; ²Cell Therapy Center, China Medical University Hospital.)

#90 Preparation of Autologous Cardio-Myoblast Sheet by a Novel Cell Sheet Engineering and Applied it to Treat Ischemic Cardiomyopathy Model Animal (MOST 109-2221-E-038-009)

Yuan TSENG¹, Jungshan CHANG¹, How TSENG^{1,2*}

(¹Graduate Institute of Medical Sciences, ²School of Medicine, College of Medicine, Taipei Medical University.)

#94 Extracellular Vesicles Enrichment, Quantification and Analysis for Cancer Diagnosis by Using Integrated Microfluidics and Optically Induced Dielectrophoresis Technique (MOST-109-2221-E-007-006-MY3)

Yi-Sin Chen¹, Charles Pin-Kuang Lai², Chihchen Chen^{1,3}, Gwo-Bin Lee^{1,3*}

(¹Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan; ²Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan; ³Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan)

#95 Improving Tumor Microenvironment Through Oxygen-Loaded Microbubbles Trapping by Acoustic Vortex Tweezer (MOST 108-2221-E-007-040-MY3)

Chih-Kuang Yeh^{1,*}

(¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University)

#96 Antiseizure Drug-Loaded Nanodroplets with Focused Ultrasound for Epilepsy Therapy (MOST 108-2221-E-007-041-MY3)

Chih-Kuang Yeh^{1,*}

(¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University)

#97 膠原蛋白-氫氧基磷灰石奈米纖維複合支架在骨組織再生的應用 (MOST 108-2221-E-019-029-MY2)

Shiao-Wen Tsai¹, Sheng-Siang Huang², Wen-Xin Yu², Yu-Wei Hsu², Fu-Yin Hsu^{2*}

(¹ Graduate Institute of Biomedical Engineering, Chang Gung

University, Taiwan; ²Department of Bioscience and Biotechnology, National Taiwan Ocean University)

#98 Development of in Situ Forming Mucoadhesive Hydrogel for Vaginal Delivery (MOST-108-2628-E-036-001-MY3)

Si-Fan, Zhou¹, Hsi-Chin, Wu¹

(¹Department of Mechanical and Materials Engineering, Tatung University, Taipei, Taiwan)

#101 Research and Application of Tropomyosin receptor kinase A (TrkA) Targeting Chinese Medicine Peptide to Promote Nerve Regeneration (MOST 109-2221-E-039-007)

Yueh-Sheng Chen^{1,2*}, Tse-Yen Yang³, Dai-Yin Chen⁴, Chun-Hsu Yao², Ning-Yi Tu²

(¹The Ph.D Program for Medical Engineering and Rehabilitation Science, China Medical University; ²Lab of Biomaterials, School of Chinese Medicine, China Medical University; ³Molecular and Genomic Epidemiology Center, China Medical University Hospital, China Medical University, Taichung, Taiwan; ⁴Center of Augmented Intelligence in Healthcare, China Medical University Hospital)

#103 Point-of-Care Devices for COVID-19 Virus Detection by Using Sample Pretreatment and Nucleic Acid Amplification Techniques (MOST 109-2224-E-007-002)

You-Ru Jhou, Chih-Hung Wang, Gwo-Bin Lee*

(¹Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan)

#106 Increase of the Fatigue Strength of Locking Plates by Merging Holes and Thread Removal (109-2221-E-002-047-)

Jinn Lin

(National Taiwan University)

#108 Development and Biomechanical Evaluation of an Additively-Manufactured Hybrid Artificial Cervical Disc (MOST 109-2221-E-027-021-MY3)

Weng-Pin Chen^{1*}, Hui Jin¹, Jia-Chang Wang¹

(¹ National Taipei University of Technology)

#109 Development and Biomechanical Evaluation of Novel

Dental NiTi Rotary Instruments(MOST 109-2221-E-027 - 018-MY3)

Weng-Pin Chen^{1*}, Yan-Xuan Lin¹, Chun-Pin Lin²

(¹ National Taipei University of Technology; ² National Taiwan University)

#110 基於共光路繞射斷層掃描顯微術之紅血球快速檢驗系統開發(108-2221-E-002-081-MY3)

Yu-Hsiang Chang¹, Huai-Ching Hsieh^{2,4}, Kung-Bing Sung^{*,1,2,3}

(¹Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; ²Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan; ³Molecular Imaging Center, National Taiwan University, Taipei, Taiwan; ⁴Department of Life Science, National Taiwan University, Taipei, Taiwan)

#115 Deveolping a Mobile Application of Boshiamy Input Code Searcherwith Voice Input and Dictionary for Visually Impaired People(MOST-108-2221-E-040-008)

李孝屏¹, 許慈芳²

(¹ 中山醫學大學醫學資訊學系; ² 靜宜大學資訊傳播工程學系)

#116 Purification and Evaluation of Sesquiterpene Farnesol in Skin Care Products(MOST 109-2622-E-214-001-CC2)

Yu Wen Wang, Chi Bo Lin, Chong Lun Chen, Shyh Ming Kuo
(Department of Biomedical Engineering, I-Shou University)

#120 Design and Improvement of a Transistor Biosensor Chip for Bacteria and Cells Detection(MOST 109-2221-E-167-033)

吳其昌^{1*}, 徐琮雅², 王敏蓉², 劉浩榮²

(¹Department of Electronic Engineering, National Chin-Yi University of Technology; ²Department of Electronic Engineering, Feng Chia University)

#126 The Gradient Approach to Identify the Rotors in Persistent Atrial Fibrillation(MOST 108-2221-E-008-040-MY3)

Chia-Hsin Chiang^{1,2}, Men-Tzung Lo^{1*}, Chen Lin¹, Yenn-Jiang Lin², Fa-Po Chung², Chin-Yu Lin², Shih-Ann Chen³

(¹National Central University, Taoyuan City, Taiwan; ² Taipei

Veterans General Hospital, Taipei, Taiwan; ³ Taichung Veterans General Hospital, Taichung City, Taiwan)

#131 To Explore the Cartilage Repair Potential of Infrapatellar Fat Pad Derived Mesemchymal Stem Cells and Acellular Cartilage Sheets Combined With in Situ Cross-Linked Hydrogel (MOST 110-2314-B-006-028-MY2)

Lin, I-Hsuan^{1*}, Yeh, Ming-Long¹

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

#132 Influential Factor Investigation and Algorithm Development for ECG Biometric Identification and Verification

#134 Computer-Aided Image Processing Techniques for Neuro Damage Analysis in Rat Brain Images With Ischemic Strokes(MOST 108-2221-E-002-080-MY3)

Herng-Hua Chang^{1,*}

(¹Department of Engineering Science and Ocean Engineering, National Taiwan University, Taipei, Taiwan)

#137 Targeted Solid Lipid Nanoparticles for APC Activation and AR Inhibition in Combination with Radio- and Checkpoint Blockade Therapy against Breast Cancer(107-2221-E-007-032 -MY3)

Te-Ming Wang, Te-I Liu, Reesha Kv, Arjun Sabu, Hsin-Hung Chen, Hsin-Cheng Chiu*

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

#138 Development of Multiple-contrast High-resolution Postmortem Fetal Brain MRI Database and Its Application on Early Detection of Cerebral Structural Malformations(MOST 109-2221-E-400-001-MY2)

Sheng-Min Huang¹, Kuan-Hung Cho¹, Koping Chang², Pei-Hsin Huang^{2,3}, and Li-Wei Kuo^{1,4*}

(¹Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Miaoli, Taiwan;

²Department of Pathology, National Taiwan University Hospital, Taipei, Taiwan; ³Graduate Institute of Pathology, National Taiwan University College of Medicine, Taipei, Taiwan; ⁴Institute of Medical Device and Imaging, National

Taiwan University College of Medicine, Taipei, Taiwan.)

#139 Development and Application of Polypeptide Multilayer Nanofilms for Proliferation and Osteogenic Differentiation of Human Dental Pulp Stem Cells(MOST 109-2221-E-010-010-)

Yu-Han Hung , Chun-Min Lo*

(Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan.)

#140 Fabrication of Drug-Loaded Scaffolds Based on Light-Curable Methacrylated Tannic Acid (MOST 109-2221-E-224-003-)

Kuo-Yu Chen*, Yi-Ci Li, Yu-Ying Chuang

(Department of Chemical and Materials Engineering, National Yunlin University of Science and Technology)

#151 Study of Sesquiterpene Farnesol in II Collagen Generation and the Treatment Potential in Early Osteoarthritis(MOST 109-2314-B-214-001-MY3)

Wu,Guan-Xuan¹ , Chen,Chun-Yu^{1, 2}, Yang,Shan-Wei², Kuo, Shyh- Ming^{3*}

(¹Department of Electrical Engineering, I-Shou University;

²Kaohsiung Veterans General Hospital, Orthopedics;

³Department of Biomedical Engineering, I-Shou University)

#156 A Head-Wearing Device Based on Scalp Acupuncture Theory for Mild Cognitive Impairment (MOST 109-2221-E-033-006-MY2)

Ming-Hsien Yu¹, Ya-Chun Hsu¹, Shun-Ku Lin², Po-Yu Huang², Wen-Chen Lin³, Wen-Chi Lin³, Cheng-Lun Tsai^{3,4}, Kang-Ping Lin^{1,3*}

(¹Department of Electrical Engineering, Chung Yuan Christian University; ²Department of Traditional Chinese medicine, Taipei City Hospital; ³Technology Translation Center for Medical Device, Chung Yuan Christian University;

⁴Department of Biomedical Engineering Chung Yuan Christian University)

#157 Biomechanical Investigation of Locking Plate Systems for Proximal Humerus Fracture Fixations Using Rotator Cuff Muscle Forces During Shoulder Rehabilitation

Activities(MOST 109-2221-E-011-035)

Meng-Hua Lin¹, Kao-Shang Shih², Nien-Jou Hsu¹, Ching-Chi Hsu^{3,*}

(¹Graduate Institute of Applied Science and Technology, National Taiwan University of Science and Technology, Taipei, Taiwan; ²Department of Orthopedic Surgery, Shin Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan; ³Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan)

#160 Microbubbles Based Combined Medical Device for Promoting Head and Neck Disease Treatment and Cancer Immunotherapy (MOST108-2221-E-011-161-MY4)

Ai -Ho Liao^{1*}, Chih -Hong Wang ², Cheng heng -Ping², u-Hsiang Chu ², Chien-Ping Chiang²

(¹National Taiwan University of Science and Technology;

²National Defense Medical Center Tri-Service General Hospital)

#162 Antibacterial Effect of Multi-Wavelength Light-Emitting Diode Based on Riboflavin-5'-Phosphate Photolysis

Yao-Wei Yeh ¹, Ping-Ching Wu^{1, 2, 3*}

(¹Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan ; ²Center of Applied Nanomedicine, National Cheng Kung University, Tainan, Taiwan; ³Medical Device Innovation Center, National Cheng Kung University, Tainan, Taiwan)

#164 Individualized Adl Health Prescription Generator (MOST 109-2221-E-009-010-MY3)

Shueh-Lin Chuang ¹, Jen-Po Hsu ¹, Bing-Shiang Yang ^{1*}

(¹Department of Mechanical Engineering, National Yang Ming Chiao Tung University)

#168 A Novel Autophagy Inhibitor Shows Single-agent Anticancer Efficacy for Hepatocellular Carcinoma Treatment (MOST 110-2628-E-007-007 -)

Van-Anh Thi Nguyen^{1,†}, Pei-Ru Jin^{1,†}, Yen-Nhi Ngoc Ta^{1,†}, I-Ting Chen^{2,†}, Jeng-Liang Han^{2,*}, Yunching Chen^{1,*}

(¹Institute of Biomedical Engineering and Frontier Research Center on Fundamental and Applied Sciences of Matters,

National Tsing Hua University, Hsinchu City, Taiwan;
²Department of Chemistry, National Chung Hsing University,
145 Xingda Rd., South Dist., Taichung City 40227, Taiwan)

#169 A Novel CXCR4 Antagonist Modulates Tumor Microenvironment and Achieves a Potent Anti-Tumor Response in Liver Cancer (MOST 108-2221-E-007 -104 -MY5)

Yen-Nhi Ngoc Ta¹, Jen-Shin Song², Chih-Chun Chang¹, Chien-Huang Wu², Kak-Shan Shia^{2,*}, and Yunching Chen^{1,*}
(¹Institute of Biomedical Engineering and Frontier Research Center on Fundamental and Applied Sciences of Matters, National Tsing Hua University, Hsinchu, Taiwan; ²Institute of Biotechnology and Pharmaceuticals Research, National Health Research Institute, Miaoli, Taiwan)

#171 Development of Hyperspectral Imaging Platform for Analyzing Vascular Access in Hemodialysis Patients (MOST 109-2221-E-030 -001 -MY3)

Hsiao-Chi Li^{1,*}, Peng-Cheng Loke¹, Yi-Xiu Zhang¹, Liang-Ting Jiang²
(¹Dept. Computer Science and Information Engineering, Fu Jen Catholic University; ² Fu Jen Catholic University Hospital)

#172 Integrating Picture and Text-Based Automatic Conversion Technology with Assistive Communication System (MOST 108-2221-E-218-018-MY2)

Yeou-Jiunn Chen
(Department of Electrical Engineering, Southern Taiwan University of Science and Technology)

#187 Project Title: Embedded system based intelligent blood glucose level regulation implementation and reliability verification for type 1 diabetic patients (MOST 109-2221-E-035-015-)

主持人：林宗志教授

研究人員：塗凱傑、黃煒成、陳韋愷、孫健文、黃冠銘、陳品瑞、廖柏宸、高嘉偉
(逢甲大學電子工程學系)

#188 CT-based Radiomics Assessment of Thoracic Surgical Strategy: Surgical Risk Evaluation and Pathological

Feature Prediction in Early Stage Lung Cancer (The 3rd year)(MOST 107-2221-E002-080-MY3)

LIN, Y. H.¹, LIN, Y. T.¹, CHUNG, Y. J. ¹, WANG, C. W.¹ , CHEN, H. F.¹, WANG, H. J. ¹, CHEN, C. M. ¹, LIN, M. W.^{2*}
(¹Department of Biomedical Engineering, National Taiwan University, Taipei, Taiwan; ²Department of Surgery, National Taiwan University Hospital, Taipei, Taiwan)

#190 Using Laser Speckle Contrast Imaging and Electrocorticography to Assess Topiramate Treatment of Epileptic Seizure in 4-Aminopyridine Model (MOST 108-2221-E-400-003-MY3)

Yuhling Wang¹, Chia-Hua Tsai¹ and Lun-De Liao^{1,*}
(¹Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Zhunan Township, Miaoli County, Taiwan.)

#192 Evaluation of Two-Photon Dyes for Sentinel Lymph Node Mapping in Mice Bearing Mammary Carcinoma (MOST 109-2119-M-033-003)

林佩欣¹, 李文婷^{1*}, 葛宗融¹, 謝明發¹, 林子超²
(¹Dept. of Biomedical Engineering, Chung Yuan Christian University; ²Dept. of Chemistry, National Central University)

#198 Fabrication of Zinc Protoporphyrin-Modified Gold Electrode for Sensitive and Fast Detection of Vascular Endothelial Growth Factor (MOST 109-2221-E-182-012-)

Hung-Yu Lin, Chin-Cheng Liao, Mu-Yi Hua^{*}
(Department of Chemical and Materials Engineering, Chang Gung University, Taoyuan 333323, Taiwan, R.O.C.)

#199 Development of Confocal Shear Wave Acoustic Radiation Force Elastography with Fractional-Order Convolution Neural Network Classifier for Early Diagnosis and Evaluation of Barret's Esophagus (MOST 108-2218-E-167-007-MY2)

Jian Xing Wu^{1,3*}, Chia-Hung Lin¹, Jin-Chyr Hsu², K. Kirk Shung³
(¹Department of Electrical Engineering, National Chin-Yi University of Technology; ²Division of Thoracic Medicine, Taichung Hospital of the Ministry of Health and Welfare; ³Department of Biomedical Engineering, University of

California)

#200 Local Estimation of Pulse Wave Velocity by Ultra-Fast Ultrasound-Phantom Study (MOST 106-2218-E-182-008-MY3)

Wei-Cheng Hsiao¹, Bao-Yu Hsieh^{1*}

(¹Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taoyuan, Taiwan; ²Department of Medical Imaging and Intervention, Chang Gung Memorial Hospital, Taoyuan, Taiwan)

#201 Lactate-Activated Hypoxia-Responsive Carrier for Viral RNA Interference and Regulated Tumor-Associated Macrophage for Immunotherapy (MOST 108-2628-E-110-MY3)

C.C. Hsueh, M.S. Yan, M.J. Hsieh, Y.H. Wang and Z.X. Liao*
(Institute of Medical Science and Technology, National Sun Yat-sen University, Kaohsiung 80424, Taiwan)

#202 Grey Matter Tissue Characterization with Diffusion Kurtosis Imaging (MOST 186-2221-E-007-039-MY3)

Jung-Sen Hsiao¹, Fu-Nien Wang¹, Hsu-Hsia Peng^{1*}

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

#203 A ROS/UV-C Based Model for Optimization of Sperm Selection in Assisted Reproductive Technology (109-2813-C-038-010-E)

Min-Chih Chan¹, Yaching Hsu¹, Li-Chern Pan^{2*}

(¹School of Biomedical Engineering /Taipei Medical University; ²Graduate institute of Biomedical Optomechatronics / Taipei Medical University)

#204 The Effectiveness of Innovative Orthosis for Phalanx Extension Neuromotor-Facilitation (Iopen) on Upper Limb Movement in Patients With Stroke (MOST 109-2221-E-006-074)

Kai Chang¹, Jer-Hao Chang^{*1,2}

(¹Institute of Allied Health Science, College of Medicine, National Cheng-Kung University; ²Department of Occupational Therapy, College of Medicine, National Cheng-Kung University)

#207 Design of a Novel Adhesive Device for Subcutaneous Extravasation Detection Using High Frequency Electromagnetic Resonance and IQ Demodulation Technology (MOST 108-2221-E-006-231-MY3)

Yi-Chun Du^{1*}, Wei-Siang Ciou¹, Ming- Jui Wu²

(¹Department of Biomedical Engineering, NCKU, Taiwan; ²Medical Department of Kaohsiung Veterans General Hospital Tainan Branch, Taiwan)

#208 Analysis of Neurofeedback Signals and Implementation of Social Evaluating Interface for Patients with Autism Spectrum Disorder (MOST 107-2221-E-110-081-MY3)

Yi-Li Tseng^{1,*}, Chia-Hsin Lee¹, Yi-Ling Chien²

(¹Department of Electrical Engineering, National Sun Yat-sen University, Kaohsiung, Taiwan; ²Department of Psychiatry, National Taiwan University Hospital, Taipei, Taiwan)

#209 Automated Detection of Multiple Eye Diseases on Optical Coherence Tomography Images Using Artificial Intelligence Techniques (MOST 109-2221-E-155-006)

Cheng-Hung Lin^{1,2*}, Jia-Kang Wang^{1,3}, Tzu-Lun Huang^{1,3}

(¹Department of Electrical Engineering, Yuan Ze University, Taoyuan City, Taiwan 320; ³Department of Ophthalmology, Far Eastern Memorial Hospital, New Taipei City, Taiwan 220)

#211 Integrated Rapid PCR Microfluidic Chip with Lateral-flow Test Strip for Rapid Pathogen Detection (MOST-105-2221-E-182-036-MY3)

詹子賢¹, 張歲², 邱全芊^{2,3}, 林彥亨^{1,4,*}

(¹長庚大學生物醫學工程研究所, 桃園, 中華民國; ²長庚大學醫學生物技術暨檢驗學系, 桃園, 中華民國; ³胸腔科, 長庚醫療財團法人林口長庚紀念醫院, 桃園, 中華民國; ⁴耳鼻喉部, 長庚醫療財團法人林口長庚紀念醫院, 桃園, 中華民國)

#213 Using Polarized Light and Contactless Bioimpedance to Assess Pressure Ulcers and Develop Early Pressure Ulcers Detection System (MOST 109-2221-E-033-010)

莊炯承¹, 蔡家豪¹, 葉承霈¹, 林巧欣¹, 廖倫德², 戴裕庭³

(¹中原大學生物醫學工程學系; ²財團法人國家衛生研究院

#215 Design and Validation of Wearable LEGO-like Electroencephalogram Headset (MOST 109-2221-E-110-009-MY3)

Yi-Hsiang Lien, Shang-You Yang, Yuan-Pin Lin*

(Laboratory for NeuroErgonomics, Institute of Medical Science and Technology, National Sun Yat-sen University, Taiwan)

13:10 ~ 15:10 Session 4

1F Lobby

MOST

#216 Biomechanical Characteristics and Functional Analyses of Self-expandable Nasal Stent (MOST 109-2221-E-195 -001 -MY2)

Chang-Hung Huang^{1,*}, Lin-I Hsu¹, Chung-Chih Cheng², Yong-Guei Chen², Chih-Feng Lin³, Yung-Chang Lu¹

(¹Biomechanics Research Laboratory, MacKay Memorial Hospital; ²Medical and Pharmaceutical Industry Technology and Development Center; ³Department of Otolaryngology, National Taiwan University Hospital; Taipei, Taiwan)

#220 Examination of the Topiramate Effects on PID of PTI Stroke Rats by Using LSCI-ECOG System (MOST 107-2221-E-400-002-MY3)

Yu-Lin Chen¹, Yuhling Wang¹, Chia-Hua Tsai¹, Lun-De Liao^{1,*}

(¹Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Zhunan Township, Miaoli County, Taiwan.)

#234 Graphene Oxide-alginate Composite Scaffold for Biomedical Application (MOST 108-2314-B-039-033-MY3)

Yi-Hsuan Tung¹, Chih-Ying Chi², Cherng-Jyh Ke^{2*}

(¹Department of Biological Science and Technology, China Medical University; ²Biomaterials Translational Research Center, China Medical University Hospital)

#236 Biodistribution Red Fluorescent Carbon Dots of in Mice Bearing Mammary Carcinoma (MOST 108-2221-E-033-025)

Yu-Chieh Lin, Wen-Tyng Li*

(Dept. of Biomedical Engineering, Chung Yuan Christian University)

#243 Development of Novel Liposomal Ions-loaded Nano-Biomaterials for Endodontic Therapy (MOST-109-2622-B-002-007-CC1)

Tai-Wei Feng¹, Hiesh², Chun-Pin Lin^{3,*}

(¹Graduate Institute of Oral Biology, National Taiwan University, Taiwan, Taipei; ²Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan, Taoyuan; ³Graduate of Clinical Dentistry, School of Dentistry, National Taiwan University, Taiwan, Taipei)

#245 A Feasibility Study of Modulating Fluid Streaming by Acoustic Vortex lens (MOST 109-2636-E-006-024)

Ching-Hsiang Fan¹

(¹Department of Biomedical Engineering, National Cheng Kung University; ²Medical Device Innovation Center, National Cheng Kung University)

#246 Intelligence Maintenance Platform with Nostalgic Scenes--Memory Retrospection Model for the Elderly (109-2221-E-146-004-)

Yu-Luan Chen¹, Ren-Guang Lue², Tsung-Hsien Hsieh², Chih-Chen Chen^{2*}

(¹National Taipei University of Education; ²Hwa Hsia University of Technology)

#247 The Development of a Clinical Decision Support System for Autonomic Dysfunction Patients based on the nonlinear Cerebrovascular Regulation Decision Support System for Autonomic Dysfunction Patients based on the nonlinear Cerebrovascular Regulation (MOST 109-2221-E-035-014)

Shyan-Lung Lin^{1*}, Shou-Jeng Yeh², Chih-En Kuo³, Ching-Kun Chen¹

(¹Department of Automatic Control Engineering, Feng Chia University; ²Department of Neurology, Cheng Ching General Hospital; ³Department of Applied Mathematics, National Chung Hsing University)

#253 Designing an Implantable Bladder Pressure Sensor for

Real-time Bladder Pressure Monitoring (MOST109-2221-E-492-005)

Yu-Ting Li^{1,*}, Chih-Wei Peng², Ling-Yu Yang³ and Wei-Ting Hsu¹

(¹Taiwan Instrument Research Institute, National Applied Research Laboratories, Hsinchu 30261, Taiwan; ²School of Biomedical Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei 11031, Taiwan; ³Department of surgery, Division of Neurosurgery, National Taiwan University Hospital, Taipei 100, Taiwan)

#257 Development of Physiologically Based Pharmacokinetic-quantitative Systems Modeling for Understanding the Interaction of Gut Microbiota-drug Metabolism and Rationalizing Design of Nanogels (MOST 109-2221-E-038-001-MY3)

Jia-Pei Lin¹, Athika Darumas Putri¹ and Chien-Ming Hsieh^{1,*}

(¹School of Pharmacy, Taipei Medical University, Taipei, Taiwan)

#259 Visible-CCD-Camera-Guided Photoacoustic Imaging System for Precision Navigation during Functional Rat Brain Imaging (MOST 107-2221-E-400-002-MY3)

Yu-Lin Chen¹, Yuhling Wang¹, Chia-Hua Tsai¹ and Lun-De Liao^{1,*}

(¹Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Zhunan Township, Miaoli County, Taiwan.)

#261 Monitoring of Vascular Response to Peri-Infarct Depolarization (PID) in Photothrombotic Stroke Animal Model with Ultrasound Ultrafast Doppler (MOST 109-2221-E-182-065 -MY3)

Shih-Ya Huang¹, Yu-Chieh Kao² and Bao-Yu Hsieh^{3*}

(¹Department of Biomedical Imaging and Radiological Science, China Medical University, Taichung, Taiwan; ²Department of Biomedical Imaging and Radiological Science, National Yang Ming Chiao Tung University, Taipei, Taiwan; ³Department of Biomedical Imaging and Radiological Science, Chang Gung University, Taoyuan, Taiwan)

#263 Small Pulmonary Nodules Detection, Surveillance and

Decision Supportive Model in Low-dose Computerized Tomography (LDCT) : Longitudinal Radiomic Analysis and Deep Convolution Generative Adversarial Network (DCGAN) (MOST 107-2221-E-002-074-MY3)

Yu-Hsuan Hu¹, Li-Wei Chen¹, Ching-Chia Chuang¹, Pei-Yu Chou¹, Mong-Wei Lin², Shun-Mao Yang^{1,2}, Yi-Chang Chen², Min-Shu Hsieh⁴, Jin-Shing Chen², Yeun-Chung Chang³, Chung-Ming Chen¹

(¹Institute of Biomedical Engineering, National Taiwan University; ²Department of Surgery, National Taiwan University Hospital and National Taiwan University College of Medicine; ³Department of Medical Imaging, National Taiwan University Cancer Center; ⁴Department of Pathology, National Taiwan University Hospital and National Taiwan University College of Medicine)

#265 Development of a System for Quantitatively Evaluating the Viscoelastic Properties of the Elbow Ulnar Collateral Ligament for Baseball Pitchers: Toward the Goal of Quantitative Diagnosis and Active Prevention for Ulnar Collateral Ligament Injury (MOST 108-2218-E-002-046-MY3)

Che-Yu Lin¹, Yi-Cheng Chen¹

(¹Institute of Applied Mechanics, National Taiwan University)

#266 Portable Pupilometer (MOST 109-2221-E-011-030-)

Allen Jong-Woei Whang¹, Yi-Yung Chen^{2*}, Wei-Chieh Tseng¹, Chih-Hsien Tsai³, Yi-Ping Chao^{4,5,6}, Chieh-Hung Yen^{4,7,8}, Chun-Hsiu Liu^{7,8}, Xin Zhang¹

(¹Department of Electronic and Computer Engineering, National Taiwan University of Science and Technology; ²Graduate Institute of Color & Illumination Technology, National Taiwan University of Science and Technology; ³Graduate Institute of Electro-Optical Engineering, National Taiwan University of Science and Technology; ⁴Graduate Institute of Biomedical Engineering, Chang Gung University; ⁵Department of Computer Science and Information Engineering, Chang Gung University; ⁶Department of Neurology, Chang Gung Memorial Hospital at Linkou; ⁷Department of Ophthalmology, Chang Gung Memorial Hospital at Linkou; ⁸College of Medicine, Chang Gung University)

#271 A Three-dimensional Photonic Crystal Biosensor for Tear Diagnosis of Diabetic Retinopathy (MOST 107-2221-E-006-054-MY3)

Li-Ying Chen¹, Ren-Nan Liao¹, Sheng Min Hsu², and Han-Sheng Chuang^{1,3,*}

(¹Department of Biomedical Engineering National Cheng Kung University, Tainan 701, Taiwan; ²Department of Ophthalmology National Cheng Kung University Hospital, Tainan 701, Taiwan; ³Medical Device Innovation Center National Cheng Kung University, Tainan 701, Taiwan)

#280 Nanostructures SERS-active Substrate Combined with Physical or Chemical Stimulation for Trace Detection of Unexpected Species in the Milk Solution and Secreted Substance of Stimulated Cell (MOST 108-2218-E-006-054-MY3)

Bo-Yao Huang, Han Lee, Jia-Wei Yang, Jaya Sitjar, Jiunn-Der Liao*

(Department of Materials Science and Engineering, National Cheng Kung University, ¹University Road, Tainan 701, Taiwan)

#281 Rapid Screening Through Enhancing Specific Raman Intensity on the Viral Envelope of SARS-CoV-2 Virus, Its Variations, and Other Infectious Viruses (MOST 110-2221-E-006-014-MY3)

Jaya Sitjar¹, Hao Wang¹, Chien-Hsiung Chen¹, Jiunn-Der Liao^{1,*}, Jen-Ren Wang^{2,3}, Huey-Pin Tsai³, Han Lee¹

(¹Engineered Materials for Biomedical Applications Laboratory, Department of Materials Science and Engineering, National Cheng Kung University, Tainan, 701, Taiwan; ²Department of Medical Laboratory Science and Biotechnology, College of Medicine, National Cheng Kung University, Tainan 701, Taiwan ; ³Department of Pathology, National Cheng Kung University Hospital, College of Medicine,)

#286 High Resolution Reduced FOV IVIM EP-MRI with 2D Spatially-Selective RF in Hypothalamus and Brain Stem (III) (MOST 107-2221-E-035 -033 -MY3)

Y.J. Liu¹, T.C. Chao², C.J. Juan³

(¹Feng Chia University/ Automatic Control Engineering, Taichung, Taiwan; ²National Cheng-Kung University /

Department of Computer Science & Information Eng., Tainan, Taiwan ; ³China Medical University /Department of medicine, Taichung, Taiwan)

#298 Design and Development of Transition-Aware Sedentary Behavior Monitoring System (MOST 109-2221-E-010-005)

Chia-Yeh Hsieh^{1,2}, Shun-Sheng Yang¹, Steen J. Hsu³ and Chia-Tai Chan^{1,*}

(¹Department of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, 112 Taiwan; ²Bachelor's Program in Medical Informatics and Innovative Applications, Fu Jen Catholic University, New Taipei City, 242 Taiwan ; ³Department of Information Management, Minghsin University of Science and Technology, Hsinchu, 304 Taiwan)

#300 Construction of Computer-assisted Immunotherapy Patient Selection and Treatment Decision-making Model for Advanced Non-small Cell Lung Cancers in Pulmonary CT Accounting for the Interaction between the Radiomics Features of Histological Subtypes and PD-L1 (MOST 109-2221-E-002-033-MY3)

Pei-Yu Chou¹, Li-Wei Chen², Ching-Chia Chuang³, Yu-Hsuan Hu⁴, Mong-Wei Lin⁵, Shun-Mao Yang⁶, Yi-Chang Chen⁷, Yeun-Chung Chang⁸, Chung-Jen Yu⁹, Shu-Yung Lin¹⁰, Chung-Ming Chen¹¹

(^{1,2,3,4,11}Institute of Biomedical Engineering, NTU; ^{5,6}Department of Surgery, NTUH and NTU College of Medicine; ^{7,8}Department of Medical Imaging, NTUH and NTU College of Medicine; ^{9,10}Department of Internal Medicine , NTUH and NTU College of Medicine)

#303 Development of Computed Tomography to Predict the Histopathological Subtypes and EGFR and T790M Mutations of Lung Adenocarcinoma (MOST 109-2221-E-002-034-MY3)

Chen, H. F.¹, Lin, Y. H.¹, Wang, H. J.¹, Chen, L. W.¹, Chen, I. C.², Lin, M. W.³, Yang, S. M.^{1,3}, Chen, C. M.¹, Chang, Y. C.^{2*}

(¹National Taiwan University Department of Biomedical Engineering; ²National Taiwan University Hospital Department of Medical Imaging; ³ Department of Surgery, National Taiwan University Hospital, Taipei, Taiwan)

#304 Optimising the Generation of Human Structural Connectome: the Development of a Novel Diffusion MRI Fibre Tracking Framework with Surface-based Anatomical Priors (MOST 109-2222-E-182-001-MY3)

Chun-Hung Yeh^{1,*}, Robert Smith², Xiaoyun Liang², Fernando Calamante², Alan Connelly²

(¹ Institute for Radiological Research, Chang Gung University, Taoyuan, Taiwan; ²Florey Institute of Neuroscience and Mental Health, Melbourne, Australia)

#315 A Sensor-based Tactile Symbol and Augmentative and Alternative Communication System for Multiple Disabilities and Visually Impairment People (MOST 109-2221-E-126-001)

許慈芳¹, 李孝屏²

(¹靜宜大學資訊傳播工程學系; ²中山醫學大學醫學資訊學系)

#316 Artificial Intelligent Feature Point Identification for Multichannel Mechanocardiogram Spectrum (MOST 109-2221-E-182-016-)

Wen-Yen Lin, Yan-Lun Huang

(Department of Electrical Engineering, Chang-Gung University)

#319 Embracing Home-based Medical Life and Mastering the Dignity of Independence (MOST 109-2224-E-006-002-)

Lin, Yu-Chen¹, Pan, Zi-Yu¹, Lin, Chih-Chun², Lin, Yu-Sheng³, Yang, Cang-Chin², Hsu, Hsiu-Yun^{1,4}, Kuo, Li-Chieh^{1,2*}

(¹ Department of Occupational Therapy, National Cheng Kung University; ²Medical Device Innovation Center, National Cheng Kung University; ³Department of Mechanical Engineering, Southern Taiwan University of Science and Technology; ⁴Department of Physical Medicine and Rehabilitation, National Cheng Kung University Hospital)

#324 Size Correlation Studies Between Biological Targets and Sensing Behaviors of Nanowire BioFETs : From Biomolecules to Bacteria and Cells (MOST 108-2221-E-492-009)

Ming-Pei Lu^{1,*}, Ying-Ya Weng², Yuh-Shyong Yang³

(¹Taiwan Semiconductor Research Institute, National Applied Research Laboratories; ²Department of Electrical and Computer Engineering, Biomedical Engineering, National Yang Ming Chiao Tung University ; ³Department of Biological Science and Technology, Biomedical Engineering, National Yang Ming Chiao Tung University)

#325 Deep Learning Assisted Image Data Analysis for Automatic Detection and Prediction of Cerebrovascular Diseases (MOST 109-2221-E-182-014)

#330 Evaluating the Joint Position Sense of Elbow in Various Matching Protocols in Healthy Subjects (MOST 109-2221-E-650-001-MY2)

Ya-Hui Li¹, Jing-Yu Chen², Zhen-Hui Liu², Po-Tsun Chen³, Yuan-Kun Tu¹, Yi-Jung Tsai^{2*}

(¹Department of Orthopedics, E-Da Hospital, Taiwan; ²Department of Medical Research, E-Da Hospital, Taiwan); ³ School of Physical Therapy, Chang Gung University, Taiwan)

#334 Ultrasound Calibration for Dual-armed Surgical Navigation System (MOST 109A03A)

Kuan-Ju Wang^{1,2}, Chun-Yi Lo³, Hung-Hsin Lin², Chieh-Hsiao Chen^{2,4}, Jia-Jin Jason Chen^{1,*}

(¹Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan; ²Brain Navi Biotechnology Co., Ltd., Zhubei City, Hsinchu Country, Taiwan ; ³Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan City, Taiwan ; ⁴China Medical University Beigang Hospital, Yunlin County, Taiwan)

#338 A New Approach to Enhance Weight Training Practice: The Application of EMG Clothes and Real-Time Feedback System (MOST 109-2221-E-037-004-)

Wen-Lan Wu^{1*}, Ing-Jer Huang^{2,3}, Hsiu-Tao Hsu³, Wen-Hsien Ho⁴

(¹Department of Sports Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan ; ²Department of Computer Science and Engineering, National Sun Yat-Sen University, Kaohsiung, Taiwan; ³Digital Content and Multimedia Technology Research Center, National Sun Yat-Sen University, Kaohsiung, Taiwan; ³ Center for Physical and Health Education,

Si-Wan College, National Sun Yat-Sen University, Kaohsiung, Taiwan; ⁴Department of Healthcare Administration and Medical Informatics, Kaohsiung Medical University, Kaohsiung, Taiwan)

#340 4D Ultrasound Cardiac Principal Stretch Imaging with Learning based Spatiotemporal Regularization (MOST 109-2222-E-009-008-MY3)

Po-Syun Chen¹, Lung-Chun Lin², Geng-Shi Jeng^{1*}

(¹Institute of Electronics, National Yang Ming Chiao Tung University ; ²National Taiwan University Hospital)

#348 Targeted Nanoparticles that Control Drug Exclusion from Cells by Using Ultrasound-drug Release for Tumor Growth Inhibition (MOST 107-2221-E-010-004-MY3)

Che-Yu Hsu¹, Po-Hung Hsu², Chun-Lung Feng³, Yu-Hsin Lin^{1*}

(¹ Department of Pharmacy, National Yang Ming Chiao Tung University, Taipei, Taiwan; ²Center for Advanced Molecular Imaging and Translation, Chang Gung Memorial Hospital, Taoyuan, Taiwan; ³Division of Hepatogastroenterology, Department of Internal Medicine, China Medical University Hospital, Taichung, Taiwan)

#349 Active Noise Cancellation Technology Benefits for Hearing Screening based on Electro-Acoustic Evaluation (MOST 109-2221-E-075-001)

Wen-Huei Liao^{* 1,2}, Ying-Hui Lai², Yuan-Chia Chu¹

(¹Department of Otolaryngology-Head and Neck Surgery, Taipei Veterans General Hospital ; ²Department of Biomedical Engineering, National Yang-Ming Chiao Tung University)

#354 Virtual Reality Apply in Kicking Posture Evaluation (MOST 109-2221-E-241-001)

Fang Chuan Kuo

(Department of Physical Therapy, Hungkuang University)

#355 Combining Clinical Information and Myocardial Perfusion Single-photon Emission Tomography to Predict the Prognosis of Coronary Heart Disease with Big Data and Artificial Intelligence Technology (MOST 108-2314-B-418-002-MY3)

Shau-Syuan Lin², Cheng-Wen Huang², Li-Wei Chen², Wei-

Chieh Huang², Chi-Lun Ko³, Shan-Ying Wang¹, Kuan-Yin Ko³, Yen-Wen Wu¹, Chung-Ming Chen¹

(¹Department of Nuclear Medicine, Far Eastern Memorial Hospital; ²Institute of Biomedical Engineering, National Taiwan University; ³Department of Nuclear Medicine, National Taiwan University Cancer Center)

#357 Computational and Experimental Study of Pitting Corrosion (MOST 108-2221-E-006-168-MY2)

Chia-Jung Chang¹, Tin-Kan Hung², Wei-Ching Hung¹ and Chih-Han Chang^{1,*}

(¹Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan; ²Bioengineering Department, University of Pittsburgh, Pittsburgh, PA, United States)

#358 Development of an In-situ Positron Imager for Applications in Proton Therapy (MOST 109-2221-E-182-004-MY2)

ML Jan^{1,2*}, MW Lee¹, Z. Wang³, CH Yang⁴, YH Chen³, JH Hong²

(¹Institute for Radiological Research, Chang Gung University/Chang Gung Memorial Hospital, Taoyuan, Taiwan, ROC; ²Department of Radiation oncology, Chang Gung Memorial Hospital, Taoyuan, Taiwan, ROC; ³ Department of Electronic Engineering, Chang Gung University, Taoyuan, Taiwan, ROC; ⁴Department of Medical Imaging and Radiological Sciences, Chang Gung University, Taoyuan, Taiwan, ROC)

#359 Evaluation the Inhibitory Effect of Probiotics on Helicobacter Pylori Infection by Using a Dynamic Gastrointestinal Simulator via 3D Printing Technology (MOST 109-2221-E-011-080-MY2)

Chen-Yu Kao^{1,2*}, Chun-Chih Hsu¹, Yung-Ching Huang¹

(¹Graduate Institute of Biomedical Engineering, National Taiwan University of Science and Technology, Taipei, 10607, Taiwan ; ² Biomedical Engineering Research Center, National Defense Medical Center, Taipei, 11490, Taiwan)

#381 Development and Application of A Deep Learning Gaze Tracking Algorithm (MOST 109-2221-E-037-003)

Tung-Lin Tsai¹, Chen-Wen Yen¹, Lan-Yuen Guo^{2*}

(¹National Sun Yat-Sen University; ²Kaohsiung Medical University)

#382 Smart Learning on Ultrasound Image Features and Quantitative Parameters for Deep Detecting and Classifying the Degree of Soft Tissue Lesions (MOST 109-2221-E-006-044-MY3)

Shyh-Hau Wang^{1*}, Huang-Chen Lin¹, Da-Ming Huang¹, Chun-Hui Lin¹

(¹Department of Computer Science and Information Engineering, National Cheng Kung University, Tainan, Taiwan)

#384 Development of a Novel Elliptical Gait Trainer for Individuals with Spinal Cord Injury –Gait Normalization and Forced Exercise (MOST 107-2221-E-182-009-MY3)

Ya-Ju Chang¹, Hsiao-Lung Chan², Jiunn-Woei Liaw³, Szi-Wen Chen⁴, Hsin-Yung Chen⁵, Chia-Ling Chen⁶, Alice May-Kuen Wong⁷

(¹School of Physical Therapy and Graduate Institute of Rehabilitation Science, College of Medicine, Chang Gung University ; ²Department of Electrical Engineering, College of Engineering, Chang Gung University; ³Department of Mechanical Engineering, College of Engineering, Chang Gung University; ⁴ Department of Electronic Engineering, College of Engineering, Chang Gung University; ⁵Department of Occupational Therapy, College of Medicine, Chang Gung University; ⁶Graduate Institute of Early Intervention, College of Medicine, Chang Gung University ; ⁷Department of Physical Medicine and Rehabilitation, Chang Gung Memorial Hospital, Taoyuan)

#386 Development of a Virtual Reality Based Guiding System Incorporated with Facial Image Processing for Individuals with Spinal Cord Injury in Gait Training (MOST 107-2221-E-182-011-MY3)

Szi-Wen Chen^{1*}, Hsiao-Lung Chan², Ya-Ju Chang³, Jiunn-Woei Liaw⁴, Rou-Shayn Chen⁵, Li-Ling Chuang³, Chia-Ling Chen⁶

(¹Department of Electronic Engineering, Chang Gung University; ² Department of Electrical Engineering, Chang Gung University; ³ Department of Physical Therapy, Chang Gung University; ⁴ Department of Mechanical Engineering, Chang Gung University; ⁵ Chang Gung Memorial Hospital ; ⁶

Graduate Institute of Early Intervention, Chang Gung University)

#387 Combination of Beamforming and Deep Learning Technology to Establish an Instant Noise Reduction System Effectively Improve the Speech Comprehension of the Patients with Hearing Impairment (MOST-109-2221-E-384-001-)

Jia-Yi Lin¹, Yi-Chun Du², Ching-Feng Liu^{3,4,*}

(¹Department of Medical Research, Chi-Mei Medical Center; ²Department of Biomedical Engineering, National Cheng Kung University; ³Department of Otolaryngology, Chi-Mei Medical Center; ⁴Department of Electrical Engineering, Southern Taiwan University of Science and Technology)

#393 Short-Term Effects of Personalized Functional Foot Orthosis on Static Balance Control in Youth Children (MOST 109-2221-E-320-001-)

Chu-Fen Chang^{1,*}, Shi-Wun Hung^{1,2} and Yu-Chun Hung^{1,2}

(¹Department of Physical Therapy, Tzu Chi University, Hualien, Taiwan; ²Division of Rehabilitation Medicine, Tzu Chi General Hospital, Hualien, Taiwan)

#404 Re-Recognition of Joint Laxity Assessment for Thumb Carpometacarpal Joint Using a Novel Stress-View Evaluation System and Its Application on Diagnosing Osteoarthritis of Thumb Carpometacarpal Joint (MOST 109-2628-E-006-002-MY3)

Lin, Yu-Chen¹, Chen, Chi-Han², Tseng, Howie², Lai, Cheng-Shih³, Wang, Chien-Kuo³, Yang, Tai-Hua², Kuo, Li-Chieh^{1,2,4*}

(¹Department of Occupational Therapy, National Cheng Kung University; ² Department of Biomedical Engineering, National Cheng Kung University; ³Department of Radiology, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University; ⁴ Medical Device Innovation Center, National Cheng Kung University)

#405 The Development of Nano Lab-on-a-Chip Platforms in the Detection of Brain Exosomes (MOST 109-2221-E-005-011-)

Nitish Kumar¹, Man-Cheng Sun¹, Lester U. Vinzon², Akhilesh Kumar Gupta¹, and Shu-Ping Lin^{1*}

(¹Graduate Institute of Biomedical Engineering, National Chung Hsing University, Taichung 40227, Taiwan, R.O.C.;

²Ph.D. Program in Tissue Engineering and Regenerative Medicine, National Chung Hsing University, Taichung 40227, Taiwan, R.O.C.)

#415 An Automatic Microfluidic System for Screening Magnetic Labeled Cell Sample (MOST 108-2221-E-033-017-MY3)

Chia-Ke Tsou¹, Tan-Yueh Chen¹, Chi-Ming Ku¹, Tzong-Rong Ger^{1*}

(¹Department of Biomedical Engineering, Chung Yuan Christian University, Taoyuan, Taiwan)

#418 Developing Ultramicro-Analytic Tool of Gold Quantification for Monitoring the Whole Life-Cycle Biodegradation of Fluorescent Gold Nanoclusters: From Molecular Modeling, Cell Analysis Toward Zebrafish Investigation (MOST 109-2221-E-033-023-)

Ya-Ting Kuo¹, Chung-Der Hsiao², Cheng-An Lin^{1*}

(¹Department of Biomedical Engineering in Chung Yuan Christian University, Taoyuan, Taiwan (R.O.S); ²Department of Biotechnology in Chung Yuan Christian University, Taoyuan, Taiwan (R.O.S))

#422 The Mechanical Properties and Functional Performance of Rotator Cuff Tendinopathy: Effects of Therapeutic Exercise for Different Pathomechanisms (MOST 109-2221-E182-064)

Kuan-Sheng, Mao¹, Li-Chieh, Kuo², Chih-Hsiu, Cheng¹, Chih-Hao Chiu³, Po-Kai, Wang⁴, Kuan-Lin, Liu⁵, Po-Tsun, Chen^{1,3*}

(¹School of Physical Therapy, Chang Gung University; ²Department of Occupational Therapy, National Cheng Kung University; ³ Department of Orthopedics, Taoyuan Chang Gung Hospital; ⁴Department of Anesthesiology, Hualien Tzu Chi Hospital; ⁵Department of Orthopedics, Hualien Tzu Chi Hospital)

#423 Evoked Compound Action Potential Studies based on Cochlear Implant Models (MOST 107-2221-E-009-088-MY3)

Charles T. M. Choi, PhD^{*1,2}, Dong Lin Wu²

(¹Department of Electrical & Computer Engineering, National Yang Ming Chiao Tung University ; ²Institute of Biomedical Engineering, National Yang Ming Chiao Tung University)

#425 Multi-mode Assistive Communication System-The Image Assistive Communication System Combined with AR (MOST 108-2221-E-218-017-MY2)

S.C. Chen^{1*}, Y.J. Chen¹, C.M. Wu², M.H. Ho³, Willy Chou⁴

(¹Department of Electrical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan; ²Department of Intelligent Robotics Engineering, Kun Shan University, Tainan, Taiwan; ³Department of Special Education, National University of Tainan, Tainan, Taiwan; ⁴Chi Mei Medical Center, Tainan, Taiwan)

#431 Noninvasive, Real-Time Evaluation and Optimization of the Enhancing Effects on Cognitive Functions by Transcranial Infrared Light Stimulation (MOST 108-2221-E-002 -075 -MY3)

Andy Ying-Chi Liao¹, Tzu-Chia Kao¹, Kung-Bin Sung^{1,2*}

(¹Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University ; ²Department of Electrical Engineering, National Taiwan University)

#435 The Cortical Modulation of the Subjects with Parkinson's Disease During a Timed Up and Go Assessment (MOST 109-2221-E-010 -006-)

Ching-Yun Chen, Yu-Hsuan Chou, Che-Cheng Lin, Sai-Wei Yang

(Institute of Biomedical Engineering, National Yang Ming Chiao Tung University, Taipei, Taiwan)

#436 Assessment of Proprioception in Active and Passive Mode with Various Elbow Flexion Angle and Movement Speeds by Isokinetic Dynamometer (MOST 109-2221-E-650-001-MY2)

Jing-Yu Chen¹, Ya-Hui Li², Chih-Kun Hsiao¹, Chin-Yu Wang³, Zhen-Hui Liu¹, Yi-Jung Tsai^{1*}

(¹Department of Medical Research, E-Da Hospital, Taiwan; ²Department of Orthopedics, E-Da Hospital, Taiwan; ³ Department of Mechanical Engineering/Institute of Mechatronic Engineering, Cheng Shiu University)

#440 The Intelligent Reabling Assistive Walker with the Function of Rehabilitation Efficiency Evaluation (2/2) (MOST 109-2224-E-218-001-)

S.C. Chen^{1*}, P.C. Chen², J.J. Huang¹, Y.J. Chen¹, C.M. Wu⁴, Y.M. Chang¹, Willy Chou²

(¹Department of Electrical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan;

²Department of Mechanical Engineering, National Taitung Jr. College, Taitung, Taiwan ; ³ Department of Intelligent Robotics Engineering, Kun Shan University, Tainan, Taiwan;

⁴Department of Creative Product Design, Southern Taiwan University of Science and Technology, Taitung, Taiwan;

⁵Department of Special Education, National University of Tainan, Tainan, Taiwan; ⁶Chi Mei Medical Center, Tainan, Taiwan)

#441 Evaluation of Motor Control and Walking Ability with Parkinson's Disease (MOST-109-2221-E-010-006)

Yu-Hsuan Chou¹, Ching-Yun Chen¹, Che-Cheng Lin¹, Sai-Wei Yang¹

(¹Institute of Biomedical Engineering, National Yang Ming Chiao Tung University)

#443 Development of Knee Joint Rehabilitation and Mobile Aids with Real Time Biofeedback (MOST 108-2622-E-010-002-CC3)

Hsiao-Chun Chen¹, Sai-Wei Yang¹, Keh-Tao Liu²

(¹ National Yang Ming Chiao Tung University ; ²Global Action Inc)

#445 Application of EEG Technology in the Assistive Communication And Control System for the Disabled (MOST 108-2221-E-168-008-MY2)

Chung-Min Wu^{1,*}, Yao-Hua Cho¹, Shih-Chung Chen², Yeou-Jiunn Chen²

(¹Department of Intelligent Robotics Engineering, Kun-Shan University, Tainan, Taiwan; ²Department of Electrical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan)

#447 Optimized quantum well and superlattice infrared

photodetector for thermal detection (MOST 108-2221-E-024-050)

Shih-Hung Lin^{*}, Bo-cheng Chen

(Department of Electronic Engineering, National Yunlin University of Science and Technology, Yunlin 64002, Taiwan)

#448 Cold Atmospheric Plasma Physically Reinforced Substances of Platelets-Laden Photothermal-Responsive Methylcellulose Restores Burn Wounds (MOST 108-2221-E-038-017-MY3; 108-2320-B-038-061 -MY3)

Yu-Nu Hsu^{1#}, Er-Yuan Chuang^{*1}

(¹Graduate Institute of Biomedical Materials and Tissue Engineering, Taipei Medical University)

#450 Preparation of Hyaluronic Acid Based Nanomedicine with Delivery Efficiency Enhancement in Posterior Eyes for Treating Blue Light Induced Retinopathy (MOST 109-2221-E-038-008)

Erh-Hsuan Hsieh¹, Yu-Yi Wu¹, Le Ngoc Hoan¹, Yu-Wen Cheng², Ching-Li Tseng^{1*}

(¹Taipei Medical University; ²Taipei Medical University)

#453 基於多面向分數階卷積滑動視窗優化 X 光視覺影像圖樣分類器於 胸腔積液量估測暨智能引流監測系統之研製 (MOST 108-2221-E-167-005-MY2)

林家宏¹, 甘宗旦², 陳碧雲¹, 巫建興¹, 張軒豪¹, 李志賢¹

(¹勤益科技大學電機工程系 ; ²成功大學醫學系外科部)

#454 Preparation of Anticancer Reagent-Containing Toroidal Polymeric Mixed Micelles as A Novel Drug Delivery System (MOST 109-2221-E-039-008 -MY3)

Yi-Kuan Wu¹, Yi-Ting Chiang^{1,*}

(¹School of Pharmacy, China Medical University, Taiwan)

#456 Applications of Integrated Rapid Detection Systems for E.Coli Molecular Diagnosis (MOST 109-2221-E-006-066-)

Weng Chen-Hsun¹

(¹National Cheng Kung University, Medical Device Innovation Center¹, University Road, Tainan, Taiwan, ROC)

#457 Big Data Analysis with Data Mining Techniques to

Develop Prediction Models for The Risk of Postoperative Shock (MOST 109-2221-E-038-003-MY2)

Chao-Shun Lin^{1,2,*}, Chuen-Chau Chang^{1,2}

(¹Department of Anesthesiology, School of Medicine, College of Medicine, Taipei Medical University ; ²Department of Anesthesiology, Taipei Medical University Hospital)

#460 Feeding and Swallowing Behavior Monitoring and Analysis of Newborns Using Artificial Intelligence (MOST 108-2221-E-009-054-MY2)

Bor-Shyh Lin^{1,*}, Yu-Lin Wang²

(¹Institute of Imaging and Biomedical Photonics, National Yang Ming Chiao Tung University, Tainan, Taiwan; ²Department of Rehabilitation, Chi Mei Medical Center, Tainan, Taiwan)