



2022 The 5th Global Conference on Biomedical Engineering GCBME

Annual Meeting of Taiwanese Society of Biomedical Engineering TSBME
SPIE Biomedical Imaging and Sensing Conference BISC

2022年全球生物醫學工程年會 暨 臺灣生物醫學工程科技研討會
暨 SPIE國際光電工程生醫影像與感測會議

Chang Yung-Fa Foundation, International Convention Center,
Taipei, Taiwan
December 15-17, 2022

Hosted by



台大醫學院 | 醫療器材與醫學影像研究所
NTUCM | Institute of Medical Device and Imaging



中華民國生物醫學工程學會
Taiwanese Society of Biomedical Engineering

SPARK
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Supported by



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國立臺灣大學
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NTU YongLin Institute of Health

SPIE.

National Science and Technology Council

As the Convener of the Biomedical Engineering Program of National Science and Technology Council (NSTC), it is my great pleasure to welcome you to 2022 GCBME/TSBME/BISC, which is the joint meeting of the 5th Global Conference on Biomedical Engineering (GCBME), Annual Meeting of Taiwanese Society of Biomedical Engineering (TSBME), and SPIE Biomedical Imaging and Sensing Conference (BISC) during December 15-17, 2022. Thanks to the great efforts of the organizing committee and program committee, we are expecting a very successful event and fruitful interactions among the attendees.

Our aim is to promote scholarly communications between all Biomedical Engineering researchers of academia and industry, including the principal investigators of NSTC Biomedical Engineering Program. The main purpose of NSTC in supporting the 2022 GCBME/TSBME/BISC conference is not only to increase academic research and development but also industrial research for the overall development of the society. We believe this conference will promote biomedical engineering and photonics research. We hope this conference will create an atmosphere for idea exchange among biomedical engineering and photonics researchers regarding our future focus and opportunities. I would like to acknowledge your attendance, for not only showcasing your outstanding achievements, but also providing your precious opinions, and participating in our future planning. I hope all of you enjoy the technical program and social events in 2022 GCBME/TSBME/BISC.



Shan-Hui Hsu

Convener, Biomedical Engineering Program

National Science and Technology Council



台大醫學院
NTUCM

醫療器材與醫學影像研究所
Institute of Medical Device and Imaging

On behalf of the Institute of Medical Device and Imaging of National Taiwan University, it is my great pleasure to welcome you to the joint conference: The 5th Global Conference on Biomedical Engineering (GCBME), the Annual Meeting of Taiwanese Society of Biomedical Engineering (TSBME) and the 7th SPIE Biomedical Imaging and Sensing Conference (BISC). The conference is supported by the Biomedical Engineering Program of the National Science and Technology Council (NSTC) and the Society of Photo-Optical Instrumentation Engineers (SPIE). This is the first year that the SPIE BISC conference is organized together with the GCBME/TSBME conference.

The primary goal of the joint conference is to bring together great minds from around the globe to share the latest advancements in biomedical engineering research. It is my great pleasure to host this joint event. I hope this conference will provide a great opportunity for the attendees to present their research and come up with new ideas.

SPIE BISC is a premier international conference for biomedical imaging and sensing. It is a regular annual event at the Optics and Photonics Congress in Japan. This is the inaugural edition of SPIE BISC in Taiwan, which I hope to continue in the future. I congratulate the BISC organizing committee from Japan for this new avenue, which will open up new directions for the collaborative research between the two countries.

This year, we are also introducing a Precision Medicine Forum, which will feature distinguished panelists from academia and industry to discuss the current challenges and future directions for precision health and biomedical engineering. The primary goal of the Forum is to have dialogue among all the partners to bring research and development from academic research to the development of smart health products for Taiwanese society. I would like to thank all the panelists for giving their valuable time to join the conference.

I do very much hope that we will together make this event very successful and fruitful for all of us.

Sincerely yours,

Yuan Luo

Chair, GCBME/TSBME/BISC

Director/Professor, Institute of Medical Device and Imaging

College of Medicine, National Taiwan University

2022.12.15



On behalf of the Taiwanese Biomedical Engineering Society (TSBME), it is my great pleasure to welcome you to 2022 GCBME/TSBME/BISC. The 5th Global Conference on Biomedical Engineering & Annual Meeting on TSBME is the top conference in this research area. The conference is supported by National Science and Technology Council. This year, the Institute of Medical Device and Imaging of National Taiwan University hosts the conference. On behalf of the host organization, we want to thank you for attending the 2022 GCBME/TSBME/BISC.

The aim of the 2022 GCBME/TSBME/BISC is to bring great minds from around the globe to share the latest advancements in biomedical engineering, and photonics research. This year, for the first time, BISC and GCBME/TSBME are organizing a joint conference, which provides the best opportunity for the attendees of different expertise to discuss and exchange knowledge.

The special sessions for the NSTC funded project will be organized. Local and international businesses will display their most recent products at the exhibition. 2022 GCBME/TSBME/BISC: gathering the people from universities, international societies, government, and companies will provide a multi-dimensional perspective. I hope all attendees will enjoy the program of the conference.

Finally, we would like to thank all committee members, the staff, the presiders, and all participants. Your participation will make 2022 GCBME/TSBME/BISC a great success.

Chien-Wen Lai

President, Taiwanese Society of Biomedical Engineering

2022 BISC Conference Chair Welcome Letter
Biomedical Imaging and Sensing Conference
Sponsored by SPIE, International Society for Optics and Photonics

On behalf of the organizing committee and program committee, it is our great pleasure that the 7-th SPIE Biomedical Imaging and Sensing Conference (BISC) in Taiwan is going to open, as a joint conference with the 5th Global Conference on Biomedical Engineering (GCBME), Annual Meeting of Taiwanese Society of Biomedical Engineering (TSBME). BISC is also supported by the Biomedical Engineering Program of the National Science and Technology Council (NSTC). BISC Conferences are held about every two years within the framework of the OPTICS & PHOTONICS International Congress in Yokohama, Japan. This is the first BISC conference outside Japan. I hope fruitful and creative discussions with many Taiwanese colleagues.

In biomedical optics and photonics, optical tools are employed for understanding and treatment of diseases, from the cellular level to macroscopic applications. At the cellular level, highly precise laser applications allow the manipulation, operation or stimulation of cells, even in living organisms or animals. Optical microscopy has been revolutionized by a thorough understanding of the different markers and their switching behavior. marker-free microscopy, like SHG or THG-microscopy is spreading into multiple biological and clinical imaging applications. OCT is continuously broadening its clinical applicability by even higher resolution, higher speed and more compact and the use of Doppler and polarization sensitivity for functional imaging.

In the field of optics and photonics, biomedical imaging and sensing areas are most quickly progressing and expanding. Techniques developed in these areas could bring us great steps in advances of physical, engineering and biological knowledge as well as optics and photonics technology. This Conference aims at covering several aspects from the fundamental studies at cellular level to clinical applications of various optical technologies.

Finally, we hope the 8-th Biomedical Imaging and Sensing Conference contributes to the progress in this field and we hope you enjoy fruitful discussions in the Conference.

Toyohiko Yatagai
BISC Conference Chair
Center for Optical Research and Education,
Utsunomiya University, Japan

Conference Maps

Transportation

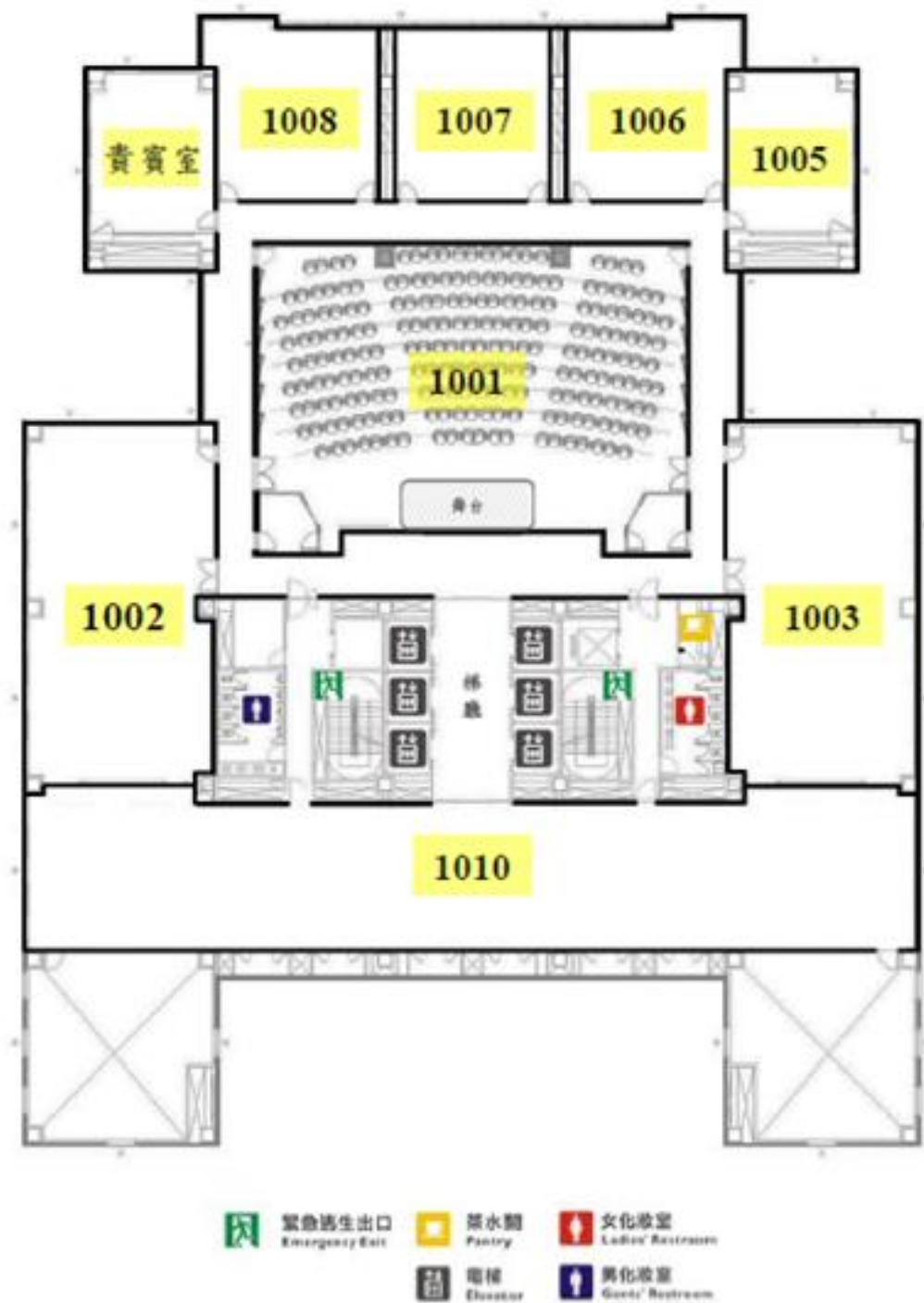
The Chang Yong-Fa Foundation is located on Zhongshan South Road with convenient transportation. It is on the opposite of Ketagalan Boulevard, nearby National Taiwan University Hospital and Liberty Square (Chiang Kai-shek Memorial Hall). It takes a five-minute walk from National Taiwan University Hospital MRT Station and a five-minute car ride from Taipei Main Station to the Chang Yong-Fa Foundation.



There is an underground parking lot for compact car.

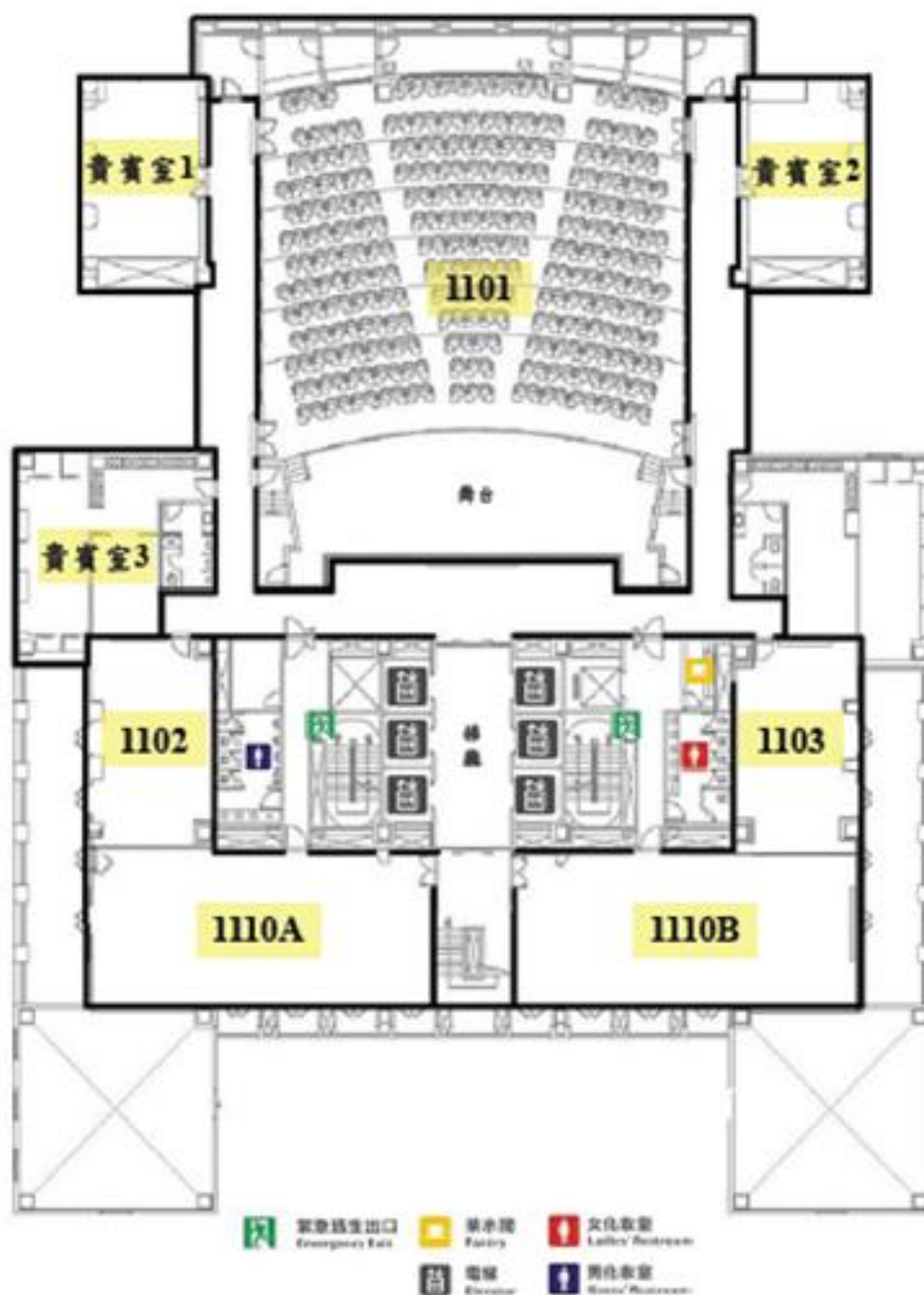
- Zhongshan highway → Jianquo North Road → go down the viaduct → Ren'ai Road → The East Gate (Jingfumen)
- Zhongzheng Bridge → Chongqing South Road → Presidential Office Building → Ketagalan Boulevard → Xinyi Road
- Zhongxiao Road → turn right on Zhongxiao West Road → Zhongshan South Road → Xinyi Road
- Taipei Bridge → Minquan West Road → Zhongshan North Road, Section 2 → Zhongshan South Road → Xinyi Road
- Take the MRT Tamsui Xinyi Line and get off at "National Taiwan University Hospital" station exit 2 (about five-minute walk to the main building)
 - Take the MRT Tamsui Xinyi Line or Songshan Xindian Line and get off at "Chiang Kai-shek Memorial Hall" station exit 5 or exit 6 (about ten-minute walk to the main building)
 - Take bus 37, 249, 261, 270, 621, 630, 651, Ren'ai Route, and get off at "Ren'ai Zhongshan Road" station
 - Take bus 0 East, 20, 22, 38, 88, 204, 588, 607, 1503 and get off at "National Chiang Kai-shek Memorial Hall" station
 - Take bus 15 and 208 and get off at "The East Gate (Jingfumen)"

Location for Plenary talks/ Oral/ Posters Sessions



F10

Location for events on Day 1 morning



F11

GCBME&TSBME&BISC 2022 Committees

Conference Chair



Prof. Yuan Luo

Institute of Medical Device and Imaging, College of Medicine, National Taiwan University

Honorary Chair



Prof. Shan-Chwen Chang

Vice President, National Taiwan University



Prof. Jaw-lin Wang

Department of Biomedical Engineering, National Taiwan University

Secretariat



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Prof. Pai-Chi Li

Distinguished Professor,
National Taiwan University



Prof. Yen-Hsuan Ni

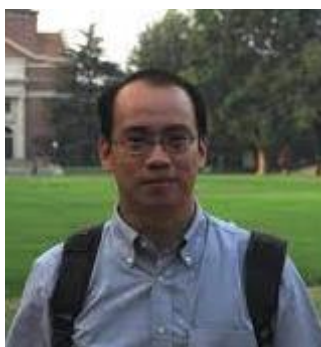
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Department of Biomedical Engineering, National Taiwan University



Pro. Yu-chun Lin (Co-Chair)

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Department of Biomedical Engineering, National Yang Ming Chiao Tung University



Pro. Han Chang (Co-Chair)

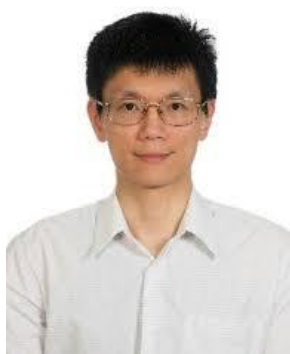
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Bioinformatics, National
Taiwan University



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Department of Surgery,
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and Engineering, National
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Institute of Medical Device
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Ta-Sen Wei Chunghua Christian Hospital
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Yu-Chuan Li Taipei Medical University
Ruey-Feng Chang National Taiwan University
Yeong-Sung Lin National Taiwan University
Nan-Zhen Xie National Taipei University of Nursing and Health Sciences

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Co-Chair:

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Chair:

Wen-Chau Wu National Taiwan University

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Chun-Yi Wu	National Yang Ming Chiao Tung University

Medical Electronics

Chair:

Jia-Jin Chen

National Cheng-Kung University

Co-Chair:

Fu-Yu Chen

Chun Yuan Christian University

Members:

Jia-Jung Wang

I-Shou University

Chia-Yen Yang

Ming Chuan University

Conference Agenda

時間	活動內容			
Thursday, December 15 (Day 1)				
08:00-12:00	Registration (註冊報到) 1101 走廊			
09:30-09:50	Opening Ceremony (開幕典禮) 1101			
09:50-10:00	Tea Break (茶敘)			
10:00-11:40	Forum of Precision Medicine (精準健康論壇/Chinese Version) 1101			
11:40-12:00	Photo Shooting Session (大合照時間) 1101			
12:00-17:00	Registration (註冊報到) 1001 走廊			
12:00-13:00	博鑫醫電公司業務說明會	Poster Session I (海報展 I)		Lunch (午餐)
	1008	1010		B1
13:00-13:45	Plenary Session I (大會特邀講座) 1001			
13:50-15:20	BISC 2022 (光電)	Material Science (材料)	Medical Imaging (影像)	Biomechanics (力學)
	1001	1006	1007	1008
15:20-16:20	Tea Break & Poster Session II (茶敘&海報展 II) 1010			
16:20-17:50	BISC 2022 (光電)	Material Science (材料)	Medical Imaging (影像)	Biomechanics (力學)
	1001	1006	1007	1008

時間	活動內容			
Friday, December 16 (Day 2)				
08:00-17:00	Registration (註冊報到) 1001 走廊			
08:30-10:00	BISC 2022 (光電)	Material Science (材料)	Medical Electronics (醫電)	Health Informatics (醫資)
	1001	1006	1007	1008
10:00-10:20	Tea Break (茶敘)			
10:20-11:50	BISC 2022 (光電)	Material Science (材料)	Medical Electronics (醫電)	Health Informatics (醫資)
	1001	1006	1007	1008
12:00-13:00	TSBME Council Meeting (醫工學會理監事會)		Poster Session III (海報展 III)	Lunch (午餐)
	1007		1010	B1
13:00-13:45	Plenary Session II (大會特邀講座) 1001			
13:50-15:20	BISC 2022 (光電)	Assistive Technologies (輔具)	JMBE best paper Competition (JMBE 最佳論文比賽)	Biology (生物)
	1001	1006	1007	1008
15:20-15:40	Tea Break (茶敘)			
15:40-17:10	BISC 2022 (光電)	Assistive Technologies (輔具)	Medical Imaging (影像)	Biology (生物)
	1001	1006	1007	1008
18:30-20:30	Conference Banquet & Best Student Presentation Awards (Oral/Poster) (大會晚宴 & 學生優秀論文頒獎) B1			

時間	活動內容				
Saturday, December 17 (Day 3)					
08:00-09:00	Registration (註冊報到) 1001 走廊				
08:00-09:30	BISC 2022 (光電)	整合型 計畫演講	Forum of Female Medical Engineers (女性醫學工 程師座談)	Annual Report of Biomedical Engineering Division, NSTC (國科 會醫工學門 成果發表會)	Forum of Clinical Engineering (臨床工程論 壇)
	1001	1005	1006	1007	1008
09:30-09:40	Tea Break (茶敘)				
09:40-11:00	BISC 2022 (光電)	Intracranial Tumor Segmentation (腦瘤分割挑戰 賽)	Forum of Female Medical Engineers (女性醫學工 程師座談)	Annual Report of Biomedical Engineering Division, NSTC (國科 會醫工學門 成果發表會)	Forum of Clinical Engineering (臨床工程論 壇)
	1001	1005	1006	1007	1008
11:00-12:00	NSTC BME Program Yearly Report/Chairman Overview and Discussion & Conference Closing (in Mandarin) (國科會工程處醫工學門報告暨閉幕典禮) 1001				
12:00-12:50	TSBME General Assembly (醫工學會會員大會) 1001				

Conference Highlights

Opening Remarks



**Prof. Shan-Chwen
Chang**
Vice President, NTU



Prof. Shan-Hui Hsu
IPSE, NTU



Prof. Jennifer Barton
Vice President, SPIE



Prof. Osamu Matoba
Kobe University , Japan

Plenary Speakers



Prof. Pai-Chi Li
Vice President, Office of Research & Development, NTU

Abstract: Recent studies on drug screening and disease progression have shown that 3D cell culture systems can better represent the in vivo conditions in comparison with 2D monolayer cultures. Studying mechanobiology in 3D cell culture systems also recapitulates cell behaviors in response to various types of mechanical stimuli. An effective tool for measuring the spatiotemporal changes in elastic properties of such 3D cell culture systems without invasively contacting the samples has not been readily available but is undoubtedly needed. We have developed novel optical and acoustic shear wave imaging methods for non-invasive quantification of the matrix stiffness in 3D culture conditions. Such methods require both high sensitivity and adequate spatial resolution. In particular, the complementary physical properties of light and sound are exploited and innovative devices are developed, despite the fact that these two distinctly different physical mechanisms are often separately applied in biomedical problems. Several techniques were developed, and their applications were demonstrated [1-5]. In addition, we will present a simple setup for shear wave elasticity imaging using only one single element transducer with machine learning based image reconstruction. The role of the combined optical and acoustic techniques in in vitro research will also be presented.



Prof. Ann-Shyn Chiang

Brain Research Center, National Tsing Hua University

Abstract: A big challenge in mapping brain connectome is visualizing both nanoscale synapses and milliscale long-range neurites in a large volume with densely packed population of neurons. Recent advances in mapping connectomes with serial electron microscopy have allowed 3D reconstruction of synapse-to-synapse connections, but limited within a small volume. Synchrotron x-ray computed tomography (CT) offers the possibility to image large brain volume at isotropic high resolution beyond the depth of focus without physical sectioning [1,2]. However, this requires an effective radiocontrast labelling of target neurons for neuroanatomy validation with the existing knowledge of neuron identity and circuit function [3]. Here, we report an enzyme metallography method to label target neurons expressing specific genes and proteins for x-ray micro-CT of not only the brain but also other tissues in the whole body at subcellular resolution in *Drosophila*. Using a synchrotron-based x-ray micro-CT with much improved resolution and imaging speed—the Accelerated X-ray Observation of Neurons (AXON) system [1], we have imaged and three-dimensionally reconstructed the central nerve system, muscle, and cuticle in the whole *Drosophila* body (Fig. 1, left). Isotropic high-resolution reconstruction allows us to segment boundary of individual neurons and brain neuropils for archiving all the collected data into a common 3D framework (Fig. 1, right). I will discuss potential applications of this new approach for mapping brain connectomes with synchrotron x-ray micro-CT.

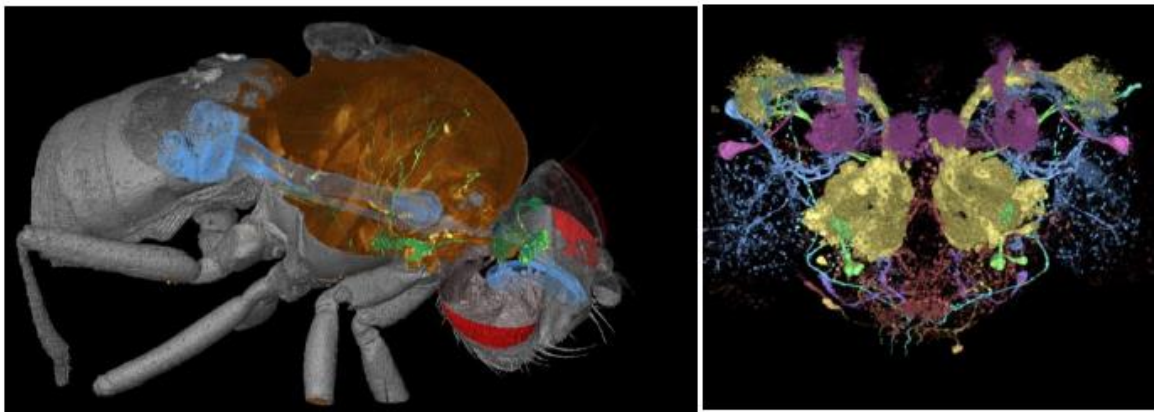


Fig. 1 | Synchrotron X-ray imaging of gene expressions in the whole *Drosophila* body. Tissues were labelled by enzyme metallography followed by osmium counterstaining. Left: lateral view. Green, the nervous system. Blue, the digestive system. Brown, muscle. Red, compound eyes. Grey, cuticle autocontrast. Right: frontal view of olfactory pathways in the brain. Yellow, iACT olfactory projection neurons. Green, mACT olfactory projection neurons. Magenta, the two APL neurons innervating the paired mushroom bodies. The sample fly carries GH146-Gal4>UAS-mCD8::GFP,UAS-GBP::APEX2 transgenes.

Forum Panelists



Prof. Pan-Chyr Yang
Academician, Academia Sinica
Former President, NTU



Prof. Huey-Kang Sytwu
Academician, Academia Sinica Vice
President, NHRI



Prof. Horn-Jiunn Sheen
Institute of Applied Mechanics, NTU
Vice Executive Secretary, BOST, EY



Han-Chang Wu
President, ASUS Cloud



Prof. Chung-Hsiun Wu
President, Development Center
for Biotechnology



Prof. Chien-Wen Lai
President, TSBME Vice Dean,
Changhua Christian Hospital



Prof. Chii-Wann Lin
Vice President & General
Director BDL, ITRI



Dr. Ted Chang
CTO & Vice President, Quanta
Computer Inc.

Invited Speakers

Assistive Technologies



Pro. Li-Wei Ko

Professor
Institute of Electrical and Control Engineering
National Yang Ming Chiao Tung University, Taipei, Taiwan



Pro. Lan-Yuen Guo

Professor
Department of Sports Medicine
Kaohsiung Medical University, Kaohsiung, Taiwan

Biology



Pro. Li-An Chu

Assistant Professor
Department of Biomedical Engineering & Environmental Sciences
National Tsing Hua University, Hsinchu, Taiwan



Dr. Chen-Hui Chen

Associate Research Fellow
Institute of Cellular and Organismic Biology
Academia Sinica, Taipei, Taiwan

Biomechanics



Pro. Wei-Li Hsu

Professor
School and Graduate Institute of Physical Therapy
National Taiwan University, Taipei, Taiwan



Pro. Ying chun Chen

Assistant Professor
Department of Mechanical Engineering
National Taipei University of Technology, Taipei, Taiwan



Pro. Wang, Yu-Tzu

Professor
Department of Mechanical and Electro-Mechanical Engineering
Tamkang University, New Taipei, Taiwan

BISC



Dr. Yen-Hsuan Ni

Dean
College of Medical
National Taiwan University



Pro. Tzi-Dar Chiueh

Dean
Graduate school of Advanced Technology
National Taiwan University



Pro. Shean-Jen Chen

Professor
Institute of Imaging and Biomedical Photonics
National Yang Ming Chiao Tung University, Taipei, Taiwan



Pro. Chi-Kuang Sun

Distinguished Professor
Department of Electrical Engineering
National Taiwan University of Science and Technology, Taipei, Taiwan



Pro. Katsumasa Fujita

Professor
Department of Applied Physics
Osaka University, Osaka, Japan



Pro. Adam T. Eggebrecht

Associate Professor
Mallinckrodt Institute of Radiology
Washington University, St. Louis, State of Missouri, U.S.A.



Pro. Jin-Wu Tsai

Professor
Institute of Brain Science
National Yang Ming Chiao Tung University, Taipei, Taiwan



Dr. YongKeun Park

Principal Investigator
Biomedical Optics Laboratory at KAIST
Korea Advanced Institute of Science and Technology, Republic of Korea



Dr. Chia-Lung Hsieh

Associate Research Fellow
Institute of Atomic and molecular Sciences
Academia Sinica, Taipei, Taiwan



Pro. Miya Ishihara

Professor
Department of Medical Engineering
National Defense Medical College, Saitama Prefecture, Japan



Pro. Bernhard Baumann

Associate Professor
Center for Medical Physics and Biomedical Engineering
Medical University of Vienna, Vienna, Austria



Pro. Ji-Xin Cheng

Professor
College of Engineering
Boston University College of Engineering, Boston, U.S.A.



Pro. Keisuke Goda

Professor
Department of Chemistry, School of Science
The University of Tokyo, Tokyo, Japan



Dr. Jung-Chi Liao

Research Fellow
Advanced Cell Microscopy Lab
Academia Sinica, Taipei, Taiwan



Pro. En-Te Hwu

Associate Professor
Department of Health Technology
Technical University of Denmark, Copenhagen, Denmark



Pro. Izumi Nishidate

Associate Professor
Division of Advanced Electrical and Electronics Engineering
Tokyo University of Agriculture and Technology, Tokyo, Japan



Pro. Kang-Ping Lin

Professor
Department of Electrical Engineering
Chung yuan Christian University, Taiwan



Pro. Laura Waller

Professor
Electrical Engineering and Computer Science
UC Berkeley, Berkeley, U.S.A.

Health Informatics



Pro. Hsu Fu-Shun

Chief executive officer
Heroic-Faith Medical Science Inc., New Taipei, Taiwan



Pro. Yang Tz Shiang

Deputy Commissioner
Quanta Computer Inc., Taoyuan, Taiwan

Material Science



Pro. Yong. Zhang

R&D Center for Membrane Technology, Department of Chemical
Engineering, Chung Yuan Christian University, Taiwan



Pro. Tse-Ying Liu

Distinguished Professor
Department of Biomedical Engineering
National Yang Ming Chiao Tung University, Taipei, Taiwan



Pro. Jui-Yang Lai

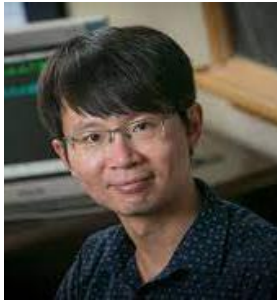
Professor
Chang Gung University, Taiwan

Medical Electronics



Dr. Pei-Yi Lin

Assistant Professor
The Boston Children's Hospital
Division Newborn Medicine, Boston, U.S.A.



Professor
Duke University, Durham, U.S.A

Pro. Hua-Tieng Wu

Medical Imaging



Cofounder and Chief Medical Officer
AcroViz Technology, Inc., Taipei, Taiwan

Pro. Wen-Yih Isaac Tseng



Distinguished Professor
Department of Electrical Engineering
National Taiwan University of Science and Technology, Taipei, Taiwan

Pro. Che-Chou Shen

光電全方位解決方案 Total Solutions !



多波長全自動倒立式顯微鏡系統
Motorized inverted microscopes



半導體雷射光源系統
Diode Laser Systems



超高解析度光譜儀
Extreme Hi-Resolution spectrometers



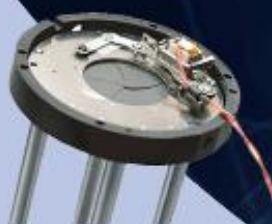
波長可調之均勻光源
Tunable light sources



超高精度線性馬達電控平台
Ultra precision linear motor stages
with built-in controllers



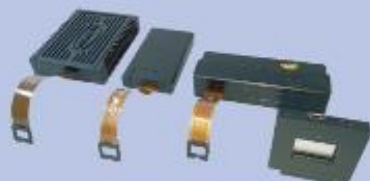
小型影像模組
Compact all in one
Imaging modules



可程式化電控快門系統
Electro-programmable
shutter systems



光學隔震裝置
Optical tables



空間光調製器
Spatial light modulators



拉曼光譜儀
Raman Spectrometers



液態可變焦透鏡
Liquid focus tunable lens



聲光調製器
AO Modulators



光功率/能量計
Power / Energy meters



雷射光形分析儀
Laser beam diagnostics



高解析波前分析儀
High resolution wavefront sensors



光束控制器
Fast steering
2D mirrors



Oral Sessions

Assistive Technologies(輔具) Room 1006

Friday, December 16

Assistive Technologies 13:50-17:10

Chair : Wen-Shiang Chen

*National Taiwan University
Hospital*

Wei-Li Hsu

National Taiwan University

Ta-Sen Wei

Changhua Christian Hospital

Assistive Technologies 13:50 *Invited*

**Mobile Brain-controlled Exoskeleton
Interfaces (mBExIs) for Post-Stroke
Lower Limb Rehabilitation**

Li-Wei Ko

*Institute of Electrical and Control
Engineering, National Yang Ming
Chiao Tung University*

Assistive Technologies 14:20-14:35

**Lip-Reading Recognition System
Based on CNN-LSTM Model**

Ling-Hsuan Yang, Chia-Yen Yang

Assistive Technologies 14:35-14:50

**Development of an Assistant Device
of Specific Speech Separation and
Enhancement for Hearing Loss
Patients** Ting-You Liu, Yi-Chun Du

Assistive Technologies 14:50-15:05

**Monitoring of Long term Sitting
Posture at Work based on Image
detection and EMG measurement**

Yun-Chi Chuang, Chia-Yen Yang

Assistive Technologies 15:05-15:20

**WiFi-Based Human Motion
Identification and Quantification for
Health Monitoring**

Tzu-Yang Weng, Shih-Yuan Chen,
Chun-Hsiang Chang, Chi-Lun Lin

Assistive Technologies 15:20-15:40

Coffee Break

Assistive Technologies 15:40 *Invited*

**Assistive technologies in dementia
care**

Lan-Yuen Guo

*Department of Sports Medicine,
Kaohsiung Medical University*

Assistive Technologies 16:10-16:25

**Impedimetric Detection of Lactate in
Human Sweat via Modified Screen-
Printed Carbon Electrodes**

Nitish Kumar, Yu-Te Liao, Shu-Ping Lin

Assistive Technologies 16:25-16:40

**Tactile Feedback Analysis of
Ferrofluids for the Education of the
Blind and Visually Impaired**

Aaron Raymond See, Aldrin Joshua

C.Tolentino, Renann G. Baldovino

Assistive Technologies 16:40-16:55

**An Integrated Wearable and Self
Powered Thermoelectric-assisted
System for Wound Healing and
Tracking Functions**

Hsuan-Yu Ho, HuaShan Wu,
ZongHong Lin

Assistive Technologies 16:55-17:10

**Barriers of Wearable Medical Device
Innovation: A study of Hearing Aids**

Chia-Wei Tu, Keng-Chia Kuo, Hsi-An

Shih, Ching-Feng Liu, Peng-Ting

Chen

Biology(生物 Room 1008

Friday, December 16

Biology 13:50-17:10

Chair : Yu-Chun Lin

National Taiwan University

Ming-Kai Pan

National Taiwan University

Biology 13:50 *Invited*

MOCAT: Combination of long-term tissue preservation and fast-speed organ-level imaging in cellular resolution

Li-An Chu

Institute of Biotechnology, National Tsing Hua University

Biology 14:20-14:35

Rotational Brownian Motion Combined with LAMP for Detection of SARS-CoV-2 On Chip

Dhrubajyoti Das, Cheng-Wen Lin, Han-Sheng Chuang

Biology 14:35-14:50

Microfluidic device for combined anti-cancer drug therapy

Yu-Ting Lin, Kin Fong Lei

Biology 14:50-15:05

Wavy structures control vascular smooth muscle cell phenotype

Chun-Yu Lin, Yu-Yu Hsueh, Pen-hsiu Grace Chao

Biology 15:05-15:20

Cre/LoxP Genetic Recombination Sustains Cartilage Anabolic Factor Expression in Hyaluronan Encapsulated MSCs Alleviates Intervertebral Disc Degeneration

Long Yi Chan, Chin-Yu Lin

Biology 15:20-15:40

Coffee Break

Biology 15:40 *Invited*

In toto imaging of skin and muscle cell dynamics in live zebrafish

Chen-Hui Chen

Institute of Cellular and Organismic Biology, Academia Sinica

Biology 16:10-16:25

Self-assembly mRNA polymeric nanomedicine applied on calvarial bone regeneration through endochondral ossification

Cheng-Hsin Wu, Hsuan Hu, Chin-Yu Lin

Biology 16:25-16:40

Dynamic metrology of biomedical cell

Kai Wu

Biology 16:40-16:55

Single-cell Transcriptomics Reveals Cellular Heterogeneity and Complex Cell-cell Communication Networks in Mouse Cornea

Yueh-Feng Wu, Nai-Wen Chang, Li-An Chu, Hsin-Yu Liu, Hsin-Yuan Tan, Sung Jan Lin

Biology 16:55-17:10

Difficulties in Biomedical Device Innovation from the perspective of innovation barriers

Hsin-Hsiung Huang, Si-Ru Chen, An-Shun Liu, Peng-Ting Chen

Biomechanics(力學) Room 1008

Thursday, December 15

Biomechanics 13:50-15:20

Chair : Han Chang

National Taiwan University

Cheng-Yang Liu

National Yang Ming Chiao

Tung University

Biomechanics 13:50 *Invited*

Virtual reality skateboarding: A novel virtual reality-based training and its biomechanical characteristics

Wei-Li Hsu

School and Graduate Institute of Physical Therapy, College of Medicine, National Taiwan University

Biomechanics 14:20 *Invited*

Detection and Evaluation of Cartilage at Early Stages Osteoarthritis using UV-VIS-NIR Spectroscopy and its Potential Application

Yingchun Chen

Department of Mechanical Engineering, National Taipei University of Technology

Biomechanics 14:50 *Invited*

The development and biomechanical analysis of mandibular reconstruction plates with a decrease in mandibular segment relapse for different types of Hemifacial microsomia

Yu-Tzu Wang

Department of Mechanical and Electro-Mechanical Engineering, TamKang University

Biomechanics 15:20-16:20

Coffee Break

Biomechanics 16:20-17:50

Chair : Han Chang

National Taiwan University

Ting-Sheng Lin

I-Shou University

Biomechanics 16:20-16:35

Automatic Identification of Pain Associated Imaging Abnormalities from Knee MRI Imaging by Deep Generative Networks

Pin-Hsun Lian, Tzu-I Chuang, Gary Han Chang

Biomechanics 16:35-16:50

Effects of Age on Three-dimensional Kinematics in Toddlers

Tsan-Yang Chen, Ting-Ming Wang, Kuan-Wen Wu, Pei-An Lee, Tung-Wu Lu

Biomechanics 16:50-17:05

Optical forces on human red blood cells induced by a shaped fiber probe with a photonic nanojet

Yu-Kai Hsieh, Wei-Yu Chen, Cheng-Yang Liu

Biomechanics 17:05-17:20

Musculoskeletal Simulation for Muscle Forces during Static Postural Balance in Patients with Degenerative Lumbar Spine Disease

Yi-Ching Tsai, Phunsuk Kantha, Po-Jung Chen, Dar-Ming Lai, Wei-Li Hsu

Biomechanics 17:20-17:35

Elucidate the postural control of dual task balance assessment in patients with mild traumatic brain injury

Li-Fong Lin, Kai-Yun Chen, Yi-Ju Hung, Ju-Chi Ou, Yung-Hsiao Chiang

Biomechanics 17:35-17:50

Using Extended High Frequency to Explore Effects of Age-related Tympanic-membrane Properties and Negative Middle Ear Pressure on Sound Transmission

You-Cheng Yu, Tang-Chuan Wang, Tzu-Ching Shih

BISC(光電) Room 1001

Thursday, December 15

Friday, December 16

BISC 13:45-16:20

Bioimaging with New Technologies I

Chair : Osamu Matoba

Kobe University, Japan

BISC 13:45-13:50

Opening remark

Osamu Matoba

Kobe University, Japan

BISC 13:50 *Invited*

Temporal focusing-based multiphoton imaging with deep inpainting and prediction

Shean-Jen Chen

Institute of Imaging and Biomedical Photonics, National Yang Ming Chiao Tung University

BISC 14:20 *Invited*

Machine learning-assisted chromatin imaging in live cell nuclei by label-free interference DYNAMICS imaging

Chia-Lung Hsieh

Institute of Atomic and Molecular Sciences, Academia Sinica

BISC 14:50-15:05

Super-resolution imaging for collagen rich tissue

Ya-Han Chuang, Ya-Hui Lin, Yueh-Feng Wu, Sung-Jan Lin, Li-An Chu

BISC 15:05-15:20

Development of high-speed polarization-sensitive optical coherence tomography imaging based on HCG-VCSEL

Chien-Hua Peng, Yu-Cheng Mei, Hung-Kai Chen, Ting-Yen Tsai, Ting-Hao Chen, Chuan-Bor Chueh, Michae C. Y. Huang, Hsiang-Chieh Lee

BISC 15:20-16:20

Coffee Break

BISC 16:20-17:50

Ubiquitous Biology & Physiology

Chair : Sheng-Hao Tseng

National Cheng Kung University, Taiwan

BISC 16:20 *Invited*

Non-contact physiological measurement using camera-based diffuse reflectance spectroscopy

Izumi Nishidate

Tokyo University of Agriculture and Technology

BISC 16:50 *Invited*

Hacking Consumer Electronics for Biomedical Imaging

En-Te Hwu

Technical University of Denmark

BISC 17:20-17:35

Single-Cell Manipulation and Detection Platform Based on Optical Tweezers for investigating the Chemotaxis and Response of Cancer cells to Tyrosine Kinase Inhibitor PD153035

Mamadi M.S Colley, ChengJen

Chang, JenChang Yang, Pei-Wen

Peng, Tzu-Sen Yang

BISC 17:35-17:50

Rapid detection of SARSCoV-2 nucleocapsid protein antigen by dualcomb biosensing

S. Miyamura, R.Oe, T.Nakahara, S.Okada, S. Taue, Y. Tokizane, T.Minamikawa, T. Yano, K.Otsuka, A.Sakane, T.Sasaki, K.Yasutomo, T.Kajisa, T.Yasui

BISC 08:30-10:20

Bioimaging with New Technologies II

Chair : Shi-Wei Chu

National Taiwan University, Taiwan

BISC 08:30 *Invited*

Mid-Infrared Photothermal Microscopy: Principle, Instrumentation, and Applications

Ji-Xin Cheng

Photonics Center, Boston University

BISC 09:00 *Invited*

Side-illumination Raman microscopy using a Bessel beam for observation of cell spheroids

Katsumasa Fujita

Department of Advanced Physics, Osaka University

BISC 09:30-09:45

Multiple-Plate Continuum for Stimulated Raman Scattering Spectro-Microscopy across the Entire Raman Active Region

Guan-Jie Huang, PeiChen Lai, Kuo-Chuan Chao, Peng Lin, Ji-Xin Cheng, AnnShyn Chiang, Bo-Han Chen, Chih-Hsuan Lu, Shi-Wei Chu, Shang-Da Yang

BISC 09:45-10:00

Super-resolution neuronal imaging in Drosophila, mouse and human

Yi-Ru Luo, Ling-Hui Yen, Ya-Hui Lin, Chi-Wen Liong, ChihMing Wang, Shih-Kuo Chen, Hsueh-Cheng Chiang, Chin-Hsien Lin, Li-An Chu

BISC 10:00-10:20

Coffee Break

BISC 10:20-11:50

Light & Neuroscience

Chair : Kung-Bin Sung

*National Taiwan University,
Taiwan*

BISC 10:20

*Keynote***Realtime and Noninvasive
Pathological Diagnosis of Diabetic
Peripheral Neuropathy by Third-
harmonic-generation Imaging of
Free Nerve Ending (TIFNE)**

Chi-Kuang Sun

*Department of Electrical Engineering,
National Taiwan University*

BISC 10:50

*Invited***Developing optical methods for
brain mapping at the point-of-care**

Adam T. Eggebrecht

*Washington University School of
Medicine*

BISC 11:20-11:35

**High speed automated cell detection
and quantification in whole mouse
brain**Li-Wen Wang, Ya-Hui Lin, Ching-Han
Hsu, Li-An Chu

BISC 11:35-11:50

**Single/Multiphoton Light
Sheet Microscopy for Drosophila
Whole Brain Functional Imaging**Heng Chang, Wei-Kun Chang, Bi-
Chang Chen, Li-An Chu

BISC 13:50-15:40

Novel Biomolecular Sensing

Chair : Miya Ishihara

*National Defense Medical
College, Japan*

BISC 13:50

*Invited***Unconventional SERS: metal/plasmon-
free and wearable/flexible SERS**

Keisuke Goda

*Department of Chemistry, University
of Tokyo*

BISC 14:20-14:35

**Using deep learning for bone
mineral density prediction with near
infrared light**Hsin-Jou Wang, Wei-Chun Chang,
Tsai-Hsueh Leu, Yi-Min Wang,
Gautam Takhellambam, Chia-Wei Sun

BISC 14:35-14:50

**Analysis of lipid molecular properties in
nonalcoholic fatty liver disease by use
of Brillouin microspectroscopy**Eiji Hase, Takeo Minamikawa, Yu
Tokizane, Takeshi Yasui

BISC 14:50-15:05

**Single-shot recording of transport of
intensity equation-based three
dimensional fluorescent imaging**Heng Manoj Kumar Kumar, Naru Yoneda,
Xiangyu Quan, Osamu Matoba

BISC 15:05-15:20

**Incoherent digital holography system for
simultaneous imaging of three
dimensional and polarization information
without a polarization filter**

Tatsuki Tahara

BISC 15:20-15:40

Coffee Break

BISC 15:40-17:10

**Large-tissue and High-speed
Imaging**

Chair : Hsiang-Chieh Lee

*National Taiwan University,
Taiwan*

BISC 15:40

*Invited***Photoacoustic imaging
technology to visualize from cells
to organs in vivo**

Miya Ishihara

National Defense Medical College

BISC 16:10

*Invited***Advancing contrast for optical
coherence tomography in the eye
and brain**

Bernhard Baumann

*Center for Medical Physics and
Biomedical Engineering, Medical
University of Vienna*

BISC 16:40-16:55

**Diopter correction
Spectral Domain Optical
Coherence Tomography**

Angiography in Ophthalmology

Sung-Wen Huang, Jia-Pu Syu,
Wen-Chuan Kuo

BISC 16:55-17:10

**H&E-compatible Rapid Fresh
Pathology technique for
intraoperative tumor assessment
at a sustained data throughput of
>700 Mbps**Bhaskar Jyoti Borah, Yao-Chen
Tseng, Chi-Kuang Sun

BISC 08:00-09:40

Label-free Microscopy

Chair : Yasuhiro Awatsuji

*Kyoto Institute of Technology,
japan*BISC 08:00 *Invited***Computational 3D microscopy
with scattering samples**

Laura Waller

*Department of Electrical Engineering
and Computer Sciences, UC Berkley*BISC 08:30 *Invited***Quantitative phase imaging and
artificial intelligence: inference of
molecular-specific information from
label-free imaging**

YongKeun Park

*Korea Advanced Institute of Science
and Technology*

BISC 09:00-09:15

**AI assisted FPGA based Isotropic
Quantitative Differential Phase
Contrast imaging**Yen-Chih Yu, Sunil Vyas, J.Andrew Yeh,
Yuan Luo

BISC 09:15-09:30

**High speed interferometric
scattering confocal microscopy
unveils rapid cell dynamics at the
nanoscale**Yi-Teng Hsiao, TsaiYing Wu, Shi-Wei
Chu, Chia-Lung Hsieh

BISC 09:30-09:40

Coffee Break

BISC 09:40-10:55

Bioimaging with New Technologies III

Chair : Katsumasa Fujita

*Osaka University, japan*BISC 09:40 *Invited***Detection of Neurodegeneration
Using Automated Dendritic Spine
Identification Based on
Convolutional Neural Network**

Jin-Wu Tsai

*Institute of Brain Science, National
Yang Ming Chiao Tung University*BISC 10:10 *Invited***Microscopy-guided subcellular
proteomics**

Jung-Chi Liao

*Institute of Atomic and Molecular
Sciences Academia Sinica. Genome
and Systems Biology Degree
Program, National Taiwan University*

BISC 10:40-10:55

**Volume holographic lenslet
array based confocal imaging**Surag Athippillil Suresh, Sunil Vyas, J.
Andrew Yeh, Yuan Luo

Health Informatics(醫資) Room 1008

Friday, December 16

Health Informatics 08:30-10:50

Chair : Furen Xiao

National Taiwan University

Health Informatics 08:30 *Invited*

Development An AI-Powered
Respiratory Sound Monitoring and
clinical practice

Dr. Fu-Shun Hsu

聿信醫療科技執行長

Health Informatics 09:00-09:15

Evaluating teaching methods via
functional near-infrared
spectroscopy

Chih-Ting Chang, Wan-Yi Chen, Yu-
Feng Li, Li-Hung Chang, Chia-Wei Sun

Health Informatics 09:15-09:30

Multimodal Drinking Activity
Identification for Fluid Intake
Monitoring

Pei-Wei Yu, Chien-Pin Liu, Chia-Yeh
Hsieh, Kai-Chun Liu, Chia-Tai Chan

Health Informatics 09:30-09:45

Wearable-based Vestibular
Rehabilitation Monitoring System

Chun-Chi Liu, Kuan-Chung Ting,
Chia-Yeh Hsieh, Kai-Chun Liu, Chia-
Tai Chan

Health Informatics 09:45-10:00

Utilize embedded sensors in a
3Dprinted, custom-designed
medical gadget to detect
hemodialysis-associated vascular
dysfunction early

Wei-Ling Chen, Che-Wei Lin, Chung-
Dann Kan

Health Informatics 10:00-10:20

Coffee Break

Health Informatics 10:20-11:50

Chair : Yi-Ju Tseng

*National Yang Ming Chiao
Tung University*

Health Informatics 10:20 *Invited*

Quanta QOCA AI-Medical Platform
for Smart Healthcare

楊子翔博士

廣達電腦副處長

Health Informatics 10:50-11:05

Pathology image classification of
stroke blood clot origin using
DenseNet

Chun-Ching Huang, Hung-Wen Chiu

Health Informatics 11:05-11:20

Feasibility Study of Diagnosis of
Parkinson' s Diseases with Voice
Analysis on Mobile Devices

Mirna Danisa Tandjung, Zhe-Yuan
Lien, Chao-Min Wu

Health Informatics 11:20-11:35

Severity Assessment of Patients with
Speech Disorder Using Deep
Learning

Chieh-Hsin Li, Chien-An Chen, Jia-Jin
Chen

Health Informatics 11:35-11:50

Personalized Prediction of Cancer
Risk and Treatment Based on the Full
Genome ArchitectureChun-Ching
Kuan-lin Huang

Material Science(材料) Room 1006

Thursday, December 15

Material Science 13:50-15:20

Chair : Hung-Yin Lin

*National University of
Kaohsiung*

Ming-Long Yeh

*National Cheng Kung
University*

Material Science 13:50-14:05

Combining Metal Organic Framework (MOF) Nanocatalysts and Immunotherapy to Enhance Cytotoxic T Lymphocytes Infiltration Ability

Min-Ren Chiang, Wei-Ting Shen, Pin-Xuan Huang, Shang-Hsiu Hu

Material Science 14:05-14:20

Stearic acid modified hydroxyapatite as a sustained release carrier for tariquidar to improve brain penetration of temozolomide

Cheng-Ping Yu, Yan-Jye Shyong

Material Science 14:20-14:35

Development of a decellularized liver matrix-based nanomedicine for liver regeneration

Yong-Heng Lin, Yu-Chuan Chiu, Yung-Te Hou

Material Science 14:35-14:50

Sebacoyl Dinalbuphine Ester-Loaded Nanostructured Lipid Carriers in Gel for Postoperative Pain on Spine Surgery

Yi-Lian Li, Cheng-Li Lin, Jui-Chen Tsai, Yan-Jye Shyong

Material Science 14:50-15:05

Degradable Biohybrid Hydrogel Neural Interfaces

Wan Lou Lei, Tzu-Ya Cheng, Chih-Wei Peng, Huai-En Lu, Wei-Chen Huang

Material Science 15:05-15:20

M1 Macrophage Membrane-coated Porous Magnetic Nanocubes for Reversing Immune-deficient TME of Lungmetastatic Colorectal Cancer

Kang-Li Wang, Cheng-Han Li, Shang-Hsiu Hu

Material Science 15:20-16:20

Coffee break

Material Science 16:20-17:50

Chair : Hung-Yin Lin

*National University of
Kaohsiung*

Shang-Hsiu Hu

National Tsing Hua University

Material Science 16:20-16:35

A Structure-Anatomy-Function Biomimetic Ligament Scaffold using Interfacial Polyelectrolyte Complexation Spinning with Mineralization Gradient

Yu-Chung Liu, Tzu-Wei Wang

Material Science 16:35-16:50

Fabless manufacturing neural probe for in vivo neural recording

Szu-Ying Li, Yen-Ting Wu, Wie-Yun Li, YuChun Lo, TaChung Liu, You-Yin Chen

Material Science 16:50-17:05

Photo-regulated emissive oxidase-like nanozyme based sensor for evaluation of the total antioxidant capacity from human saliva

Sanskriti Swain, Ting-Yi Lin, Hua-En Chueh, I-Hsuan Chou, Hsing-Ying Lin, Chen-Han Huang

Material Science 17:05-17:20

Devising hyperthermia dose of NIRirradiated Cs0.33WO3 hyperthermia dose of NIR-irradiated Cs0.33WO3 nanoparticles for HepG2 hepatic cancer cells

Po-Sheng Hu, Hsiu-Jen Chou, Chi-An Chen, Po-Yi Wu, KaiHsien Hsiao, YuMin Kuo

Material Science 17:20-17:35

P-tau Dephosphorylation Measurement on the Basis of Biomimetic

Electrochemicalpolymerized Thin Film Modified EQCM

Shang-Chi Chien, Jung-Chih Chen

Material Science 17:35-17:50

Modulation of Schwann cell behaviors by micro-and nanopatterned polyurethane substrates

Chun-Ting Lin, Lester U.Vinzons, ShuPing Lin

Material Science(材料) Room 1006

Friday, December 16

Material Science 08:30-10:00

Chair : Grace Pen-Hsiu Chao

National Taiwan University

Ming-Fa Hsieh

Chung Yuan Christian University

Material Science 08:30 *Invited*

Study on nanomedicines for tumor cell-targeting radiotherapy

Tse-Ying Liu

Department of Biomedical

Engineering, National Yang Ming

Chiao Tung University

Material Science 09:00 *Invited*

Bio-inspired Zwitterionic Material System: Molecular Design and Medical Applications

Yung Chang

R&D Center for Membrane

Technology, Department of Chemical Engineering, Chung Yuan Christian University

Material Science 09:30 *Invited*

Functional Biomaterial Design for Glaucoma Pharmacotherapy

Jui-Yang Lai

Department of Biomedical

Engineering,

Chang Gung University

Material Science 10:00-10:20

Coffee break

Material Science 08:30-10:00

Chair : Grace Pen-Hsiu Chao

National Taiwan University

San-Yuan Chen

National Chiao Tung University

Material Science 10:20-10:35

Remdesivir and Dexamethasone loaded Nanostructured Lipid Carrier for pulmonary delivery

Yi-Hsuan Wen, Jui-Chen Tsai, Chian-Wei Chen, Yan-Jye Shyong

Material Science 10:35-10:50

Integrating the microneedles with radiosensitizers to enhance the therapeutic effect of radiotherapy for skin cancers

Min-Hua Chen, Chun-Hung Lee, Hsiang-Kuang Liang, Su-Chin Huang, Jui-Ping Li, Cheng-An J. Lin, Jen-Kun Chen

Material Science 10:50-11:05

Radiolabelled Upconversion nanoformulation for multimodal image guided cancer therapy

Najim Akhtar, Chuan Lin Chen, Surojit Chattopadhyay

Material Science 11:05-11:20

Preparation of polyethyleneimine coated magnetic nanoparticles conjugated with folic acid for hyperthermia application

Yu-Fang Lin, WenTyng Li

Material Science 11:20-11:35

Long-term therapeutic potential of nanoceria in urological chronic pelvic pain syndrome: immunomodulation via SerpinB2 downregulation

Wei-Chih Lien, Pei-Yuan Lee, Feng-Huei Lin, Hui-Min David Wang

Material Science 11:35-11:50

Aminated chitosan-functionalized nano eye-drops for acute glaucoma treatment

Chia-Jung Yang, Jui-Yang Lai

Medical Electronics(醫電) Room 1007

Friday, December 16

Medical Electronics 08:30-11:50

Moderator : Jia-Jin J. Chen

National Cheng Kung University

Fu-Yu Chen

Chung Yuan Christian University

Jia-Jung Wang

I-SHOU University

Chia-Yen Yang

Ming Chuan University

Medical Electronics 08:30 *Invited*

Bedside cerebral physiology monitoring in neonatal neurocritical care

Pei-Yi Lin

Pediatrics at Harvard Medical School

Medical Electronics 09:00-09:15

Quantification of Neonatal Bilirubin and Hemoglobin Concentrations with a Miniaturized DRS Handheld Device

Ying-Yu Chen, Nan-Yu Cheng, Shih-Yu Tzeng, Ming-Chein Fang, Sheng-Hao Tseng

Medical Electronics 09:15-09:30

Prediction of Vascular Access Stenosis from Phonoangiogram Signals Using the VGG16 and VGG19 Models

Jia-Jung Wang, Hangliang Zhang, Thung-Lip Lee

Medical Electronics 09:30-09:45

Ultrasonic Acupuncture Lowers Blood Glucose

Chia-Hsuan Chang, Jung-Chih Chen, Gin-Shin Chen

Medical Electronics 09:45-10:00

Extended-Gate Field-Effect Transistor with an Indium Tin Oxide-Coated Vertically Aligned Silicon Nanowires for the Detection of Cortisol

Yu-Ting Wei, Shu-Ping Lin

Medical Electronics 10:00-10:20

Coffee Break

Medical Electronics 10:20 *Invited*

Turning nonstationary biomedical signals into useful clinical information using modern signal processing

Hau-Tieng Wu

Department of Mathematics, Duke University

Medical Electronics 10:50-11:05

Development of a 6-axis RUS for AVF Stenosis Assessment

Shih-Yang Hung, Cheng-Bin Xu, Yi-Chun Du

Medical Electronics 11:05-11:20

Rapid and sensitive electrochemical biosensor for the detection of TNF- α
Neil Adrian P. Ondevilla, Peng-Wen Liu, Hsien-Chang Chang

Medical Electronics 11:20-11:35

Ultra-sensitive respiration detection mask with low cost SnO₂ sensors
Moumita Deb, Mei-Yu Chen, Po-Yi Chang, Pin-Hsuan Li, Ming-Jen Chan, Ya-Chung Tian, Ping-Hung Yeh, Olivier Soppera, Hsiao-Wen Zan

Medical Electronics 11:35-11:50

Neuroscience Tool: Ultrasensitive Electrochemical Dopamine

Aptasensor on the Multi-Electrode Array

Huai-Hsuan Shao, Ta-Chung Liu, Ting-Wei Kuo, Yu-Chun Lo, Tzu-Hsin Tseng, Min-Chieh Chuang, You-Yin Chen

Medical Imaging(影像) Room 1007

Thursday, December 15

Medical Imaging 13:50-15:20

Chair : Cheng-Wen Ko
*National Sun Yat-sen
University*
Yi-Ping Chao
Chang Gung University

Medical Imaging 13:50 *Invited*

**Brain predicted age is an emerging
biomarker for brain health**

Wen-Yih Issac Tseng
AcroViz Technology

Medical Imaging 14:20-14:35

**Oral cavity detection
using handheld-probe
polarization sensitive optical
coherence tomography**
Hui-Ki Lai, Ting Chang, Ting-Yun
Deng, Chung-Yu Chang, Wen-Chuan
Kuo

Medical Imaging 14:35-14:50

**3D Phase-sensitive PatchMatch
Searching for Ultrasound Motion
Estimation**
Li-Fu Lee, Yen-Ting Liu, Po-Syun
Chen, Mo-Han Lin, Geng-Shi Jeng

Medical Imaging 14:50-15:05

**Pulse-Inversion Shear Wave
Elastography (PI-SWE) Estimation of
Stiffness Change by High Intensity
Focused Ultrasound – Porcine liver**
Wei-Cheng Hsiao, Hsien-Jung Chan,
Bao-Yu Hsieh

Medical Imaging 15:05-15:20

**Phase Aberration Correction Using
Point Spread Function Reshaping
for Biomedical Ultrasound
Imaging**
Wei-Hsiang Shen, Meng-Lin Li

Medical Imaging 16:20-17:50

Chair : Chun-Yi Wu
*National Yang Ming Chiao
Tung University*
Meng-Lin Li
National Tsing Hua University

Medical Imaging 16:20-16:35

**Mask Guided Generative Adversarial
Networks for Osteoarthritis Repair
MRI Simulation**
Tzu-I Chuang, P-H Liana, G. Changa

Medical Imaging 16:35-16:50

**Compensation of out-of-focus
blurring for dual-head PET imaging
in proton therapy**
Ming-Wei Lee, Meei-Ling Jan

Medical Imaging 16:50-17:05

**Tunable acoustic lens plus adaptive
optics (TAO) for fast volumetric two-
photon imaging**
Chang-Ling Chung, Tommaso Furieri,
Jyun-Yi Lin, Ting-Chen Chang, Jye-
Chang Lee, Yi-Fan Chen, Ming-Kai
Pan,
Stefano Bonora, Shi-Wei Chu

Medical Imaging 17:05-17:20

**Intratumor Oxygen Measurement in
3D-Multicellular Tumor Spheroids
by using Ru(dpp)-based Fluorescent
Polymeric Nanosensors**
Ashish Kumar, Venkanagouda
S.Goudar, Bishal Kumar Nahak, Fan-
Gang Tseng

Medical Imaging 17:20-17:35

**3D Ultrasound Cardiac Principal
Stretch Imaging with Least Squares-
based Regularization**
Po-Syun Chen, Lung-Chun Lin, Geng-
Shi Jeng

Medical Imaging 17:35-17:50

**The Effect of Gender and Age on
Jawbone Quality : A Dental CBCT
Study**
Shiuan-Hui Wang, Jui-Ting Hsu, Lih-
Jyh Fuh, Heng-Li Huang

Medical Imaging(影像) Room 1007

Friday, December 16

Medical Imaging 15:40-17:10

Chair : Yi-Ru Lin

*National Taiwan University of
Science and Technology*

Medical Imaging 15:40 *Invited*

**Enhanced Temporal Coherence for
Ultrasound Ultrafast Power Doppler
Imaging: Temporal Multiply-and-
Sum (TMAS) Autocorrelation**

Che-Chou Shen

*Department of Electrical Engineering,
National Taiwan University of Science
and Technology*

Medical Imaging 16:10-16:25

**Nakagami Imaging Combined with
Pulse Inversion Subtraction for
Monitoring of Continuous HIFU
Therapy**

Hsien-Jung Chan, Wei-Cheng Hsiao,
Po-Hsiang Tsui, Bao-Yu Hsieh

Medical Imaging 16:25-16:40

**Target Detection of B-mode Image
through Two-dimensional CFAR
Processing**

Chia-Hsuan Chang, Yuan-Pin Cheng,
Jung-Chih Chen

Medical Imaging 16:40-16:55

**In vivo monitoring of hemoglobin
derivative concentrations and
saturation in rat burn wounds using
diffuse reflectance spectral imaging**

Md Anowar Parvez, Kazuhiro Yashiro,
Izumi Nishidate, Yasuyuki Tsunoi,
Yasue Haruyama, Daizoh Saitoh,
Shunichi Sato

Medical Imaging 16:55-17:10

**Image-domain Material
Decomposition using DIP for Dual
Energy CT**

Hui-Yu Chang, Hsuan-Ming Huang

Interactive 5G Mobile Smart Patient Monitor

BROADSIMS

Beyond Measurement

We Simplify Your Work Flow



| Built-In Features |

- 12-Lead ECG
- Blood Pressure
- SpO2
- Heart Rate



| Add-On Features |



Open
RAW Data



Dashboard



| Solution Features |

- Spot Check
- Continuous Monitoring
- Prediction
- Auto Report



Poster Sessions



Paper ID	Category	Paper Title	Authors
250018	[GCBME] Medical Electronics	Development of Graphene/Polypyrrole Nanocomposite-based SAW Sensors and Its Clinical Applications in Detection of Sub-ppm Ammonia	Shao-Kai Lai Chi-Yen Shen Tien-Tsan Hung Yao-Wei Chuang
250020	[GCBME] Biomechanics	Prediction Traditional Hand Function Assessment through an Innovative Medical Device with Deep Learning	Pu-Chun Mo I-Te Tu Li-Chieh Kuo Hsiu-Yun Hsu Fong-Chin Su
250021	[GCBME] Biomechanics	Dimension Reduction of Time Series Data from Sensorimotor Function through Autoencoder	Pu-Chun Mo I-Te Tu Cheng-Feng Lin Charlie Chen Ma Li-Chieh Kuo Hsiu-Yun Hsu Yih-Kuen Jan Fong-Chin Su
250022	[GCBME] Health Informatics	Investigating the Connection between the Biomarkers in Blood and Hand Sensibility in Hemodialysis Patients	I te TU Yu-Shiuan Cheng Pu-Chun Mo Hsiu-Yun Hsu Li-Chieh Kuo I-Ming Jou Fong-Chin Su
250024	[GCBME] Material Science	Strawberry Extract Facial Mask Function and Biocompatibility Test	劉承祐 徐鼎鈞 林峻誼 吳翎瑄 張軒儒 王明誠
250025	[GCBME] Medical Imaging	Influence of Target Volume to Prediction Accuracy of Tumor Segmentation using U-Net on MRI for Hypopharyngeal Cancer	Shao-Chi Lin Chi-Yi Ho Yu-Chun Lin Shu-Hang Ng
250028	[GCBME] Medical Imaging	Deep Learning Technology and System Development in application to Gynecologic Oncology	Ching-Wei Wang Tai-Kuang Chao Huang-Chun Lien Yung-Ming Jeng

250030	[GCBME] Health Informatics	Interleukin-6 Rapid Diagnostic System for Sequential Monitoring Respiratory Failure in Elderly Pneumonia	Cheng-Han Chen Chao-Min Cheng
250031	[GCBME] Material Science	Molecularly targeted photothermal ablation of epidermal growth factor receptor-expressing cancer cells with a polypyrrole-iron oxide-afatinib nanocomposite	Lekshmi Rethi Chinmaya Mutalik Lekha Rethi Wei Hung Chiang Hsin-Lun Lee Wen Yu Pan Tze-Sen Yang Jeng-Fong Chiou Yin-Ju Chen Er Yuan Chuang Long Sheng Lu
250034	[GCBME] Biomechanics	C-terminus of Hsc70-interacting protein (CHIP) expression enhances survival, anti-senescence and stemness abilities in human Wharton's jelly mesenchymal stem cell	Chun-Hsu Yao Tung-Sheng Chen
250035	[GCBME] Medical Imaging	Decoupling of Brain Connectivity and Heart Rate Variability Underlies Dysautonomia in Familial Amyloid Polyneuropathy	Yuan-Che Min Ming-Chang Chiang
250043	[GCBME] Assistive Technologies	Improving the performance of a deep learning-based speech enhancement system by the scene flow technology: A hearing aid application	You-Ren Lin Bo-Sin Wang Wei-Zhong Zheng Ji-Yan Han Yu-Min Lin Wen-Huei Liao Ying-Hui Lai
250044	[BISC] Photonics & Optoelectronics	Custom-Made Photoacoustic System on Tumor Blood Vessels and Oxygen Saturation Measurement for Small Animals	YU-FONG LIOU Shih-Po Su Huihua Kenny Chiang
250046	[GCBME] Health Informatics	Quantitative Assessment of Physical Changes Based on Acoustic Parameters after Drinking Different Attributes of Beverages	Chuang-Chien Chiu Lun-Chien Lo Yu-Hsien Chen Hsiang Wang Cheng-Ru Yang
250047	[GCBME] Medical Electronics	A Safer Bone-Cement Infusion System for Assisting Osteoporotic Vertebral Compression Fracture Surgeries	Chu Woei Chyn Chen Jhong Yi Hsu Yung Fu Lin Jia Yi

			Tseng Yin Jiun Hwang Shiu Ren Liu An Shun Cheng Shih Hao Tsuei Yu Chuan Chu William
250051	[GCBME] Medical Imaging	Prediction of real-time left ventricular ejection fraction using deep learning algorithm	Madankumar Balasubramani Chih-Wei Sung Mu-Yang Hsieh Edward Pei-Chuan Huang Jiann-Shing Shieh
250056	[GCBME] Health Informatics	Early Warning Score Prediction using Machine Learning Applied in Cardiovascular Intensive Care Unit	Zi-Xuan Yang Ho-Tsung Hsin Jiann-Shing Shieh
250060	[BISC] Photonics & Optoelectronics	Prediction based on machine learning of operation outcome from peripheral arterial occlusive disease	Yung-Chang Chen Pin-Yu Kuo Jen-Kuang Lee Chau-Chung Wu Chia-Wei Sun
250061	[GCBME] Medical Electronics	Cross-domain CNN transfer learning from EEG to heart rate applied to sleep staging	Wen-Chen Huang Chia-Yen Yang
250062	[GCBME] Biomechanics	Mechanical analysis of the porous dental implant with triply periodic minimal surface lattice	Hung-chih Chang Chen-Gyi Yang Yu-Tang Ji Pin-Xin Guo Yu-Chi Chen
250064	[BISC] Photonics & Optoelectronics	Applying Machine learning to extracorporeal membrane oxygenation patients using functional near-infrared spectroscopy	Chang Yi Lee Ting-Wei Chiang Hsiao-Huang Chang Chia-Wei Sun
250065	[GCBME] Biomechanics	ECG classification using continuous wavelet transform and convolutional	Ting-Chi Hou Maysam Abbod Jiann-Shing Shieh
250067	[GCBME] Medical Electronics	Non-invasive continuous arterial blood pressure monitoring via PPG	Najsm Cox Maysam Abbod Jiann-Shing Shieh
250070			許廷鴻

	[BISC] Photonics & Optoelectronics	Analysis of police overwork degree by functional near-infrared spectroscopy: taking the Copenhagen overwork scale as a standard	謝清彥 劉耀鴻 王文瑜 林慶波 孫家偉
250080	[GCBME] Medical Imaging	Automatic Segmentation of Calcified Plaques and Vessel Borders with 2D Spatial Multilayer Machine Vision Classifier	Chia-Hung Lin
250081	[GCBME] Medical Electronics	The Synthesized Conductive/Magnetic Composite Particles for Tumor Magnetic Ablations	Jen-Jie Chieh, Shu-Hsien Liao Ting-Yuan Chen, Wen-Chun Wei
250083	[GCBME] Biomechanics	Remote and local generation of microstreaming vortices by focused ultrasound with vortex lens	Chih-Hsien Li Ching-Hsiang Fan
250085	[GCBME] Biomechanics	Intelligent meal carbohydrate recognition and evaluation based on blood glucose regulation for type 1 diabetic patients	Kai-Chieh Tu Tsung-Chih Lin
250088	[GCBME] Medical Imaging	Dual-Modality Bioluminescence/ Ultrasound 3D 360o Imaging System for Small Animal Tumor Imaging Using Homemade Transducers	Yuan Zhen Yang Shih-Po Su Yun-Chen Lee Huihua Kenny Chiang
250090	[GCBME] Material Science	Design and Development of Atmospheric Plasma Sterilization with Dialysis Machine	Cheng Kuo Tung 李東錦 林慶元 林秉郁 梁能昕 陳祐陞 林宏達 王明誠
250091	[GCBME] Biology	Mechanisms of ultrasound-microbubble cavitation for inducing the permeability of human skin	Ai-Ho Liao Yu-Chen Chen Chih-Hung Wang Shun Cheng Chang Jehng-Kang Wang
250092	[GCBME] Medical Imaging	Micro-bubble composite medical material combined with ultrasound for the development of head and neck diseases and tumor immunotherapy	Ai-Ho Liao Chih-Hung Wang Cheng-Ping Shih Yu-Hsiang Chu Jehng-Kang Wang
250095			

	[GCBME] Material Science	Hepatic Patch for Liver Regeneration after CCl4 Poisoning	Ting Yi Wu Yi Cheng Hsieh Yung Te Hou
250096	[BISC] Photonics & Optoelectronics	Biodegradable and implantable polymer optical waveguide plate for guiding lightwaves into biological tissue	Ai-Wei Li Cheng-Yang Liu
250100	[GCBME] Medical Imaging	Monitoring of Pleural Respiratory Signals	Hsiao Tung Hsu Shih Hua Wang Hui Hua Chiang
250102	[GCBME] Health Informatics	Self-attention-based Pre-impact Fall Detection System Using Wearable Sensors	Tin-Han Chi Chien-Pin Liu Chia-Yeh Hsieh Kai-Chun Liu Chia-Tai Chan
250104	[GCBME] Medical Imaging	Portable electrical impedance tomography for lower limb edema	Chang-Lin Hu I-Cheng Cheng Zong-Yan Lin Chien-Ju Li Chii-Wann Lin
250105	[GCBME] Material Science	Design and Testing of Porous Artificial Tooth Roots for 3D Printing Techniques	Feng Min Lai Po Chun Shin Yu Yi Wang Pei Xuan Wu Fu Hsuan Yang Yu Xiu Huang Xin You Ji
250110	[GCBME] Medical Imaging	An Efficient Superimposition Method for Surgical Accuracy Assessment	Yu-Ching Hsiao Jing-Jing Fang
250111	[GCBME] Biomechanics	GAT-based through-the-eyelid tonometry for intraocular pressure monitoring	De-Yi Chiou Chi-Shen Chang Chun-Chuan Lin
250112	[GCBME] Medical Imaging	Lesion delineation framework for vestibular schwannoma, meningioma and brain metastasis for gamma knife radiosurgery using stereotactic magnetic resonance images	Yu-Te Wu Wei-Kai Lee Huai-Che Yang Cheng-Chia Lee Chia-Feng Lu Chih-Chun Wu Wen-Yuh Chung Hsiu-Mei Wu

			Wan-Yuo Guo
250115	[GCBME] Medical Imaging	Integrating Artificial Intelligence Services in Radiology for Diagnostic Assistance	Chin-Lin Lee Woei-Chyn Chu Chung-Yueh Lien Wei-Kai Lee Yu-Te Wu Wan-Yuo Guo
250117	[BISC] Photonics & Optoelectronics	Unsupervised Cross-modality Segmentation and Isotropic Restoration by Pseudo-mask Assisted Deep Generative Network	Meng-yun Wu Ya-ding Liu Da-yu Huang Li-An Chu Gary Han Chang
250119	[GCBME] Medical Imaging	Generative Adversarial Networks for MRI to Different Types of PET Synthesis and Comparison	Jie Ji
250120	[GCBME] Medical Imaging	Development of Surgical Planning and Patient Specific Instrument for High Tibial Osteotomy Surgery	Pei-Rou Chang Wei-Chih Tsemg Jing-Jing Fang
250121	[GCBME] Medical Electronics	Portable Electrochemical Impedance Spectroscopy Device Implementation	Yu-Rong Wang Jung-Chih Chen
250122	[GCBME] Material Science	Enhanced Corrosion Resistance and Promoted Bone Healing Ability of Dicalcium Phosphate Dihydrate Coating on ZK60 Magnesium Alloy	Jie-Yu Chen Guan-Lin Wu Chin-En Yen Ming-Long Yeh
250123	[GCBME] Biomechanics	Construction of a musculoskeletal system for mechanics and EMG analysis	Bo-Sheng Jiang Kuo-Kuang Jen Chia-Wei Lee Shin-Shiue Chen Chi-Kae Wang Shu-Ta Hsieh Ming-Fang Luo Sheng-Yen Hu Yuan Kang Tzong-Rong Ger
250124	[GCBME] Biomechanics	Evaluate the Biomechanical Stability of Different Glenoid Defect Angles for Latarjet Procedure: A Finite Element Analysis	Chun-Kai Chiu Guan-Lin Wu Ming-Long Yeh
250125			Wang-Ching Hung Guan-Lin Wu

	[GCBME] Material Science	To Explore the Application of Temperature-sensitive and Photo-sensitive Hydrogel in Cartilage Tissue Engineering	Yu-Jia Hou Chih-En Ke Ming-Long Yeh
250127	[GCBME] Medical Electronics	Explore the effect of magneto-thermal therapy through the number of MNPs in single cell on melanoma	Ping-Wei Tseng Jou-Hsuan Huang Chi-Hui Wang Tzong-Rong Ger
250128	[GCBME] Material Science	Development of electric heating thin films by using polycaprolactone/polypyrrole composite materials	Xing-Yi Li Wei-Jie Wang Yi-Ting Shu Wu-Zhang Su Tzong-Rong Ger
250129	[GCBME] Medical Electronics	A predicting system for epileptic seizures base on transfer learning from EEG to ECG	Pin Chen Chen Chia-Yen Yang
250131	[GCBME] Medical Imaging	Design and Implementation of the Open-Source DICOM Viewer for Whole Slide Image in Digital Pathology	Shao Yu Chen Chung-Yueh Lien Pau-Choo Chung Chin-Lin Lee
250132	[BISC] Photonics & Optoelectronics	Image Restoration Based on Deep learning in Millisecond-scale Two-photon Fluorescence Volumetric Microscopy	Chien-Sheng Wang
250134	[GCBME] Health Informatics	Deep Learning-based Segmentation of Functional Shoulder Sub-Task for Frozen Shoulder Assessment	En Ping Chu Ting-Yang Lu Chien-Pin Liu Chia-Yeh Hsieh Chih-Ya Chang Kai-Chun Liu Chia-Tai Chan
250135	[GCBME] Material Science	Improve the Material Properties of Biodegradable ZK60 Magnesium Alloy by Different Heat Treatments	Hsin-Te Yu Guan-Lin Wu Ming-Long Yeh
250136	[GCBME] Medical Imaging	CT-based Radiomics Combining the factors of High-grade Patterns for Histopathology Grading Prediction in Lung Adenocarcinoma	Chun-Yu Huang Li-Wei Chen Guan-Lin Huang Shun-Mao Yang Yi-Chang Chen Mong-Wei Lin

			Min-Shu Hsieh Guan-Yu Chen Yeun-Chung Chang Chung-Ming Chen
250137	[GCBME] Biology	Trispecific T-cell Engagers Non-covalently Decorated with PEGylated Nanocarriers for Prolonging Cancer Immunotherapy	Hsin Chen Ho Wei Jie Cheng Hsiu O Ho Chien Ming Hsieh
250138	[GCBME] Medical Imaging	Detection and Morphological Analysis of Adipose Stem Cells in Microscopic Images	Ching-Fen Jiang Chia-Yuan Yuan
250139	[GCBME] Material Science	Surface Modification for Cardiovascular Stents: Preparation and Analysis of PTMC Anti-corrosion Coating for ZK60 Magnesium Alloy	Chi-Fang Li Guan-Lin Wu Ming-Long Yeh
250140	[GCBME] Assistive Technologies	A Scene Analysis-Based Indoor Positioning System	Woei-Chyn Chu Yung-Fu Hsu Chun-Hsiang Laio
250141	[GCBME] Material Science	Developing Multifunctional Biosensing Clusters based on Molecularly Imprinted Polymer	陳駿睿 莊漢聲
250142	[GCBME] Medical Imaging	Using Feature Pyramid Network for Segmentation and Quantification of COVID-19 Infections in Chest Computed Tomography	Ming Chi Wu Adam Huang
250143	[GCBME] Medical Imaging	Ultrasound computed tomography image reconstruction system based on reflection mode	Jheng Ru Chen Po Chi Hu Yu Wei Tsai Sheng Hung Yang Wen Hui Huang Zong Hsin Liu Po Hsiang Tsui
250144	[GCBME] Material Science	Hierarchical SU-8 topographies patterned by nanosphere lens lithography and UV-LED photolithography for modulating PC12 neurite development	Lester Vinzon Cho-Yi Liu Shu-Ping Lin
250147	[GCBME] Medical Electronics	PC Controlled Burst Ultrasound function generator based on an ESP32 module	鄭妃伶 馬亞尼
250148	[GCBME] Material Science	Design and Development of Sterilization Mask Box Using Cold Atmospheric Plasma	趙沁玲, 劉廷涵 彭郁晴, 李冠毅 許家瑋, 陳盈穎

			王明誠, 李東錦 林佩蓉
250149	[GCBME] Biomechanics	The Effect of Virtual Reality Gait Training on Postoperative Lumbar Spinal Stenosis Patients: A Pilot Study	Po Jung Chen Phunsuk Kantha Dar-Ming Lai Wei-Li Hsu
250150	[GCBME] Material Science	Simple and Low-cost Method for Fabricating the Hollow Microneedle Channel Used in Balloon Catheter	Ching-Tzu Wu Guan-Lin Wu Ming-Long Yeh
250151	[GCBME] Biomechanics	Dynamical Information from Normal Mode Analysis Aids Graph Neural Networks in Identification of Protein Functions and Functionally Important Residues When Combined with Protein Contact Maps as Multigraphs	Yenlin Chen Yuan Chiang Wei-Han Hui Shu-Wei Chang
250152	[GCBME] Medical Imaging	Phase-aberrated Point Spread Function Estimation for Biomedical Ultrasound Imaging Using Complex-valued Convolutional Neural Network	YuAn Lin Wei-Hsiang Shen Meng-Lin Li
250153	[GCBME] Biomechanics	Rapid Screening of Diabetic Retinopathy by Enhance Tear Biomarker Fluorescent Signal Using a SAW-based System	Hsuan-An Chen Jae-Sung Kwon Han-Sheng Chuang
250155	[GCBME] Material Science	Membrane-integrated Microfluidic Biosensor for Biomolecule Detection	Hua-En Chueh Chen-Han Huang Klaus Stefan Drese Jonas Kluitmann
250156	[GCBME] Medical Imaging	Intermittent Theta-Burst Stimulation in Central Thalamus Restored Memory Deficits in Mouse Models of Alzheimer's Disease	Yi-Chen Lin Ssu-Ju Li Yu-Chun Lo Tsai-Yu Cho Mu-Hua Wang Ching-Te Chen Sheng-Huang Lin You-Yin Chen
250157	[GCBME] Material Science	Acellular Cartilage Sheets Combined with In-situ Hydrogel for Cartilage Repair	Hao Chuan Chang I Hsuan Lin Guan Lin Wu Ming Long Yeh
250158	[GCBME] Biomechanics	Assessment of the Coordinate Stability between Center of Mass and Center of Pressure during Walking at Different Speeds	Hsuan-Lun Lu Tung-Wu Lu
250161			Wei-Chih Chiu

	[GCBME] Biology	Impedance Analysis of Disk-Shaped Cells Cultured on Microelectrodes	Yu-Han Hung Chun-Min Lo
250166	[GCBME] Material Science	Selectively Cross-linked Hydrogel based Cocktail Drug Delivery Chip for Colon Cancer Drug Screening	Kiran Kaladharan Ouyang Chih-Hsuan Hsin-Yu Yang Fan-Gang Tseng
250167	[GCBME] Material Science	Quantitative in silico assessment of gut microbiota-drug interactions by PBPK modelling	Chien-Ming Hsieh Athika Putri
250168	[GCBME] Material Science	Immobilization of Ag-PTFE by Oxygen Plasma Treatment and UV Light on Silicon Catheter	Xin-Yu Chou Wen-Ching Shih Chung-Yih Wang
250170	[GCBME] Material Science	Tumor acidity-responsive polymeric nanoparticles to promote intracellular delivery of zoledronic acid by PEG detachment and positive charge exposure for enhanced antitumor potency	Ya-Hsuan Chou Nien-Tzu Yeh Yu-Ling Liu Tsai-Ching Hsu Jia Le Yow Bor-Show Tzang Wen-Hsuan Chiang
250171	[GCBME] Material Science	Personalized Bone Plate Fabricated by Selective Laser Melting	Chin-En Yen, Guan-Lin Wu Ching Feng, Ming-Long Yeh
250172	[GCBME] Medical Imaging	An automatic microfluidic system for screening magnetic labeled cell sample	Chia-Ke Tsou Tzong-Rong Ger Chi-Ming Ku Rou-Xuan Huang Huang-Te Li
250173	[GCBME] Medical Electronics	Cell analysis technology of magnetic labeled lung cancer cells	Hsu Chia-Hsiang Chia-ke Tsou Yu-Chi Chiu Huai-Lu Chang Tzong-Rong Ger
250174	[GCBME] Biology	Development of Multi-well Microchip for Rapid Antimicrobial Susceptibility Testing based on Diffusometry	peiwei chen
250178		A Nanocomposite-Based Assistive System for Active Gait Phase Detection	An Li Hou Shin Min Huang

	[GCBME] Assistive Technologies		Po Kang Yang
250180	[GCBME] Assistive Technologies	Investigation of Muscle Fatigue using EMG and Plantar Pressure for the Development of a Digital Foot Pressure Insole for Sarcopenia	Ying-Ying Tsai Yi-Cheng Haung Fu-YU Beverly Chen Tzu-Yao Lin Ching-Cian Wang Mei-Lan Tseng Zi-Ciane Tan
250182	[GCBME] Medical Imaging	Brain-heart interactions under attentional and resting states	Jia-jeng Lee Chun-Chuan Chen Eric Hsiao-Kuang Wu Shih-Ching Yeh
250183	[GCBME] Assistive Technologies	Development and analysis of a passive hip exoskeletal device	Kuo-Kuang Jen Bo-Sheng Jiang Chia-Wei Lee Chi-Ming Ku Chi-Kae Wang Shu-Ta Hsieh Ming-Fang Luo Sheng-Yen Hu Yuan Kang Tzong-Rong Ger
250184	[GCBME] Medical Electronics	Lead-Free Perovskites for Wearable Sensor Application	Shih-Min Huang Po-Kang Yang
250185	[GCBME] Material Science	Design of Biodegradable Soft Scaffold-mimicked Neural Microelectrode Arrays for Drug Releasing and Localized Neural Recording	程姿雅 王馨苡 黃薇蓁
250190	[GCBME] Medical Electronics	A Wireless Gait and Muscle Measurement System for Evaluation of Sarcopenia Disease	Bo Cheng Lin Shing Hong Liu Fu-Yu Beverly Chen
250191	[GCBME] Medical Electronics	Using Weight-Fat Scale for Measurement of Pulse Transit Time	Yan-Rong Wu Shing-Hong Liu
250192	[GCBME] Biomechanics	Anticipatory Postural Adjustments Strategy in Adolescents for Crossing Obstacles of Different Heights	Cheng-Hao Yu Tse-Hua Huang Shiuan-Huei Lu Tung-Wu Lu

250194	[GCBME] Material Science	Impacts of chemical protectors on storage stability of magnetic genosensor	張家鳳 Pravanjan Malla Chi-Hsien Liu
250195	[GCBME] Medical Imaging	Automatic Tooth and Alveolar Bones Segmentations from Cone-Beam CT Images with Deep Learning	Chang Yu Hung Yung Nien Sun Teresa Chanting Sun
250197	[GCBME] Material Science	Development and verification of disinfection equipment using low-temperature plasma technology application and x-ray film cartridge	許家瑋 林造民 李東錦 林慶元 賴家輝 郭婕語 王明誠
250199	[GCBME] Assistive Technologies	Development of clinical shoulder dystocia surgical instruments	李冠毅 許家瑋 呂理政 李欣宜 王品元 江柏昇 王明誠
250200	[GCBME] Assistive Technologies	Sound Localization Training System for Hearing Impaired Children	Te-Chen Shen Shu-Min Yu Pei-Hua Chen Kang-Ping Lin Cheng-Lun Tsai
250209	[GCBME] Assistive Technologies	Designing and Pilot Testing a Novel Transcranial Interfering Electric Field Stimulation (tIEFS) Device for Neural Rehabilitation Application	Chun-Wei George Wu Yu-Ting Li Chih-Wei Peng
250210	[GCBME] Material Science	T Cell Infiltration into Orthotropic Brain Tumors via Rabies Virus Glycoprotein-Mediated Transportation	Shang-Hsiu Hu
250211	[BISC] Photonics & Optoelectronics	Dynamic event measurements by single-shot generalized Hanbury Brown-Twiss intensity interferometry	Naru Yoneda

250212	[GCBME] Medical Electronics	Synchronous pulsed wave modulated biological intravenous red laser Irradiation of Blood integrated with the microscopic clinical hemodialysis blood vessel halogen perovskite imaging system	Jian-Chiun Liou
250214	[GCBME] Medical Imaging	Ultrasound synthetic shear-wave elastography of homogeneous scattering media by using the generative adversarial network	Chun Hao Yu Pei Huan Wu Wei Cheng Hsiao Bao Yu Hsieh Po Hsiang Tsui
250218	[GCBME] Medical Imaging	Tracking-by-detection based compensation system for diaphragm motion	張庭瑋
250219	[GCBME] Medical Electronics	The Effect of Access Region in van der Waals Heterostructures Based Neuromorphic Device on Memory Behavior	Advaita Ghosh Yen-Fu Lin Shu-Ping Lin
250221	[GCBME] Material Science	Tumor site-specific PEG detachment and active tumor homing of therapeutic PEGylated chitosan/folate-decorated polydopamine nanoparticles to augment antitumor efficacy of photothermal/chemo combination therapy	Wen-Hsuan Chiang Ming-Hung Hsieh Tzu-Hao Wang Tsai-Ching Hsu Jia-Le Yow Bor-Show Tzang
250226	[GCBME] Medical Imaging	Assessment of the root-to-crown ratio of a first and second mandibular molar	Ting-Jyun Shen Shiuan-Hui Wang Jui-Ting Hsu Heng-Li Huang
250227	[BISC] Photonics & Optoelectronics	Quantitative Differential Phase Contrast Microscopy with Dual-color Coded Pupil	Ying-Ju Chen Sunil Vyas Tai-Horng Young Yuan Luo
250228	[GCBME] Medical Imaging	Apply Deep Learning to Image Segmentation of Swallow-tail Sign and Evaluate Different Susceptibility Imaging Approaches	Yu-Tzu Kuo Shu-Yi Yeh Hua-Shan Liu
250229	[GCBME] Material Science	Transfection of a CRISPR/dCas9 OCT4 Transcription Activation System Using Magnetic Peptide-imprinted Nanoparticles	Mei-Hwa Lee Cheng-Chih Lin James L. Thomas Chih-Kai Chan

			Jin-An Li Hung-Yin Lin
250231	[GCBME] Health Informatics	Relationship between instrumented Romberg test and dizziness handicap inventory in patients with vestibular disorder	Yu-Ting Sung Kuan-Chung Ting Chia-Yeh Hsieh Kai-Chun Liu Chia-Tai Chan
250232	[GCBME] Medical Electronics	Monitoring of Tumor Hypoxia Dynamics during Treatment with Microbubbles and Gemcitabine by Functional Photoacoustic Imaging	Yuhling Wang Lun-De Liao
250233	[GCBME] Medical Electronics	Key Factor for Medical Device Translational Research: Based on NCKU-SPARK Program	Yu-Pei Huang Chih-Han Chang
250234	[GCBME] Medical Electronics	Development of Barcode Microbeads Based Multiplex Immunoassay for Prognosis of Severe Dengue	Tien-Chun Tsai Tzong-Shiann Ho Ya-Lan Lin
250236	[GCBME] Material Science	The Clinical Trials of 3-Hydroxyanthranilic Acid-imprinted Polymer-based Nanocomposite Sensor	Mei-Hwa Lee James L. Thomas Yu-Chia Chang Yuh-Shyan Tsai Bin-Da Liu Hung-Yin Lin
250239	[BISC] Photonics & Optoelectronics	Data poisoning attack effects on imaging of handwritten digits through scattering media using deep learning	Koki Oishi
250240	[BISC] Photonics & Optoelectronics	Integrated Minimum-Variance and Delay-Multiply-and-Sum Beamformation for Photoacoustic Array Imaging	Chun-Hsien Chiang Meng-Lin Li
250241	[GCBME] Health Informatics	A Web-Based Vestibular Functional Assessment Management System	Yen-Chen Lin Kuan-Chung Ting Chia-Yeh Hsieh Kai-Chun Liu Chia-Tai Chan
250242	[BISC] Photonics & Optoelectronics	Microplastic imaging in marine animals using spectroscopy and polarization	Nobuaki Endo Nathan Hagen Yukitoshi Otani
250243	[GCBME] Medical Imaging	Microvascular Imaging for Mice Brain through 40 MHz High-Frequency Ultrasound Localization Microscopy	Cheng Wei Li Chih Chung Huang

250247	[GCBME] Biomechanics	Predictions of Vertebral Bone Strength by Using CT-Based Finite Element Model	Yen Cheng Po-Liang Lai Hsiang-Ho Chen
250248	[GCBME] Assistive Technologies	Rapid Assessment of Bone Density based on Bilateral Radial X-ray Image Analysis with segmentation by modified Yolov4 method	Yan-Chin Gau Wei-Siang Ciou Yi-Chun Du Ming-Jui Wu
250249	[GCBME] Medical Imaging	Enhancement of Spine Ultrasound Image Contouring Using Plane Wave Angle Compounding	Chun-Tai Chen Bao-Yu Hsieh
250251	[GCBME] Medical Electronics	Real-time impedance measurement of angiogenesis induced by cancer cells	Chun-hao Huang Kin Fong Lei
250253	[BISC] Photonics & Optoelectronics	Optical encoding for fluorescence addressing	Yusuke Ogura Keita Hayashi Suguru Shimomura Takahiro Nishimura Jun Tanida
250254	[GCBME] Material Science	Additive manufacturing of Schwann cell-laden collagen/alginate nerve guidance conduits by freeform reversible embedding regulate neurogenesis towards peripheral nerve regeneration	Ping-Ling Chiu Ming-You Shie Yueh-Sheng Chen Chun-Hsu Yao
250255	[GCBME] Medical Electronics	Precision fast measurements of voltage and current for an electronic load control loop	邵逸夫 馬亞尼
250257	[GCBME] Material Science	Triphenylphosphonium-modified Mitochondria-targeted Gold Nanoparticles for Penetrative Therapeutics at Deep Brain Tumor	Chia-Ko Chen Shang-Hsiu Hu
250260	[GCBME] Material Science	Non-Enzymatic High-Sensitivity Glucose Sensor Fabricated by Ni-Nanowires Decorated Graphene Gated FETs	Sheng Chun Hung Yu-Cheng Lin Chung-Wei Lin Wei-Lun Chen Wen-Hung Chien Chia-Chi Chen Jhih-Syuan Huang
250261	[GCBME] Material Science	GelMA microspheres combine with Magnetoelectric Organic Metal Frameworks for Nerve Repair in Traumatic Brain Injury	Chun-Yi Liang Yi-Chieh Chan Shang-Hsiu Hu
250262			Yi-Cheng Huang

	[GCBME] Assistive Technologies	Development of a Digital Therapeutic System for the Management of Sarcopenia's Mobility	Ying-Ying Tsai Fu-Yu Beverly Chen
250263	[GCBME] Material Science	An Inhaled Nano-formulation Carrying both FTY720 and Nobiletin Ameliorates LPS-induced Acute Lung Injury in Animal Models	Huei-Han Zhang Ping-Ching Wu Chien-Chung Lin Min-Hsiung Pan
250264	[GCBME] Biology	Delivery of Nitric Oxide with pH-sensitive Nanocarriers for Renal Fibrosis Therapy	Tsung-Ying Lee Yun-Jen Tsai Hung-Hsun Lu Hui-Teng Cheng Hsi-Chien Huang Tsai-Te Lu Chi-How Peng Yunching Chen
250269	[GCBME] Biology	CXCR4-Targeted Nanoparticles Deliver Nitric Oxide and PD-L1 siRNA for Immunotherapy against Glioblastoma	Hsin-Tzu Hsieh Hsi-Chien Huang Chieh-Wei Chung Tsai-Te Lu Yunching Chen
250271	[GCBME] Assistive Technologies	Development of a Weight-shifting Movement Evaluation System under Time or Space Pressure for Patients with Parkinson's Disease	Chia-wei Hou Yu-Ting Hung Sung-Hui Huang Cheng-Ya Huang Yi-Chun Du
250272	[GCBME] Medical Imaging	Application of the Dynamic Radiomics in Gliomas Tumor Grading	Shu-Yi Yeh Yu-Tzu Kuo Hua-Shan Liu
250273	[BISC] Photonics & Optoelectronics	Label-free quantitative refractive index analysis for neuroblastoma cell death with holographic tomography	Chung-Hsuan Huang Yun-Ju Lai Han-Yen Tu Chau-Jern Cheng
250275	[BISC] Photonics & Optoelectronics	Surface modification of ZnO luminescent film by ion-milling for imaging biological specimen with a super-resolution beyond diffraction limit	Kei Hosomi Wataru Inami Yoshimasa Kawata
250276	[BISC] Photonics & Optoelectronics	Multi-plane two-photon imaging from selective excitations	Xiangyu Quan Naru Yoneda Osamu Matoba
250277	[GCBME] Biomechanics		ChihKun Hsiao Yenwei Chiu

		Local thermal effect of power on setting on electrosurgical coagulation: a three dimensional electrothermal coupled finite element study	Yi-Jung Tsai Yuan-Kun Tu Yung-Chuan Chen
250278	[GCBME] Biomechanics	Quantitative Estimation of the Forearm Performance Fatigability in a Screw Driving Model	Yenwei Chiu Hao-Yuan Hsiao Zhi-Yan Wang Wen-Fan Chen Chih-Kun Hsiao Yi-Jung Tsai Yuan-Kun Tu
250279	[GCBME] Medical Imaging	Using multi parametric imaging for predicting pediatric NAFLD by deep learning	Lu Tsung Yung Hsieh Chiao-Shan Tsui Po-Hsiang
250280	[GCBME] Material Science	Fabrication of 3D Biomimetic Skin Tissue for Burn Wound Healing	Si-Ting Wu Kai-Jen Tsai Qi-Hong Hong Feng-Yuan Chien Hsun-Yueh Yang Tsung-Hsuan Wu Ching-Yun Chen
250282	[BISC] Photonics & Optoelectronics	Damage Evaluation Induced by Focused Electron Beam Irradiation onto a Living biological Cell	Asahi Tanaka Wataru Inami Yoshimasa Kawata
250283	[GCBME] Material Science	Lipid-Coated Magnetic Porous Nanocubes to Lung Metastasis for Nanocatalytic Immunotherapy	Pin-Xuan Huang Shang-Hsiu Hu
250285	[GCBME] Assistive Technologies	Face Feature Emergency Bell Based on Artificial Intelligence for Severely Disabled People	Shih-Chan Huang Sheng-Feng Zheng Po-JUI Su Shih-Chung Chen Yeou-Jiunn Chen Chung-Min Wu
250286	[GCBME] Material Science	Comparing Different Shapes of Covalent Organic Frameworks (COFs) Nanoparticles as An Antigen-Capturing Platform for Lung Metastasis Immunotherapy	Pin-Hua Chen Shang-Hsiu Hu
250287	[GCBME] Material Science	The Potential Use of Bone-like Tissues in Surgical Treatment on Empty Nose Syndrome	Jing-ke Chen Zheng-An Yan Chih-Wei Laun Ching-Yun Chen

250290	[GCBME] Medical Electronics	Attention Analysis of EEG Response in Task Recognition with Different Auditory Flash stimuli	Che-Min Hsieh Wen-Hung Chao
250292	[GCBME] Medical Imaging	Deep Learning Enabled Computer-Aided Diagnosis in The Classification of Pancreatic Cystic Lesions based on Confocal Endomicroscopy	Clara Lavita Angelina Tsung-Chun Lee Pradermchai Kongkam Ming-Lun Han Hsiu-Po Wang Hsuan-Ting Chang
250293	[GCBME] Medical Imaging	Feasibility study of a pupil movement assistance system for hearing assessment in infants	Shin-Rui Lee Chen-Sin Huang Pei-Yu Su Yi-Hao Jiang Cheng-Lun Tsai Yu-Chen Hung Fu-Yu Chen
250294	[BISC] Photonics & Optoelectronics	Focused Spot Generation based on Digital Phase Conjugation by Transport of Intensity Equation in Scattering Media	Shiori Matsuda Naru Yoneda Xiangyu Quan Osamu Matoba Wataru Watanabe
250296	[BISC] Photonics & Optoelectronics	Local gene induction by IR-LEGO to trigger stem cell formation in a moss plant	Yuka Yoshida Takumi Tomoi Chizuru Numata Suguru Ohe Joe Sakamoto Yasuhiro Kamei Yosuke Tamada
250298	[GCBME] Medical Electronics	A Facial Skin Colorimetric Image Generation System Based on Pix2Pix Translation Technology	Yu Ting Tu Patrick Po-Han Huang Shu-Chen Chang Chih-Yu Wang
250302	[BISC] Photonics & Optoelectronics	Using adjustable radio frequency MS platform and conjunction-modulation design to improve the synchronization and resolution of the ion trap mass spectrometer for intact protein analysis	Fang Hsu Chen Chun-Yen Cheng Cheng-Han Yang I-Chung Lu Ming-Long Yeh
250303	[GCBME] Material Science	Biomimetic Tissue-engineered Tendon Using Interfacial Polyelectrolyte Complexation Spinning Process	Hao-Xuan Chen Tzu-Wei Wang

250306	[GCBME] Assistive Technologies	Artificial Intelligence Image Assisted Input System for Severely Disabled	Sheng-Feng Zheng Shih-Chan Huang Shih-Chung Chen Chung-Min Wu
250307	[GCBME] Medical Imaging	Ultrasound mastoid imaging by using a clinical convex array system	YU QIAN YIN Yen Heng Lai Po Hsiang Tsui
250311	[BISC] Photonics & Optoelectronics	Quantitative phase imaging with a Fresnel biprism-based digital holographic microscope	Chen-Ming Tsai Yuan Luo
250312	[BISC] Photonics & Optoelectronics	Wavelength coded volume holographic gratings based fluorescence microscopy	Yu-Hsin Chia Sunil Vyas Yi-You Huang Yuan Luo
250313	[BISC] Photonics & Optoelectronics	Differential phase contrast volume holographic incoherent microscopy	Yu-Hsin Chia Sunil Vyas Yi-You Huang Yuan Luo
250314	[GCBME] Material Science	The development of TiO ₂ nanostructure blended PU microfibers for antimicrobial application	Hui-Xuan Huang Shu-Ping Lin Po-Yu Liu
250315	[GCBME] Assistive Technologies	Development of a Smart Watch with Alert for The Hearing Impaired	Wei-lian Ou En-Zhu Lyu Yu-Ting Chu Jia-Yi Tsai Po-Yen Hsiao Yuh-Show Tsai
250318	[BISC] Photonics & Optoelectronics	Development of Optical Coherence Tomography Imaging Engine based on FPGA	Chang-An Shih Ting-Hao Tsai Chuan-Bor Chueh Ting-Hao Chen Hsiang-Chieh Lee
250320	[GCBME] Biomechanics	Impaired Visual-motor integration in School-Aged Children with Unilateral Cerebral Palsy: Application of a Computer-aided Measure of VMI	Wen-Feng Huang Hao-Ling Chen Ren-Yu Chen Tien-Ni Wang Jeng-Yi Shieh
250321	[GCBME] Medical Electronics	Development and Preliminary Evaluation of a Single-Arm Electrocardiogram Device	王家鍾 莊姿涵 蔡丞賢

			Ioannis Manousakas 李 統 立
250327	[GCBME] Material Science	Immobilization of Tumor-derived Extracellular Vesicles and its Labeling by Gold Nanoparticle	李 珊 宣 廖 品 竣 劉 冠 賢 廖 昱 翔 林 政 鞍
250329	[GCBME] Assistive Technologies	Intelligent Physical Exercise Training system design for people with Chronic Obstructive Pulmonary Disease (COPD)	Shih-Ying Chien
250330	[BISC] Photonics & Optoelectronics	3D image analysis of spermatid nuclei to understand the mechanism of the sperm formation in a land plant	Yosuke Tamada Nan Gu
250331	[GCBME] Medical Electronics	Quality Comparison among Single-Arm ECG Signals Recorded at Multiple Locations	陳 柏 霖 王 家 鍾 蔡 丞 賢
250332	[GCBME] Medical Imaging	Unsupervised deep learning-based sinogram outpainting for dual-source, dual-energy computed tomography	Wei-Tse Huang Hsuan-Ming Huang
250333	[BISC] Photonics & Optoelectronics	Classification of fork fringes using VGG 16	Sunil Vyas Yuan Luo
250334	[BISC] Photonics & Optoelectronics	Super-Gaussian Airy beam for light sheet microscopy	Sunil Vyas Yuan Luo
250335	[BISC] Photonics & Optoelectronics	Edge Contrast Enhancement Filters	Sunil Vyas Yuan Luo
250336	[GCBME] Assistive Technologies	An Acupoint Visualization System Based on Image-to-Image Translation Technology	Chun yi Yeh Chang-Yin Lee Shu-Chen Chang Chih-Yu Wang
250340	[BISC] Photonics & Optoelectronics	Development of Multi-view Optical Coherence Tomography (OCT) and Image Registration Algorithm for Tooth Imaging	Heng-Yu Li Tzu-Hsuan Chang Yu-Ren Chou Yin-Lin Wang Hsiang-Chieh Lee
250341			Bayu Tri Murti

	[GCBME] Material Science	A Label-Free Impedimetric Aptasensor Based on Vertically Aligned SnS ₂ Nanostructures for Alzheimer's Biomarker Detection	Chih-Wei Peng Po-Kang Yang
250343	[BISC] Photonics & Optoelectronics	Development of a real-time multifunctional catheter-based optical coherence tomography imaging with multiplexing system	Xiang-Yu Chen Po-Chuan Chen Chuan-Bor Chueh Ting-Yen Tsai Ting-Hao Tsai Cheng-Kuang Lee Hsiang-Chieh Lee
250344	[GCBME] Medical Imaging	The correlation between Hyperspectral Imaging and Neuropathy in Diabetic Foot by using 3D Receptor Operating Characteristic Curve	Hsian-Min Chen Yi-Jing Sheen Chiu-Chin Sung Hsin-Che Wang Yu-Wen Fu
250345	[GCBME] Material Science	A Study of Fish Scale-Chitin Hydroxyapatite Derived Scaffold For Cartilage Regeneration	陳奕璇 唐湘淇 陳翰欣
250346	[GCBME] Medical Imaging	Automatic Classification of Histopathological Images for Lymph Node Metastases with Breast Cancer	Chia-Lin Kao
250347	[GCBME] Medical Imaging	Detection of Histopathological Images for Lung and Colon Cancer	Yi-Wei Chen
250348	[GCBME] Material Science	Electrochemical detection of acetaminophen drug using a glassy carbon electrode modified with a graphene oxide nanosheets	Aravindan Santhan Ravikumar Murugan Kuo-Yuan Hwa
250349	[GCBME] Material Science	A Study of Alginate-Chitosan Nanoparticles Loaded with Moringa leaf powder To Inhibit growth of cancer cells	Xin-Jie Lin Si-Ting Xu
250350	[BISC] Photonics & Optoelectronics	Single Cell Effects of Photobiomodulation on Mitochondrial Membrane Potential and Reactive Oxygen Species Production in Human Adipose Mesenchymal Stem Cells	Le-Thanh-Hang Nguyen Tzu-Sen Yang Li-Chern Pan Mamadi M.S Colley Cheng-Jen Chang
250353			Yong-Ji Chen

	[GCBME] Material Science	Biodegradable Microneedle Mediated Transdermal Stage-Controlled Drug Release and Dual Drug Combination Therapy for Keloid Scar Treatment	Hung-Wei Cheng Wan-Yu Yen Chin-Yi Yeh Jen-Hao Tsai Ching-Jung Chen Jen Tsai Liu San-Yuan Chen Shwu-Jen Chang
250354	[GCBME] Medical Electronics	An automated multi-point laser acupuncture system based on 2-D galva-mirror scanning technology	xinyu wu Kun-Chan Lan Chih-Yu Wang Min-Yu Shen Xiao-Yun Zhang
250356	[GCBME] Medical Electronics	Novel Three-in-one Automatic Coating System for Vascular Stents	Yu-Hsuan Lin Li-Han Lin Hao-Ming Hsiao
250357	[BISC] Photonics & Optoelectronics	Volumetric Imaging of the Ex Vivo Oral Precancerous Lesions with Multi-scale Wide Field- of-View Optical Coherence Microscopy	Chuan-Bor Chueh Po-Hao Tseng Ming-Che Tu Ting-Yen Tsai Ting-Hao Chen Heng-Yu Li Shih-Jung Cheng Hsiang-Chieh Lee
250359	[GCBME] Biomechanics	Investigation of Screw Effect of Anterior Stand- alone Locking cage in Lumbar Interbody Fusion by 3D Finite Element Analysis	Erh-Yi Huang Pao-Hsin Liu
250362	[GCBME] Medical Electronics	Low-intensity pulsed ultrasound stimulation enhances remyelination in lysolecithin-induced model of multiple sclerosis	Zih-Yun Pan Li-Hsin Huang Feng-Yi Yang
250365	[GCBME] Material Science	Surface modification of hydrogel contact lenses underwater for superhydrophilicity with improved biocompatibility	Ting Yi Lin Hua En Chueh I Hsuan Chou Sanskruti Swain Yun Jung Ting Hsing Ying Lin Chen Han Huang
250366	[BISC] Photonics & Optoelectronics	Development of an imaging analysis algorithm for quantitatively assessing skin conditions with optical coherence tomography	Ting-Hao Chen Chau-Yee Ng Cheng-An Huang

			Chau-Hsiang Cheng Yu-Hsuan Lee Meng-Tsan Tsai Cheng-Kuang Lee Hsiang-Chieh Lee
250367	[GCBME] Material Science	Synthesis of functional titanium implants coatings with hierarchical polymers for preventing infection and promoting osseointegration	Yueh-Chen Wu Ting-Yi Lin Hua-En Chueh I-Hsuan Chou Sanskriti Swain Hsing Ying Lin Chen Han Huang
250368	[GCBME] Material Science	Biocompatible polysaccharide-based anti-bacterial coating for Clear Overlay Appliances	吳芷瑜 Ting-Yi Lin Hua-En Chueh I-Hsuan Chou Sanskriti Swain Hsing Ying Lin Chen Han Huang
250369	[GCBME] Medical Electronics	Investigation of the Transcranial Ultrasound Stimulation on Neuron Deficits in Intracerebral Hemorrhage Animal Model	Wei Shen Su Chun-Hu Wu Feng-Yi Yang
250370	[GCBME] Material Science	Biodegradable polymeric coating on Magnesium alloy stents enhances corrosion resistance and thromboresistance	謝宜臻 Ting-Yi Lin Hua-En Chueh I-Hsuan Chou Sanskriti Swain Hsing Ying Lin Chen Han Huang
250373	[BISC] Photonics & Optoelectronics	Three-dimensional optical manipulation using cubic-phase metamaterials	Hung Chuan Hsu Hsin Yu Kuo Sunil Vyas Kuang-Yuh Huang Hsien-Shun Liao Yuan Luo
250375	[GCBME] Medical Electronics	Measurement of Single-Wrist ECG with Two/Three Electrodes at Different Positions	王家鍾 蘇逸軒 相昌霈 蔡丞賢
250376			Clara Lavita Angelina

	[BISC] Photonics & Optoelectronics	Hybrid Vision Transformer based Deep Learning for Pancreatic Cystic Lesion Classification Based on Confocal Endomicroscopy	Yi-Kai Chou Tsung-Chun Lee Pradermchai Kongkam Ming-Lun Han Hsiu-Po Wang Hsuan-Ting Chang
250381	[BISC] Photonics & Optoelectronics	Development of a high-speed catheter-based polarization-sensitive optical coherence tomography system	Meng-Shan Wu Chuan-Bor Chueh Ting-Hao Chen Tai-Ang Wang Ting-Yen Tsai Brett E. Bouma Martin Villiger Hsiang-Chieh Lee
250383	[GCBME] Medical Imaging	EEG Power Spectrum and HRV Changes Correlate Four Types of Breathing during Virtual Reality- based Mindfulness Practice	Yu-ju Chien Hei-Yin Hydra Ng Chun-Hsian Chuang Chih-Mao Huang Changwei W. Wu Yi-Ping Chao
250384	[GCBME] Material Science	Au-decorated magnetic graphene oxide as novel RNA nanocarriers	陳怡君 廖思評 劉繼賢
250385	[BISC] Photonics & Optoelectronics	Artificial intelligence assisted pathology with nonlinear optical microscopy on esophageal cancer	Guan-Yu Zhuo Wei-Hsun Wang Ming-Chi Chen Ming-Xin Lee
250388	[GCBME] Material Science	Biomimetic Composite Cryogels in Dental Alveolar Filling Materials	Jen-Hao Tsai Shwu-Jen Chang Chang-Lin Huange Zhi-Tian Kuo
250389	[GCBME] Medical Imaging	Contrast Enhanced Microcirculation Imaging for Small Animal Skin Flap Transplant Models	Ying-Rue Kao Yu-Chung Shih Fu-Jen Kao
250390	[GCBME] Medical Electronics	Fabrication of finger comb-shaped MoS ₂ composites electrode structure for pH detection using picosecond laser ablation	Mei-En Liu Zhao-Chi Chen Qi-Xuan Wu Tien-Li Chang
250391		Dual-polarization resolved second harmonic generation microscopy for precise tissue imaging	Guan-Yu Zhuo Wei-Hsun Wang

	[BISC] Photonics & Optoelectronics		Ming-Chi Chen
250395	[GCBME] Health Informatics	Hierarchical Clustering analysis of Traffic Accidents Related to Scooters in Tainan, Taiwan	Chenwen Fang Jia-Jin J. Chen Wei-Ru Chen Yang-Kun Ou
250396	[GCBME] Assistive Technologies	Wearable foot pressure sensing system for the track of flatfoot correction improvement and person recognition	Yao-Hsuan Tseng Fu-Cheng Kao Kee-Chin Lim Zong-Hong Lin
250397	[GCBME] Biomechanics	Biomechanical investigations of humeral greater tuberosity fracture with different fixation techniques under various shoulder rehabilitation activities	Ching-Chi Hsu Kao-Shang Shih Hao-Che Hsu Balraj Muthusamy Meng-Hua Lin
250398	[GCBME] Medical Electronics	Estimating Treatment Efficacy of Postural Instability and Gait Disorder in Patients with Parkinson's Disease Using Electroencephalogram	Shin-Yuan Huang Wei-Che Lin Yuan-Pin Lin
250399	[BISC] Photonics & Optoelectronics	Moiré metalens for optical sectioning microscopy	Cheng Hung Chu Yuan Luo Sunil Vyas Hsin Yu Kuo Yu Hsin Chia Mu Ku Chen Yi-You Huang Din Ping Tsai
250400	[GCBME] Assistive Technologies	Preliminary research on wearable walking stability index in walker	Jiun-Hung Lin Chih-Chin Wen Shih-Tsang Tang
250404	[GCBME] Medical Imaging	An Automated Registration Scheme Between Rat Brain MR and Atlas Images for Infarct Evaluation	Ni-Chuan Chung Shin-Joe Yeh Ming-Chang Chiang Sung-Tsang Hsieh Herng-Hua Chang
250405	[BISC] Photonics & Optoelectronics	Perturbation Monte Carlo Applicability for Human Neck Model	Chin-Hsuan Sun Kung-Bin Sung
250406		Machine Learning Prediction Models for Recovery After Colorectal Cancer Surgery Using Wearable	Yu-Hsin Liu Chia Tung Wu

	[GCBME] Health Informatics	Device Data, Air Quality Data and Clinical Evaluation Data	Yi-En Su Feipei Lai Yu-Tso Liao Yun-Jen Chou Shiow-Ching Shun
250407	[GCBME] Material Science	Isolation and Purification of Mouse Cochlear Progenitor Cells	Sheng-Wen Chang Chia-Yu Chang Chia-Ching Chang Hsin-Chien Chen Ching-Yun Chen
250410	[GCBME] Health Informatics	Association analysis between gut microbiota and their metabolites toward vascular calcification in hemodialysis patients	Chun-fan Lung
250411	[GCBME] Material Science	Theranostic Alginate-based Microbubbles: Transformation from Raspberry-like to Core-Shell-like Microbubbles and Their In Vitro Studies	Meng-Yi Bai Tsai-Hsuan Chen Yu-Chi Wang Yu-Ju Lai
250412	[BISC] Photonics & Optoelectronics	Development of surface plasmon resonance-Raman spectroscopy system to detect heparin-induced thrombosis	Chia-Ling Chiang Nan-Fu Chiu Chii-Wann Lin
250419	[BISC] Photonics & Optoelectronics	Design and characterization of flattop beam shapes through volume holographic grating	Surag Suresh Sunil Vyas J. Andrew Yeh Yuan Luo
250421	[GCBME] Medical Imaging	Ultrasound Ultrafast Imaging Using Diverging Waves on Sparse Arrays	Kuang Cheng Hsueh Tzu-Hsien Sang Geng-Shi Jeng
250422	[GCBME] Medical Electronics	Self-Powered Wound Dressing with Antibacterial and Electrical Stimulation Capabilities for Promoting Healing of Infected Wounds	Snigdha Roy Barman Shuen-Wen Chan Zong-Hong Lin
250426	[GCBME] Medical Electronics	Design of Transcranial Electrical Stimulation System with Multiple Programmable Channels	Hao Xheng Lu Chien-An Chen Jia-Jin Chen
250427	[BISC] Photonics & Optoelectronics	Single-shot dual-energy cone-beam CT using an energy-integrating detector	Fang Yu Liang Ming-Wei Lee Meei-Ling Jan
250429	[GCBME] Medical Electronics	Design of Digital Therapeutic Language Rehabilitation System for Aphasic Patients	Yen-Ru Wu Jia-Jin Chen Chien-An Chen

250430	[GCBME] Assistive Technologies	A Development of AIoT Based Auto Medication Counting System	Yu-Sheng Lin Ching-Lan Cheng
250431	[BISC] Photonics & Optoelectronics	A novel method for the detection of cell-free Mitochondrial DNA Levels by using an isothermal amplification-assisted Surface Plasmon Resonance biosensor platform of its clinical role	Jian Hong Yang Chii Wann Lin Tzu Heng Wu Ying Ru Chen Hui Yun Lo
250433	[GCBME] Medical Imaging	Hemodynamic Change Monitoring and Lesion Size Prediction Following Stroke by Ultrafast Doppler Imaging	Bao-Yu Hsieh Shih-Ya Huang Yu-Chieh Kao Sung-Yu Chu
250434	[GCBME] Assistive Technologies	Reliability analysis of homemade rehabilitation ring for assessing hand dexterity in stroke patients	Zih-Ming Syu Zhen Dai Shu-Chen Chang Pei-Xuan Lu Xiang-Yi Weng Chih-Yu Wang Chien-Hsiou Liu
250435	[GCBME] Biomechanics	The biomechanical analysis of different thicknesses of vacuum extractors during delivery	Kuo-Chih Su
250438	[GCBME] Health Informatics	Stimulation of SSVEP with dual-frequency 40Hz flicker and detection of visual pathway impairment in Alzheimer's disease	Chun-Hui Huang Chih-Tsung Chang Chii-Wann Lin
250441	[GCBME] Health Informatics	Developing Data Collection and Labeling Software Protocols for Clinical Lung Sound Applications	Dan Jing Chang Fu-Ji Tsai Chii-Wann Lin
250442	[GCBME] Medical Electronics	Electrical Impedimetric Investigation of MCF-7 Breast Cancer Cell Growth on Indium Tin Oxide Coated Vertically Aligned Silicon Nanowires	Hung-Ming Chen Shu-Ping Lin
250444	[GCBME] Medical Imaging	Functional Connectivity Abnormalities in Idiopathic Generalized Epilepsy Patients : An fMRI Study	Yun Chi Hsu Siew Na Lim Yi Ping Chao
250445	[GCBME] Biomechanics	Simulation of occupant kinematics due to inertial force in driving situation	Tsai-Jeon Huang Chun-Yang Lee Zhi-Wei Chen C-Y Shih

250446	[GCBME] Biomechanics	A wearable restraint device to simulate hand strength of elderly	Yun-Hsuan Chiang Tsai-Jeon Huang Yun-Hsin Chang
250447	[GCBME] Health Informatics	Evaluation the Effect of Transcutaneous Auricular Vagus Nerve Stimulation with Pulse Rate Variability	Huang-Chang Chen Chien-An Chen Chun-Wei Wu Fan-Yu Yen Jia-Jin Chen Chao-Chen Lo
250448	[GCBME] Material Science	Preparation and research on soft film powder of roselle and mulberry plant extract	謝詠筑
250450	[BISC] Photonics & Optoelectronics	Optical coherence microscopy (OCM) imaging of the lung carcinoma (CA) cell spheroid	You-Nan Tsai Wei-Tse Huang Yu-Chun Lin Huei-Wen Chen Yuan Luo Hsiang-Chieh Lee
250452	[GCBME] Material Science	Comparision of the Immunogenicity of Decellularized Extracellular Matrix Hydrogels Prepared from the Serums of Various Species in the Decellularization Process	Yi Chin Akrasirakul Sutatta Huynh-Quang-Dieu Nguyen Chen-Yu Kao
250453	[BISC] Photonics & Optoelectronics	Evaluation of Monte Carlo-based Fitting of Diffuse Reflectance Spectroscopy to Quantify Optical Properties of Muscle and Superficial Tissues	Hao-Wei Lee Kung-Bin Sung
250454	[GCBME] Biology	Influence of Mechanical Environment on Corneal Endothelial-stromal Interactions	yuting Jou yuwei Chiang yuchun Lin
250455	[BISC] Photonics & Optoelectronics	VHG-based Airy light-sheet fluorescence microscope	Hung Chuan Hsu Sunil Vyas Kuang-Yuh Huang Hsien-Shun Liao Yuan Luo
250456	[GCBME] Biomechanics	Standing Balance after Combined High Tibial Osteotomy and Layered Chondrocyte Sheet Implantation versus High Tibial Osteotomy alone	Jing-Yu Chen Yuan-Kun Tu Nan-Chun Chen Yi-Jung Tsai
250457			Chen-Ming Tsai

	[BISC] Photonics & Optoelectronics	Optical scanning holography for three-dimensional microscopic imaging	Tzu-Yi Yang Jung-Ping Liu
250458	[BISC] Photonics & Optoelectronics	an immunofluorescence-enhanced photonic crystal biosensor for tear-based diagnosis of diabetic retinopathy	陳俐瑩
250459	[BISC] Photonics & Optoelectronics	U-net Model for Isotropic Differential Phase Contrast Microscopy	An-Cin Li Ying-Ju Chen Sunil Vyas Hsuan-Ming Huang Yuan Luo
250461	[GCBME] Material Science	Developing Monocyte-Targeting Peptide Liposomes for Targeted Drug Delivery	Bill Cheng
250462	[BISC] Photonics & Optoelectronics	Investigate the spatiotemporal dynamics of primary spermatocyte cellularization in <i>C. elegans</i> through light sheet microscopy	Hsiao-Fang Peng Yu-Chun Chen Yuan Luo Jui-ching Wu
250466	[GCBME] Medical Electronics	Analytical Derivation and Experimental Validation of Magnetic Flux for an Electromagnetic Dental Implant Stability Assessment Device	Riza Fanani Min-Chun Pan
250469	[GCBME] Material Science	Polymeric Bead Fabrication for Cell Culture Applications	Gizem Canko Yu-Cheng Liang Hui-Min David Wang Aidan An-Cheng Sun
250470	[GCBME] Biomechanics	Exploring the physical and biological mechanisms of colorectal cancer metastasis and its microenvironment using hydrogel incorporated biomimetic chip	Shao Wei Huang Yi-Hsuan Lin Fan-Gang Tseng
250474	[GCBME] Medical Electronics	A CMOS Biosensor for Sensing Permittivity at Microwave Frequencies	Wei-Liang Hsu Sheng-Hsun Huang Sheng-Yu Peng Chii-Wann Lin
250475	[GCBME] Medical Imaging	Non-invasive imaging of human tendons in vivo using multispectral optoacoustic tomography for anatomical and functional assessment	Ivana Ivankovic Hsiao-Chun Amy Lin Ali Ozbek Ana Orive

			Xose-Luis Deán-Ben Daniel Razansky
250476	[GCBME] Medical Imaging	Non-contacting measurement of skin tension via polarization imaging	Szu-Yu Chen Keng-Yang Li Cheng-Chieh Line
250477	[GCBME] Biology	Property changes of spruce woods with different treatments revealed via two-photon hyperspectral imaging and spectral analysis	Szu-Yu Chen Zhen-Hao Fang Wei-Ting Lai Keng-Yang Li Hwan-Ching Tai
250480	[GCBME] Health Informatics	Research on the commercialization Barriers of AI SaMD	Wei Pin Chen Te-Ai Tang Kuan-Chung Wang Yu-Bin Huang Samuel Wang Angie Aparicioa Pi-Ju Tsai Yuan-Hsien Chuang Chao-Chih Hsuehe Peng-Ting Chen
250481	[GCBME] Biology	Barriers of biomedical academic innovations in Taiwan: A case study of Biomedical Commercialization Center	I-Ching Tsai Yi-Jing Lin An-Shun Liu Yu-Tsen Cheng Peng-Ting Chen
250483	[GCBME] Medical Imaging	Ultrasound Motion Estimation Using Modified PWC-Net	Yen-Ting Liu Li-Fu Lee Po-Syun Chen Chih-Wei Liao Geng-Shi Jeng
250484	[GCBME] Material Science	Microwave-hydrothermal synthesis of magnetic biosensor for nucleocapsid gene from coronavirus	Ching-Yi Tai Ssu-Pin Liao Chien-Ho Huang Malla Pravanjan Chi-Hsien Liu
250485	[GCBME] Assistive Technologies	A Predictive Coding Model-Based Sound Therapy on Treating Tinnitus	Chun-Chia Yang Chih-Hsu Huang Chou-Ching Lin
250486		Effect of Hypertension on Alzheimer's Disease: a Fixel-Based Analysis	Jiun-Jie Wang Hsien-Hao Tsao

	[GCBME] Medical Imaging		Yao-Liang Chen Chih-Chien Tsai Yi-Chun Chen
250487	[BISC] Photonics & Optoelectronics	Temporal Focusing Based Deep Learning Computer Generated Holography For Simultaneous Three-Dimensional Micropattern Neuron Stimulation	Liang-Wei Chen Chun-Yu Lin Shang-Yang Lu Feng-Chun Hsu Yvonne Yuling Hu Shean-Jen Chen
250488	[BISC] Photonics & Optoelectronics	Cross-modality image restoration of temporal focusing microscopy via progressive 3D U-Net	Yvonne Hu Chun-Yu Lin Chia-Wei Hsu Yu-Hao Tseng Shean-Jen Chen
250489	[BISC] Photonics & Optoelectronics	An Advanced Volumetric Imaging System Based on Light Field Microscopy with Selective Excitation via Temporal Focusing	Feng-Chun Hsu Chun-Yu Lin Yvonne Yuling Hu Yeu-Kuang Hwu Ann-Shyn Chiang Shean-Jen Chen
250490	[GCBME] Health Informatics	Organizational and user barriers to Telemedicine development	Po-Sen Huang Kuan-Chung Wang Yu-Lin Wang Zheng-Yu Hoe Tsung-Hsun Hsieh Wei-Chih Lien Jian-Yu Lian Peng-Ting Chen
250491	[GCBME] Medical Imaging	High-definition depth-resolved skin images with a portable optical coherence tomography	Meng-Tsan Tsai Chien-Yu Lin Tai-Ang Wang Chau Yee Ng
250492	[BISC] Photonics & Optoelectronics	Biosensing applications of graphene in surface plasmons	Yi-An Wei Pei-Jung Wu Yu-Hua Chen Chan-Shan Yang
250493	[GCBME] Medical Imaging	Pelvic Arteries Segmentation on CT Angiography with Deep Learning	Yu-Tong Cheng Te-Wei Shieh Wen-Jeng Lee Tzung-Dau Wang

250494	[GCBME] Medical Imaging	Using Deep-Learning Approaches to Evaluate the Differentiation Quality of the Human Induced Pluripotent Stem Cell-derived Vessel Organoids	Yi-Ming Wang Ly Meng Che Woei-Chyn Chu Chian-Shiu Chien Chung-Yueh Lien
250495	[GCBME] Medical Imaging	A Physical Paradigm for Metabolic Signals in Hyperpolarized [1-13C]pyruvate: Spectral–Spatial Encoding and Least-Squares Chemical Shift	Ching-Yi Hsieh
250497	[BISC] Photonics & Optoelectronics	High-speed dual-resonance scanning multiphoton microscopy based on deep learning for dynamic volumetric imaging	Chia-Wei Hsu Chun-Yu Lin Yvonne Yuling Hu Shean-Jen Chen
250498	[GCBME] Medical Electronics	Continuous monitoring of exosomes from cancer cell lines by automatic imaging surface plasmon resonance	Jin-Huai Xu Jian-Hong Yang Chii-Wann Lin
250502	[GCBME] Assistive Technologies	An active and passive hand rehabilitation equipment designed with game-interactive function	Jiun-Hung Lin Han-Lin Li Shih-Tsang Tang
250504	[GCBME] Material Science	Development of ACE2 mimicking domain (AMD) recombinant bacterial phage capsid as SARS-CoV-2 entry blocker for COVID-19 prevention and therapy	Hao-Han Pang Nan-Si Li Ying-Pei Hsu Hung-Wei Yang
250505	[GCBME] Assistive Technologies	A Machine Learning Approach for the Temperature Prediction in Ultrasound Diathermy with Implants	Hsiu-Chin Hsu Siang-Rong Lin Hong-Wei Chen Chia-Ching Chou Shu-Wei Chang Chang-Wei Huang
250506	[GCBME] Biomechanics	Dynamic image recognition technology analyzes scuba diving kicking action	Hsin-Chieh Chen, Ming-Hung Lin Yi-You Hou, Syuan-You Lin
250507	[BISC] Photonics & Optoelectronics	In Situ Formation of Au-Glycopolymer Nanoparticles for SERS-Based Biosensing and Single-Cell Immunity	Zi Chun Chia Li-Xing Yang Ting-Yu Cheng Ya-Jyun Chen

			Horng-Long Cheng Fei-Ting Hsu Ying-Jan Wang Tzu-Chi Huang Chih-Chia Huang
250508	[GCBME] Assistive Technologies	Monitoring Respiratory-Swallow Coordination during Feeding: The Influence of Trunk Positions and Food Textures	Wann-Yun Shieh Chin-Man Wang Yan-Ying Ju Yu-Huei Jian Hsin-Yi Cheng

2022 Biomedical Engineering Program Presentation of Department of Engineering and Technologies NSTC

December 17, Saturday

Room 1005

Moderator: Tze-Hao Chang

Time	Speaker	Topic	Affiliation
08:50-09:10	Fan-Gang Tseng	High efficient SACA System for rapid CTCs/CTMs selection/pickup for CRC diagnosis/prognosis and drug screening	Department of Engineering and System Science, National Tsing Hua University
09:10-09:30	Chih-Kuang Yeh	Drug-loaded acoustic droplets with focused ultrasound in theranostics	Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University

December 17, Saturday

Room 1007

Moderator: Yi-Chen Li, Tzong-Rong Ger, Tze-Hao Chang

Time	Speaker	Topic	Affiliation
08:00-11:00	Yen-Ping Hsu Wan-An Chang Kai-Chun Huang	The experience of proposal writing and submitting for College Student Research Scholarship, NSTC	NSTC Biomedical Engineering Program
11:00-11:15	NSTC Biomedical Engineering Program Convener — Shan-hui Hsu	Opening speech	Institute of Polymer Science and Engineering, National Taiwan University
11:15-11:45	Tze-Hao Chang	The annual business report of NSTC Biomedical Engineering Program	Department of Engineering and Technologies NSTC
11:45-12:00		Q&A	

December 17 (09:40-11:00)
10F Room 1010
NSTC Poster Session
<p>NSTC 110-2221-E-002-008-</p> <p>Investigation of Systemic Antitumor Immunity by Combining Pulsed-Wave Ultrasound Hyperthermia with Anti-PD-L1 Antibody for Cancer Treatment</p> <p>WIN-LI LIN</p>
<p>NSTC 110-2221-E-011-108-</p> <p>Portable Pubillometer(2/2)</p> <p>Yi-Yung Chen</p>
<p>NSTC 110-2628-E-007-003-</p> <p>Rapid diagnostic device development for monitoring the severe cases of the infectious diseases (1/3)</p> <p>Chao-Min Cheng</p>
<p>NSTC 108-2628-E-006-003-MY3</p> <p>Development of a wearable medical device for arrhythmia and structural heart disease screening using time-frequency spectrogram of wrist artery pulse audiogram (PAG) and artificial intelligence classifier</p> <p>Che-Wei Lin</p>
<p>NSTC 108-2628-E-010-001-MY3</p> <p>SERS detection of molecules in complex fluids through the integration of plasmonic agarose gels and optofluidic nanomanipulation techniques</p> <p>Yih-Fan Chen</p>
<p>NSTC 108-2221-E-033-017-MY3</p> <p>Development of an automated microfluidics analysis platform for magnetic labelled bio-sample</p> <p>Tzong-Rong Ger</p>
<p>NSTC 108-2221-E-002-175-MY3</p> <p>Focused ultrasound neuromodulation for epilepsy treatment: A feasibility study</p> <p>Hao-Li Liu</p>
<p>NSTC 109-2221-E-182-004-MY2</p> <p>Development of an on-line positron imager for treatment response monitoring in charged-particle therapy (2/3-3/3)</p> <p>MEEI-LING JAN</p>
<p>NSTC 109-2221-E-492-002-MY2</p> <p>Development of a Biochip System to Accelerate Total Assay Time For Precision Medicine in Clinical Sepsis</p> <p>I-Fang Cheng</p>
<p>NSTC 109-2221-E-009-009-MY2</p> <p>Development of bacterial detection transistor</p> <p>YUH-SHYONG YANG</p>

<p>NSTC 109-2221-E-003-005-MY2</p> <p>Development of the innovative magnetically-thermal therapy with the high-specificity, rapid treatment, and imaging contrast and the multifunction system of imaging and treatment-II</p> <p>JEN-JIE CHIEH</p>
<p>NSTC 108-2218-E-002-046-MY3</p> <p>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</p> <p>Che-Yu Lin</p>
<p>NSTC 109-2222-E-468-001-MY2</p> <p>Evaluating the static and dynamic stability of elastic intramedullary nail in the fixation of tibial diaphyseal fractures</p> <p>Yen-Nien Chen</p>
<p>NSTC 110-2222-E-303-001-</p> <p>Influence of decompression surgery on the kinematics and stability of degenerative lumbar spondylolisthesis: measurement and analysis using 3D fluoroscopy</p> <p>CHUNG-HUA CHU</p>
<p>NSTC 110-2222-E-341-001-</p> <p>Effects of posterior cruciate ligament deficiency and reconstruction on knee biomechanics during level and slope walking using 3D fluoroscopy</p> <p>Yo-Lun Chu</p>
<p>NSTC 110-2628-E-002-004-</p> <p>Using handwriting as a behavioral marker to develop an AI-based early detection system for patient with cognitive decline (1/3)</p> <p>Hao-Ling Chen</p>
<p>NSTC 110-2221-E-182-066-</p> <p>Predictions of Vertebral Bone Strength by Using CT-Based Finite Element Model</p> <p>HSIANG-HO CHEN</p>
<p>NSTC 110-2221-E-039-005-</p> <p>Prediction of structural condition of the bone with orthodontic miniscrew insertion using dental cone-beam computed tomography and its effect on the mechanical stability of the miniscrew</p> <p>Jui-Ting Hsu</p>
<p>NSTC 110-2221-E-182-019-</p> <p>Development of a technology-assisted training device and a muscle quality/function analysis platform with the efficacy evaluation of home exercise on the elderly with Sarcopenia</p> <p>Chih-Hsiu Cheng</p>
<p>NSTC 110-2221-E-166-001-</p> <p>To reevaluate the time-dependent concentration of radioactive I-131 via 9-compartmental biokinetic model and MATLAB program</p> <p>LUNG-KWANG PAN</p>
<p>NSTC 110-2221-E-075A-001-</p>

Biomechanical analysis of different calcaneal slide plate design in medial displacement calcaneal osteotomy(MDCO) Kuo-Chih Su
NSTC 110-2221-E-341-003- Effects of superior capsule reconstruction on the static and dynamic joint stability of the shoulder complex using 3D fluoroscopy Li-Wei Hung
NSTC 108-2628-E-006-002-MY3 Development of Rotational Diffusivity based DNA Nanosensors Targeting at Topoisomerase I for Rapid Tuberculosis Diagnosis Han-Sheng Chuang
NSTC 109-2221-E-650-001-MY2 To investigate the movement control and rehabilitation program effects in patients after nerve transfer by the multi-joint evaluation system Yi-Jung Tsai
NSTC 109-2222-E-218-001-MY2 Spatial Exploration and Environment Recognition (SEER) System for the Visually Impaired and the Blind: Development and Validation SEE AARON RAYMOND ANG
NSTC 110-2221-E-006-041- Development of Innovative Modular 3D-Printed Dynamic Orthoses: Application Programs for Hand Function Facilitation in Patients with Stroke JER-HAO CHANG
NSTC 110-2221-E-152-001- Early warning application program(APP) for smartphone user in head posture control YU-LUEN CHEN
NSTC 110-2221-E-212-007- Development and Regulatory Certification of Assistive Devices for Variable Shuttle Wheelchair with Lightweight Structure Feng-Min Lai
NSTC 110-2221-E-038-011- To investigate the advantages of paired associative nerve stimulation on motor function and cortical excitability in individuals with incomplete spinal cord injury Chien-Hung Lai
NSTC 110-2221-E-715-001- Innovation Development, Motion Analysis, and Effectiveness Evaluation of Intelligent Assist Multi-Axis Cycling Training System for Elderly People Chun-Ting Li
NSTC 110-2221-E-002-077- Biomechanical analysis of the lower extremities and body balance control in adults with developmental dysplasia of the hip during activities: comparing efficacy between Ganz

periacetabular osteotomy and total hip arthroplasty Ting-Ming Wang
NSTC 108-2221-E-009-045-MY3 Development of Ear-EEG and VNS Device for Prediction and Treatment of Migraine Li-Wei Ko
NSTC 108-2221-E-182-016-MY3 A New System to Measure Jaw Opening Force and Speed: Apply in Aging and Stroke, and Correlate to Anterior Tongue Pressure and Swallowing-Respiration Coordination CHIN-MAN WANG
NSTC 109-2221-E-305-001-MY2 Development of a Dynamic, Static Balance Evaluation and AI-based Exercise Prescription System for the Elderly Bor-Shing Lin
NSTC 109-2221-E-195-001-MY2 Biomechanical characteristics and functional analyses of self-expandable nasal stent_Comparison of biomaterials and design features. Chang-Hung Huang
NSTC 109-2222-E-039-001-MY2 Combination of Herbal Extract Loaded Nanocarrier and 3D Bioprinting Technique for Repairing Skin Injury Ming-You Shie
NSTC 109-2222-E-007-003-MY2 Exosome sensing platform development Hsing-Ying Lin
NSTC 110-2222-E-006-004- Development of Barcode Microbeads-based Multiplex Immunoassay for Companion Diagnostics of Severe Dengue Tien-Chun Tsai
NSTC 110-2628-E-005-001- Development of zoledronic acid/IR780-loaded polymeric nanoparticles capable of dually targeting breast cancer cells and tumor-associated macrophages for chemo/photothermal combinatorial cancer therapy (1/3) Wen-Hsuan Chiang
NSTC 110-2221-E-A49A-506- Development and application of polypeptide multilayer nanofilms for proliferation and osteogenic differentiation of human dental pulp stem cells 2/2 Chun-Min Lo
NSTC 110-2221-E-011-027- Norbornene derived block copolymers for reactive oxygen species (hydrogen peroxide) induced hydrogen sulfide gas generation to enhance passive cancer targeting regime Vijayakameswara Rao Neralla

<p>NSTC 110-2221-E-027-012-</p> <p>Investigating of tongue and temporomandibular joint lubrication during chewing process</p> <p>Hsu-Wei Fang</p>
<p>NSTC 110-2221-E-468-003-</p> <p>Development of pigmented human three-dimensional artificial skin by using cell building blocks for the application of large-area injuries</p> <p>Yu-Fang Shen</p>
<p>NSTC 110-2221-E-264-002-</p> <p>Novel Preparation of Carfilzomib-bound Human Serum Albumin (HSA) Nanoparticles to Improve Pharmacokinetic Characteristics and Its Antitumor Efficacy Either alone or Combination with Paclitaxelbound HSA nanoparticles-2</p> <p>Ling Chun Chen</p>
<p>NSTC 110-2221-E-532-001-</p> <p>Evaluation on an Interaction of Furan Derivatives and Bladder Cell Growth by Using Surface Enhanced Raman Scattering and Cellular Imaging</p> <p>Yi-chun Chiu</p>
<p>NSTC 110-2221-E-008-015-</p> <p>Development of Multifunctional Perfluorocarbon Hybrid Hydrogel Assembly for Chronic Wound Healing--- Material Synthesis, in vitro/in vivo Validation, and Mechanism Study</p> <p>Yu-Hsiang Lee</p>
<p>NSTC 108-2221-E-007-038-MY3</p> <p>Bioinspired Self-assembling Peptide Hydrogel with Proteoglycan-assisted Growth Factor Delivery for Therapeutic Angiogenesis</p> <p>TZU-WEI WANG</p>
<p>NSTC 108-2628-E-007-001-MY3</p> <p>Polypeptide Nanocarrier with Programming Dissociation Mechanism for Tumor-associated Stromal Desmoplasia Attenuation</p> <p>TZU-WEI WANG</p>
<p>NSTC 108-2628-E-007-004-MY3</p> <p>Development of smart wound dressings with release of reactive oxygen species activated through temperature difference and pressure regulation</p> <p>Zong-Hong Lin</p>
<p>NSTC 108-2628-E-008-002-MY3</p> <p>The promotion effects of bioreactor for mechanical and electrical stimulations on the reconstruction of muscle tissue</p> <p>Wei-Wen Hu</p>
<p>NSTC 108-2628-E-110-003-MY3</p> <p>Lactate-activated hypoxia-responsive Carrier for viral RNA interference and regulated Tumor-Associated Macrophage for immunotherapy</p> <p>ZI-XIAN LIAO</p>
<p>NSTC 108-2221-E-011-038-MY3</p>

<p>Metallic glasses nanotubes as advanced materials: Development and Application of Drug Delivery</p> <p>Jinn P. Chu</p>
<p>NSTC 108-2221-E-214-010-MY3</p> <p>Rejuvenation of the reproductive system of older rats through icariin and echinacoside transdermal patches</p> <p>SHYH-MING KUO</p>
<p>NSTC 108-2221-E-038-017-MY3</p> <p>Smart human platelet pellet incorporated with multifunctional polymeric carrier as a novel therapeutic biomedical platform</p> <p>Er Yuan Chuang</p>
<p>NSTC 108-2628-E-036-001-MY3</p> <p>Nanoparticle-releasing in situ mucoadhesive hydrogel composite for vaginal delivery (II)</p> <p>Hsi-Chin Wu</p>
<p>NSTC 109-2222-E-038-002-MY2</p> <p>To create individual risk matrix between long-term drug and cancer</p> <p>Hsuan-Chia Yang</p>
<p>NSTC 110-2222-E-027-002-</p> <p>Using millimeter-wave radar to sense changes in human posture to evaluate rehabilitation effects</p> <p>Chien-Hung Lai</p>
<p>NSTC 110-2222-E-011-014-</p> <p>Developed a high-speed 3D printing rapid prototyping system for lightweight and highly breathable adjustable helmets for infants</p> <p>Chun-Ming Chen</p>
<p>NSTC 110-2221-E-A49-038-</p> <p>Select Independent BOLD Components Using Deep Neural Network and Intrinsic Neural Timescale</p> <p>Jeng-Ren Duann</p>
<p>NSTC 110-2221-E-227-002-</p> <p>Develop open-source software and clinical application for the interoperability of medical imaging and AI results</p> <p>Chung-Yueh Lien</p>
<p>NSTC 110-2628-E-239-001-</p> <p>Development on the sonogram-based referral index of non-alcoholic fatty liver disease (NAFLD) using deep learning techniques for liver diagnosis and diabetes care (1/4)</p> <p>Chia-Yen Lee</p>
<p>NSTC 110-2221-E-035-016-</p> <p>The Development of High-Resolution MUSE IVIM and DKI in Head and Neck – to Discover the Effect of fat on the Parameters of IVIM and DKI, and to Explore the Responses of Parotid, Brain Stem and Hypothalamus under Gustatory Stimulation</p> <p>YI-JUI LIU</p>
<p>NSTC 110-2221-E-038-006-</p> <p>Artificial Intelligence in Detection of Rib Fracture on plain Chest Radiographs</p>

Hung-Wen Chiu
<p>NSTC 110-2628-E-040-001-</p> <p>Hepatic steatosis and fibrosis assessment using ultrasound quantitative index: non-alcoholic fatty liver disease and type 2 diabetes-clinical trials (1/3)</p> <p>Yin-Yin Liao</p>
<p>NSTC 110-2221-E-182-014-</p> <p>The study of the optimal algorithm for acute pancreatitis surgery</p> <p>CHUNG-CHIH LIN</p>
<p>NSTC 110-2221-E-218-005-</p> <p>Optimizing Tidal Volumes for Ventilator-Dependent Patients</p> <p>Tsai-Rong Chang</p>
<p>NSTC 110-2221-E-075-002-</p> <p>Development of intelligent optical imaging system for real-time precise diagnosis of lymphomas and gliomas</p> <p>Sanford PC Hsu</p>
<p>NSTC 108-2221-E-002-081-MY3</p> <p>Development of Rapid Red Blood Cell Screening System based on Common-path Tomographic Diffractive Microscopy</p> <p>Kung-Bin Sung</p>
<p>NSTC 108-2221-E-011-117-MY3</p> <p>Calibration of metabolic concentration using water signal: a fast strategy for MRSI</p> <p>Yi-Ru LIN</p>
<p>NSTC 108-2221-E-214-011-MY3</p> <p>The application of exergame and computerized motor function evaluation on the long term care system</p> <p>NAN-YING YU</p>
<p>NSTC 108-2221-E-040-007-MY3</p> <p>Investigating the role of intravoxel incoherent motion and diffusion kurtosis in head and neck cancers: a multishot readout-segmented MRI study</p> <p>Ping-Huei Tsai</p>
<p>NSTC 109-2221-E-038-003-MY2</p> <p>Big data analysis with data mining techniques to develop risk prediction models for intraoperative hypoxemia and postoperative shock</p> <p>Chao-Shun Lin</p>
<p>NSTC 109-2221-E-010-004-MY2</p> <p>Biomimetic Spatial Memory to Reconstruct Moving Trajectory by Brain Inspired Reinforcement Learning</p> <p>You-Yin Chen</p>
<p>NSTC 109-2221-E-030-002-MY2</p> <p>Development of patch-based pseudo computed tomography generation frameworks using machine-learning with application to measurement of tibiofemoral and patellofemoral joint kinematics</p>

Cheng-Chung Lin
NSTC 110-2221-E-182-012-MY3 Development of a diverse intelligent movement evaluation and training system- needs assessment for special ed population and assistive device module design Hsin-Yi Kathy Cheng

Sponsors



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