

# 2023 ISOMRM & BCERS

The 6<sup>th</sup> International Symposium of  
Materials on Regenerative Medicine, 2023

Annual Meeting of Biomaterials and  
Controlled Releases Society in Taiwan

08/31 – 09/03

**Program Book**



📍 Fullon Hotel - Tamsui Fisherman's Wharf  
(251 No. 83, Guanhai Road, Tamsui District,  
New Taipei City)



TAIPEI MEDICAL UNIVERSITY  
Graduate Institute of Biomedical  
Materials and Tissue Engineering



中華民國生醫材料及藥物制放學會  
Chinese Taipei Society for Biomaterials and Controlled Release





# 專利型「液體精華」導入裝置

一次性使用皮膚點刺針(滅菌)

link-Best

潤霽生技

榮獲【韓國五大專利】暨【世界多國專利】

NR64 轉動奇肌  
Rolling-Miracle

衛部醫器製壹字第009501號

## ROLLER

SI6 鏢待圖  
S.T.P

衛部醫器製壹字第009432號

## STAMP

圓形滾針



現有規格：0.25、0.75mm

方形印針



現有規格：0.5mm



【安瓶、空針兩用套環連結設計】

- 不鏽鋼鈦金鍍膜針片
- 高效能精華導入器械

可與玻尿酸、膠原蛋白、PRP、外泌體  
等各式精華搭配、導入使用

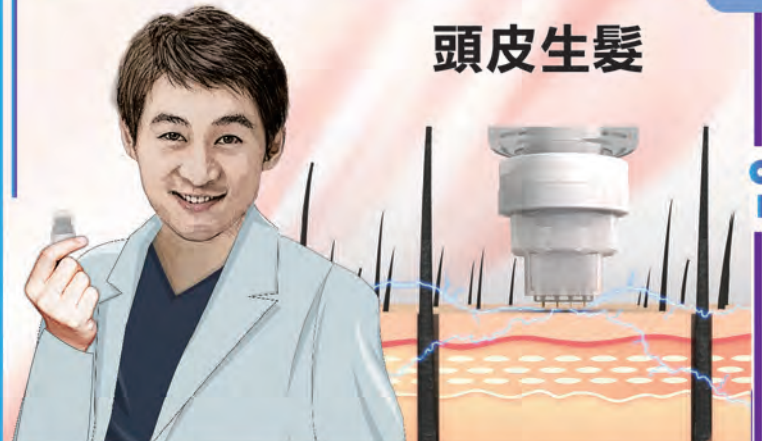
### 面部回春



轉動黃金滾輪 見證奇肌美人

Golden Roller Makes Your Beauty Come True

### 頭皮生髮



蓋壓黃金印針 觸動毛髮再生

Golden Stamp Activates Your Hair Come Back



# Welcome Message

Dear 2023 ISOMRM/BCRS Participants,

On behalf of the organization, it is our great honor and pleasure to welcome you to join the 6th International Symposium of Materials in Regenerative Medicine (ISOMRM) and Annual meeting of Biomaterials and Controlled Release Society (BCRS) 2023, in Taiwan. After three years of travel restrictions for join webinars, we are delighted to finally be able to meet up face-to-face. This includes reuniting with some old friends and long-time collaborators, as well as meeting some researchers who are visiting us for the first time. If it is your first-time visiting Taiwan, I hope this symposium will be useful and rewarding for you.

The symposium topics are spanning the field of materials to apply in regenerative medicine, drug release, nanoscience, medical device, and precision medicine etc. for at least 10 session topics. We extend our heartfelt appreciation to the 8 keynote speakers and 56 invited speakers hailing from 15 different countries and regions. We also extend our thanks to the esteemed audiences. Without your active participation, this event would not have achieved its true purpose. With over 400 participants this year, I'm certain that we are in for an enlightening and captivating experience throughout the conference. We hope that this symposium could be a milestone to the next millennium as the ***main theme of the symposium: The Prospects of Material promoting "Medical Technology and Healthcare.***

In addition to the academic activities, we have scheduled plenty of time for networking and discussion which we hope will be useful in building and strengthening our mutual international collaboration and joint research efforts. Please also do take some time to engage in some leisure activities; perhaps taking different culture experience or sightseeing in this beautiful island. Hope everyone has an enjoyable and memorable time during symposium period, also with fruitful academic interaction from this event!

Best wishes

Ching-Li Tseng

General Chairman  
2023 ISOMRM/BCRS



Professor/Director, Graduate Institute of Biomedical Materials and Tissue Engineering, Taipei Medical University

Jui-Yang Lai

Co-General Chairman  
2023 ISOMRM/BCRS



President, Chinese Taipei Society for Biomaterials and Controlled Release



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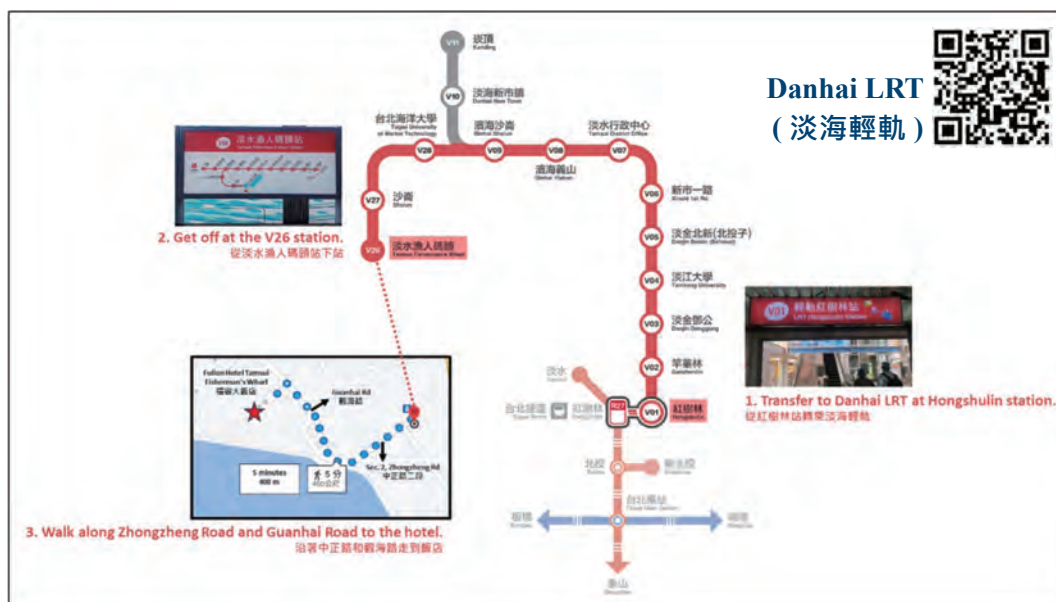


# Transportation

## Taoyuan Airport MRT (桃園機場捷運)



## Taipei MRT (台北捷運)

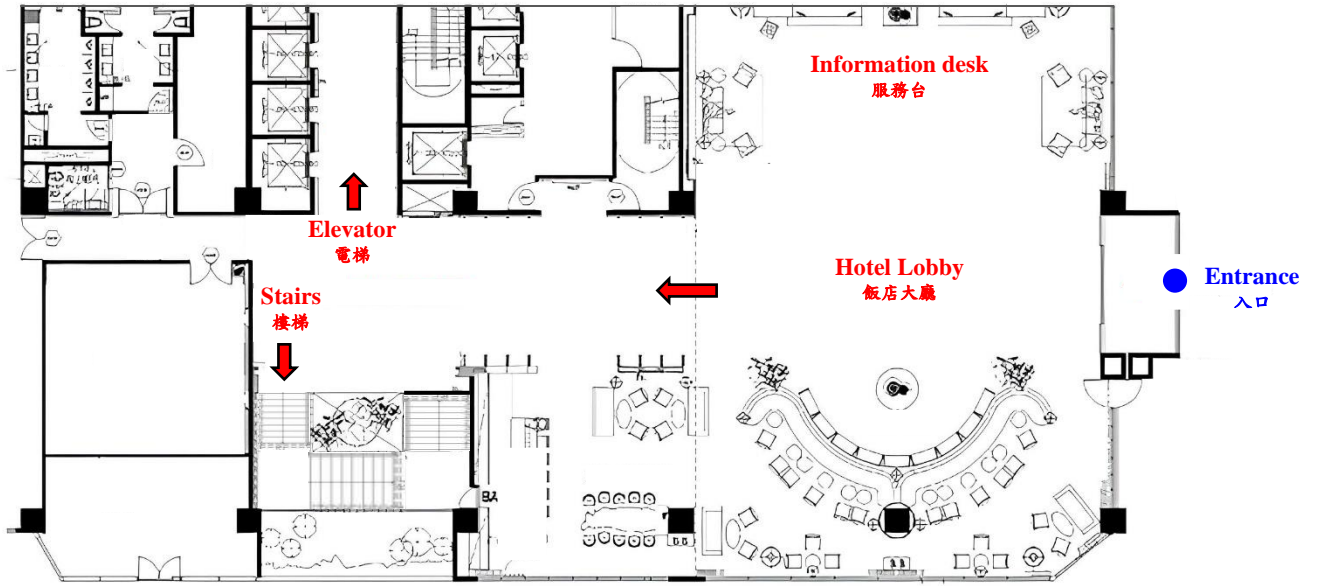


If you plan to take public transportation, the suggested routes are below.

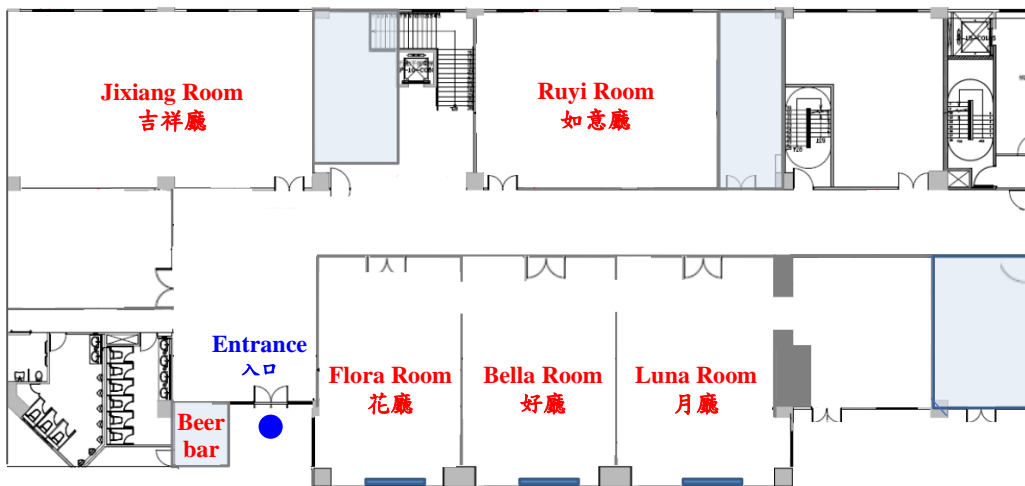
1. Take the Taoyuan Airport MRT from the airport to the Taipei Main Station. (\*for international participants)
2. Take the Taipei MRT (Tamsui–Xinyi line, red line) from the Taipei Main Station (R10) to the Hongshulin Station (R27), and transfer to Danhai LRT.
3. Take the Danhai LRT from the Hongshulin Station (V01) to the Tamsui Fisherman's Wharf Station (V26).
4. Walk along Zhongzheng Road and Guanhai Road to the hotel (400 m, 5 min).

# Floor Plan

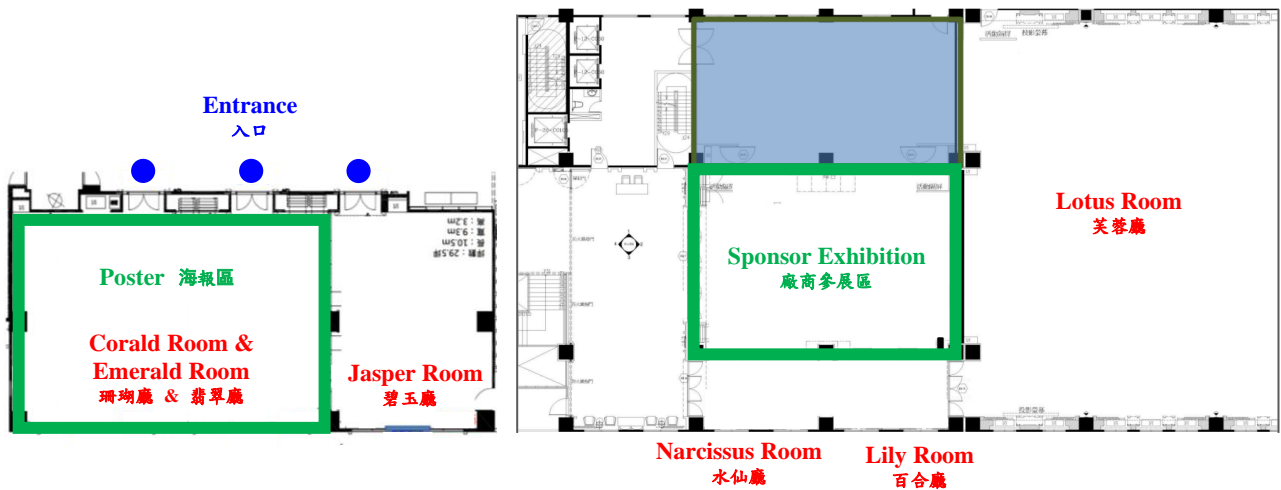
## First floor (1F)



## Second floor (2F)



## Third floor (3F)

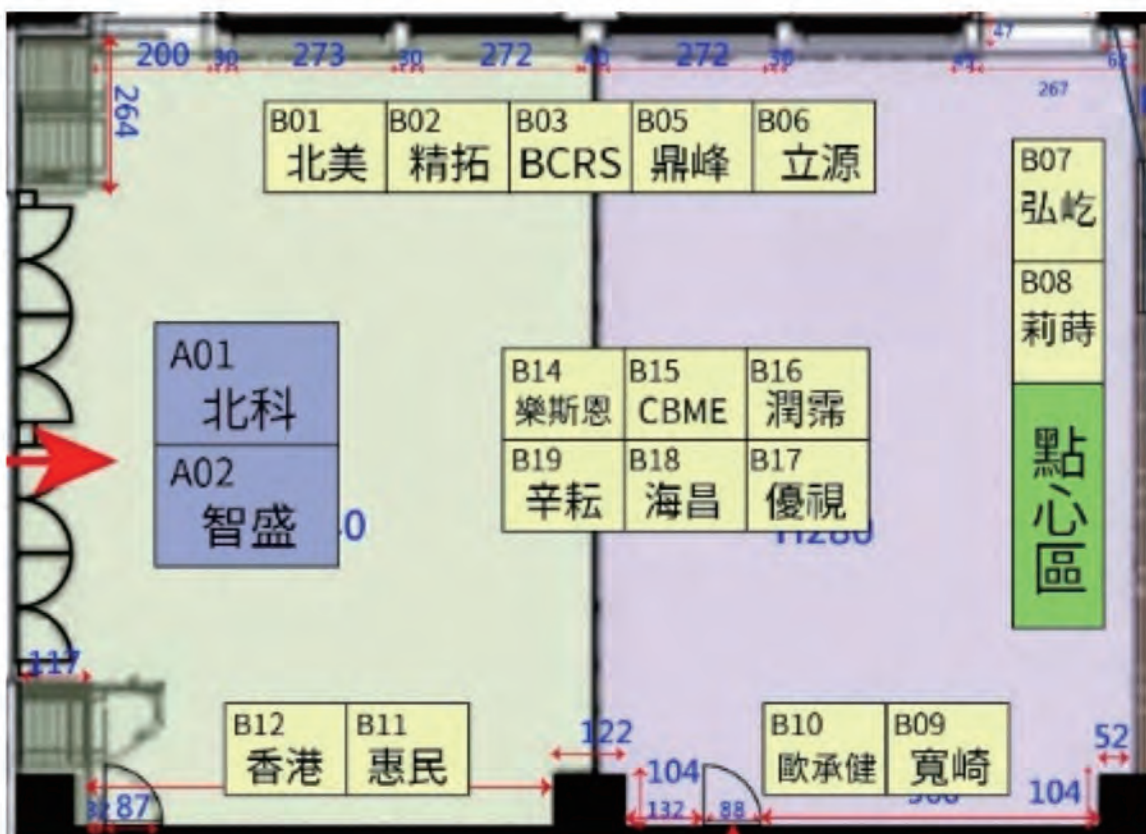






# Sponsor Exhibition

## Third floor (3F)



# Co-Organizations



衛生福利部

Ministry of Health and Welfare



教育部



中華民國外交部

MINISTRY OF FOREIGN AFFAIRS  
REPUBLIC OF CHINA (TAIWAN)



經濟部國際貿易局  
Bureau of Foreign Trade



衛生福利部雙和醫院  
(委託臺北醫學大學興建經營)

Taipei Medical University - Shuang Ho Hospital,  
Ministry of Health and Welfare



國家衛生研究院

National Health Research Institutes



臺北醫學大學  
TAIPEI MEDICAL UNIVERSITY



事業發展處  
OFFICE OF BUSINESS DEVELOPMENT



臺北醫學大學附設醫院

TAIPEI MEDICAL UNIVERSITY HOSPITAL



財團法人生物技術開發中心  
Development Center for Biotechnology



TMU

Research Center of  
Biomedical Device



國立臺北科技大學  
National Taipei University of Technology



財團法人  
醫藥工業技術發展中心  
Medical and Pharmaceutical Industry  
Technology and Development Center





# Organization Committee

## Honorary Chair

Prof. Mai-Szu Wu	President, Taipei Medical University
Prof. Chien-Huang Lin	President, Taipei Medical University
Prof. Chih-Hwa Chen	Vice Superintendent, Taipei Medical University Shuang Ho Hospital
Prof. Jiunn-Horng Kang	Dean, Taipei Medical University

## Founder Chair

Prof. Feng-Hui Lin	National Taiwan University
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## General Chair

Prof. Ching-Li Tseng	Taipei Medical University
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## Co-General Chair

Prof. Jui-Yang Lai	Chang Gung University
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## Secretary General

Prof. Yu-Jui Fan	Taipei Medical University
Prof. Er-Yuan Chuang	Taipei Medical University

## Scientific Program

Prof. Yi-Ping Chen	Taipei Medical University
Prof. Si-Han Wu	Taipei Medical University

## Academic Chair

Prof. Tzu-Sen Yang	Taipei Medical University
Prof. Long-Sheng Lu	Taipei Medical University
Prof. Kai-Chiang Yang	Taipei Medical University

## Financial & Investment

Prof. Yin-Ju Chen	Taipei Medical University
Prof. Tsung-Rong Kuo	Taipei Medical University
Prof. Chih-Wei Peng	Taipei Medical University

## Administrative

Chia-Hsuan Chu	Taipei Medical University
Erh-Hsuan Hsieh	Taipei Medical University
Huai-An Chen	Taipei Medical University



# Scientific Committee

Prof. Bor-Ran Lee	National Yang Ming Chiao Tung University
Prof. Chen-tsyr Lo	National Taiwan University of Science and Technology
Prof. Cherng-Jyh Ke	China Medical University
Prof. Chi-Chang Wu	National Chin-Yi University of Technology
Prof. Chieh-Cheng Huang	National Tsing Hua University
Prof. Chien-Wen Chang	National Tsing Hua University
Prof. Chih-Chia Huang	National Cheng Kung University
Prof. Ching-Yun Chen	National Central University
Prof. Chun-Che Lin	National Taipei University of Technology
Prof. David Lundy	Taipei Medical University
Prof. Guei-Sheung Liu	The University of Melbourne
Prof. Guo-Chung Dong	National Health Research Institutes
Prof. Hsi-Chin Wu	Tatung University
Prof. Hui-Min Wang	National Chung Hsin University
Prof. Hung-Wei Yang	National Cheng Kung University
Prof. Jean-Cheng Kuo	National Yang Ming Chiao Tung University
Prof. Jiashing Yu	National Taiwan University
Prof. Jung-Chih Chen	National Yang Ming Chiao Tung University
Prof. I-Chi Lee	National Tsing Hua University
Prof. Ling-Shan Yu	National Sun Yat-sen University
Prof. Lun-De Liao	National Health Research Institutes
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Prof. Ming-Fa Hsieh	Chung Yuan Christian University
Prof. Ming-Hua Ho	National Taiwan University of Science and Technology
Prof. Min-Hua Chen	Chung Yuan Christian University
Prof. Ping-Ching Wu	National Cheng Kung University
Prof. Po-Chun Chen	National Taipei University of Technology
Prof. Ren-Jei Chung	National Taipei University of Technology
Prof. Shang-Hsiu Hu	National Tsing Hua University
Prof. Shiao-Wen Tsai	Chang Gung University
Prof. Ting-Yu Liu	MingChi University of Technology
Prof. Ting-Yuan Tu	National Cheng Kung University
Prof. Tsu-En Lin	National Yang Ming Chiao Tung University
Prof. Tzong-Rong Ger	Chung Yuan Christian University
Prof. Wei-Chen Huang	National Yang Ming Chiao Tung University
Prof. Wen-Tyng Li	Chung Yuan Christian University
Prof. Yang Wei	National Taipei University of Technology
Prof. Yang-Kao Wang	National Cheng Kung University
Prof. Yen-Liang Liu	China Medical University
Prof. Yi-chen Li	Feng Chia University
Prof. Yi-Chiang Hsu	National Central University
Prof. Yu-Chun Chen	National United University
Prof. Zong-Hong Lin	National Tsing Hua University





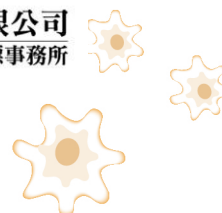
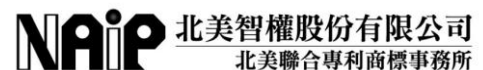
# Sponsor Acknowledgment

**decent rossi**  
First, do no harm.



君品實業股份有限公司

佑昇欣業有限公司



# Conference Schedule and Venue

Time	8/31 (Thursday)	9/1 (Friday)						
08:00-08:20		<b>Registration</b>						
08:20-08:50		<b>Opening Ceremony</b> 3F Lotus Room 芙蓉廳						
08:50-10:10		<b>Keynote Speech (I)</b> 3F Lotus Room 芙蓉廳						
10:10-10:30		<b>Coffee Break</b>						
10:30-12:00		<b>Stem Cell (I)</b> 3F Lotus Room 芙蓉廳	<b>Regenerative Medicine (I)</b> 2F Flora Room 花廳	<b>Muscular Skeleton and Dental</b> 2F Luna Room 月廳	<b>Student Oral (I)</b> 3F Jasper Room 碧玉廳	<b>Artificial Intelligence/ Medical Device</b> 2F Bella Room 好廳	<b>Nanotechnology (I)</b> 2F Ruyi Room 如意廳	<b>General Meeting 會員大會</b> BCRS 中華民國生醫材料與藥物製劑學會 2F Jixiang Room 吉祥廳
12:00-13:30		<b>Luncheon Meeting</b> Baker Company / 12:00-12:40 貝克公司 Unimed Healthcare INC. / 12:50-13:30 騰達行 3F Lotus Room 芙蓉廳						
13:30-14:50		<b>Keynote Speech (II)</b> 3F Lotus Room 芙蓉廳						
14:50-15:10		<b>Coffee Break</b>						
15:10-16:00		<b>Venue Layout</b>	<b>Nanotechnology (II)</b> 2F Flora Room 花廳	<b>Drug Delivery</b> 2F Luna Room 月廳	<b>Stem Cell (II)</b> 3F Jasper Room 碧玉廳	<b>YIC</b> 2F Bella Room 好廳	<b>Satellite Conference 衛星會議</b> BMCC 生醫商品化中心 2F Ruyi Room 如意廳	<b>Satellite Conference 衛星會議</b> NTUT 國立臺北科技大學 2F Jixiang Room 吉祥廳
16:00-17:00	<b>TMU CBME Workshop</b>							
17:00-17:40	<b>Registration &amp; Welcome Reception</b>							
17:40-18:00		<b>Break</b>						
18:00-20:00	<b>2F Jixiang Room 吉祥廳</b>	<b>Gala Dinner</b> 3F Lotus Room 芙蓉廳						

Sponsor Exhibition Narcissus Room/Lily Room 水仙廳/百合廳  
Poster Emerald Room/Coral Room 碧綠廳/珊瑚廳





# Conference Schedule and Venue

Time	9/2 (Saturday)							9/3 (Sunday)	
08:00-09:00	Registration							Registration	
09:00-10:20	<b>Keynote Speech (III)</b> <b>3F Lotus Room 芙蓉廳</b>							<b>Student Oral (IV)</b> <b>2F Flora Room 花廳</b>	<b>Student Oral (V)</b> <b>2F Bella Room 好廳</b>
10:20-10:40	Coffee Break								
10:40-12:10	<b>Biofabrication</b> <b>3F Lotus Room 芙蓉廳</b>	<b>Regenerative Medicine (II)</b> <b>2F Flora Room 花廳</b>	<b>YIA (I)</b> <b>2F Bella Room 好廳</b>	<b>Student Oral (II)</b> <b>3F Jasper Room 碧玉廳</b>	<b>Stem Cells (III)</b> <b>2F Luna Room 月廳</b>	<b>Biomaterials (I)</b> <b>2F Ruyi Room 如意廳</b>	<b>Extracellular Vesicle</b> <b>2F Jixiang Room 吉祥廳</b>	<b>Sponsor Exhibition</b> <b>Narcissus Room/Lily Room 水仙廳/百合廳</b>	<b>Culture Tour</b>
12:10-13:40	<b>Luncheon Meeting</b> IBEN Service, NHRI / 12:00-12:40 國衛院生醫工程與奈米醫學研究所貴重儀器服務中心 NoetherTech Bio-Science Taiwan Ltd. / 12:50-13:30 諾得特台灣科技 <b>3F Lotus Room 芙蓉廳</b>						<b>Chau-Jen Lee Seminar</b> 李昭仁講座 <b>2F Bella Room 好廳</b>		
13:40-15:00	<b>Keynote Speech (IV)</b> <b>3F Lotus Room 芙蓉廳</b>								
15:00-15:20	Coffee Break							<b>Satellite Conference</b> 衛星會議 TMUH 臺北醫學大學附設醫院 <b>2F Jixiang Room 吉祥廳</b> BCRS 中華民國生醫材料與藥物釋放學會 <b>2F Ruyi Room 如意廳</b>	
15:20-17:10	<b>Biomaterials (II)</b> <b>3F Lotus Room 芙蓉廳</b>	<b>Regenerative Medicine (III)</b> <b>2F Flora Room 花廳</b>	<b>Student Oral (III)</b> <b>2F Bella Room 好廳</b>	<b>YIA (II)</b> <b>3F Jasper Room 碧玉廳</b> (Start at 15:10)	<b>Biosensor</b> <b>2F Luna Room 月廳</b>	<b>Industry-Academia Conference</b> 產學論壇			
17:10-18:00	<b>Award Ceremony</b> <b>3F Lotus Room 芙蓉廳</b>								

# Scientific Program

September 1 (Friday)	
3F Lotus Room 芙蓉廳	
<b>Opening Ceremony</b>	
08:20-08:30	<b>Mai-Szu Wu (吳夢斯)</b> President, Taipei Medical University, Taiwan
08:30-08:40	<b>Tai-Horng Young (楊台鴻)</b> Director General, Department of Life Sciences, National Science and Technology Council, Taiwan
08:40-08:50	<b>Feng-Hui Lin (林峯輝)</b> Founder Chair, Distinguished Professor, National Taiwan University, Taiwan
	<b>Ching-Li Tseng (曾靖嫻)</b> General Chair, Professor, Taipei Medical University, Taiwan
	<b>Jui-Yang Lai (賴瑞陽)</b> Co-General Chair, Distinguished Professor, Chang Gung University, Taiwan
3F Lotus Room 芙蓉廳	
<b>Keynote Speech (I)</b>	
Moderator: Prof. Feng-Hui Lin and Prof. Ching-Li Tseng	
08:50-09:30	<i>Keynote Lecture: Understanding mechano-drivers of ageing and developing methods to slow it down!</i> <b>Prof. Justin John Cooper-White, The University of Queensland, Australia</b>
09:30-10:10	<i>Keynote Lecture: Novel Hydrogels-based Strategies for Regenerative Medicine and Drug Delivery</i> <b>Prof. Ki-Dong Park, Ajou University, Korea</b>
3F Lotus Room 芙蓉廳	
<b>Keynote Speech (II)</b>	
Moderator: Prof. Yu-Chen Hu	
13:30-14:10	<i>Keynote Lecture: Multifunctional bandages as potential strategy for chronic skin wound management</i> <b>Prof. Sabine Szunerits, University of Lille, France</b>
14:10-14:50	<i>Keynote Lecture (Online): Biodegradable polymer scaffolds and their composites for biomedical applications</i> <b>Prof. Guo-Ping Chen, National Institute for Materials Science, Japan</b>
3F Lotus Room 芙蓉廳	
<b>Gala Dinner Opening</b>	
18:00-20:00	<b>Chih-Hwa Chen (陳志華)</b> Vice Superintendent, Taipei Medical University Shuang Ho Hospital, Taiwan
	<b>Jiunn-Horng Kang (康峻宏)</b> Dean, College of Biomedical Engineering, Taipei Medical University, Taiwan
September 2 (Saturday)	
3F Lotus Room 芙蓉廳	
<b>Keynote Speech (III)</b>	
Moderator: Prof. San-Yuan Chen	
09:00-09:40	<i>Keynote Lecture: Mechano-epigenetic engineering for cell reprogramming</i> <b>Prof. Song Li, University of California, Los Angeles, United States</b>
09:40-10:20	<i>Keynote Lecture: Semiconductor Nanotheranostic Systems: A Panacea Tool for Cancer Treatment</i> <b>Prof. Hsin-Cheng Chiu, National Tsing Hua University, Taiwan</b>
3F Lotus Room 芙蓉廳	
<b>Keynote Speech (IV)</b>	
Moderator: Prof. Win-Ping Deng	
13:40-14:20	<i>Keynote Lecture: Biocompatibility Issues for the Tissue Engineered Products for Commercialization</i> <b>Prof. Gilson Khang, Chonbuk National University, Korea</b>
14:20-15:00	<i>Keynote Lecture: Platelet lysates and their Extracellular vesicles in regenerative medicine</i> <b>Prof. Thierry Burnouf, Taipei Medical University, Taiwan</b>



### Speaker Name

**Professor Justin Cooper-White**

### Current Position

Professor of Bioengineering and Head of School, School of Chemical Engineering,  
The University of Queensland



### Education & training

- B.Eng (Chemical Engineering, 1<sup>st</sup> Class Honors)
- Ph.D. (Chemical Engineering (Biomedical Polymers))

### Professional experience

- 2020-current Head of School, School of Chemical Engineering
- 2021-current Co-Director, Australian Organoid Facility (AOF), University of Queensland
- 2016-current Editor-in-Chief, APL Bioengineering, American Institute of Physics Publishing.
- 2009-current Australian representative, Asian Biomaterials Council.
- 2006-current Senior Group Leader, AIBN, UQ.
- 2007-current Professor of Bioengineering, School of Chemical Engineering, UQ.
- 2007-current Strategic Advisory Committee Member, ANFF Ltd.
- 2006-current Founding Director, Australian National Fabrication Facility (Queensland Node).
- 2017-2020 Co-Director, UQ Centre in Stem Cell Ageing and Regenerative Engineering (UQ-StemCARE)
- 2017-2020 Chief Scientific Officer, Scaled Biolabs Inc., USA.
- 2018-2019 Deputy Director, Australian Institute for Bioengineering and Nanotechnology (AIBN), UQ.
- 2017-2019 Vice President (Health and Medical/Fundraising & Engagement), Queensland Academy of Arts and Sciences (QAAS)
- 2015-2019 President, Asian Biomaterials Federation and Council Chair.
- 2012-2019 Australian Representative, International Union of Societies for Biomaterials Science and Engineering.
- 2014-2018 Science Advisory Council, Biomedical Manufacturing Program, CSIRO.
- 2013-2018 CSIRO OCE Science Leader
- 2012-2018 Professor and Group Leader (Adjunct) within the Australian Regenerative Medicine Institute (ARMI, Monash University)
- 2009-2013 Associate Dean (Research), Faculty of Engineering, Architecture and IT (EAIT), UQ.
- 2004-2006 Associate Professor, UQ.
- 2003-2004 Senior Lecturer, UMelb.
- 2001-2003 Senior Research Fellow and ARC SRI Research Manager, UMelb.
- 1999-2001 Research Fellow, UMelb.
- 1996-1999 Senior Consulting Engineer, N.D. Harley and Associates – Consulting Engineers.
- 1995-1996 Bitumen Technology Engineer (Australia-wide), Shell (Australia) Ltd.
- 1994-1996 Facilities Manager, Shell (Australia) Ltd.
- 1993-1994 Process Engineer, Shell (Australia) Ltd.
- 1992-1996 Design Technologist, Shell (Australia) Ltd.



### Honor/Awards

- 2020-current Fellow, International Union of Societies for Biomaterials Science and Engineering
- 2015-current Fellow, Queensland Academy of Arts and Sciences (QAAS)
- 2016 NHMRC Marshall and Warren Award for Research Excellence for 2015
- 2016 Vice President, Queensland Academy of Arts and Sciences (QAAS)
- 2015 AON Insurance and Life Sciences Queensland Regenerative Medicine Award
- 2013-2018 CSIRO Office of the Chief Executive Science Leader Fellowship
- 2012-2013 Politecnico di Milano Visiting Professor Fellowship.
- 2007-2008 ETH Zurich Visiting Professor Fellowship.
- 2005 Annual Award, The British Society of Rheology
- 1996-1999 Australian Postgraduate Award
- 1996-1999 CRC for International Food Manufacture and Packaging Science Postgraduate Scholarship
- 1989-1990 Kings College Academic Bursary & Kings College Travel Bursary

### Biography Brief

Professor Cooper-White graduated with a Bachelor of Engineering (Chemical) in 1991, University of Queensland, and thereafter worked for Shell (Australia) Pty. Ltd. for 5 years as a practicing chemical engineer and processing manager. He was awarded his Ph.D. in Chemical Engineering (Rheology and thermodynamics of biomedical polymers and their blends), UQ, in March 2000. He subsequently held a postdoctoral position at the University of Melbourne (UMelb) under the mentorship of Prof. David V. Boger and joined the Department of Chemical and Biomolecular Engineering at UMelb as a tenured Senior Lecturer in early 2003. In 2004, then A/Prof. Cooper-White was recruited to the University of Queensland (UQ) to head a new initiative in Tissue Engineering in the Department of Chemical Engineering and in 2007 was promoted to Professor of Bioengineering. He has over 250 scientific publications, including >230 journal articles, 11 reviews, 7 book chapters, along with >150 conference abstracts. His work has been published in high impact journals in his fields (including Nature, Chemical Reviews, Advanced Functional Materials, Advanced Science, ACS Nano, Science Advances, Nature Communications, Nature Protocols, Nature Microbiology, Cell Stem Cell, Biomaterials, Biomacromolecules, Lab on a Chip, Stem Cells, Stem Cells Trans Med., APL Bioengineering), and has been cited >16,000 times (H index 66). He reviews for these and other journals in his fields and has served on the Australian National Health and Medical Research Council (NHMRC) review panels for Centres of Research Excellence (2011) and Project Grants (2012-2014), the Health Research Council of New Zealand Assessment Committee (Biomedical) (2015-2016), and most recently the Singapore Ministry of Education Expert Panel for Life Sciences and Biomedical Engineering (2022, 2023). Prof. Cooper-White has produced 6 Worldwide patents that have reached National Phase Entry in USA, Europe, and Australia in the areas of formulation design for agriproducts, microbioreactor arrays (MBAs) and tissue engineering scaffolds. Technologies developed in his laboratory have been commercialised by an Australian SME and a USA-based start-up company. His research focuses on understanding the role of microenvironmental cues on stem cell commitment and tissue genesis, and the critical roles that stem cells and their niches play in systemic losses of tissue and organ function as we age. His team applies this understanding to develop biomicrodevices, engineered surfaces and advanced scaffolds for cell therapy manufacturing and engineering tissue replacement or repair, and more recently, nanoparticles for targeted rejuvenation of our aged tissues.

**Speaker Name****Ki Dong Park****Current Position**

Professor of Ajou University, Dept. of Molecular Science and Technology,  
Dept. of Applied Chemistry and Biological Engineering

**Education & training**

- Postdoctoral Research Fellow, CCCD, University of Utah, USA (1990-1991)
- Ph. D., Pharmaceutics and Pharmaceutical Chemistry, University of Utah, USA (1986-1990)
- M.S., Industrial Chemistry, Hanyang University, Korea (1981-1983)
- B.S., Industrial Chemistry, Hanyang University, Korea (1977-1981)

**Professional experience**

- Professor/Associate Professor at Ajou University, Korea (2000-present)
- President and Honorary president of Korean Society for Biomaterials (2013-president)

**Honor/Awards**

- Fellow of The American Institute for Medical and Biological Engineering (2023-present)/Fellow of The Korean Academy of Science and Technology (2020-present)/Fellow of Biomaterials Science and Engineering (2016-present)
- Korea Industrial Chemistry Award of Korean Society of Industrial and Engineering Chemistry (2022)/Woongbi National Medal (Highest National Honor), Korean Government (2020)/LG Chemical Award of The Polymer Society of Korea (2018)/Grand prize of Korean Society for Biomaterials (2017)

**Biography Brief**

Ki Dong Park received his Ph.D at the University of Utah, USA in 1990. After postdoctoral training, he worked as a principal research scientist at Korea Institute of Science and Technology (1991-2000). He joined the faculty at Ajou University in 2000. He was the president of the Korean Society for Biomaterials (KSBM) in 2013 and have been honorary president of KSBM. He is acting as vice presidents of Korean Society of Industrial and Engineering Chemistry and Korean Translational Medical Device Society. He is serving as a Congress chair of World Biomaterials Congress to be held in Korea 2024. He has published over 320 scientific publications, possessed 80 patents, and joined many book chapters. His research interests are wide-ranging from implants, controlled drug delivery, tissue regeneration, and biomimetic surface modification.

**Selected Publications**

1. Tonsil-derived mesenchymal stem cells incorporated in reactive oxygen species-releasing hydrogel promote bone formation by increasing the translocation of cell surface GRP78, *Biomaterials* (2021), 278, 121156
2. Multifunctional Surfaces through Synergistic Effects of Heparin and Nitric Oxide Release for a Highly Efficient Treatment of Blood-Contacting Devices, *Journal of controlled release* (2020), 329, 401-412
3. Engineered Heterochronic Parabiosis in 3D Microphysiological System for Identification of Muscle Rejuvenating Factors, *Advanced Functional Materials* (2020), 30, 2002924

**Speaker Name****Sabine SZUNERITS****Current Position**

Full Professor, University of Lille, Lille, France | Head of LiST team at Danube Private University, Austria

**Education & training**

- Habilitation Analytical Chemistry, Université Joseph Fourier, France, Dec. 2003
- Ph.D. Electro-Organic Chemistry, Univ. of London, UK, Sep.1998
- M.S. Chemistry, Univ. of Vienna, Austria Chemistry, June 1994
- M.A. Open University of London, 2001

**Professional experience**

- 09/2022 -present Head of LiST team, Danube Private University (DPU), Austria
- 09/2009 -present Professor in Chemistry, University of Lille
- 09/2004-08/2009 Professor (PR2), INPGrenoble
- 09/2007-08/2009: CNRS délégation (IEMN), University of Lille
- 09/2002-08/2004 Post-Doctoral contract CNRS, CEA Grenoble
- 10/2001-08/2002 Research Associate, E.N.S.C.P.B., Bordeaux, France
- 09/2000-09/2001 Research Associate, Tufts University, Boston, Massachusetts, USA
- 09/1998-08/2000 Post-Doctoral research work, Ecole Normale Supérieure, Paris, France

**Honor/Awards**

- 2022 Senior Member of the de « Institut Universitaire de France » (IUF)
- 2018 Médaille d'argent CNRS (CNRS silver medal)
- 2015 Distinguished Nanoscience Research Leader Award 2015, Publishing Division of Cognizure 2
- 2011 Prix d'Innovation Ecole Polytechnique
- 2011 Junior Member of the de « Institut Universitaire de France » (IUF)
- 2007 ICYS Visiting Research Fellowship, National Institute for Materials Science, Japan
- 2006 Hanse-Wissenschaftskollege Fellowship, University Oldenburg, Germany
- 1998 Schrödinger-Auslandsstipendium, Austria(2 years)
- 2021- Editor-in-Chief of Sensors & Diagnostics (RSC)
- 2020- Editorial Board Member of « ACS Omega »
- 2019- Editor of « Analytical and Bioanalytical Chemistry »
- 2017- Editorial Board Member of « ACS Applied Materials & Interfaces »
- 2017- Editorial Board Member of « ACS Sensors »
- 2017-2019 ISE, Regional Representative of France (<http://www.ise-online.org/>)
- 2020-2022 Nominated member of Scientific Council, IEMN
- Since 2021 Elected member of the Research Council of University of Lille
- 2019- Advisory Member of » Hanse-Wissenschaftskollege », Germany
- 2019 Examiner, Irish Science Foundation Laboratory of Prof. Eion Casey, UCD Center for Biomedical Engineering, Dublin, Ireland







- 2020 HCERS Comity President, Structure SyMMES. CEA Grenoble
- 2018 HCERS Evaluator, Chimie ParisTech. Institute of Chemistry for Life and Health Sciences (i-CLHeS)
- 2017 HCERS Evaluator, IUT de Compiègne. Génie Enzymatique et Cellulaire (UME 6022)
- 2015 HCERS Evaluator, Bordeaux. Laboratoire du Futur (LOF)
- 2019 Consultant of Hanse-Wissenschafts College, Germany

### **Biography Brief**

Sabine Szunerits obtained her PhD in 1998 from Queen Mary and Westfield College, University of London, UK, then spent two years at the ENS Paris as postdoctoral fellow financed by the Schrödinger-Auslandsstipendium (Austria). This was followed by several postdoctoral positions at Tufts University, Boston, USA, ENSCPB, Bordeaux, and CEA Grenoble. In 2004 she became a Full Professor at the INPGrenoble (Laboratoire d'Electrochimie et de Physico-Chimie des Matériaux et des Interfaces). After a CNRS delegation of 2 years at the Institut d'Electronique, de Microélectronique et de Nanotechnologie, Lille, she was appointed Full Professor at the University of Lille (ULille) in 2009. In 2010 she was appointed "member junior" at the "Institut Universitaire de France (IUF) for a period of 5 years. She is a co-author of >360 research publications, 12 cover arts, has edited 4 books, and wrote 20 book chapters in subjects related to nanotechnology, materials chemistry, and biosensors. In 2018 the CNRS honoured her with the "médaille d'argent du CNRS" for her contribution to sensors and nanomedicine for fighting against bacterial and viral infections.

### **Selected Publications**

1. I. De Hoon, A. Barras, T. Swebocki, B. Vanmeerhaeghe, B. Bogaert, C. Muntean, A. Abderrahmanai, R. Boukherroub, St. De Semdt, F. Sauvage, S. Szunerits Influence of the Size and Charge of Carbon Quantum Dots on Their Corneal Penetration and Permeation Enhancing Properties. *ACS Applied Materials & Interfaces*, 2023, 15, 3, 3760–3771
2. T. Rodrigues, F. Curti, Y.R. Leroux, A. Barras, Q. Pagneux, H. Happy, C. Kleber, R. Boukherroub, R. Hasler, S. Volpi, M. Careri, R. Corradini, S. Szunerits, W. Knoll Discovery of a Peptide Nucleic Acid (PNA) aptamer for cardiac troponin I: Substituting DNA with neutral PNA maintains picomolar affinity and improves performances for electronic sensing with graphene field-effect transistors (gFET). *Nano Today*, 2023, 50, 101840
3. S Szunerits, A Abderrahmani, R Boukherroub Nanoparticles and Nanocolloidal Carbon: Will They Be the Next Antidiabetic Class That Targets Fibrillation and Aggregation of Human Islet Amyloid Polypeptide in Type 2 Diabetes? *Accounts of Chemical Research* 2022, 55 (20), 2869-2881
4. B. Demir, L. Rosselle, A. Voronova, Q. Pagneux, A. Quenon, V. Gmyr, D Jary, N. Hennuyer, B. Staels, T. Hubert, A.mar Abderrahmani, V. Plaisance, V. Pawlowski, R. Boukherroub, S. Vignoud, S. Szunerits Innovative transdermal delivery of insulin using gelatin methacrylate-based microneedle patches in mice and mini-pigs *Nanoscale Horizons* 2022, 7 (2), 174-184 Cover art
5. T. Rodrigues, V. Mishyn, Y. R. Leroux, L. Butruille, E. Woittrain, A. Barras, P. Aspermair, H. Happy, C. Kleber, R. Boukherroub, D. Montaine, W. Knoll, S. Szunerits *Nano Today*, 2022, 43, 101391 Highly performing graphene-based field effect transistor for the differentiation between mild-moderate-severe myocardial injury
6. Q. Pagneux, A. Roussel, H. Saada, C. Cambillau, B. Amigues, V. Delauzun, I. Engelmann, E. Kazali Alidjinou, J. Ogiez, A. S. Rolland, E. Faure, J. Poissy, A. Duhamel, R. Boukherroub, D. Devos, S. Szunerits SARS-CoV-2 detection using a nanobody-functionalized voltammetric device *Communications Medicine*, 2022, 2 (1), 1-11





### Speaker Name

**Guoping Chen**

### Current Position

Group Leader, National Institute for Materials Science, Japan  
Professor, University of Tsukuba, Japan



### Education & training

- 1997, PhD, Department of Material Chemistry, Kyoto University
- 1989, M.S., Department of Chemistry, East China Normal University
- 1986, B.S., Department of Chemistry, East China Normal University

### Professional experience

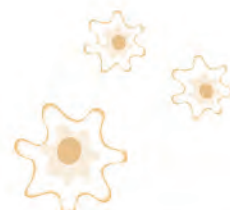
- 1997/4-2000/9, Post doc, Nara Institute of Science and Technology and National Institute of Advanced Industrial Science and Technology (AIST), Japan
- 2000/10-2003/9, Researcher, AIST.
- 2003/10-2004/3, Senior Researcher, Tissue Engineering Research Center, AIST.
- 2004/4-2006/12, Senior Researcher, Biomaterials Center, National Institute for Materials Science (NIMS), Japan.
- 2007/1-Now, Group Leader, NIMS, Japan.
- 2011/4-2015/3, PI and Unit Director, International Center for Materials Nanoarchitectonics (MANA), NIMS.
- 2015/4-2016/3, PI, Unit Director and Field Coordinator, MANA, NIMS.
- 2016/4-2017/3, MANA PI and Field Coordinator, Nano-Life Field, MANA, NIMS.
- 2013/10-Now, Professor, Department of Materials Science and Engineering, University of Tsukuba

### Honor/Awards

- 1997/4-2000/9, Post doc, Nara Institute of Science and Technology and National Institute of Advanced Industrial Science and Technology (AIST), Japan
- 2001, Young Scientist Award from Japanese Biomaterials Society
- 2002, Original Award from the Japanese Society of Artificial Organs
- 2005, Tsukuba Award of Chemical and Bio-Technology from Tsukuba Foundation for Chemical and Bio-Technology
- 2015, Fellow, The Royal Society of Chemistry
- 2017, Fellow, American Institute for Medical and Biological Engineering (AIMBE)
- 2020, Fellow, International Union of Societies for Biomaterials Science and Engineering

### Biography Brief

Dr. Guoping Chen is Group Leader of National Institute for Materials Science (NIMS) and Professor of University of Tsukuba. He received his Ph.D. from Kyoto University in 1997 majoring in Biomaterials and did postdoctoral research until 2000. He became Researcher in 2000 and Senior Researcher in 2003 at Tissue Engineering Research Center, National Institute for Advanced Industrial Science and Technology, Japan. He moved to Biomaterials Center, National Institute for Materials Science (NIMS) as Senior Researcher in 2004 and was promoted to Group Leader in January, 2007. He served as Principal Investigator and Unit Director of Tissue Regeneration Materials Unit from April, 2011 to March, 2015; Principal Investigator,



Field Coordinator and Unit Director of International Center for Materials Nanoarchitectonics, NIMS from April, 2015 to March, 2017. He concurrently joined the Joint Doctoral Program in Materials Science and Engineering, University of Tsukuba as a Professor in 2013. His research interests include tissue engineering and regenerative medicine, polymeric porous scaffolds, photothermal scaffold, nanobiomaterials, biomimetic biomaterials, nano/micro-patterning and surface modification. He has authored more than 300 publications and holds 18 issued patents. He has given more than 140 plenary and invited lectures at conferences. He is Scientific Editor of Materials Horizons. He has been selected Fellow of the Royal Society of Chemistry in 2015, Fellow of American Institute for Medical and Biological Engineering (AIMBE) in 2017 and Fellow of International Union of Societies for Biomaterials Science and Engineering in 2020.

### **Selected Publications**

1. Advanced Healthcare Materials. 2023, 2202604 (2023)
2. Journal of Materials Chemistry B, 10 (21), 3989-4001 (2022).
3. Biomaterials. 275, 120923 10.1016/j.biomaterials.2021.120923 (2021)
4. Acta Biomaterialia. 114, 158-169 (2020).
5. Biofabrication. 12 :025027 (2020).
6. Biomaterials, 197, 317-326 (2019).
7. Acta Biomaterialia. 67, 341-353 (2018).
8. Biomaterials, 133, 253-262 (2017).
9. Advanced Functional Materials, 26, 7634-7643 (2016).
10. Acta Biomaterialia, 35, 185-193 (2016).
11. Biomaterials, 52, 199-207 (2015).
12. Acta Biomaterialia, 10, 2005-2013 (2014).
13. Biomaterials, 34, 2472-2479 (2013).
14. Advanced Materials, 24(31), 4311-6 (2012).



**Speaker Name****Song Li****Current Position**

Chancellor's Professor and Chair, Department of Bioengineering, UCLA

**Education & training**

- Ph. D., Bioengineering, UC San Diego, 1997 (Mentor: Dr. Shu Chien)
- M.S., Biomechanics, Peking University, 1991
- B.S., Mechanics, Peking University

**Professional experience**

- Assistant Professor-Full Professor, Bioengineering, UC Berkeley, 2001-2015
- Chancellor's Professor and Chair, Department of Bioengineering, UCLA, 2016-present
- Postdoctoral Research Fellow, Department of Bioengineering, University of California, San Diego

**Honor/Awards**

- Fellow, American Institute for Medical and Biological Engineering (AIMBE), 2014
- Fellow, Biomedical Engineering Society, 2014
- Fellow, International Academy of Medical and Biological Engineering (IAMBE), 2015
- Global Biomaterials Leadership Award, Chinese Association for Biomaterials, 4/2023

**Biography Brief**

Dr. Li is a renowned bioengineer in the field of cell and tissue engineering. He holds a B.S. and M.S. from Peking University, as well as a Ph.D. and postdoctoral training in Bioengineering from UC San Diego. Throughout his career, he has held positions with prestige and leadership, including serving as a professor of bioengineering at UC Berkeley from 2001 to 2015, chairing the Bioengineering Department at UC Los Angeles, and serving as the Director of Bioengineering Institute for California. Dr. Li's research has contributed to the understanding of how biophysical factors regulate stem cell differentiation and cell reprogramming. He has developed multidisciplinary approaches for engineering biomaterials, stem cells, and immune cells for tissue regeneration and disease therapy. Dr. Li's contributions to bioengineering have earned him numerous awards and honors, including being elected as a Fellow of the American Institute of Medical and Biological Engineering, the Biomedical Engineering Society, and the International Academy of Medical and Biological Engineering.

**Selected Publications**

1. Downing T, Soto J, Morez C, Houssin T, Yuan F, Chu J, Fritz A, Patel S, Schaffer D, Li S (2013) Biophysical regulation of epigenetic state and cell reprogramming. *Nat Mater* 12(12):1154-62.
2. Fang, J., Sia, J., Soto, J., Wang, P., Li, L. K., Hsueh, Y. Y., Sun, R., Faull, K. F., Tidball, J. G. and Li, S. (2021). Skeletal muscle regeneration via the chemical induction and expansion of myogenic stem cells in situ or in vitro. *Nature Biomedical Engineering* 5(8): 864-879. PMID: PMC8387336.
3. Song, Y., Soto, J., Chen, B., Hoffman, T., Zhao, W., Zhu, N., Peng, Q., Liu, L., Ly, C., Wong, P. K., Wang, Y., Rowat, A. C., Kurdستاني, S. K. and Li, S. (2022). Transient nuclear deformation primes epigenetic state and promotes cell reprogramming. *Nature Materials* 21(10): 1191-1199. PMID: PMC9529815.



**Speaker Name****Hsin-Cheng Chiu ( 邱信程 )****Current Position**

Professor, Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University (2009~present)

**Education & training**

- Ph.D., Pharmaceutics and Pharmaceutical Chemistry, University of Utah
- B.S., Chemical Engineering, National Taiwan University of Science and Technology

**Professional experience**

- 2020/08~2022/08 President, Taiwan Biomaterials and Controlled Release Society
- 2020/09~2022/01 Associate Dean, College of Nuclear Science, National Tsing Hua University
- 2011/08~2014/07 Professor and Chairman, Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University
- 2002/02~2009/07 Professor, Chemical Engineering, National Chung-Hsing University, Taichung
- 1995/02~2002/01 Associate Professor, Chemical Engineering, National Chung-Hsing University, Taichung

**Honor/Awards**

- NSTC Outstanding Research Award
- Fellow of Biomaterials Science & Engineering (FBSE) of the International Union of Societies for Biomaterials Science and Engineering (IUSBSE)
- Outstanding Scholar Award of Professor Chau-Ren Lee Foundation ( 李昭仁教授紀念基金會傑出研究學者獎 )
- Biomedical Engineering Award of Professor Chau-Ren Lee Foundation ( 李昭仁教授紀念基金會生醫工程獎 )

**Biography Brief**

Prof. Hsin-Cheng Chiu received his PhD degree from Pharmaceutics and Pharmaceutical Chemistry, University of Utah. He is now a full professor at National Tsing Hua University. His research includes the design of targetable therapy delivery systems and triggered drug release devices and the synthesis of new biomaterials for drug delivery applications. He has published more than 100 scientific papers in the biomaterials and drug delivery field.

**Selected Publications**

1. New Combination Treatment from ROS-Induced Sensitized Radiotherapy with Nanophototherapeutics to Fully Eradicate Orthotopic Breast Cancer and Inhibit Metastasis, *Biomaterials*, 2020, 257, 120229.
2. Dual Stimuli-Guided Lipid-Based Delivery System of Cancer Combination Therapy, *Journal of Controlled Release*, 2020, 318, 16-24.
3. Hierarchically targetable polysaccharide-coated solid lipid nanoparticles as an oral chemo/thermotherapy delivery system for local treatment of colon cancer, *Biomaterials*, 2019, 197, 86-100.



**Speaker Name****Gilson Khang****Current Position**

Professor, Chonbuk National University, Korea

**Education & training**

- 1995 Ph.D. Dept of Biomed Eng, The University of Iowa, USA
- 1985 M.S. Dept of Polymer Sci & Tech, Inha University, Korea
- 1981 B.S. Dept of Polymer Sci & Tech, Inha University, Korea

**Professional experience**

- Professor, Chonbuk National University, 2009.
- Associate Professor, Chonbuk National University, 2004-2009.
- Assistant Professor, Chonbuk National University, 1998-2004.

**Honor/Awards**

- Member of Tissue Engineering and Regenerative Medicine International Society (TERMIS), Society for Biomaterials, and American Association of Pharmaceutical Science.
- Council member for TERMIS-AP.
- Founder Members of the Asian Tissue Engineering Society (ATES).
- The Founding Fellow for Tissue Engineering and Regenerative Medicine (FTERM).

**Biography Brief**

Dr. Gilson Khang was born in 1960 in South Korea, where he obtained his degrees at the Inha Univ. He was studying for Ph.D. degree at the Department of Biomedical Engineering, The Univ of Iowa (Iowa City, IA, USA) from 1991~1995. His academic career started at the Department of PolymerNano Science and Technology at Chonbuk National University (CBNU). Dr. Khang was the one of Founder Members of TERMIS-AP Chapter. Prof. Khang was General Secretary and Treasurer for 2005~2009 of TERMIS-AP Chapter and served as a council member for TERMIS-AP. He was TERMIS-AP Past-President, & Founding Fellow TERMIS.

He has co-authored or edited ~30 books. He has published ~700 original research papers, and ~200 editorials, reviews or chapters in books. His papers were cited 18,720 times. (h-index >71) His major scientific contribution has been the importance of natural/synthetic hybrid scaffold to reduce the host inflammation reaction as well as the commercialization for tissue engineered products as cartilage, bone, retinal pigment epithelium, cornea endothelium, etc. His international collaboration network is really worldwide and tight over 7 countries and 15 Universities. He is/was engaging the Visiting Professor of Tsinghua Univ, Peking Univ, Zhejiang Univ, China and Wake Forest Institute of Regenerative Medicine, USA.

**Selected Publications**

1. Accelerating bone regeneration using poly (lactic-co-glycolic acid)/hydroxyapatite scaffolds containing duck feet-derived collagen. Jeong Eun Song, Dae Hoon Lee, Gilson Khang, Sun-Jung Yoon. International Journal of Biological Macromolecules 229, 486-495
2. Development of Gelatin-Based Shape-Memory Polymer Scaffolds with Fast Responsive Performance and Enhanced Mechanical Properties for Tissue Engineering Applications. Na Eun Kim, Sunjae Park, Sooin Kim, Joo Hee Choi, Se Eun Kim, Seung Ho Choe, Tae woong Kang, Jeong Eun Song, Gilson Khang. ACS omega
3. Silk fibroin-coated polyamide thin-film composite membranes with anti-scaling properties. Somin Lee, Hee-Jun Kim, Miao Tian, Gilson Khang, Hyun-Woo Kim, Tae-Hyun Bae, Jaewoo Lee. Desalination 546, 116195.





**Speaker Name****Thierry Burnouf****Current Position**

Distinguished Professor, Vice Dean  
Graduate Institute of Biomedical Materials and Tissue Engineering  
College of Biomedical Engineering, Taipei Medical University, Taipei, Taiwan

**Education & training**

- Ph. D.: University of Science and Technology, Lille, France
- M.S.: University of Science and Technology, Lille, France
- B.S.: University of Science and Technology, Lille, France

**Professional experience**

- Professor, Taipei medical University, Taiwan
- Director, Human Protein Process Sciences, France
- VP, Haemonetics Corporation, Braintree, MA, USA
- Scientific Director, Laboratoire Français du Fractionnement et des Biotechnologies, Paris France
- Director of production and R&D, plasma fractionation center, Lille, France

**Honor/Awards**

- Taiwan Ministry of Science and Technology Outstanding Research Award (2021)
- International Plasma Fractionation and Plasma Association Award (2019)
- Distinguished Professor, Taipei Medical University (2019)
- Excellent teacher award for Research, Teaching and Administration, Taipei Medical University (2018)
- Prize of Research Award, Taipei Medical University (2017, 2018, 2022)

**Biography Brief**

I am the Director of a research laboratory with over 30 years of industrial and academic experience in the development and translational applications of human blood-derived protein therapeutics. During my tenure as the head of R&D and Scientific Director of the French National Plasma Fractionation and Biotechnology Laboratory (LFB), I led the development and licensing of new therapeutic plasma protein products. This included coagulation factor concentrates (e.g., Factor VIII, Von Willebrand Factor, Factor IX, Factor XI), protease inhibitors (e.g., alpha 1-antitrypsin, antithrombin, C1-inhibitor), and immune globulins. My work involved developing novel plasma fractionation engineering technologies, primarily utilizing ion-exchange and affinity chromatography. Additionally, I contributed to pioneering virus inactivation methods such as solvent/detergent treatment and virus removal procedures through "nanofiltration," which were implemented at industrial level in Europe.

For the past 12 years, I have been a Professor in the College of Biomedical Engineering at Taipei Medical University. My research activities have focused on pioneering the development of virally-safe human platelet-derived fractions and platelet extracellular vesicles rich in trophic factors. These preparations are aimed at treating and modulating neurological and ocular disorders, as well as facilitating the xeno-free expansion of human cells for transplantation. Specifically, my laboratory is developing dedicated platelet and extracellular vesicle preparations for non-invasive intranasal delivery to the brain in models of Parkinson's disease, traumatic brain injury, and aging.



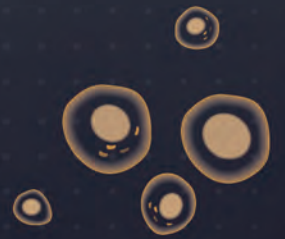
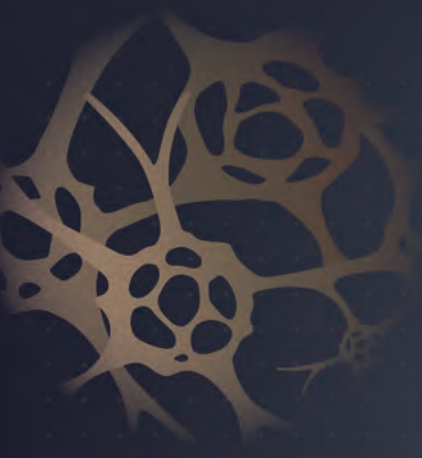
Through my research activities, I have successfully applied for and been granted over 23 international patent families and have published over 300 scientific articles. My current H-index in Web of Science is 47. Additionally, I serve as an editorial board member for several journals, including 'Platelets,' 'Vox Sanguinis,' 'Biologicals,' 'Transfusion Clinique et Biologique,' and 'Current Nanoscience.'" I serve as an informal consultant to the World Health Organization (WHO) and have been actively involved in the drafting of several guidelines on human blood and plasma products, antivenoms, immunoglobulins, and most recently, the 'WHO Guidance on Increasing Supplies of Plasma-Derived Medicinal Products in Low- and Middle-Income Countries through Fractionation of Domestic Plasma.' I hold elected positions as Secretary and Treasurer of the working parties on 'Global Blood Safety' and 'Cellular Therapies' in the International Society of Blood Transfusion (ISBT). I am also a member of the Steering Committee of the International Coalition for Safe Plasma Proteins (ICSPP), which includes ISBT, FIODS, WFH, IPOPI, IPFA, and PPTA.

### **Selected Publications**

1. Burnouf T\*, Walker T\*. The multifaceted role of platelets in mediating brain function *Blood*, 2022; 140(8):815–827.
2. Nebie O et al. Can the administration of platelet lysates to the brain help treat neurological disorders? *Cellular and Molecular Life Sciences*, 2022;79(7):379.
3. Delila L et al. Neuroprotective activity of a virus-safe nanofiltered human platelet lysate depleted of extracellular vesicles in Parkinson's disease and traumatic brain injury models. *Bioengineering & Translational Medicine*, 2022; Published 2022 June 21 doi: 10.1002/btm2.10360
4. Nyam-Erdene A et al. Characterization and Chromatographic Isolation of Platelet Extracellular Vesicles from Human Platelet Lysates for Applications in Neuroregenerative Medicine. *ACS Biomaterials Science & Engineering*, 2021; 7(12): 5823–5835.
5. Nebie O et al. Human platelet lysate biotherapy for traumatic brain injury: pre-clinical assessment. *Brain*, 2021; 144(10): 3142–3158. doi: 10.1093/brain/awab205
6. Johnson J et al. Prospective Therapeutic Applications of Platelet Extracellular Vesicles. *Trends in Biotechnology*, 2021; 39(6): 598–612.
7. Nebie O et al. The neuroprotective activity of heat-treated human platelet lysate biomaterials manufactured from outdated pathogen-reduced (amotosalen/UVA) platelet concentrates. *Journal of Biomedical Science*, 2019; 26(1): doi:10.1186/s12929-019-0579-9
8. Agrahari V et al. Extracellular microvesicles as new industrial frontiers. *Trends in Biotechnology* 2019; 37:707-729
9. Chou ML, Wu JW, Gouel F, Jonneaux A, Timmerman K, Renn TY, Laloux C, Chang HM, Lin LT, Devedjian JC, Devos D\*, Burnouf T\*. Tailor-made purified human platelet lysate concentrated in neurotrophins for treatment of Parkinson's disease. *Biomaterials*, 2017; 142: 77–89.



# Oral Program





# Scientific Program

<b>3F Lotus Room 芙蓉廳</b>	
<b>Stem Cell (I)</b>	
Moderator: Prof. Heungsoo Shin and Prof. Chien-Wen Chang	
10:30-10:55	<i>Invited Lecture: Biomaterials-based delivery of signaling molecules and cells for tissue engineering and regenerative medicine</i> <b>Prof. Heungsoo Shin, Hanyang University, Korea</b>
10:55-11:20	<i>Invited Lecture: Core-Shell Microgels: A Versatile Platform for Driving the Chondrogenic Differentiation of Mesenchymal Stem cells</i> <b>Prof. Chien-Wen Chang, National Tsing Hua University, Taiwan</b>
11:20-11:45	<i>Invited Lecture (Online): Physicochemical Design of Cell Microenvironments for Fat Tissue Engineering</i> <b>Prof. Michiya Matsusaki, Osaka University, Japan</b>
11:45-12:00	<i>Multi-Target Stem Cell Therapy in Companion Animal</i> <b>DVM. Min Koo, Konkuk University, Korea</b>
<b>2F Flora Room 花廳</b>	
<b>Regenerative Medicine (I)</b>	
Moderator: Prof. Yin Xiao and Prof. Che-Ming (Jack) Hu	
10:30-10:55	<i>Invited Lecture: The interplay between hemostasis and immune response in biomaterial development for osteogenesis</i> <b>Prof. Yin Xiao, Griffith University, Australia</b>
10:55-11:20	<i>Invited Lecture: Living Cell Intracellular polymerization for immunotherapy, tissue engineering, synthetic biology, and drug delivery</i> <b>Prof. Che-Ming (Jack) Hu, Academia Sinica, Taiwan</b>
11:20-11:45	<i>Invited Lecture: Solutions for Corneal Blindness Using Functionalized PEG-based Hydrogel Films</i> <b>Prof. Gregory Dusting, Centre for Eye Research Australia, Australia</b>
11:45-12:00	<i>Fabrication of Surface Modified Micro/Nano Spherical Hydrogel as 3D Cell Culture Scaffolds</i> <b>Prof. Chun-Yen Liu, National Cheng Kung University, Taiwan</b>
<b>2F Luna Room 月廳</b>	
<b>Muscular Skeleton and Dental</b>	
Moderator: Prof. Cho-Hong (James) Goh and Prof. Tunku Kamarul Zaman	
10:30-10:55	<i>Invited Lecture: Analysis Of Silk-Based Construct For Bone-Tendon Integration in Anterior Cruciate Ligament Reconstruction</i> <b>Prof. Cho-Hong (James) Goh, National University of Singapore, Singapore</b>
10:55-11:20	<i>Invited Lecture: The Development And Evolution Of Biomaterials In Cartilage Tissue Engineering: Malaysian Perspective</i> <b>Prof. Tunku Kamarul Zaman, University of Malaya, Malaysia</b>
11:20-11:45	<i>Invited Lecture: Joint Cartilage Engineering</i> <b>Prof. Feza Korkusuz, Hacettepe University, Turkey</b>
11:45-12:00	<i>Photo-crosslinked gelatin methacryloyl (GelMA)/hyaluronic acid methacryloyl (HAMA) composite scaffold using anthocyanidin as photo-initiator for bone tissue regeneration</i> <b>Ms. Susaritha Ramanathan, National Taipei University of Technology, Taiwan</b>
<b>2F Bella Room 好廳</b>	
<b>Artificial Intelligence/Medical Device</b>	
Moderator: Prof. Jung-Chih (George) Chen and Prof. Sabareeswaran Arumugam	
10:30-10:55	<i>Invited Lecture: The Symphony via Photoelectrochemical for Alzheimer's Disease</i> <b>Prof. Jung-Chih (George) Chen, National Yang Ming Chiao Tung University, Taiwan</b>
10:55-11:20	<i>Invited Lecture: Tissue-material interface and biocompatibility evaluation of medical devices/biomaterials</i> <b>Prof. Sabareeswaran Arumugam, Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), India</b>
11:20-11:35	<i>Gastric models with biomimetic mechanical, topographical and fluid dynamic properties by 3D printing for drug development</i> <b>Prof. Ming-Hua Ho, National Taiwan University of Science and Technology, Taiwan</b>
11:35-11:50	<i>Enhancing NSCLC survival prediction with multi-modal deep radiomics</i> <b>Prof. Nguyen Quoc Khanh Le, Taipei Medical University, Taiwan</b>





<b>2F Ruyi Room 如意廳</b>	
<b>Nanotechnology (I)</b>	
Moderator: Prof. Yongsung Hwang and Prof. Wen-Tyng Li	
10:30-10:55	<i>Invited Lecture: Understanding the cellular forces that control cell fate and disease progression</i> <b>Prof. Yongsung Hwang, Soonchunhyang University, Korea</b>
10:55-11:20	<i>Invited Lecture: The synthesis of magnetofluorescent carbon dots for bioimaging of mammary carcinoma cells</i> <b>Prof. Wen-Tyng Li, Chung Yuan Christian University, Taiwan</b>
11:20-11:45	<i>Invited Lecture (Online): Photoresponsive drug delivery for the treatment of cancer and eye diseases</i> <b>Prof. Wei-Ping Wang, The University of Hong Kong, Hong Kong</b>
11:45-12:10	<i>Invited Lecture (Online): Next-generation materials for lyophilized RNA-lipid nanoparticles</i> <b>Prof. Akon Higuchi, National Central University, Taiwan</b>
<b>2F Flora Room 花廳</b>	
<b>Nanotechnology (II)</b>	
Moderator: Prof. Kohei SOGA and Prof. Tse-Ying Liu	
15:10-15:35	<i>Invited Lecture: Organic/Inorganic hybrid nano structure design for NIR-excited photo dynamic therapy</i> <b>Prof. Kohei SOGA, Tokyo University of Science, Japan</b>
15:35-16:00	<i>Invited Lecture: Nanomedicine approaches for precise tumor cell-targeting radiotherapy and metastasis inhibition</i> <b>Prof. Tse-Ying Liu, National Yang Ming Chiao Tung University, Taiwan</b>
16:00-16:25	<i>Invited Lecture: A Self-powered Smart Dressing for Active Infection Prevention and Accelerated Wound Healing</i> <b>Prof. Zong-Hong Lin, National Taiwan University, Taiwan</b>
16:25-16:50	<i>Invited Lecture: Engineered Perfluorocarbon Dual-Layered Drug Nanocarriers Provide Effective Photoimmunotherapy against Colorectal Cancer</i> <b>Prof. Yu-Hsiang Lee, National Central University, Taiwan</b>
16:50-17:15	<i>Invited Lecture: Bio-inspired zwitterionic polymeric chelating assembly for treatment of copper-induced cytotoxicity and triggered-release drug delivery</i> <b>Prof. Chun-Jen Huang, National Central University, Taiwan</b>
17:15-17:40	<i>Invited Lecture: Biological nanoparticle, RBC-derived vesicles (RDVs), for biomedical applications</i> <b>Prof. Dong-Ming Huang, National Health Research Institutes, Taiwan</b>
<b>2F Luna Room 月廳</b>	
<b>Drug Delivery</b>	
Moderator: Prof. In-Kyu Park and Prof. Shang-Hsiu Hu	
15:10-15:35	<i>Invited Lecture: Catalase mimicking manganese oxide nanozymes as anti-cancer and anti-inflammation nanotherapeutics</i> <b>Prof. In-Kyu Park, Chonnam National University, Korea</b>
15:35-16:00	<i>Invited Lecture: Rabies Virus Glycoprotein-Mediated T Cell Infiltration to Brain Tumor By Magnetolectric Gold Yarnballs</i> <b>Prof. Shang-Hsiu Hu, National Tsing Hua University, Taiwan</b>
16:00-16:25	<i>Invited Lecture: New concept of cancer therapy using engineered macrophage (Mactrigger)</i> <b>Prof. Yoshiki Katayama, Kyushu University, Japan</b>
16:25-16:50	<i>Invited Lecture: TAK1 blockade as a therapy for ocular neovascularization</i> <b>Prof. Guei-Sheung Liu, Centre for Eye Research Australia, Australia</b>
16:50-17:15	<i>Invited Lecture: Novel Drug Delivery System Using Nano-Prodrugs</i> <b>Prof. Hitoshi Kasai, Tohoku University, Japan</b>
17:15-17:30	<i>Exploration and Development of New Decellularized Matrix Hydrogels for Pulmonary Delivery in Rats</i> <b>Prof. Chen-Yu Kao, National Taiwan University of Science and Technology, Taiwan</b>



3F Jasper Room 碧玉廳	
<b>Stem Cell (II)</b>	
Moderator: Prof. Sangheon Kim and Prof. Sung-Jan Lin	
15:10-15:35	<i>Invited Lecture: Cell-assembling collagen microgel for stem cell therapy in critical limb ischemia</i> <b>Prof. Sangheon Kim, Korea Institute of Science and Technology, Korea</b>
15:35-16:00	<i>Invited Lecture: How hair follicle stem cells interact with the environment</i> <b>Prof. Sung-Jan Lin, National Taiwan University, Taiwan</b>
16:00-16:25	<i>Invited Lecture: Engineering Different Scaffold-Free 3D Culture Systems of Adipose-Derived Stem cells for Tissue Regeneration</i> <b>Prof. Nai-Chen Cheng, National Taiwan University Hospital, Taiwan</b>
16:25-16:50	<i>Invited Lecture: Infrapatellar fat pads-derived stem cells is a favorable cell source for articular cartilage tissue engineering: A study based on 3D organized self-assembled biomimetic scaffold</i> <b>Prof. Chen-Chie Wang, Taipei Tzu Chi Hospital, Taiwan</b>
16:50-17:15	<i>Invited Lecture: Stem Cells in Disease Modelling, Drug Discovery and Therapeutic Development</i> <b>Prof. Thamil Selvee Ramasamy, University of Malaya, Malaysia</b>
2F Bella Room 好廳	
<b>Young Investigator Competition (YIC-BCRS)</b>	
Judge: Prof. Mei-Chin Chen, Prof. Wei-Bor Tsai and Prof. Yun-Ching Chen	
15:10-15:25	<i>Fabrication of dynamic covalently crosslinked alginate hydrogels for biomedical applications</i> <b>Prof. Yi-Cheun Yeh, National Taiwan University, Taiwan</b>
15:25-15:40	<i>Natural-compound-derived multifunctional nanomedicines for cancer theranostics</i> <b>Prof. Chih-Sheng Chiang, China Medical University, Taiwan</b>
15:40-15:55	<i>Monocyte-mediated drug carriers targeting cancer spheroids in a 3D microfluidic cell culture that reconstitute tumor microenvironment</i> <b>Prof. Bill Cheng, National Chung-Hsing University, Taiwan</b>
15:55-16:10	<i>Electric stimulation preserves regenerative microenvironment of denervated neuromuscular junction by satellite cell activation and differentiation</i> <b>Prof. Yuan-Yu Hsueh, National Cheng Kung University, Taiwan</b>
16:10-16:25	<i>Revolutionary Dual Single Molecule Detection Frameworks: Empowering Nanomedicine and Extracellular Vesicle Research</i> <b>Prof. Chi-An (Annie) Cheng, National Taiwan University, Taiwan</b>
16:25-16:40	<i>Unveiling the Synergistic Potential of Chemo-Immunotherapy in Triple-Negative Breast Cancer through Tumor-Microenvironment-on-Chip Technology</i> <b>Prof. Jen-Huang Huang, National Tsing Hua University, Taiwan</b>
16:40-16:55	<i>Highly heterogeneity lung-cancer spheroid-based physiological model to recapitulate the microenvironment and the drug response for precision medicine</i> <b>Prof. Ming-You Shie, China Medical University, Taiwan</b>
16:55-17:10	<i>Thermoresponsive gold nanohuts Simultaneous targeting to cancer cells and tumor associated macrophages for enhanced Synergistic photoimmunotherapy</i> <b>Dr. Hung-Wei Cheng, National Yang Ming Chiao Tung University, Taiwan</b>
17:10-17:25	<i>An Iron Oxide-based Photocrosslinkable Ink for the Applications of Magnetic-Responsive Bioactuators</i> <b>Prof. Yi-Chen (Ethan) Li, Feng Chia University, Taiwan</b>
17:25-17:40	<i>Hafnium-doped bioceramic nanoparticles for use as radiosensitizers in cancer treatment</i> <b>Prof. Min-Hua Chen, Chung Yuan Christian University, Taiwan</b>
17:40-17:55	<i>Using clinical porous gelatin sponge to establish a 3D Multilayered Intervertebral Disc Degeneration Model</i> <b>Prof. Chi-Yun Wang, Ming Chi University of Technology, Taiwan</b>
3F Jasper Room 碧玉廳	
<b>Student Oral (I)</b>	
Judge: Prof. James Lai and Prof.	
10:30-10:40	<i>Development and application of a drug carrier platform for probiotic lysate extract delivery</i> <b>Yong-Xin Ta, National Yang Ming Chiao Tung University, Taiwan</b>
10:40-10:50	<i>A chemoimmunotherapy nanogel enables efficient delivery of interleukin-2 and induction of immunogenic cell death for effective cancer therapy</i> <b>Yen-Nhi Ngoc Ta, National Tsing Hua University, Taiwan</b>
10:50-11:00	<i>Magnetolytic therapy-mediated antigen capture and T cell infiltration in lung metastasis by biomimetic zwitterionic copolymer coated magnetic nanoparticles</i> <b>Thi My Hue Huynh, National Tsing Hua University, Taiwan</b>
11:00-11:10	<i>Bridging the Gap Between In Vitro and In Vivo the Chick Embryo Model and Its Potential Applications in Nanomedicine</i> <b>Cong-Kai Lin, Taipei Medical University, Taiwan</b>
11:10-11:20	<i>Calcium carbonate-encapsulated STING agonist for anti-cancer immunotherapy</i> <b>Yi-Ju Lin, China Medical University, Taiwan</b>





11:20-11:30	<i>Development of temperature and reactive oxygen species responsive gelatin-PNIPAM-based hydrogels for drug delivery</i> <b>Hsin-Ho Chen, National Taiwan University of Science and Technology, Taiwan</b>
11:30-11:40	<i>Spheroids-laden hydrogel with spatially confined delivery of signaling molecules for engineering 3D complex tissue</i> <b>Eunjin Lee, Hanyang university, Korea</b>
11:40-11:50	<i>Nanocomposite hydrogels containing immunomodulatory strontium-tannic acid nanoparticles for vascularized skin tissue regeneration</i> <b>Yujin Han, Hanyang university, Korea</b>
11:50-12:00	<i>Fabrication of a collagen-based bioink for 3D bioprinting</i> <b>Po-Hsun Chen, National Taiwan University, Taiwan</b>



**Speaker Name****Heungsoo Shin****Current Position**

Professor, Department of Bioengineering, Hanyang University (Korea)

**Education & training**

- Ph. D. 2003, Bioengineering, Rice University (USA)
- M.S. 1998, Industrial Chemistry, Hanyang University (Korea)
- B.S. 1996, Industrial Chemistry, Hanyang University (Korea)

**Professional experience**

- Professor
  - 2006 ~ present, Department of Bioengineering, Hanyang University (Korea)
- Postdoctoral Research Fellow
  - 2003 – 2006, Dept. Mechanical Engineering, Georgia Institute of Technology (USA)

**Honor/Awards**

- MEDIPOST Outstanding Research Award, Korean Tissue Engineering and Regenerative Medicine Society (2021)
- CGBIO Mid-Career Researcher Award, The Korea Society for Biomaterials (2021)
- Mid-Career Researcher Academy Award, The Polymer Society of Korea (2019)
- HYU Outstanding Research Fellow Award, Hanyang University (2016)

**Biography Brief**

Dr. Heungsoo Shin is currently Professor with tenure in the Department of Bioengineering, Hanyang University in Korea. His main research areas lie in (1) Development of biomimetic materials for delivery of bioactive molecules and stem cells, (2) Surface modification of biomaterials, (3) Spheroid-based 3D tissue engineering and biofabrication, (4) Cell-extracellular matrix interactions. His works particularly have led innovative approaches in regeneration of impaired bone, muscular, and vascular tissue. He has co-authored over 150 peer-reviewed publications and 19 patents (filed or registered). He has been serving as co-editors-in-chief in Tissue Engineering Part B: Reviews, and editorial board member of Journal of Biomedical Materials Research A. He has been recognized by various international and domestic awards. He is an active member of professional societies, and also actively involved in international Conferences including service as organizer of International Conference on Tissue Engineering, Aegean Conferences (2022, 2017, and 2014) and a chair of scientific session of World Biomaterials Congress (WBC) 2024.

**Selected Publications**

1. J. Lee et al. *Advanced Science*, 9, 2103525, 2022
2. T. Ahmad et al. *Biomaterials*, 230:119652, 2020
3. S.J. Kim et al. *Biomaterials*, 225, 119534, 2019



**Speaker Name****Chien-Wen Jeff Chang****Current Position**

Professor, Biomedical Engineering & Environmental Sciences,  
National Tsing Hua University, Taiwan

**Education & training**

- Ph. D. Department of Pharmaceutics & Pharmaceutical Chemistry, University of Utah

**Professional experience**

- Postdoctoral Research Fellow
  - CIRM Postdoctoral Fellow, Bioengineering, UCSD
  - CNSI Postdoctoral Fellow, Chemistry & Biochemistry, UCLA
- Others
  - Board of Directors, Taiwan Biomaterials and Drug Delivery Society

**Honor/Awards**

- 19th National Innovation Excellence Award/2022
- College of Nuclear Science Excellent Teaching Award, NTHU/2022
- Future Tech Award/2021
- 17th National Innovation Award/2020

**Biography Brief**

Dr. Chien-Wen Jeff Chang is a Professor at the Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, where he also serves as the Associate Director of the Biomedical Science and Engineering Center. He has a keen research interest in drug/gene delivery, molecular beacons, cell encapsulation, and stem cell engineering. Dr. Chang has a record of scholarly publications with over 50 SCI papers in the field of biomaterials and drug delivery. His publication has an h-index of 29 and an i10-index of 41.

**Selected Publications**

1. Huang RY, Liu ZH\*, Weng WH and Chang CW\*. Magnetic Nanocomplexes for Gene Delivery Applications. *Journal of Materials Chemistry B* 2021 9, 4267–4286.
2. Chuang CC, Chen YN, Wang YY, Huang YC, Lin SY, Huang RY, Jang YY, Yang CC, Huang YF, Chang CW\*. Stem Cell-Based Delivery of Gold/Chlorin e6 Nanocomplexes for Combined Photothermal and Photodynamic Therapy. *ACS Applied Materials & Interfaces* 2020 12 (27), 30021-30030.





**Speaker Name****Michiya MATSUSAKI****Current Position**

Professor, Department of Applied Chemistry, Graduate School of Engineering,  
Osaka University, Japan

**Education & training**

- B.S. from Kagoshima University, March 1999
- M.S. from Kagoshima University, March 2001
- Ph.D. in Engineering, from Kagoshima University, September 2003 (short period)

**Professional experience**

- April 2003 to March 2005: Japan Society for the Promotion of Science (JSPS) Postdoctoral Research Fellow
- January 2004 to March 2004: Visiting Scientist in Lund University (Prof. Carl A.K. Borrebaeck Lab.)  
by Japan-Sweden Young Researcher Exchange Program
- April 2005 to July 2006: Designated Assistant Professor, Department of Applied Chemistry, Graduate School of Engineering, Osaka University
- August 2006 to Sept. 2015: Assistant Professor, Department of Applied Chemistry, Graduate School of Engineering, Osaka University
- October 2008 to March 2011: PRESTO Researcher, JST (Concurrent position)
- Sept. 2015 to July 2019: Associate Professor, Department of Applied Chemistry, Graduate School of Engineering, Osaka University
- Sept. 2015 to March 2019: PRESTO Researcher, JST (Concurrent position)
- August 2019 to present: Professor, Department of Applied Chemistry, Graduate School of Engineering, Osaka University
- April 2012 ~: Committee member of Japanese Society for Biomaterials
- April 2022 ~: Board of Directors of Japanese Society for Biomaterials
- April 2016~: Committee member of Bio division, Kinki chemical society, Japan
- June 2016~: Committee member of Kobunshi Ronbunshu, The Society of Polymer Science (SPSJ), Japan
- June 2017~: Committee member of 174th Committee, Japan Society for the Promotion of Science
- April 2018~: Committee member of Research Group on Biomedical Polymers, SPSJ
- April 2018~: Specific investigator of National Institute of Science and Technology Policy (NISTEP)
- July 2018~: Technical Advisor, Japan Association for Chemical Innovation (JACI)
- September 2018~: Visiting researcher of AIST
- April 2015 ~: Editorial Board Member of Scientific Reports (Nature Publishing Group)
- Jan 2013 ~: Editorial Board Member of PLoS ONE (PLOS Group)
- October 2019 ~: Editorial Board Member of Materials Today Bio (ELSEVIER)
- August 2021 ~: Assistant Editor of Journal of Materials Science: Materials in Medicine (Springer Nature)





### Honor/Awards

- May 2022: 29th HAB Annual Meeting, Best Poster Award
- Sept 2021: U.S. National Academy of Medicine, Healthy Longevity Global Grand Challenge Catalyst Award (NAM-HLGC Catalyst Award)
- May 2020: 2019 KCS Award in Chemical Technology, KINKA Chemical Society
- May 2018: The Publicity Award of SPSJ
- May 2016: The Award for Young Investigator of Japanese Society for Biomaterials
- November 2015: Best Paper Award in 2015 International Symposium on Micro-Nano Mechatronics and Human Science (MHS2015)
- November 2015: The Award for Young Investigator of Japanese Society for Biomaterials
- July 2015: 2014 Osaka University Presidential Awards for Encouragement
- March 2015: 1st Noguchi Shitagau Award
- August 2014: SPSJ Wiley Award 2014
- July 2014: 2014 Osaka University Presidential Awards for Encouragement
- April 2014: The Young Scientist's Prize of The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology
- August 2013: 2013 Osaka University Presidential Awards for Encouragement
- August 2011: 2011 Osaka University Achievement Award in Research
- March 2011: The Chemical Society of Japan Award For Young Chemists for 2010
- January 2010: Award for Encouragement of Research in Materials Science; The Materials

### Biography Brief

Michiya Matsusaki was born in Kagoshima, Japan in 1976. He received his Ph.D. degree in 2003 under the direction of Prof. Mitsuru Akashi from Kagoshima University. He started his academic career as a Postdoctoral fellow at Osaka University from 2003 to 2005. During this period, he was a visiting scientist at the Prof. Carl A. K. Borrebaeck laboratory in 2004 at Lund University. In 2006, he joined the Department of Applied Chemistry in the Graduate School of Engineering at Osaka University, Japan as an Assistant Professor. He was promoted to Associate Professor in 2015 and full Professor in 2019. He was a JST-PRESTO researcher (Concurrent position) from 2008 to 2011 and 2015 to 2019. His research interest is functional polymers and biomaterials for biomedical and tissue engineering applications.

### Selected Publications

1. Masahiko Nakamoto\*, Shiro Kitano, Michiya Matsusaki\*, Biomacromolecule-fueled Transient Volume Phase Transition of a Hydrogel, *Angew. Chem. Int. Ed.* 61, e202205125 (2022).
2. Dong-hee Kang, Fiona Louis, Hao Liu, Hiroshi Shimoda, Yasutaka Nishiyama, Hajime Nozawa, Makoto Kakitani, Daisuke Takagi, Daijiro Kasa, Eiji Nagamori, Shinji Irie, Shiro Kitano, Michiya Matsusaki\*, Engineered Whole Cut Meats Assembled of Cell Fibers Constructed by Tendon-Gel Integrated Bioprinting, *Nat. Commun.* 12, 5059 (2021).
3. Hiroataka Nakatsuji, Yudai Shioji, Noboru Hiraoka, Yuta Okada, Natsuko Kato, Sayaka Shibata, Ichio Aoki, Michiya Matsusaki\*, Cancer-Microenvironment Triggered Self-Assembling Therapy by Molecular Blocks, *Mater. Horizon* 8, 1216-1221 (2021).
4. P. Chetprayoon, M. Matsusaki, U. Yokoyama, T. Tejima, Y. Ishikawa, M. Akashi, Use of Three-dimensional Arterial Models To Predict the In Vivo Behavior of Nanoparticles for Drug Delivery, *Angew. Chem. Int. Ed.* 55, 4461-4466 (2016).
5. M. Matsusaki, H. Ajiro, T. Kida, T. Serizawa, M. Akashi, LbL Assembly Through Weak Interactions and Their Biomedical Applications, *Adv. Mater.* 24, 454 (2012).



**Speaker Name****Yin XIAO****Current Position**

Distinguished Professor, School of Medicine and Dentistry, Griffith University

**Education & training**

- Ph. D. 2000 (UQ)
- M.S. 1991 (WHU)
- B.S. 1986 (WHU)

**Professional experience**

- Professor (2012-2022): Institute of Health and Biomedical Innovation, Queensland University of Technology
- Associate Professor (2005-2012): Institute of Health and Biomedical Innovation, Queensland University of Technology
- Research Fellow (2003-2005): School of Life Sciences, Queensland University of Technology
- Postdoctoral Research Fellow (2000-2003): School of Dentistry, the University of Queensland

**Honor/Awards**

- 2022 Outstanding Scientist, TERMIS-AP

**Biography Brief**

**Prof. Yin Xiao** is a Distinguished Professor in Dentistry, Oral Health, and Medicine at Griffith University, an Adjunct Professor in Medical Engineering at the Queensland University of Technology, and an honorary Professor at the University of Queensland. He was a dental specialist (BDS 1986 and MDS 1991 from Wuhan University) and started his academic career in 2000 (PhD from the University of Queensland). He is the Founder and the Director of the Australia-China Centre for Tissue Engineering and Regenerative Medicine (ACCTERM), established in 2013, and the Joint Research Centre of functional biomaterials for Tissue and organ replacement. His work predominantly focuses on bone, biomaterials, stem cells, dentistry, and tissue engineering. He has authored over 360 journal papers, three books, and 23 book chapters. His H index is 81 (GS), and his work has been cited more than 29,000 times. Australian Research Magazine named him one of the top 250 researchers in Australia and the field leader in Biomedical Technology in 2019 and 2021. He has been awarded the 2022 Outstanding Scientist from the TERMIS-AP Society and the World's Top 2% Scientists in AD Scientific Index.

**Selected Publications**

1. Biomaterials 2013, 34 (2), 422-433 (733 Citations)
2. Materials Today 2016, 19 (6), 304-321 (514 Citations)
3. Chemical Reviews 2017, 117 (5), 4376-4421 (414 Citations)





**Speaker Name****Che-Ming Jack Hu****Current Position**

Associate Research Fellow, Institute of Biomedical Sciences, Academia Sinica, Taiwan

**Education & training**

- Ph. D. in Bioengineering, UC San Diego 2011
- B.S. in Biomedical Engineering, UC Berkeley 2005

**Professional experience**

- 10/2019 to present: Associate Research Fellow, Institute of Biomedical Sciences, Academia Sinica
- 06/2015 to 09/2019: Assistant Research Fellow, Institute of Biomedical Sciences, Academia Sinica
- 01/2012 to 05/2015: Postdoctoral Researcher, Nanoengineering, UC San Diego

**Honor/Awards**

- 2023 Outstanding Research Award, National Science and Technology Council, Taiwan
- 2022 Outstanding Technology Award by the Taiwan Nanomedicine Society
- 2022 The 10th Y.Z. Hsu Technology Invention Award-Biomedical Technology
- 2021 Academia Sinica Early-Career Investigator Research Achievement Award
- 2020 Chen-Yuan Lee Foundation Young Investigator Award in Biomedical Research
- 2019 "Top 1% Highly Cited Researchers" in cross-field research by Clarivate Analytics

**Biography Brief**

Dr. Hu's research emphasis lies in the development of biologically inspired materials to address fundamental barriers in drug delivery and immunoengineering. He has pioneered the development of several notable materials categories, including cell membrane camouflaged nanocarriers, intracellularly polymerized cells, and tailorable hollow polymeric nanoshells. Dr. Hu has received numerous recognitions for his work, including the Outstanding Research Award from the National Science and Technology Council, Y.Z. Hsu Technology Invention Award, and TienTe Lee Biomedical Foundation Young Scholar Award. His work has led to multiple patents, biotechnology startups, and technology transfers.

**Selected Publications**

1. Lymph node follicle-targeting STING agonist nanoshells enable single-shot M2e vaccination for broad and durable influenza protection, *Advanced Science*, 2023, 2206521.
2. Facile transformation of murine and human primary dendritic cells into robust and modular artificial antigen-presenting systems by intracellular hydrogelation. *Advanced Materials*, 2021, 210119.



**Speaker Name****Greg Dusting****Current Position**

Professorial Fellow (Surgery), Centre for Eye Research Australia (CERA)  
Honorary Professorial Fellow (Surgery), University of Melbourne

**Education & training**

- 1974 Ph.D., Pharmacology, The University of Melbourne
- 1971 BScHons., Pharmacology, The University of Melbourne

**Professional experience**

- 2005 Fellow, British Pharmacological Society

**Honor/Awards**

- 2016 The Heart Foundation Medal for distinguished cardiovascular research
- 2011 The MICHAEL RAND Medal for Pharmacology – The prestigious award of ASCEPT
- 2005 Fellow of the British Pharmacological Society – Distinction and election by the fellows
- 1992 The Australian Physiological and Pharmacological Society Lecture

**Biography Brief**

Professor Dusting is a pharmacologist, who has discovered and developed 2 drugs: the first a lifesaving heart medicine marketed since 2005, and the second in Phase 2 clinical trial. He trained with Rand then Vane (Nobel Laureate, 1982) and is renowned for fundamental research and drug discovery in cardiovascular disease. More recently he has directed research in tissue engineering, building cardiac tissue, blood vessels and vascularising multiple tissues. The team now focusses on construction of cornea, utilizing stem cells or donor corneal tissues, in order to restore corneal endothelium that is lost in ocular disease or injury. He is a Founding and Honorary Life member of Hypertension Australia, ASCEPT, and was elected an Honorary Fellow of the British Pharmacological Society in 2005. He has assisted commercialization of discoveries from beginnings with the pharmaceutical industry (Wellcome plc), and extended to new drugs he progressed to Phase 2 trial in Australia (ArmaronBio Pty Ltd). He has trained about 40 postgraduate students or post-docs, 10 of whom have been appointed as Professors of Pharmacology or Medicine in prestigious Academies in Australia, USA, and China.

**Selected Publications**

1. Wang JH, Chang YF, Zhu LX, Lams S, Tu LL, Dusting GJ, Liu GS. An integrative multi-omics analysis reveals micro-RNA as potential therapeutic to attenuate retinal angiogenesis. *Nucleic Acid Therapeutics* 2022, 32:251-266
2. Brown KD, Dusting GJ, Daniell M. Emerging technologies to solve the key issues in endothelial keratoplasty. *Current Ophthalmology Reports* 2020, 8: 236-244.
3. Jiang F, Zhang Y, Dusting GJ. NADPH oxidase-mediated redox signaling: roles in cellular stress, stress tolerance, and tissue repair. *Pharmacol Rev* 2011; 63: 218-42. Cited > 400 times
4. Nicholls SJ, Dusting GJ, Cutri B, Bao S, Drummond GR, Rye KA, Barter PJ. Reconstituted high-density lipoproteins (HDL) inhibit the acute pro-oxidant and proinflammatory vascular changes induced by a periarterial collar in normocholesterolemic rabbits. *Circulation* 2005; 111: 1543-50. Cited >200 times



**Speaker Name****James C.H. Goh****Current Position**

Emeritus Professor, Department of Biomedical Engineering,  
College of Design and Engineering, National University of Singapore

**Education & training**

- PhD in Bioengineering – University of Strathclyde, UK, 1982
- BSc (1st Class) in Mechanical Engineering – University of Strathclyde, UK, 1978

**Professional experience**

- 2010 - 2019: Professor & Head, Department of Biomedical Engineering, College of Design and Engineering, NUS
- 2008 - 2022: Professor, Department of Biomedical Engineering, College of Design and Engineering, NUS
- 2008 - 2022: Research Professor (Joint Appt), Orthopedic Surgery, YLL School of Medicine, NUS
- 2008 - 2010: Research Professor & Director (Research), Orthopedic Surgery, YLL School of Medicine, NUS

**Honor/Awards**

- IUPESM Award of Merit (2022) • Life Member, World Association of Chinese Biomedical Engineers (WACBE)
- Fellow, International Union of Physical and Engineering Sciences in Medicine (IUPESM)
- Fellow, International Academy of Medical and Biological Engineering (IAMBE)
- Fellow, American Institute of Medical and Biological Engineering (AIMBE)
- Fellow, Institute of Engineers, Singapore (IES)
- Fellow, ASEAN Academy of Engineering and Technology (AAET)

**Biography Brief**

Prof James Goh graduated with PhD in Bioengineering (1982) from the University of Strathclyde, Glasgow, UK. He is currently an Emeritus Professor in the Department of Biomedical Engineering College of Design and Engineering, National University of Singapore. He had held a joint appointment as Research Professor in the Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore. He was the Head of the Department of Biomedical Engineering from 2010 to 2019. Nationally, he had been involved in research grant panels of several funding agencies. He chaired the Singapore Sports Institute's Science and Technology Advisory Board. He is a member of the Biomedical and Health Standards Committee (BHSC) of the Singapore Standards Council and chairs the BHSC's Technical Committee on Medical Devices.

Prof Goh has a strong research interest in musculoskeletal research, particularly in tissue regeneration. He has given numerous invited talks at international and regional conferences. He has published well over 150 international peer review journal papers, more than 500 conference papers and 12 book chapters. He is on several Editorial Boards of peer-reviewed journals, such as ACS Biomaterials Science & Engineering, Tissue Engineering and Regenerative Medicine, Biomedical Engineering Letters, Medical and Biological Engineering, and Journal of Orthopaedic Translation.

Prof Goh actively promotes the field of biomedical engineering through his involvement in high level forum, such as the WHO Forum on Medical Devices in Geneva and the WFEO's seminar on UN's SDG3, and accreditation of BME educational program. As Head of Department, he led his department to achieve accreditation through the Washington Accord framework. He was an external advisor to several Biomedical Engineering undergraduate and





### Biography Brief

post-graduate programs in the region.

Prof Goh is the Founding Member & President of the Biomedical Engineering Society (Singapore). He is the Past-President of the International Federation of Medical and Biological Engineering (President from 2015- 2018). He is the Immediate Past-President of the International Union of Physical and Engineering Sciences in Medicine (President from 2018-2022) and a Delegate (2018-2022) at the International Science Council's General Assembly. Prof Goh is a Life Member of the World Association of Chinese Biomedical Engineers (WACBE) and had previously served in the WACBE Council. He was also an active member of the World Council of Biomechanics and chaired the organizing committee of the World Congress of Biomechanics (2010) held in Singapore. Prof Goh is currently the President of the Asian Pacific Association of Biomechanics.

Prof Goh is a Fellow of the Institute of Engineers, Singapore (IES) and chairs IES' Technical Committee on Biomedical Engineering. He is also a Fellow of several prestigious international BME organizations, such as American Institute of Medical and Biological Engineering, International Academy of Medical and Biological Engineering, International Union of Physical and Engineering Sciences as well as Fellow of the ASEAN Academy of Engineering and Technology (AAET). Prof Goh was awarded the IUPESM Award of Merit (2022) for his outstanding contribution to Medical and Biological Engineering. Prof Goh has held key positions in organization of conferences, such as the International Vice-President, IUPESM World Congress (2006), Seoul, Korea; Chairman, Organizing Committee, TERMIS-AP Conference (2011), Singapore; Chairman, Organizing Committee, 7th WACBE World Congress on Bioengineering (2015), Singapore; Chairman, Organizing Committee, 16th ICBME, (2016), Singapore; Co-Chair, International Symposium on Tendon and Ligament (2020), Phoenix, USA and Advisor, Organizing Committee, IUPESM World Congress (2022), Singapore.

### Selected Publications

1. C Ai, L Liu, K Wong, XH Tan, JCH Goh. The effect of chondroitin sulfate concentration and matrix stiffness on chondrogenic differentiation of mesenchymal stem cells. *Biomaterials Science* 2023. DOI: 10.1039/D2BM01980A
2. C Ai, YHD Lee, XH Tan, SHS Tan, JHP Hui, JCH Goh. Osteochondral tissue engineering: Perspectives for clinical application and preclinical development. *2022 Journal of Orthopaedic Translation* 30, 93-102
3. Liang YS, JCH Goh "An in vitro Mat-on-Gel Construct for Engineering Cardiac Tissue". *Advanced Materials Interfaces* 11 July 2021 <https://doi.org/10.1002/admi.202100341>
4. Liang YS, A Mitriashkin, TT Lim, JCH Goh. "Conductive Polypyrrole-Encapsulated Silk Fibroin Fibers for Cardiac Tissue Engineering". *Biomaterials* Volume 276, September 2021. <https://doi.org/10.1016/j.biomaterials.2021.121008>
5. Ai CC, L Liu, JCH Goh. "Pore size modulates in vitro osteogenesis of bone marrow mesenchymal stem cells in fibronectin/gelatin coated silk fibroin scaffolds". *Materials Science and Engineering: C*, Volume 124, May 2021, <https://doi.org/10.1016/j.msec.2021.112088>
6. Liang YS, JCH Goh. "Polypyrrole-Incorporated Conducting Constructs for Tissue Engineering Applications: A Review." *Bioelectricity* Vol. 2, No. 2 2020. <https://doi.org/10.1089/bioe.2020.0010>
7. Liu L, WMR Lam, Z Yang, M Wang, X Ren, T Hu, J Li, JCH Goh, HK Wong. "Improving the handling properties and long-term stability of polyelectrolyte complex by freeze-drying technique for low-dose bone morphogenetic protein 2 delivery". *Journal of Biomedical Materials Research Part B: Applied Biomaterials* 2020/2/4. <https://doi.org/10.1002/jbm.b.34577>
8. Liu L, WMR Lam, M Naidu, Z Yang, M Wang, X Ren, T Hu, R Kumarsing, K Ting, JCH Goh, HK Wong, "Synergistic Effect of NELL-1 and an Ultra-Low Dose of BMP-2 on Spinal Fusion", *Tissue Engineering Part A*, 25 (2019): 1677-1689





### Speaker Name

**Tunku Kamarul Zaman**

### Current Position

Director of Advanced Medical & Dental Institute, Universiti Sains Malaysia (USM).  
Professor of Orthopaedics and Regenerative Medicine, University of Malaya (UM)

### Education & training

- M.D. (UKM)
- M.S. (Ortho) (UM)
- Dip.Tis.Bank (NUS)
- Ph.D (Liv. UK)
- Healthcare leadership certificate (Harvard)
- Fellowship in Upper Limb Orthopaedic Surgery

### Professional experience

- Professor in University of Malaya (since 2010-now)
- Professor in Universiti Sains Malaysia (since 2021-now)
- Visiting Professor in UCSI (since 2016-now)
- Visiting Professor to University of Liverpool (2015-2018)
- Visiting Professor to University of Swansea (2015-2018)
- Visiting Professor to Hong Kong Chinese University (2019)
- Clinical Research Fellow in Royal Liverpool and Broadgreens Hospital (2006-2010)
- ASEAN traveling fellow (2004-2005)
- Director of University of Malaya Medical Center (2015-2020)
- Director of Clinical Investigative Center (2013-2015)
- Deputy Dean of Research, Faculty of Medicine, University of Malaya (2011-2013)
- Head of Tissue Engineering Group, National Orthopaedic Center of Excellence in Research & Learning (NOCERAL), Malaysia

### Honor/Awards

- Fellow of Academy of Science Malaysia (2017)
- The Most Distinguished Order of the Defender of the Realm, Companion J.M.N. Malaysia Federal Award (2020)
- P.Balasubramaniam Best Published Translational Medicine Paper for Malaysia Orthopaedic Association award (2012,2016,2021)
- Multiple national and international orthopaedic research award.

### Biography Brief

Professor Dr. Tunku Kamarul Zaman is by profession an orthopaedic surgeon/trainer/scientist with special interest in upper limb and microsurgery. He obtained his medical degree (M.D.) from the National University of Malaysia in 1998. Following his orthopaedic training from 2000-2004, Prof. Kamarul obtained and Masters Degree, M.S.(Ortho) from University of Malaya (UM), and was later inducted as a lecturer there. Later in his career, he obtained a diploma in tissuebanking from National University of Singapore in 2003 and a PhD from University of Liverpool through a national scholarship award in 2007. He also pursued his sub-specialty training in the Royal Liverpool and Broadgreen hospitals from 2006 till 2010. Upon his return to Malaysia in 2010, he was appointed the head of the tissue engineering group, a division under The



National Orthopaedic Centre for Research and Learning (NOCERAL). This research group comprises of many researchers of which Prof. Kamarul (as he is commonly known) supervises many post-doctoral, doctoral, post-graduate as well as undergraduate students (averaging 25-40 members). His research group is actively involved in basic science orthopaedic related research that ranges from biomechanics to cell biology. Prof. Kamarul is however presently focused in pursuing fundamental research involving cartilage, tendons and stem cell applications. He is a well known researcher in the field of orthopaedics, presenting his work in countless international meetings and publishing over 220 peer-reviewed articles in highly regarded scientific journals during his career (Citations: >6,000; H-index=44; top 10% of the world). He is presently the only orthopaedic surgeon inducted as a Fellow to the prestigious Academy of Sciences in Malaysia.

Prof. Kamarul is also heavily involved in the administrative duties at the institution where he works. He is presently the Director for the Advanced Medical & Dental Institute (AMDI) and USM Medical Center Bertam in Universiti Sains Malaysia. He was previously appointed the director of University of Malaya Medical Centre (UMMC), a premier 1600+ bedded university hospital in Malaysia with over 6,000 personnel (from 2015 till 2020). His other administrative appointments also includes the deputy dean of research for faculty of medicine (2011-2013), acting dean for faculty of medicine (2012), deputy director (clinical & professional services) for UMMC (2013-2015) and, director for the Clinical Investigative Centre in UMMC (an internationally award winning centre that conducts over 200 clinical trials a year; 2011-2014). He sits in many national level committees, national research grant review committee and awarded membership/fellowship from many international societies. Notable appointments include member of the National Cell Research & Therapeutics Ethics Committee (NCERT), Co-chair for the Healthcare and Science Domain in the Ministry of Higher Education (MOHE), President of the Malaysian Orthopaedic Association (MOA), Past President of the Asia Pacific Orthopaedic Research Society (APORS), Chairman for the ASEAN Orthopaedic Research Society and was council to many international professional societies such as the ICORS, APOA and ACRS. He has been invited to speak on several academic subjects in many international meetings and, a reviewer and editor to a number of academic journals. He has since received many national and international awards for his accomplishments. As the result of the many accolades to his name, Prof. Kamarul was awarded the title Professor from University of Malaya in 2011. He has since been nominated and appointed as adjunct and honorary professors in several universities, as well as board members and expert panelists in several organizations worldwide.

### **Selected Publications**

1. Polyvinyl Alcohol-Chitosan Scaffold for Tissue Engineering and Regenerative Medicine Application: A Review. Nathan KG, Genasan K, Kamarul T. *Mar Drugs*. 2023 May 17;21(5):304.
2. TGF- $\beta$ 1 and - $\beta$ 3 for Mesenchymal Stem Cells Chondrogenic Differentiation on Poly (Vinyl Alcohol)-Chitosan-Poly (Ethylene Glycol) Scaffold. Wee AS, Lim CK, Tan SL, Ahmad TS, Kamarul T. *Tissue Eng Part C Methods*. 2022 Oct;28(10):501-510.
3. The Effect of Tortuosity on Permeability of Porous Scaffold. Prakoso AT, Basri H, Adanta D, Yani I, Ammarullah MI, Akbar I, Ghazali FA, Syahrom A, Kamarul T. *Biomedicines*. 2023 Feb 1;11(2):427.

**Speaker Name****Feza Korkusuz****Current Position**

Professor; Hacettepe University Medical Faculty, Department of Sports Medicine, Turkey

**Education & training**

- Research Assistant (Clinical Fellow): Gazi University Medical Faculty, Department of Orthopedic Surgery and Traumatology
- Postgraduate Diploma: Osaka University Faculty of Medicine, Department of Orthopaedic Surgery
- Diploma in Medicine: Ankara University Medical Faculty

**Professional experience**

- Professor and Head of Department (2001): Middle East Technical University, Medical Center and Department of Physical Education and Sports
- Associate Professor (1994): Middle East Technical University, Medical Center and Department of Physical Education and Sports
- Director of Medical Center (1993-2013): Middle East Technical University, Medical Center and Department of Physical Education and Sports

**Honor/Awards**

- Prof. Dr. Rıdvan Ege Research and Publication Award
- Young Investigator Award, Scientific and Technological Research Council of Turkey (TUBITAK)
- Young Investigator Award, Middle East Technical University Prof. Dr. N. Parlar Foundation

**Biography Brief**

Feza Korkusuz MD attended medical specification in Orthopedic Surgery and Traumatology at Gazi University Medical Faculty, Department of Orthopedic Surgery and Traumatology between 1987 and 1992 after graduating from Ankara University Medical Faculty in 1986. Between 1989 and 1990 he studied at Osaka University Faculty of Medicine, Department of Orthopaedic Surgery from where he graduated with a postgraduate diploma. His clinical and research studies focused on Spine Surgery, Sports Medicine and Basic Research. Dr. Korkusuz worked at Middle East Technical University (METU) as an orthopedic surgeon and Medical Director at the Medical Center and at the Department of Physical Education and Sports as the Head of the Department until 2013. In 1994 and in 2001 he became Associate Professor and Professor, respectively. In 1999 and 2000, he received the METU Prof. Dr. N. Parlar Foundation young investigator and the Scientific and Technological Research Council of Turkey (TUBITAK) Promotion Award in Medical Sciences, respectively.

Between 1991 and 2016, he was a member to the Orthopaedic Research Society. In 2008 he became an active member of the Association of Bone and Joint Surgeons, and since 2006 he has been a member of the corresponding and deputy editor of Clinical Orthopaedics and Related Research. In 2017, he became an active member to the Turkish Academy of Science (TUBA). He currently is the Head of the Department of Hacettepe University Medical Faculty, Department of Sports Medicine. He was the Advisor to the President of TUBITAK.

**Selected Publications**

1. Dede Çiftçi E, Gizer M, Korkusuz F, Bal Z, Ishiguro H, Yoshikawa H, Kaito T, Korkusuz P. A pilot study: Nano-hydroxyapatite-PEG/PLA containing low dose rhBMP2 stimulates proliferation and osteogenic differentiation of human bone marrow derived mesenchymal stem cells (DOI: DOI: 10.1002/jsp2.1258). JOR Spine (ISSN:2572-1143), 2023;e1258.
2. Vargel I, Tuncel A, Baysal N, Hartuç-Çevik I, Korkusuz F. Autologous adipose-derived tissue stromal vascular fraction (AD-tSVF) for knee osteoarthritis. (DOI: 10.3390/ijms232113517) Int J Mol Sci (ISSN: 1422-0067) 2022; 23, 13517.
3. Kankılıç B, Bayramlı E, Korkusuz P, Eroğlu H, Şener B, Mutlu P, Korkusuz F. Vancomycin containing PDLLA and PLGA/β-TCP inhibit biofilm formation but do not stimulate osteogenic transformation of human mesenchymal stem cells (DOI: 10.3389/fsurg.2022.8852241). Frontiers Surgery: Orthopedic Surgery (ISSN: 2296875X)2022;9:885241.





**Speaker Name****George, Jung-Chih Chen ( 陳榮治 )****Current Position**

Consultant: Legislative Yuan / Catholic Mercy Hospital, Hsinchu.

Researcher: Medical Device Innovation &amp; Translation Center.

Deputy Director: Institute of Biomedical Engineering / Smart Healthcare Promotion Office.

Director Professor: Biomedical Sensing &amp; Oncology Lab.

**Education & training**

- Ph. D.: Biomedical engineering from National Taiwan University, Taipei, Taiwan
- M.S.: Biomedical Engineering from National Cheng Kung University, Tainan, Taiwan
- B.S.: Chemistry from National Cheng Kung University, Tainan, Taiwan

**Professional experience**

- 2022/08 ~ present Deputy Director, Institute of Biomedical Engineering, NYCU.
- 2021/08 ~ present Associate Professor, BME/EE/BS/AI, NYCU.
- 2021/07 ~ present Consultant, Catholic Mercy Hospital, Hsinchu.
- 2020/02 ~ present Coordinator, Science & Technology Advisor, Policy Research Center of Legislative Yuan.
- 2017/04 ~ 2019/07 Deputy Director, Smart Healthcare Promotion Office, NCTU.
- 2016/07 ~ present Director, Association of Chemical Sensor Technology in Taiwan.
- 2014/02 ~ 2021/07 Assistant Professor, Institute of Biomedical Engineering, NCTU.
- 2012/04 ~ 2014/01 Assistant Professor, Medical Device Innovation Center, NCKU.
- 2001/10 ~ 2012/04 Program manager, National Science Council.

**Biography Brief**

From 2001 to 2012, he was a researcher in the National Science Council (NSC), and from 2012 to 2014, he was a research professor with the MDIC (Medical Device Innovation Center), National Cheng Kung University. His research focuses on chemical sensors, biomaterials, and biomedical artificial intelligence for clinical laboratory science and disease treatment, such as Alzheimer's disease, etc. Besides, his expertise lies in AD rapid screening and electrochemical therapy, tumor cell cycle therapy, optogenetics, and AI. He will build on his extensive experience in the field of biomedical sensing, serve as a bridge between medicine and engineering, and contribute to human engineering based on user experience.

**Selected Publications**

<https://nctubsolab.weebly.com/>

**Speaker Name****Sabareeswaran Arumugam****Current Position**

Scientist-G/ Professor

**Education & training**

- MVSc (Vet path), Ph. D.

**Professional experience**

- Professor/ Associate Professor/ Assistant Professor - 17 years

**Biography Brief**

He has got 17 years of working experience in evaluation of biomaterials and medical devices as per international standard in an accredited Histopathology laboratory. As study pathologist in preclinical studies, he has evaluated medical devices like Chitra-TTK mechanical heart valve, biological heart valve, left ventricular assist devices (LVAD), haemoconcentrator, blood oxygenator, coronary stents (bare, drug eluting, degradable), large diameter vascular grafts, ureteric stents, bone implants, dental implants (endosseous implants, tooth restorative and filler materials, HA based bone grafts), orthopaedic implants(SS, Ti, Co-Cr based, Mg Zn alloys, HA) dura substitutes, neuroprosthetics, liquid embolic agents for vascular embolisation, decellularised scaffolds for cardiac applications, post-surgical antiadhesive materials, wound care products, tissue engineered vascular grafts, keratoprosthesis and artificial cornea.

**Selected Publications**

1. Ajit A, Kumar TR, Harikrishnan VS, Anil A, Sabareeswaran A, Krishnan LK. Enriched adipose stem cell secretome as an effective therapeutic strategy for in vivo wound repair and angiogenesis. 3 Biotech. 2023 Mar;13(3):83.
2. Boopalan PR, Varghese VD, Sathishkumar A, Sabareeswaran S, Amarnath V. Similar regeneration of articular cartilage defects with autologous & allogenic chondrocytes in a rabbit model. The Indian Journal of Medical Research. 2019 May;149(5):650.
3. Sabareeswaran A, Basu B, Shenoy SJ, Jaffer Z, Saha N, Stamboulis A. Early osseointegration of a strontium containing glass ceramic in a rabbit model. Biomaterials. 2013 Dec 1;34(37):9278-86.
4. Mohanty M, Sabareeswaran A, Baby S, Sebastian J, Diana CS. Color Atlas of Tissue Response to Biomaterials. JP Medical Ltd; 2013 Nov 30.



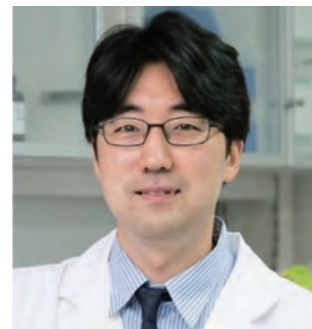


### Speaker Name

**Yongsung Hwang**

### Current Position

Associate Professor, Department of Integrated Biomedical Science,  
Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University



### Education & training

- Ph.D., Materials Science and Engineering, UC San Diego, USA
- M.S., Materials Science and Engineering, UC San Diego, USA
- B.S., Materials Science and Engineering, Sungkyunkwan Univ., Korea

### Professional experience

- Assistant, Associate Professor, Soonchunhyang University, Mar 2015 - Current
- Director, SIMS Research Planning Division, Mar 2021 - Current
- Postdoctoral Researcher, Bioengineering, UC San Diego, USA, Oct 2011 - Dec 2014

### Honor/Awards

- Certificate of Appreciation, Chief of Naval Operations of ROK Navy (2023)

### Biography Brief

Developing the next generation of regenerative medicine-based therapies requires a critical understanding that encompasses biology, materials science, physiology, medicine, and engineering. Therefore, my research interests lie in understanding the roles of cell-matrix and cell-cell interactions in controlling the lineage-specific fate determination of human pluripotent and patient-derived mesenchymal stem cells into various functional cells, including myo-/teno-/osteo-/adipo-/chondrogenic progenitors, as well as insulin-producing beta cells, through biomaterial-based physiochemical and soluble cues. Beyond the fundamental understanding of artificial ECM-based cues for stem cells, my team also focuses on developing multifunctional 3D biomimetic materials as a bioengineered niche by leveraging 3D bioprinting techniques for regenerative and tissue engineering applications. Finally, in strong collaboration with clinicians, my team aims to develop disease microenvironments (such as fibrosis and cancer) to investigate the roles of mechanotransduction in regulating various degenerative disease progressions, including pterygium, podocyte dysfunction, keloid skin fibrosis, osteoarthritis, and head and neck cancers.

### Selected Publications

1. Journal of Industrial and Engineering Chemistry. 2023. <https://doi.org/10.1016/j.jiec.2023.05.009>
2. International Journal of Molecular Science. 2021 Mar 2;22(5):2488.
3. Biomaterials. 2013 Jan;34(4):912-21.

**Speaker Name****Wei-ping Wang****Current Position**

Assistant Professor, The University of Hong Kong

**Education & training**

- Ph. D., The Hong Kong University of Science and Technology, 2011
- B.S., Anhui University, 2004

**Professional experience**

- Assistant Professor, 2016 - present
  - Department of Pharmacology and Pharmacy & Dr. Li Dak-Sum Research Centre, The University of Hong Kong
- Postdoctoral Research Fellow, 2012-2016
  - Boston Children's Hospital, Harvard Medical School & Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology

**Honor/Awards**

- Gold Medal, Special Edition 2022 Inventions Geneva Evaluation Days, 2022
- Thieme Chemistry Journals Award, Thieme Chemistry, 2021
- JMCB Emerging Investigator, Royal Society of Chemistry, 2020
- Young Innovator Award in Nanobiotechnology, Nano Research, 2018

**Biography Brief**

Dr. Weiping Wang is an Assistant Professor at Department of Pharmacology and Pharmacy & Dr. Li Dak-Sum Research Centre, The University of Hong Kong. He obtained his PhD in 2011 from The Hong Kong University of Science and Technology. During 2012-2016, he conducted postdoctoral research at Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology and Boston Children's Hospital, Harvard Medical School. Dr. Wang has received multiple awards, including the Gold Medal at Special Edition 2022 Inventions Geneva Evaluation Days, 2021 Thieme Chemistry Journals Award, and 2018 Nano Research Young Innovator Award in Nanobiotechnology. His current research interests include photopharmacology, nanomedicine, ocular drug delivery, and stimuli-triggered drug delivery.

**Selected Publications**

1. Kaiqi Long, Yifan Wang, Wen Lv, Yang Yang, Shuting Xu, Changyou Zhan, Weiping Wang\*, Photoresponsive Prodrug-dye Nanoassembly for in-situ Monitorable Cancer Therapy, *Bioengineering & Translational Medicine*, 2022, 7, 3, e10311
2. Kaiqi Long, Yang Yang, Wen Lv, Kuan Jiang, Yafei Li, Amy Cheuk Yin Lo, Wai Ching Lam, Changyou Zhan\*, Weiping Wang\*, Green light-triggered intraocular drug release for intravenous chemotherapy of retinoblastoma, *Advanced Science*, 2021, 2101754
3. Wen Lv, Yafei Li, Feiyang Li, Xin Lan, Yaming Zhang, Lili Du, Qiang Zhao, David L. Phillips, Weiping Wang\*, Upconversion-like photolysis of BODIPY-based prodrugs via a one-photon process, *Journal of the American Chemical Society*, 2019, 141, 44, 17482-17486





**Speaker Name****Akon Higuchi****Current Position**

Chair Professor of National Central University

**Education & training**

- Ph. D. Tokyo Institute of Technology (1985)
- M.S. Tokyo Institute of Technology (1982)
- B.S. Tokyo Institute of Technology (1979)

**Professional experience**

- 1986-1993 - Assistant Professor, Dept. of Appl. Chem., Meiji University, Tokyo
- 1993-1999 - Associate Professor, Dept. of Ind. Chem., Seikei University, Tokyo
- 1999-2007 - Professor, Dept. of Mater. Life Sci., Seikei University, Tokyo
- 2007-present - Chair Professor, Dept. of Chem. Mater. Eng., Central University, Taiwan

**Honor/Awards**

- Outstanding Scientific Award, TERMIS-AP / 2021
- Gold Medal Award, 2021 Taiwan Innotech Expo Invention Contest, Taiwan /2021
- Future Tech Breakthrough Award, Ministry of Science and Technology, Taiwan / 2019
- Fellow, American Institute for Medical & Biological Engineering (AIMBE, USA) / 2018
- Fellow, Taiwan Chemical Engineering Society (Taiwan) / 2015
- Fellow, Royal Society of Chemistry (RSC, England) /2014
- Seikei Academic Award, Seikei Alumni Association, Japan (5,000US\$) / 2003
- Sofue Memorial Award, Society of Fiber Science, Japan /2020

**Biography Brief**

Prof. Higuchi is a chair professor in National Central University, a visiting professor in King Saud University (Saudi Arabia) and Wenzhou Medical University (China). He received Ph.D. at Tokyo Institute of Technology in 1985. He was a Professor in Seikei University (Tokyo) from 1993 to 2007. He received Sofue Memorial Award from Society of Fiber Science, Japan in 1994, Seikei Academic Award from Seikei Alumni Association in 2003, Nanotechnology Outstanding Contribution Award, National Science Council, Taiwan in 2013, Future Tech Breakthrough Award in 2019, Ministry of Science and Technology, Taiwan, Gold Medal Award, 2021 Taiwan Innotech Expo Invention Contest in 2021, and Outstanding Scientific Award, Tissue Engineering and Regenerative Medicine International Society, Asia Pacific region (TERMIS-AP) in 2021. He is a fellow of Royal Society of Chemistry (RSC, England), a fellow of Taiwan Chemical Engineering Society (Taiwan) and a fellow of American Institute for Medical & Biological Engineering (AIMBE, USA). He is interested in the development of materials for stem cell culture and differentiation. He established purification method of hematopoietic stem cells, mesenchymal stem cells from umbilical cord blood and adipose tissue, respectively by filtration method through polymeric porous membranes. He also developed biomaterials for stem cell culture and differentiation. He emphasized the important function of cell culture biomaterials, which guide differentiation fate of human pluripotent stem cells and mesenchymal stem cells into specific lineage of the cells. He developed ECM-derived peptide-immobilized hydrogels having adjustable elasticity for culture and differentiation of human pluripotent stem cells. He developed universal (hypoimmunogenic) human pluripotent stem cells on specific ECM-coated surface.

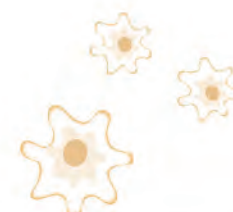




He is also developing lyophilizable lipid nanoparticles entrapped with mRNA for treatment of ocular diseases. He published three articles in *Chemical Reviews* with first and a corresponding author (Impact factor=72.1), 3 articles in *Progress in Polymer Science* (Impact factor=31.3) with first and a corresponding author, one article in *Progress in Materials Science* (Impact factor=48.2), and several articles in *Biomaterials* (Impact factor=15.3). To sum up, he published 280 SCI articles with H index =60. He also published three books as Editors. Besides, He is an advisory board of *Journal of Materials Chemistry B* (Impact factor=7.6), an Editor of *Open Physics* (Impact factor=1.4), Editorial Board of *Laboratory Investigation* (Impact factor=5.5) and *Tissue Engineering and Regenerative Medicine* (Impact factor=4.5), and Associate Editor of *IET Nanobiotechnology* (Impact factor=2.1).

### Selected Publications

1. A. Higuchi,\* Y. Zhou, S.-H. Chiou (Eds), *Stem Cell in Medicine*, 1st Edition, September 1, 2023, Elsevier, Amsterdam, Netherlands, ISBN: 9780443134111.
2. A. Higuchi,\* *Biomaterials Control of Therapeutic Stem Cells*, Ed. A. Higuchi, p. 1-385, Royal Society of Chemistry. London, UK, 2019, April, ISBN: 978-1-78801-207-2.
3. Akon Higuchi,\* et al., Thermoresponsive surfaces designed for the proliferation and differentiation of human pluripotent stem cells, *Acta Biomaterialia*, 116 (2020) 162–173.
4. T.-C. Sung, A. Higuchi,\* et al., Efficient differentiation of human pluripotent stem cells into cardiomyocytes on cell sorting thermoresponsive surface, *Biomaterials*, 253(2020) 120060.
5. T.-C. Sung, A. Higuchi,\* et al., Effect of cell culture biomaterials for completely xeno-free generation of human induced pluripotent stem cells, *Biomaterials*, 230 (2020) 119638.
6. T.-C. Sung, A. Higuchi,\* et al., The design of a thermoresponsive surface for the continuous culture of human pluripotent stem cells, *Biomaterials*, 221 (2019) 119411.
7. T.-C. Sung, A. Higuchi,\* et al., Efficient differentiation of human ES and iPS cells into cardiomyocytes on biomaterials under xeno-free conditions, *Biomaterials Science*, 7 (2019) 5467-5481.
8. A. Higuchi,\* et al., *Biomaterials Used in Stem Cell Therapy for Spinal Cord Injury*, *Prog. Mater. Sci.*, 103 (2019) 374-424.
9. A. Higuchi,\* et al., Physical cues of biomaterials guide stem cell differentiation fate, *Chemical Reviews*, 113(5) (2013) 3297-3328. Highly cited paper
10. A. Higuchi\*, Q.-D. Ling, S.-T. Hsu, A. Umezawa, *Biomimetic Cell Culture Proteins as Extracellular Matrices for Stem Cell Differentiation*, *Chemical Reviews*, 112 (2012) 4507-4540.





### Speaker Name

**Kohei SOGA**

### Current Position

Professor, Department of Medical and Robotic Engineering Design,  
Tokyo University of Science

### Education & training

- Ph.D. Materials Eng., Grad. School of Eng., The University of Tokyo (1995/3/31)
- S.M. Metallurgy, Grad. School of Eng., The University of Tokyo (1992/3/31)
- B.E. Metallurgy, School of Eng., The University of Tokyo (1990/3/31)

### Professional experience

- 1999/4/1-2004/3/31 Research Associate at Department of Advanced Materials Science, Graduate School of Frontier Science, The University of Tokyo
- 1999/9/1-2001/8/31 Post Doctoral Researcher at Department of Ceramic and Materials Engineering, Rutgers, the State University of New Jersey, NJ, USA
- 2004/4/1-2012/3/31 Associate Professor at Department of Materials Science and Technology, Tokyo University of Science
- 2012/4/1-present Professor at Department of Materials Science and Technology, Tokyo University of Science
- 2009/9/1-2010/3/31 Visiting Professor at Center for Biomedical Science and Engineering (BME), National Tsing Hua University, Taiwan, ROC
- 2010/4/1-2010/8/31 Visiting Professor, Institute of Biomedical Engineering, National Yang Ming University, Taiwan, R. O. C.

### Biography Brief

Prof. Kohei SOGA started his research on rare-earth-doped luminescent materials in 1990 as a graduate student of the University of Tokyo. His thesis concentrated on relating the spectroscopic properties of the rare earth ions and the structure of the host glass. After obtaining the Ph. D. degree in 1995, he explored his research onto the photonic applications, especially on that relating to optical communication. Beside the work on physical properties of icosahedral cluster solids started in 2000, he has extended the materials to nanophosphors. Since 2004, he has challenged to develop biophotonic system under near infrared excitation as an interdisciplinary research by a bio-nano-photonics collaboration. The research is attracting the interests from the researchers in medicine, biomaterials, photonic materials and bioengineering.

He has authored and co-authored 190 journal papers and presented totally more than 671 oral and poster presentations including 116 invited presentations.

### Selected Publications

1. Kohei Soga, Masakazu Umezawa and Kyohei Okubo ed., "Transparency in Biology: Making Invisible Visible," (Springer, 2021)[<https://doi.org/10.1007/978-981-15-9627-8>]

[ORCID 0000-0001-7364-6724](https://orcid.org/0000-0001-7364-6724)

[Scopus 57220515364](https://scopus.com/authid/detail/authid/57220515364)





**Speaker Name****Tse-Ying Liu****Current Position**

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

**Education & training**

- Ph. D. Department of materials science and engineering, National Chiao Tung University
- M.S. Institute of materials science and engineering, National Taiwan University

**Professional experience**

- Professor - Department of biomedical engineering, National Yang Ming Chiao Tung University
- Associate Professor - Department of biomedical engineering, National Yang Ming Chiao Tung University
- Assistant Professor - Department of biomedical engineering, National Yang Ming Chiao Tung University

**Honor/Awards**

- Distinguished professor; National Yang Ming Chiao Tung University

**Biography Brief**

Dr. Tse-Ying Liu received his Ph.D. degree in Materials Science and Engineering from National Chiao-Tung University in 2006. From 1995 to 2002, he served as the Engineer and Manager in the Department of Process Development at Compeq Co., Ltd (a manufacturer of IC substrates and PCBs). In 2008, he joined the Institute of Biomedical Engineering at National Yang Ming University, where he currently serves as a Distinguished Professor and the Department Chair of the Department of Biomedical Engineering at National Yang Ming Chiao Tung University. His main research focus is on utilizing nanomaterials to encapsulate water-insoluble drugs. In recent years, he has concentrated on enhancing the efficacy and reducing the side effects of radiotherapy using nanomaterials. He is also dedicated to proposing solutions for inhibiting cancer metastasis.

**Selected Publications**

1. Y.C. Wang, S.H. Tsai, M.H. Chen, F.Y. Hsieh, Y.C. Chang, F.I. Tung, T.Y. Liu.\*Mineral Nanomedicine to Enhance the Efficacy of Adjuvant Radiotherapy for Treating Osteosarcoma. ACS Applied Materials & Interfaces, 2022; 14, 4: 5586–5597.
2. C.L. Pan, M.H. Chen, F.I. Tung, T.Y. Liu.\* A nanovehicle developed for treating deep-seated bacteria via using low-dose X-ray. Acta Biomaterialia, 2017;47:159-169.
3. C.S. Chiang. I.J. Shih, P.W. Shueng, L.W. Kao, S.F. Zhang, M.H. Chen, T.Y. Liu.\* Tumor cell-targeting radiotherapy in the treatment of glioblastoma multiforme using linear accelerators. Acta Biomaterialia. 2021;125:300-311.
4. F.I. Tung, L.J. Zheng, K.T. Hou, C.S. Chiang, M.H. Chen, T.Y. Liu.\* One stop radiotherapeutic targeting of primary and distant osteosarcoma to inhibit cancer progression and metastasis using 2DG-grafted graphene quantum dots. Nanoscale, 2020;12(16):8809-8818.
5. H.P. Chen, F.I. Tung, M.H. Chen, T.Y. Liu.\* A magnetic vehicle realized tumor cell-targeted radiotherapy using low-dose radiation. Journal of controlled release 2016;226:182–192.

**Speaker Name****Zong-Hong Lin****Current Position**

Professor, Department of Biomedical Engineering, National Taiwan University

**Education & training**

- Ph.D.: Department of Chemistry, National Taiwan University, Taiwan
- M.S.: Department of Chemistry and Biochemistry, National Chung Cheng University, Taiwan
- B.S.: Department of Chemistry, National Chung Cheng University, Taiwan

**Professional experience**

- 08/2014-07/2017 - Assistant Professor, Institute of Biomedical Engineering, National Tsing Hua University
- 08/2017-07/2021 - Associate Professor, Institute of Biomedical Engineering, National Tsing Hua University
- 08/2021-01/2023 - Professor, Institute of Biomedical Engineering, National Tsing Hua University
- 01/2023-Present - Professor, Department of Biomedical Engineering, National Taiwan University
- 10/2010-03/2012 - Postdoctoral Research Fellow, Department of Chemistry, National Taiwan University
- 04/2012-07/2014 - Postdoctoral Research Fellow, School of Materials Science & Engineering, Georgia Institute of Technology

**Honor/Awards**

- 2022 Fellow of the Royal Society of Chemistry (FRSC)
- 2021-2022 Future Tech Award, National Science and Technology Council, Taiwan
- 2021 Ta-You Wu Memorial Award, National Science and Technology Council, Taiwan
- 2021-2022 Top 2% most-cited scientists by Stanford University
- 2020 Young Scholar Fellowship, National Science and Technology Council, Taiwan
- 2019 IEEE-NANOMED New Innovator Award
- 2018 Young Investigator Award, National Tsing Hua University

**Biography Brief**

Dr. Zong-Hong Lin received his PhD degree in Chemistry from the National Taiwan University in 2009 and continued with his postdoctoral research at the National Taiwan University and the Georgia Institute of Technology during the years of 2010-2014. Subsequently, Dr. Lin joined the Institute of Biomedical Engineering, National Tsing Hua University (NTHU) as Assistant Professor in August 2014 and was successfully promoted to Associate Professor and Full Professor with Tenure effective from August 2017 and August 2021, respectively. In recognition of his academic achievements, Dr. Lin was invited as Adjunct Faculty for both the Department of Power Mechanical Engineering, Department of Chemistry and Frontier Research Center on Fundamental and Applied Sciences of Matters at NTHU. In 2023, he moved to Department of Biomedical Engineering, National Taiwan University. Dr. Lin's research interests include the development of self-powered (bio)chemical sensors, biomedical diagnostic devices, wearable healthcare electronics and remote intelligent monitoring platform, micro- and nano-electrodes/materials for electrical stimulation applications.

**Selected Publications**

1. S. R. Barman, Y.-J. Lin, K.-M. Lee, A. Pal, N. Tiwari, S. Lee; Z.-H. Lin\* (2023) "Triboelectric Nanosensor Integrated with Robotic Platform for Self-Powered Detection of Chemical Analytes" ACS Nano, 17, 3, 2689-2701 (Headline Science Video).
2. S. R. Barman, S.-W. Chan, F.-C. Kao, H.-Y. Ho, I. Khan, A. Pal, C.-C. Huang, Z.-H. Lin\* (2023) "A Self-powered Multifunctional Dressing for Active Infection Prevention and Accelerated Wound Healing" Sci. Adv., 9, eadc8758.
3. Y.-H. Chen†, P.-Y. Lin†, T.-W. Wang, N. Tiwari, S.-C. Lin, H.-S. Wu, D. Choi, W. Wu, D. Choi\*, Y.-C. Hsiao\*, Z.-H. Lin\* (2021) "Dynamics of Electrically Driven Cholesteric Liquid Crystals by Triboelectrification and its Application in Self-Powered Information Securing and Vision Correcting" ACS Energy Letters, 6, 3185-3194.
4. Y.-J. Lin†, I. Khan†, S. Saha, C.-C. Wu, S. R. Barman, F.-C. Kao, Z.-H. Lin\* (2021) "Thermocatalytic Hydrogen Peroxide Generation and Environmental Disinfection by Bi<sub>2</sub>Te<sub>3</sub> Nanoplates" Nat. Commun., 12, 180 (Editor's Highlight).

**Speaker Name****Yu-Hsiang Lee****Current Position**

Associate Dean, National Central University, College of Health Sciences &amp; Technology

Distinguished Professor, National Central University, Department of Biomedical Sciences and Engineering

**Education & training**

- Ph. D. University of Southern California (USA), Department of Chemical Engineering
- M.S. University of Southern California (USA), Department of Chemical Engineering
- B.S. Tunghai University (ROC), Department of Chemical Engineering

**Professional experience**

- NCU College of Health Sciences & Technology, Associate Dean (2020 - Present)
- NCU Dept. Biomedical Sciences & Engineering, Professor (2019 - Present)
- NCU Dept. Biomedical Sciences & Engineering, Associate Professor (2014 – 2019)
- NCU Graduate Institute of Biomedical Engineering, Assistant Professor (2010 – 2014)
- UCLA Dental Research Institute (USA), Postdoctoral Fellow (2008 – 2010)
- Sierra Sciences LLC, Cell Biology Division (USA), Research Scientist (2006 – 2008)

**Honor/Awards**

- NCU Distinguished Professor Award / 2022-2024
- NCU Outstanding Research Award / 2019, 2020, 2021

**Biography Brief**

Dr. Yu-Hsiang Lee received his B.S. degree from Ch.E./Tunghai University in 1998, M.S. degree from Ch.E./University of Southern California (USA) in 2002, and Ph.D. from Ch.E./University of Southern California (USA) in 2006. He held the research scientist position from 2006 to 2008 in a biotech company at Reno, NV, USA right after receiving Ph.D. degree, where he led drug discovery projects regarding telomerase-activated compounds for curing aging-related diseases. Afterward, he joined UCLA Dental Research Institute as a postdoctoral fellow from 2008 to 2010, where he worked on multiple salivary transcriptomic biomarkers discovery projects for early diagnosis of ovarian/oral/lung cancers and type II diabetes. He took the faculty position as an Assistant Professor in Graduate Institute of Biomedical Engineering at National Central University since 2010 and was promoted to Associate Professor and professor in 2014 and 2019, respectively. Currently he is a Distinguished Professor (2022-) in Dept. Biomedical Sciences & Engineering and the Associate Dean (2020-) in College of Health Sciences & Technology at NCU. Now his research interests are focused on 1) nanomedicine for cancer & bacterial infection therapies, 2) hydrogel-based biomaterials for chronic wound healing, 3) photobioreactor engineering for enhanced microalgae cultivation and production, and 4) mechanotransductional biology for vascular & tumor microenvironmental studies.

**Selected Publications**

1. Lee Y-H\*, Pham U.N.T. Chemical Engineering Journal. 2023; 460: 141819. (SCI)
2. Lin Y-J, Chang Chien B-Y, Lee Y-H\*. European Polymer Journal. 2022; 175: 111364. (SCI)
3. Lee Y-H\*, Lin S-J. Pharmaceutics. 2022; 14: 537. (SCI)
4. Lee Y-H\*, Kuo P-W, Chen C-J, Sue C-J, Hsu Y-F, Pan M-C\*. Pharmaceutics. 2021; 13(9): 1499. (SCI) [5]. Lee Y-H\*, Chiu C-C, Chang C-Y. Biomaterials Science. 2021; 9: 1739-1753. (SCI)
5. Lee Y-H\*, Hong Y-L, Wu T-L. Mater. Sci. Eng. C-Mater. Biol. Appl. 2021; 118: 111385. (SCI)
6. Hsiao K-H, Huang C-M, Lee Y-H\*. Nanomaterials. 2020; 10(6): 1095. (SCI)
7. Lee Y-H\*, Ma Y-T. Journal of Nanobiotechnology. 2017; 15(1): 41. (SCI)





### Speaker Name

**Chun-Jen Huang**

### Current Position

Distinguished Professor, Department of Chemical & Materials, National Central University

### Education & training

- Ph. D. Johannes Gutenberg Universität Mainz
- M.S. National Taiwan University
- B.S. Chang Gung University

### Professional experience

- Professor - National Central University, 2012.02 - present
- Associate Professor - National Central University
- Assistant Professor - National Central University
- Postdoctoral Research Fellow - University of Washington, Seattle with Prof. Shaoyi Jiang, 2011.2-2011.11

### Honor/Awards

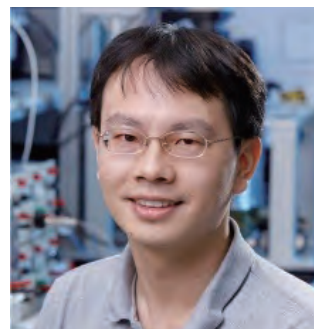
- Young Investigator Awards from The 3rd International Symposium of Materials on Regenerative Medicine and The 5th Asian Biomaterials Congress
- Outstanding New Faculty Award and Outstanding Research Award (4 times) from NCU
- Outstanding Young Researcher Project (3 times) from the Ministry of Science and Technology (MOST), Taiwan.

### Biography Brief

Dr. Chun-Jen Huang is currently the Professor of Chemical & Materials Engineering at the National Central University (NCU), Taiwan. He received his B.S. degree in 2001 from Chang Gung University, M.S. in 2003 from the National Taiwan University, and Ph.D. from Johannes Gutenberg Universität Mainz, Germany in 2010 under the guidance of Prof. Wolfgang Knoll and Dr. Jakub Dostalek. He was a postdoctoral fellow at the University of Washington, Seattle with Prof. Shaoyi Jiang in 2011. In 2012 and 2013, he obtained Visiting Fellowships from Academia Sinica, Taiwan. Prof. Huang's research focuses on biomolecular interfaces, biomaterials, and biosensors—particularly on the development of zwitterionic-based functional materials for biomedical and engineering applications.

### Selected Publications

1. Advanced Functional Materials, 2211316, (2023).
2. Advanced Materials Interfaces, 2201002, (2022).
3. ACS Applied Nano Materials 5 (1), 107-112, (2022)





### Speaker Name

**Dong-Ming Huang**

### Current Position

Associate Investigator, Institute of Biomedical Engineering and Nanomedicine,  
National Health Research Institutes, Taiwan

### Education & training

- Ph. D. Department of Pharmacology, College of Medicine, National Twain University, Taiwan
- M.S. Graduate Institute of Basic Medical Science, Chang-Gung University, Taiwan
- B.S. Department of Medical Technology, Taipei Medical University, Taiwan

### Professional experience

- Assistant Investigator, Center for Nanomedicine Research, National Health Research Institutes, Taiwan
- Postdoctoral Fellow, Stem Cell Research Center, National Health Research Institutes, Taiwan
- Postdoctoral Fellow, Department of Pharmacology, College of Medicine, National Twain University, Taiwan

### Honor/Awards

- National Innovation Award Renewal /2021
- TienTe Lee Award /2014
- Young Scientist Research Achievement Award, NHRI /2013
- National Innovation Award /2013
- Wu Ta-You Memorial Award, Taiwan NSC /2011

### Biography Brief

Dr. Huang's research interests focus on 1) the development of integrated application and new strategy for nanomedicine and stem cell biology, and 2) the development of novel nanocarriers for biomedical applications. His lab is trying to lead the impact of SPIO nanoparticles on stem cell attributes to favorable stem cell therapy and developing a novel system composed of red blood cell-derived vesicles (RDVs) for biomedical applications.

### Selected Publications

1. S. H. Wu, C. C. Hsieh, S. C. Hsu, M. Yao, J. K. Hsiao, S. W. Wang, C. P. Lin and D. M. Huang: RBC-derived vesicles as a systemic delivery system of doxorubicin for lysosomal-mitochondrial axis-improved cancer therapy. *J Adv Res*, 30, 185–196 (2021)
2. L. Y. Wang, X. Y. Shi, C. S. Yang and D. M. Huang: Versatile RBC-derived vesicles as nanoparticle vector of photosensitizers for photodynamic therapy. *Nanoscale*, 5, 416–421 (2013)
3. M. Chang, J. K. Hsiao, M. Yao, L. Y. Chien, S. C. Hsu, B. S. Ko, S. T. Chen, H. M. Liu, Y. C. Chen, C. S. Yang and D. M. Huang: Homologous RBC-derived vesicles as ultrasmall carriers of iron oxide for magnetic resonance imaging of stem cells. *Nanotechnology*, 21, 235103 (2010)



**Speaker Name****In-Kyu Park****Current Position**

Professor, Department of Biomedical Sciences,  
Chonnam National University Medical School, South Korea

**Education & training**

- Ph. D. Natural Fiber Science, Seoul National University (2022)
- M.S. Natural Fiber Science, Seoul National University (1998)
- B.S. Natural Fiber Science, Seoul National University (1996)

**Professional experience**

- Professor - Department of Biomedical Sciences, Chonnam National University Medical School.
- Associate Professor - Department of Biomedical Sciences, Chonnam National University Medical School.
- Assistant Professor - Department of Biomedical Sciences, Chonnam National University Medical School.
- 2005.5 ~ 2007.6: Senior Fellow, Department of Bioengineering, University of Washington.
- 2004.9 ~ 2005.4: Senior Scientist, Research Institute for Agriculture and Life Sciences, Seoul National University
- 2002.4 ~ 2004.8: Visiting Researcher, Research Institute for Agriculture and Life Sciences, Seoul National University Others

**Honor/Awards**

- Osstem Cardiotec Technology Achievement Award/2020
- CGBio Outstanding Senior Researcher Award/2018

**Biography Brief**

In-Kyu Park is currently a full professor in the Department of Biomedical Sciences, Chonnam National University Medical School. He serves as an associate editor of ACS Biomaterials Science & Engineering and a reviewing editor of Frontiers in Bioengineering and Biotechnology. He has published over 210 peer-reviewed journal articles, 5 book chapters and 20 patents to his credit.

His research focuses on nanoparticles mediated delivery of therapeutic drug and genes to the specific tissues. The fate of those particles in body can be monitored non-invasively by MR and optical/photoacoustic imagings after labeling them with the appropriate imaging agents. Bio-compatible hydrogels and nanogel can be also utilized for delivering bioactive molecules including proteins and vaccines. His specific interest is on the development of specific tissue-targeted multi-functional nanostructures to deliver chemical drugs as well as therapeutic genetic materials, while tracking them simultaneously. He also works on the development of immunomodulatory nanoparticles for cancer immunotherapy and anti-inflammation.

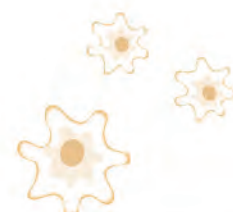






### Selected Publications

1. In-Kyu Park et al., 'Peroxidase' mimicking Nano-assembly Mitigates Lipopolysaccharide Induced Endotoxemia and Cognitive Damage in the Brain by Impeding Inflammatory Signaling In Macrophages, *Nano Letters*, 18 (10) 6417-6426 (2018).
2. In-Kyu Park et al., Magnetic Field-inducible Drug-eluting Nanoparticles for Image-Guided Thermo-Chemotherapy, *Biomaterials*, 180 (1) 240-252 (2018)
3. In-Kyu Park et al., Programmed 'triple-mode' anti-tumor therapy: Improving peritoneal retention, tumor penetration and activatable drug release properties for effective inhibition of peritoneal carcinomatosis, *Biomaterials* 169 (1) 45-60 (2018)
4. In-Kyu Park et al., Dual-stimuli-responsive albumin-polyplex nanoassembly for spatially controlled gene release in metastatic breast cancer, *Journal of Controlled Release*, 276 (1) 72-83 (2018)
5. In-Kyu Park et al., Long circulating photoactivable nanomicelles with tumor localized activation and ROS triggered self-accelerating drug release for enhanced locoregional chemo-photodynamic therapy, *Biomaterials* 232 (1) 119702 (2020)
6. In-Kyu Park et al., Heat-Confined Tumor-Docking Reversible Thermogel Potentiates Systemic Antitumor Immune Response During Near-Infrared Photothermal Ablation in Triple-Negative Breast Cancer, *ADVANCED HEALTHCARE MATERIALS*, 11 (21) 2100907 (2021)
7. In-Kyu Park et al., Inflammation-sensing catalase-mimicking nanozymes alleviate acute kidney injury via reversing local oxidative stress, *Journal of Nanobiotechnology*, 20 (1) 205 (2022)
8. In-Kyu Park et al., Biomineralized Nanoscavenger Abrogates Proinflammatory Macrophage Polarization and Induces Neutrophil Clearance through Reverse Migration during Gouty Arthritis, *ACS Applied Materials & Interfaces*, 15 (3) 3812-3825 (2023)



**Speaker Name****Shang-Hsiu Hu (胡尚秀)****Current Position**

Professor, Department of Biomedical Engineering and Environmental Sciences,  
National Tsing Hua University  
Associate Vice President for R&D, National Tsing Hua University  
Director, Innovation Incubation Center (IIC), NTHU

**Education & training**

- Ph.D.—materials—2010, NCTU
- M.S.—materials—2006, NCTU
- B.S.—chemical engineering—2004, NCHU

**Professional experience**

- Professor, Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan, 2021.8~present.
- Associate Vice President for R&D, National Tsing Hua University (2023.02 ~ present)
- Associate Professor, Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan, 2017.8~2021.7.
- Director, Innovation Incubation Center (IIC), Operation Center for Industrial Cooperation (OCIC), National Tsing Hua University, 2022.8~present.
- Division Leader, Technology Transfer Division, GLORIA Operation Center, National Tsing Hua University, 2019.1~2022.7.
- Adjunct Mentor, Interdisciplinary Program of Nuclear Science, National Tsing Hua University, 2016.8~Present.
- 中華民國生醫材料與藥物製放學會 · 理事 · 2018.03-present.

**Honor/Awards**

- 2022 未來科技獎。
- 2022 李昭仁基金會 - 研究學者獎。
- 2022 國立清華大學 110 年校傑出教學獎。
- 2022 科技部傑出研究獎。
- 2017 科技部吳大猷先生紀念獎 - 醫學工程

**Biography Brief**

Shang-Hsiu Hu has been an associate professor at National Tsing Hua University since 2017 (Department of Biomedical and Environmental Sciences). His research explores novel nanomaterials and nanotechnologies to develop advanced drug and gene delivery systems with the promise to improve health care.

**Selected Publications**

1. Nirosha Yalamandala, B., Huynh, T. M. H., Chiang, M. R., Weng, W. H., Chang, C. W., Chiang, W. H., Hu, S. H.\* (2022) Catalytic Therapy and Antigen Capture-Mediated Dendritic Cells Harnessing Cancer Immunotherapies by In Situ-Forming Adhesive Nanoreservoirs, *Adv. Funct. Mater.*, 2210644.
2. Hsu, R. H., Li, S. J., Fang, J. H., Lee, I. C., Chu, L. A., Lo, Y. C., Lu, Y. J., Chen Y. Y., Hu, S. H.\* (2022) Wireless Charging-Mediated Angiogenesis and Nerve Repair by Adaptable Microporous Hydrogels from Conductive Building Blocks, *Nat. Comm.*, 13, 5172.
3. Cheng, W., Su, Y. L., Hsu, H. H., Lin, Y. H., Chu, L. A., Huang, W. C., Lu, Y. J., Chiang, C. S., Hu, S. H.\*, Rabies Virus Glycoprotein-Mediated Transportation and T Cell Infiltration to Brain Tumor by Magnetolectric Gold Yarnballs, *ACS nano*, 16, 3, 4028.

**Speaker Name****Yoshiki KATAYAMA****Current Position**

Professor in Kyushu University (Faculty of Engineering)

**Education & training**

- Ph. D/ Graduate School of Engineering, Kyushu University 1987

**Professional experience**

- Professor/ Faculty of Engineering, Kyushu University 2003-present
- Associate Professor/ Faculty of Engineering, Kyushu University 1996-2003
- Guest Researcher/ National Institute for Medical Research, London 1990-1992
- Senior Researcher/ Dojindo Laboratories Co. Ltd. 1987-1996
- Adjunct Professor of Chung Yuan Christian University/ 2016-present
- Director of Innovative Center for Medical Redox Navigation/ 2013-2020

**Honor/Awards**

- Japan Society of Analytical Chemistry Award /2018
- The Chemical Society of Japan Award for Creative Work/2016
- Hot Article Award in Analytical Sciences/ 2011 and 2014
- The Takeda Techno-Entrepreneurship Award, The Takeda Foundation/ 2002

**Biography Brief**

Yoshiki Katayama is a professor of Kyushu University. He has published more than 250 original papers. He has held various project leaders such as PRESTO, CREST, NEDO, Research Centers. He has also served as board member in various scientific society (Polymer Society of Japan, Japan Society of Analytical Chemistry, Bio-related division of Chemical Society of Japan, Japan Society of Drug Delivery System, Chemical Biology Society of Japan etc.) His current interest is development of immune-regulation system, new drug delivery system, bioimaging, clinical analysis or cancer therapy.

**Selected Publications**

1. J. Control. Research, <https://doi.org/10.1016/j.jconrel.2023.04.010> (2023)
2. ACS Applied Bio Mater., 4, 2335-2341 (2021)
3. Chem. Sci., 11, 3208-3214 (2020)



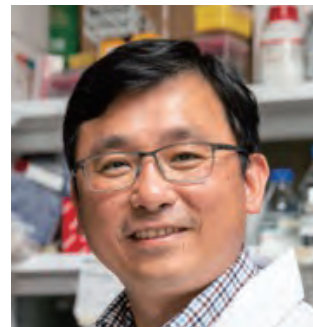


### Speaker Name

Guei-Sheung (Rick) Liu

### Current Position

Head, Genetic Engineering Research Unit  
Principal Investigator, Centre for Eye Research Australia  
Associate Professor of Ophthalmology, University of Melbourne



### Education & training

- Ph. D.- Kaohsiung Medical University
- B.S. - Fooyin University

### Professional experience

- 2021- Associate Professor, University of Melbourne
- 2020- Associate Professor, University of Tasmania
- 2017-2020 Senior Research Fellow, University of Tasmania
- 2016-2017 Senior Research Fellow, University of Melbourne
- 2012-2016 Research Fellow, University of Melbourne
- 2010-2012 Postdoctoral Research Fellow, O'Brien Institute
- 2008-2009 Postdoctoral Research Fellow, National Cheng Kung University

### Honor/Awards

- PacBio Access HiFi Fellowship /2022
- Health Fellowship, Harold Mitchell Foundation /2013

### Biography Brief

Dr Liu is an internationally recognized expert on ophthalmic gene therapy. He is currently a Principal Investigator and leads Genetic Engineering Research Unit at the Centre for Eye Research Australia (CERA). He also holds an adjunct Associate Professor appointment at Ophthalmology, the University of Melbourne, as well as Menzies Institute for Medical Research (Menzies), the University of Tasmania. Dr Liu received his PhD in Biochemistry from Kaohsiung Medical University (Taiwan), working in genetic engineering and gene therapy. Dr Liu has significant expertise in the design, development, and evaluation of innovative gene therapy approaches to prevent and delay blindness of major eye diseases and has been continuous funding from the NHMRC and other agencies since 2012. His work has resulted in 88 peer-reviewed publications, generated >2800 citations and an h-index of 30. He has ongoing patent applications and has obtained over \$3M AUD in funding during her 5 years. He was the first to establish and lead ocular gene therapy research at CERA and Menzies. His team also reports for the first time a proof-of-principal application showing the feasibility of AAV-mediated CRISPR-Cas gene editing in the retina in vivo. His current research work has extended into the fields of next-generation gene therapy, focusing on refining these applications to revolutionize ophthalmic care by latest genetic technologies. In addition to his research work, Dr Liu is actively involved in the scientific community in gene therapy and ophthalmology research and serves on the journal editorial board for a number of international journals.

### Selected Publications

1. Wang JH, et al. TAK1 blockade as a therapy for retinal neovascularization. *Pharmacol Res.* 2023; 187:106617.
2. Kumar S, et al. RNA-targeting strategies as a platform for ocular gene therapy. *Prog Retin Eye Res.* 2023; 92:101110.
3. Wang JH, et al. Topical application of TAK1 inhibitor encapsulated by gelatin particle alleviates corneal neovascularization. *Theranostics.* 2022; 12(2):657-674.

**Speaker Name****Hitoshi KASAI****Current Position**

Professor, Institute of Multidisciplinary Research for Advanced Materials (IMRAM),  
Tohoku University, Sendai 980-8577, Japan

**Education & training**

- Ph. D. in Department of Chemistry, Faculty of Science, Tohoku University, 1996 (March)
- M.S. in Department of Chemistry, Faculty of Science, Tohoku University, 1993 (March)
- B.S. in Department of Chemistry, Graduate School of Science, Tohoku University, 1991 (March)

**Professional experience**

- 1999(April)-2001(March) Assistant (to Prof. H. Nakanishi) in Institute for Chemical Reaction Science, Tohoku University
- 2001(April)-2004(March) Assistant (to Prof. H. Nakanishi) in Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, JAPAN
- 2004(April)-2016(March) Associate Professor (to Prof. H. Nakanishi) in Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, JAPAN
- 2016(April)-Present Professor in Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, JAPAN
- 1996(April)-1999(March) Post Doctoral Fellow, in New Energy and Industrial Technology Development Organization (NEDO)

**Honor/Awards**

- 1999 Award for Encouragement of Research in Polymer Science, The Society of Polymer Science, of Japan
- 2001 Young Scientists Award, The Chemical Society of Japan

**Biography Brief**

Dr. Hitoshi Kasai has been a professor of Tohoku University, Sendai since 2016. After receiving a Ph.D. degree from Tohoku University in 1996, he worked at New Energy and Industrial Technology Development Organization (NEDO) until 1999, then became an Assistant Professor at Tohoku University. In 2004, he was promoted to be an Associate Professor at Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, concurrently worked as a PRESTO researcher from 2007 to 2011, followed by a full Professor position at IMRAM from 2016. During his Ph.D., he was majored in the creation of organic crystals with the main focus was on their electronics and photonics applications. Not long after, he realized the extreme potential of the technique in the creation of nanocrystals composed of pure anticancer drug molecules. The obtained nano-prodrugs showed greatly enhanced delivery efficacy while reducing the side effects which were usually caused by drug carrier materials in the conventional methods. With the great dedication for the last decade, his laboratory has been one of the first initiation in the field and gradually strengthen the possibility of the carrier-free DDS. Until date, he has co-authored more than 300 publications including original papers, reviewing articles, book chapters and patents.

**Selected Publications**

1. "A Novel Preparation Method of Organic Microcrystals", H. Kasai, H. S. Nalwa, H. Oikawa, S. Okada, H. Matsuda, N. Minami, A. Kakuta, K. Ono, A. Mukoh, and H. Nakanishi, *Jpn. J. Appl. Phys.*, 31, L1132-1134 (1992).
2. "Creation of Pure Nanodrugs and Their Anticancer Properties", H. Kasai, T. Murakami, Y. Ikuta, Y. Koseki, K. Baba, H. Oikawa, H. Nakanishi, M. Okada, M. Shoji, M. Ueda, H. Imahori, M. Hashida, *Angew. Chem. Int. Ed.*, 51, 10315–10318 (2012).
3. "Influence of Hydrolysis Susceptibility and Hydrophobicity of SN-38 Nano-Prodrugs on Their Anticancer Activity", Y. Koseki, Y. Ikuta, L. Cong, M. Takano, H. Tada, M. Watanabe, K. Gonda, T. Ishida, N. Ohuchi, K. Tanita, F. Taemaitree, A. T.N. Dao, T. Onodera, H. Oikawa, H. Kasai, *Bull. Chem. Soc. Jpn.*, 92, 1305–1313 (2019).

**Speaker Name****Sang-Heon Kim****Current Position**

Principal Research Scientist, Center for Biomaterials,  
Korea Institute of Science and Technology  
Professor, Division of Bio-Med, Korea University of Science and Technology

**Education & training**

- Ph. D., Department of Bioengineering, Tokyo Institute of Technology (2001)
- M.S., Department of Microbiology, Kyungbuk National University (1994)
- B.S., Department of Microbiology Kyungbuk National University (1990)

**Professional experience**

- Professor, Department of Biomedical Engineering, Korea University of Science and Technology (UST)
- Associate Professor, Department of Biomedical Engineering, Korea University of Science and Technology (UST)
- Assistant Professor, Department of Biomedical Engineering, Korea University of Science and Technology (UST)
- 2011-2012, Visiting Scholar, Dept. Bioengineering, UCSD

**Honor/Awards**

- 2017. 12. Excellent Researcher Award, Minister of Health and Welfare
- 2018. 07. KIST Award, President of KIST
- 2019. 05. Excellent Inventor, Minister of Trade, Industry and Energy
- 2020. 01. Excellent Research Team Award, President of KIST Award

**Biography Brief**

Currently, Dr. Kim is concentrating on developing a standard therapeutic of 3D microtissue composed of adult stem cells for the treatment of critical limb ischemia (CLI). Cell therapy holds great potential for therapeutic angiogenesis in the treatment of various ischemic diseases, especially critical limb ischemia (CLI).

[Research area]

- Matrix engineering for cell priming and tissue engineering (Articular disease, Diabetic ulcer..)
- Stem cell therapy for therapeutic angiogenesis
- Cell-assembling technologies for regenerative medicine (Osteoarthritis, Diabetic disease...)

**Selected Publications**

1. S.-H. Kim, Functionally enhanced cell spheroids for stem cell therapy: Role of TIMP1 in the survival and therapeutic effectiveness of stem cell spheroids, *Acta Biomaterialia* (2023)
2. S.-H. Kim, TIMP-1-expressing breast tumor spheroids for the evaluation of drug penetration and efficacy, *Bioengineering & Translational Medicine* 7 (2022)
3. S.-H. Kim, FGF2-primed 3D spheroids producing IL-8 promote therapeutic angiogenesis in murine hindlimb ischemia, *npj Regenerative Medicine* 6 (2021)





### Speaker Name

**Sung-Jan Lin**

### Current Position

Distinguished Professor, Departments of Biomedical Engineering and Dermatology,  
National Taiwan University

### Education & training

- PhD, Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan
- MD, National Taiwan University College of Medicine, Taipei, Taiwan

### Professional experience

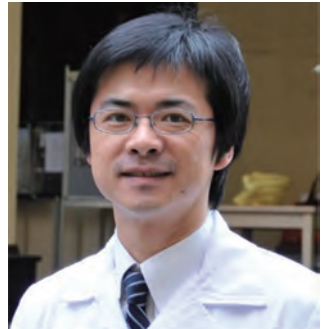
- Chair, Department of Biomedical Engineering, National Taiwan University
- Taiwan Bio-Development Foundation (TBF) Chair in Biotechnology
- Director, Research Center for Developmental Biology and Regenerative Medicine, National Taiwan University
- Director, Center for Frontier Medicine, National Taiwan University Hospital
- Deputy Director, Department of Medical Research, National Taiwan University Hospital
- President, Taiwan Society for Stem Cell Research
- President, Taiwanese Society for Investigative Dermatology

### Honor/Awards

- Award for Junior Research Investigators in Life Science, Academia Sinica, Taiwan, 2009
- Physician Scientist Award, National Health Research Institutes, Taiwan, 2010-2015
- Ta-You Wu Memorial Award of National Science Council, Taiwan, 2010
- Excellent Teaching Award, National Taiwan University, 2010, 2013
- Taiwan Bio-Development Foundation (TBF) Chair in Biotechnology, 2014-2024
- Distinguished Research Award, Ministry of Science and Technology, Taiwan, 2014 & 2020
- Distinguished Research Award, National Taiwan University Hospital, 2014
- Dean Chen-Yuan Lee Memorial Medical Award, 2014
- Distinguished Professor Award, Far Eastern Y.Z. Hsu Science and Technology Memorial Foundation, 2017
- Basic Research Award, Asia-Pacific La Roche-Posay Foundation, 2012, 2018
- Kenneth K. Wu Chair Professor, National Tsing Hua University, Hsinchu, Taiwan, 2020

### Biography Brief

Dr. Sung-Jan Lin is the Taiwan Bio-development Foundation (TBF) Chair in Biotechnology and Professor of Department of Biomedical Engineering and the Deputy Director of Research Center for Developmental Biology and Regenerative Medicine at National Taiwan University. He is also a dermatologist in National Taiwan University Hospital. He received his MD and PhD from College of Medicine and College of Engineering in National Taiwan University. He takes hair follicles, a miniorgan with distinct structures and growth cycles, as a model to understand how a complex organ interacts with the environment and reacts to various insults and to decipher the principles and machinery of tissue regeneration. He is also interested in corneal tissue regeneration, especially corneal endothelium. His lab employs a multidisciplinary approach by combing the knowledge learned in biology and tissue engineering to enhance tissue regeneration.



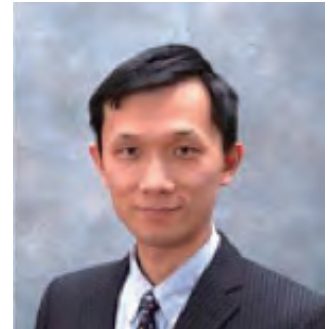
He has published ~120 journal papers in associated journals, including Science, PNAS, Nature Communications, Biomaterials, Optics Letters, etc. His work has been recognized by Award for Junior Research Investigators in Life Science of Academia Sinica, Physician Scientist Award of Taiwan National Health Research Institutes, Distinguished Research Award of Taiwan Ministry of Science and Technology and Outstanding Professor Award of Far Eastern Y.Z. Hsu Science and Technology Memorial Foundation. In 2014, he was elected as Taiwan Bio-development Foundation (TBF) Chair in Biotechnology.

### Selected Publications

1. Hong JB, Wang WH, Hsu YW, Tee SY, Wu YF, Huang WY, Lai SF, Lin SJ\*. Hair follicle transit amplifying cells phagocytose dead cells after radiotherapeutic and chemotherapeutic injuries for timely regeneration. *Journal of Investigative Dermatology* (in press)
2. Lai SH, Huang WY, Wang WH, Hong JB, Kuo SH, Lin SJ\*. Prostaglandin E2 prevents radiotherapy-induced alopecia by attenuating transit amplifying cell apoptosis through promoting G1 arrest. *Journal of Dermatological Science* 109: 117-126, 2023.
3. Chiu HY, Wang WH, Tseng CR, Wang SH, Lin SJ\*. Depilatory laser miniaturizes hair by inducing bystander dermal papilla cell necrosis. *Lasers in Surgery and Medicine* 54:916-927, 2022.
4. Shwartz Y#, Gonzalez-Celeiro M#, Chen CL#, Pasolli HA, Sheu SH, Fan SMY, Shamsi F, Assad S, Lin ETY, Zhang B, Tsai PC, He M, Tseng YH, Lin SJ\*, Hsu YC\*. Cell types promoting goosebumps form a niche to regulate hair follicle stem cells. *Cell* 182: 578-593, 2020. (# equal contribution)
5. Fan SMY, Chang YT, Chen CL, Wang WH, Pan MK, Chen WP, Huang WY, Xu Z, Huang HE, Chen T, Plikus MV, Chen SK\*, Lin SJ\*. External light activates hair follicle stem cells through eyes via an ipRGC-SCN-sympathetic neural pathway. *Proceedings of the National Academy of Sciences of USA* 115: E6880-E6889, 2018.
6. Fan SMY, Tsai CF, Yen CM, Lin MH, Wang WH, Chan CC, Chen CL, Phua KKL, Pan SH, Plikus MV, Yu SL, Chen YJ\*, Lin SJ\*. Inducing hair follicle neogenesis with secreted proteins enriched in embryonic skin. *Biomaterials* 167:121-131, 2018.
7. Huang WY, Lai SF, Chiu HY, Chang M, Plikus MV, Chan CC, Chen YT, Tsao PN, Yang TL, Lee HS, Chi P, Lin SJ\*. Mobilizing transit-amplifying cell-derived ectopic progenitors prevents hair loss from chemotherapy or radiation therapy. *Cancer Research* 77:6083-6096, 2017.
8. Li YC, Lin MW, Yen MH, Fan SMY, Wu JT, Young TH, Cheng JY, Lin SJ\*. Programmable laser-assisted surface microfabrication on a polyvinyl alcohol-coated glass chip with self-changing cell adhesivity for heterotypic cell patterning. *ACS Applied Materials & Interfaces* 7:22322-32, 2015.
9. Sheen YS, Fan SMY, Chan CC, Wu YF, Jee SH, Lin SJ\*. Visible red light enhances physiological anagen entry in vivo and has direct and indirect stimulative effects in vitro. *Lasers in Surgery and Medicine* 47: 50-9, 2015.
10. Lin SJ, Foley J, Jiang TX, Yeh CY, Wu P, Foley A, Yen CM, Huang YC, Cheng HC, Chen CF, Reeder B, Jee SH, Widelitz RB, Chuong CM. Topology of feather melanocyte progenitor niche allows complex pigment patterns to emerge. *Science* 340:1442-5, 2013.
11. Huang YC, Chan CC, Lin WT, Chiu HY, Tsai RY, Tsai TH, Chan JY, Lin SJ\*. Scalable production of controllable dermal papilla spheroids on PVA surfaces and the effects of spheroid size on hair follicle regeneration. *Biomaterials* 34:442-451, 2013.
12. Yen CM, Chan CC, Lin SJ\*. High-throughput reconstitution of epithelial-mesenchymal interaction in folliculoid microtissues by biomaterial-facilitated self-assembly of dissociated heterotypic adult cells. *Biomaterials* 31:4341-4352, 2010.

**Speaker Name****Nai-Chen Cheng****Current Position**

Clinical Professor, Department of Surgery,  
National Taiwan University Hospital and College of Medicine

**Education & training**

- Ph. D. Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan
- Fellowship, Department of Surgery, Duke University Medical Center, Durham, NC, USA
- M.S. Institute of Clinical Medicine, National Taiwan University, Taipei, Taiwan
- M.D School of Medicine, National Taiwan University, Taipei, Taiwan

**Professional experience**

- President, Taiwan Society for Wound Care
- Executive director, Formosa Association of Regenerative Medicine
- Director, Taiwan Society of Plastic Surgery

**Honor/Awards**

- QingXing Medical Award 2020
- Dean Chen-Yuan Lee's Memorial Award, National Taiwan University 2018
- International Guest Scholar Award, American College of Surgeons 2016

**Biography Brief**

Dr. Cheng is a board-certified plastic surgeon in Taiwan. He specializes in breast aesthetic and reconstructive surgery and treatment of difficult wounds. His research has been focused on wound infection and applying stem cells for regenerative wound healing. His work has been published in several first-tier journals, including *Clinical Infectious Disease*, *Biomaterials*, *Acta Biomaterialia* and *Stem Cells Translational Medicine*. He has also been invited to give a speech in several renowned institutes and international conferences, including the World Congress of Tissue Engineering and Regenerative Medicine International Society. In 2015 and 2016, Dr. Cheng received Best Reconstructive Save Award from Taiwan Society of Plastic Surgery for his excellent work in difficult wound reconstruction.

**Selected Publications**

1. Chiang YC, Yeh HW, Hu SM, Wu CY, Wu TY, Chen CH, Liao PC, Guan ZY, \*Cheng NC, \*Chen HY. Vapor construction and modification of stem cell-laden multicomponent scaffolds for regenerative therapeutics. *Materials Today Bio*. 2022 Feb; 13:100213.
2. \*Cheng NC, Tu YK, Lee NH, \*Young TH. Influence of human platelet lysate on extracellular matrix deposition and cellular characteristics in adipose-derived stem cell sheets. *Frontiers in Cell and Developmental Biology*. 2020 Oct 22;8:558354.
3. Cheng Y, Lin KH, Young TH, \*Cheng NC. The influence of fibroblast growth factor 2 on the senescence of human adipose-derived mesenchymal stem cells during long-term culture. *Stem Cells Translational Medicine*. 2020 Apr;9(4):518-530.

**Speaker Name****Chen-Chie Wang****Current Position**

Visiting Staff, Department of Orthopedic, Taipei Tzu-Chi General Hospital,  
 Professor, Department of Orthopedic, Hualien Tzu-Chi University  
 Director of Tissue Engineering and Stem Cell Research Center  
 General Secretary, Formosa Association Regenerative Medicine  
 Standing Director, Taiwan Orthopaedic Foot and Ankle Society

**Education & training**

- Ph. D. Biomedical engineering, National Taiwan University College of Medicine
- M.D., School of Medicine, National Taiwan University College of Medicine

**Professional experience**

- Professor, Hualien Tzu-Chi University (2022)
- Associate Professor, Hualien Tzu-Chi University (2017)
- Assistant Professor, Hualien Tzu-Chi University (2012)
- Postdoctoral Research Fellow, Nara Medical University Hospital (2018)

**Honor/Awards**

- 2016 Taiwan National Innovation award
- SNQ 2020: A new advancement of sports injury- the application of ultrasound-guided minimally invasive surgery for Achilles tendon rupture and related disorders

**Biography Brief**

- Professor Dr. Chen-Chie Wang is by profession an orthopaedic surgeon/trainer/scientist with special interest in foot and ankle surgery and related arthroscopic surgery for sports injury.
- He is Professor of Orthopaedics in Hualien Tzu-Chi University, Taiwan
- Research interest: Tissue Engineering & Regenerative Medicine (Orthopaedics), Basic Sciences in Musculoskeletal, Fundamental research in Cartilage and Tendon tissues.

**Selected Publications**

1. The chondroprotective effect of diosmin on human articular chondrocytes under oxidative stress. Yi-Ru Chen, Kai-Chiang Yang, Dai-Hua Lu, Wen-Tien Wu, Chen-Chie Wang\*, Mong-Hsun Tsai\*. *Phytotherapy Research*. 2019;33: P2378–2386.
2. Effects of scaffold geometry on chondrogenic differentiation of adipose derived stem cells. Kai-Chiang Yang, Ing-Ho Chen, Ya-Ting Yang, Jong-Kai Hsiao, Chen-Chie Wang\* *Materials Science & Engineering C*. 2020;110: p. 110733
3. Infrapatellar fat pads-derived stem cell is a favorable cell source for articular cartilage tissue engineering: An in vitro and ex vivo study based on 3D organized self-assembled biomimetic scaffold, Wang CC, Chen IH, Yang YT, Chen YR, Yang KC: *Cartilage*, 2021; Dec: 13 (2\_suppl), 508S-520S.
4. Bioinspired collagen-gelatin-hyaluronic acid-chondroitin sulfate tetra-copolymer scaffold biomimicking native cartilage extracellular matrix facilitates chondrogenesis of human synovium-derived stem cells, Kai-Chiang Yang, Ya-Ting Yang, Chang-Chin Wu, Jong-Kai Hsiao, Chien-Yuan Huang, Ing-Ho Chen, Chen-Chie Wang \**International Journal of Biological macromolecules* (2023 accepted).



**Speaker Name****Thamil Selvee RAMASAMY****Current Position**

Head, Stem Cell Biology Laboratory, Universiti Malaya, Malaysia

**Education & training**

- B.Sc, (Biotechnology-Cell & Molecular Biology), Universiti Putra Malaysia
- PhD (Clinical Medicine Research Programme), Imperial College London, UK

**Professional experience**

- Special Officer to Minister of Health, Ministry of Health, Malaysia (2021-2022)
- Advisor to Minister of Science, Technology and Innovation, MOSTI (2022)
- President, Tissue Engineering & Regenerative Medicine Society of Malaysia (TESMA) (2015-2019)
- Assistant Professor, Department of Molecular Medicine, Universiti Malaya (2012-current)

**Honor/Awards**

- Fulbright Scholar, 2022 (International)
- Erasmus+ International Credit Mobility Program, 2022 (International)
- Promising Early-Career Scientists Award by Young Leaders Program, Science and Technology in Society (STS) Forum, 2019, (International)
- UK BBSRC Research Council Award, BBSRC Research Council, United Kingdom, 2018 (International)

**Biography Brief**

Dr. Ramasamy earned her PhD in Clinical Medicine Research Programme (specialisation: human embryonic stem cell research) from Imperial College London, UK. She is heading the Stem Cell Biology Laboratory at University of Malaya. Dr. Ramasamy has been actively engaged in stem cell research for more than a decade now and recently embarked on cancer stem cell research, the research field that she has so much passion. Her research group has set their focus to strive for cutting edge and impactful research in developing effective stem cell therapy and target cancer stem cells by developing scientific programs of exceptional merit in collaboration with multiple institutions and industries at national and international levels.

Her passion in bringing the impact of research in Malaysia to a great height is very much evident through many leadership roles that she has held; including as the advisor to Minister of Science, Technology and Innovation (MOSTI), Special Officer to Health Minister (MOH), President of Tissue Engineering and Regenerative Medicine Society of Malaysia (TESMA) at national level and many administrative roles at institutional level.

**Selected Publications**

1. Wong PF, Dharmani M, Ramasamy TS. Senotherapeutics for mesenchymal stem cell senescence and rejuvenation. *Drug Discov Today*. 2023 Jan;28(1):103424.
2. Yadav A, Ramasamy TS, Lin SC, Chen SH, Lu J, Liu YH, Lu FI, Hsueh YY, Lin SP, Wu CC. Autologous Platelet-Rich Growth Factor Reduces M1 Macrophages and Modulates Inflammatory Microenvironments to Promote Sciatic Nerve Regeneration. *Biomedicines*. 2022 Aug 17;10(8):1991.
3. Yadav A, Huang TC, Chen SH, Ramasamy TS, Hsueh YY, Lin SP, Lu FI, Liu YH, Wu CC. Sodium phenylbutyrate inhibits Schwann cell inflammation via HDAC and NFκB to promote axonal regeneration and remyelination. *J Neuroinflammation*. 2021 Oct 16;18(1):238.
4. Agnes Ong Lee Chen, Lee Sau Har, Aung Shuh Wen, Si Lay Khaing, Thamil Selvee Ramasamy (2021). 5-Azacytidine pretreatment confers transient upregulation of proliferation and stemness in human mesenchymal stem cells, *Cells & Development*.



# Scientific Program

September 2 (Saturday)	
<b>3F Lotus Room 芙蓉廳</b>	
<b>Biofabrication</b>	
Moderator: Prof. Vasif Hasirci and Prof. Chia-Hsien Hsu	
10:40-11:05	<i>Invited Lecture: 3D printed PCL/HAp implant in in vivo application of segmental bone defect of femoral shaft</i> <b>Prof. Vasif Hasirci, Acibadem University, Turkey</b>
11:05-11:30	<i>Invited Lecture: Microfluidic Chips for Cell Spheroids Culture</i> <b>Prof. Chia-Hsien Hsu, National Tsing Hua University, Taiwan</b>
11:30-11:55	<i>Invited Lecture: 3D Bioprinted pectin and gelatin skin grafts containing fibroblasts and bioactive agents</i> <b>Prof. Nesrin Hasirci, Middle East Technical University, Turkey</b>
11:55-12:10	<i>Bioprinting of stimulus-responsive auxetic scaffold for enhanced cartilage regeneration under cyclic tensile force</i> <b>Mr. Yen-Hong Lin, China Medical University, Taiwan</b>
<b>2F Flora Room 花廳</b>	
<b>Regenerative Medicine (II)</b>	
Moderator: Prof. Petek Korkusuz and Prof. Jiasheng Yu	
10:40-11:05	<i>Invited Lecture: In vitro Spermatogenesis Platforms</i> <b>Prof. Petek Korkusuz, Hacettepe University, Turkey</b>
11:05-11:30	<i>Invited Lecture: Multiscale design of 3D hydrogel bioink with ROS scavenging and retina tissue regeneration</i> <b>Prof. Jiasheng Yu, National Taiwan University, Taiwan</b>
11:30-11:55	<i>Invited Lecture: Biologically inspired scaffolds for neural tissue regeneration</i> <b>Prof. Sing Yian Chew, Nanyang Technological University, Singapore</b>
11:55-12:10	<i>Application of ultrahigh frequency transcutaneous electrical nerve stimulation for alleviation of neuropathic pain and neuroinflammation modulation in rat sciatic nerve chronic constriction injury</i> <b>Dr. Yu-Wen Lin, National Cheng Kung University Hospital, Taiwan</b>
<b>2F Luna Room 月廳</b>	
<b>Stem Cell (III)</b>	
Moderator: Prof. Dinh-Toi Chu and Prof. Koichi Kato	
10:40-11:05	<i>Invited Lecture: Ear mesenchymal stem cells (EMSCs): an good in vitro model of primary cells to study regenerative medicine and molecular biomedicine</i> <b>Prof. Dinh-Toi Chu, Vietnam National University, Vietnam</b>
11:05-11:30	<i>Invited Lecture: Selective and rapid proliferation of stem cells on growth factor-tethered surfaces</i> <b>Prof. Koichi Kato, Hiroshima University, Japan</b>
11:30-11:55	<i>Invited Lecture: Cell chirality in tissue morphogenesis</i> <b>Prof. Ting-Hsuan (Cecil) Chen, City University of Hong Kong, Hong Kong</b>
11:55-12:10	<i>Effects of Photobiomodulation on Migration of Adipose-derived Stem Cells</i> <b>Mr. Mamadi Colley, Taipei Medical University, Taiwan</b>
<b>2F Jixiang Room 吉祥廳</b>	
<b>Extracellular Vesicle</b>	
Moderator: Prof. Ming-Fa Hsieh and Prof. Pan-Pan Chong	
10:40-11:05	<i>Invited Lecture: Platelet-derived Biomaterials for Xenogenic Application of Cartilage Repair</i> <b>Prof. Ming-Fa Hsieh, Chung Yuan Christian University, Taiwan</b>
11:05-11:30	<i>Invited Lecture: Cartilage tissue engineering and osteoarthritis therapy: mesenchymal stem cells, perivascular stem cells, and platelet-derived extracellular vesicles</i> <b>Prof. Pan-Pan Chong, University of Malaya, Malaysia</b>
11:30-11:55	<i>Invited Lecture: Temperature-responsive polymeric reagents for extracellular vesicle isolation and analysis</i> <b>Prof. James Lai, National Taiwan University of Science and Technology, Taiwan</b>
11:55-12:20	<i>Invited Lecture: Extracellular vesicles from human right atrial appendage stromal cells are cardioprotective</i> <b>Prof. David Lundy, Taipei Medical University, Taiwan</b>





<b>2F Ruyi Room 如意廳</b>	
<b>Biomaterials (I)</b>	
Moderator: Prof. Liam Grover and Prof. Jin-Jia Hu	
10:40-11:05	<i>Invited Lecture: Structured soft polymers as functional biomaterials</i> <b>Prof. Liam Grover, University of Birmingham, United Kingdom</b>
11:05-11:30	<i>Invited Lecture: Preparation of sub-100-micron calcium-alginate microspheres using nitrogen flow focusing: dependence of spherical shape on gas streams</i> <b>Prof. Jin-Jia Hu, National Yang Ming Chiao Tung University, Taiwan</b>
11:30-11:55	<i>Invited Lecture: A Biomaterial Perspective on Gasotransmitter-Induced Therapeutic Angiogenesis</i> <b>Prof. Subramaniam Sadhasivam, Bharathiar University, India</b>
11:55-12:10	<i>Comparison of the difference between orthokeratology cleaning solution with added polysaccharides and commercially available products</i> <b>Mr. You-Cheng Chang, National Taipei University of Technology, Taiwan</b>
<b>3F Lotus Room 芙蓉廳</b>	
<b>Biomaterials (II)</b>	
Moderator: Prof. Hsu-Wei Fang and Prof. Min Wang	
15:20-15:45	<i>Invited Lecture: Biotribology of Biomaterials: Studies from Total Joint Implant to Orthokeratology</i> <b>Prof. Hsu-Wei Fang, National Taipei University of Technology, Taiwan</b>
15:45-16:10	<i>Invited Lecture: 3D/4D Printing of Composite/Hybrid Structures for Tissue Engineering</i> <b>Prof. Min Wang, The University of Hong Kong, Hong Kong</b>
16:10-16:35	<i>Invited Lecture: Monodisperse cell-laden microgel droplets for cartilage tissue engineering</i> <b>Prof. Hsia-Wei Liu, Fu Jen Catholic University, Taiwan</b>
16:35-16:50	<i>Investigation of Factors Altering Rheological Properties of Poloxamer-Based Thermo-Sensitive Hydrogel</i> <b>Prof. I-Cheng Chen, National Taipei University of Technology, Taiwan</b>
<b>2F Flora Room 花廳</b>	
<b>Regenerative Medicine (III)</b>	
Moderator: Prof. Yukio Nagasaki and Prof. Chia-Wen Tsao	
15:20-15:45	<i>Invited Lecture: Antioxidant nanoparticles that scavenge the intestinal ROS lead to health</i> <b>Prof. Yukio Nagasaki, University of Tsukuba, Japan</b>
15:45-16:10	<i>Invited Lecture: Modularized microfluidic-based bioreactor for multiplex cell stimulation</i> <b>Prof. Chia-Wen Tsao, National Central University, Taiwan</b>
16:10-16:35	<i>Invited Lecture: EPIGENETIC REGULATIONS OF ADIPOSE-DERIVED STEM CELLS DURING SPHEROID FORMATION AND PERIPHERAL NERVE REGENERATION</i> <b>Prof. Chia-Ching (Josh) Wu, National Cheng Kung University, Taiwan</b>
16:35-16:50	<i>Effects of different barbed suture implantation methods on facial tissue tension and displacement in minimally invasive medical cosmetic surgery</i> <b>Mr. Chia-Hsien Hsieh, National Taipei University of Technology, Taiwan</b>
<b>2F Luna Room 月廳</b>	
<b>Biosensor</b>	
Moderator: Prof. Gabriel Lopez and Prof. Wilfrid Boireau	
15:20-15:45	<i>Invited Lecture: Bioanalytical Applications of Engineered Intrinsically Disordered Proteins</i> <b>Prof. Gabriel Lopez, The University of New Mexico, United States</b>
15:45-16:10	<i>Invited Lecture: Nanobioanalytical investigations of Extracellular vesicles from secretome of macrophages - Possible implication in the treatment of fibrosis</i> <b>Prof. Wilfrid Boireau, FEMTO-ST Institute, France</b>
16:10-16:35	<i>Invited Lecture: Novel Drug Delivery System Using Nano-Prodrugs</i> <b>Prof. Masaya Yamamoto, Tohoku University, Japan</b>
16:35-17:00	<i>Invited Lecture: Using Functional Photoacoustic Imaging to Understand Pancreatic Tumor Hypoxia Dynamics during Treatment</i> <b>Prof. Lun-De Liao, National Health Research Institutes, Taiwan</b>
<b>2F Bella Room 好廳</b>	
<b>Young Investigator Award (I)</b>	
Judge: Prof. Zong-Hong Lin, Prof. Yen-Hua Huang, and Prof. Yi-Ming Sun	
10:40-10:55	<i>Development of Hyaluronic Acid Coated with Kaempferol Nanoparticles for the Treatment of knee Osteoarthritis in Rats</i> <b>Prof. Ching-Yu Lee, Taipei Medical University, Taiwan</b>
10:55-11:10	<i>Immunofoam: foam-based immunotherapy for metastatic peritoneal cancer</i> <b>Prof. Yen-Liang Liu, China Medical University, Taiwan</b>
11:10-11:25	<i>Improving the Prognosis of Advanced Hepatocellular Carcinoma (HCC): Development and Evaluation of 125I-Labeled GPC3 Antibody Micelle</i> <b>Ms. Tzu-Chuan Ho, Kaohsiung Medical University, Taiwan</b>
11:25-11:40	<i>Development of Kaempferol-Loaded Platelet-Derived Extracellular Vesicles for Choroidal Neovascularization Treatment</i> <b>Mr. Huai-An Chen, Taipei Medical University, Taiwan</b>
11:40-11:55	<i>(Online) Porous scaffolds with microwell structures for 3D culture of pancreatic beta cells</i> <b>Mr. Huajian Chen, National Institute for Materials Science, Japan</b>



3F Jasper Room 碧玉廳	
<b>Young Investigator Award (II)</b>	
Judge: Prof. Heungsoo Shin, Prof. Shang-Hsiu Hu, and Prof. Yih-Chih Hsu	
15:10-15:25	<i>Optogenetic Technique Advancement for Modeling Neuro-Cardiac Diseases</i> <b>Prof. Yen-Ling Sung, Taipei Medical University, Taiwan</b>
15:25-15:40	<i>Evaluation of the sustained-release carrier incorporating novel protein-drug of rhTMD2/3 for the spinal interbody fusion in a rat model</i> <b>Prof. Yan-Jye Shyong, National Cheng Kung University, Taiwan</b>
15:40-15:55	<i>Cerium oxide nanoparticles and hyaluronic acid hydrogel for early osteoarthritis treatment</i> <b>Dr. Hsuan-Yu Chen, National Taiwan University Hospital, Taiwan</b>
15:55-16:10	<i>The Use of preconditioned Mesenchymal Stromal Cell-Secretome as a Protective Measure for the Kidneys and Liver in an Acute on Chronic Liver Failure Animal Model</i> <b>Ms. Ya-Lin Huang, Universidad del Desarrollo, Chile</b>
16:10-16:25	<i>Multifunctional CuO/Cu<sub>2</sub>O Truncated Nanocubes as Trimodal Image-Guided Near-Infrared-III Photothermal Agents to Combat Multi-Drug-Resistant Lung Carcinoma</i> <b>Ms. Munusamy Shanmugam, National Tsing Hua University, Taiwan</b>
16:25-16:40	<i>Using Functional Photoacoustic Imaging to Monitor Tumor Hypoxia Dynamics during Treatment with Microbubbles and Gemcitabine</i> <b>Ms. Yuhling Wang, National Health Research Institutes, Taiwan</b>
16:40-16:55	<i>Microfluidic Devices and AIoT Animal Physiological Sensors for a New Compounds Screening System</i> <b>Dr. Weilun Sun, Pythia Biotech, Taiwan</b>
3F Jasper Room 碧玉廳	
<b>Student Oral (II)</b>	
Judge: Prof. Ting-Yu Liu and Prof. Chen-Yu Kao	
10:40-10:50	<i>A Biomimicking and Multiarm Self-Indicating Nanoassembly for Site-Specific Photothermal-Potentiated Thrombolysis Assessed in Vessel-on-a-Chip Device and in vivo Models</i> <b>Kuan-Ting Liu, National Taiwan University, Taiwan</b>
10:50-11:00	<i>Programmed T Cells Infiltration into Lung Metastases with Harnessing Dendritic Cells in Cancer Immunotherapies by Catalytic Antigen-Capture Sponges</i> <b>Min-Ren Chiang, National Tsing Hua University, Taiwan</b>
11:00-11:10	<i>A Novel Peptide Assembling Nanoparticle as Eye Drop for Treating Choroidal Neovascularization</i> <b>Yu-Yi Wu, Taipei Medical University, Taiwan</b>
11:10-11:20	<i>Direct Thermal Growth of Gold Nanoparticles on 3D Interweaved Hydrophobic Fibers as Ultrasensitive Portable SERS Substrates for Clinical Applications</i> <b>Li-Chia Lu, National Tsing Hua University, Taiwan</b>
11:20-11:30	<i>Bi<sub>2</sub>S<sub>3</sub>@C/Pd-BSA hetero-nanostructures for photocatalysis-mediated hydrogen sulfide splitting and hydrogen production for colorectal cancer therapy</i> <b>Arjun Sabu, National Tsing Hua University, Taiwan</b>
11:30-11:40	<i>Three-dimensionally cultured adipose derived stem cell exosomes for diabetic wound healing</i> <b>Edgar Quiñones, National Taiwan University, Taiwan</b>
11:40-11:50	<i>Platelet-derived biomaterial with hyaluronic acid alleviates temporal mandibular joint osteoarthritis: clinical trial from dish to human</i> <b>Wen Tsao, Taipei Medical University, Taiwan</b>
11:50-12:00	<i>The synergistic in vitro and in vivo antitumor effect of combination therapy with iron oxide nanoparticles and fucoidan against lung adenocarcinoma</i> <b>Thi-Luu Ho, Taipei Medical University, Taiwan</b>
12:00-12:10	<i>One-step Bone Graft: The Efficiency of Bone Regeneration with 3D Culture Wharton's Jelly Mesenchymal Stem Cells</i> <b>Chia-Chun Hsu, Changhua Christian Hospital, Taiwan</b>
2F Bella Room 好廳	
<b>Student Oral (III)</b>	
Judge: Prof. Guei-Sheung Liu	
15:20-15:30	<i>Disruption of CCL2 in mesenchymal stem cells as an anti-tumor approach against prostate cancer</i> <b>Quoc Thang Bui, Taipei Medical University, Taiwan</b>
15:30-15:40	<i>Isolation of Ovarian Cancer Cells to Establishing Cancer Stem Cell Lines Using Membrane Filtration Method</i> <b>Yi-Shuo Su, National central university, Taiwan</b>
15:40-15:50	<i>Development of A New Prime Editing System for Efficient Genome Editing</i> <b>Quyen Thuc Dang, National Tsing Hua University, Taiwan</b>
15:50-16:00	<i>Nanoparticle-Based Dopaminergic Neuron Differentiation Approach - in vitro Model Derived from Human Induced Pluripotent Stem Cells</i> <b>Cai-Jhen Wu, Taipei Medical University, Taiwan</b>





16:00-16:10	<i>Establishing a drug screening platform based on cardiomyocytes derived from human induced pluripotent stem cells for analyzing the effects of nanosized heart failure medications</i> <b>Tzu-Yun Yeh, Taipei Medical University, Taiwan</b>
16:10-16:20	<i>A high-throughput lung air-blood barrier neutrophil transmigration system for drug dose-dependent study</i> <b>Liang-Hsin Chen, Georgia Institute of Technology, United States</b>
16:20-16:30	<i>Polymerized magnetic cells amenable to synapse formation enable selective capture of antigen-specific T lymphocytes</i> <b>Chung-Yao Hsu, Academia Sinica, Taiwan</b>
16:30-16:40	<i>Combination of Platinum-doped CaCO<sub>3</sub> and Amylopectin-based Gel to Synergize with Radiotherapy for High-grade Glioma</i> <b>Jason Lin, National Taiwan University, Taiwan</b>
16:40-16:50	<i>(Online) 4D Printed Multilayered Scaffolds with Enhanced Performance for Bone Regeneration</i> <b>Jizhuo Chen, The University of Hong Kong, China</b>
16:50-17:00	<i>(Online) Influence of hydrogel stiffness on adipogenic differentiation of mesenchymal stem cells with controlled morphology</i> <b>Chengyu Lu, University of Tsukuba, Japan</b>
17:00-17:10	<i>(Online) Composite scaffolds for magnetic hyperthermia of breast cancer and reconstruction of adipose tissue</i> <b>Rui Sun, University of Tsukuba, Japan</b>
<b>September 3 (Sunday)</b>	
<b>2F Flora Room 花廳</b>	
<b>Student Oral (IV)</b>	
Judge: Prof. Pei-Chun Wong and Prof. Si-Han Wu	
09:00-09:10	<i>Multi-functional hydrogels incorporating mineral-coated composite nano fibers with magnetic nanoparticles for photothermal therapy and bone tissue regeneration</i> <b>Taeyeon Hwang, Hanyang University, Korea</b>
09:10-09:20	<i>Changing Behavior of C2C12-GFP on Linear Groove Polydimethylsiloxane (PDMS) Substrate</i> <b>Yhusi Karina Riskawati, Universitas Brawijaya, Indonesia</b>
09:20-09:30	<i>Administration of self-assembly mRNA nanomedicine augmented calvarial defect healing by endochondral ossification</i> <b>Cheng-Hsin Wu, China Medical University, Taiwan</b>
09:30-09:40	<i>Sebacoyl Dinalbuphine Ester-Loaded Nanostructured Lipid Carriers in Gel for Postoperative Pain on Spine Surgery</i> <b>Yi-Lian Li, National Cheng Kung University, Taiwan</b>
09:40-09:50	<i>Antiretroviral-Drugamer In-situ Forming Subcutaneous Injectables with Tunable Drug Release</i> <b>Shin-Tian Chien, University of Washington, United States</b>
09:50-10:00	<i>Effect of Magnetic Field Strength on the Controlled Release Behavior of Magnetic Nanogel Drug Delivery Systems</i> <b>Chia-Ke Tsou, Chung Yuan Christian University, Taiwan</b>
10:00-10:10	<i>Constructing Heart-specific Exosome Profile to Enable Research of Cardiovascular Disease</i> <b>Rosie Kao, National Taiwan University of Science and Technology, Taiwan</b>
10:10-10:20	<i>Enabling Rapid Extracellular Vesicle Isolation from Cell Culture Media by Osmosis</i> <b>Casey Huang, National Taiwan University of Science and Technology, Taiwan</b>
10:20-10:30	<i>Assessment of the neuroprotective and neuro-regenerative potentials of extracellular vesicles isolated from platelet concentrates in Parkinson's disease and traumatic brain injury models</i> <b>Liling Delila, Taipei Medical University, Taiwan</b>
10:30-10:40	<i>Diffusion-tensor imaging and dynamic susceptibility contrast MRI improve radiomics-based machine learning model of MGMT promoter methylation status in glioblastomas</i> <b>Tran Nguyen Tuan Minh, Taipei Medical University, Taiwan</b>
10:40-10:50	<i>Concentrates Urinary Biomarkers Via the Osmosis Processors</i> <b>Chia-Yu Lee, National Taiwan University of Science and Technology, Taiwan</b>
10:50-11:00	<i>Immobilization of lysozyme on chitosan modified nanofiber membrane: Antibacterial Assessment</i> <b>Thi-Tam-An Tran, Ming-Chi University of Technology,</b>
11:00-11:10	<i>Temperature-Responsive Polymer-Antibody Conjugate for Biomarker Separation</i> <b>Maggie Shen, National Taiwan University of Science and Technology, Taiwan</b>
11:10-11:20	<i>H<sub>2</sub>S-responsive copper selenide Cu<sub>2</sub>-xSe@BSA nanoparticles for photothermal and chemodynamic combination therapy in colon cancer</i> <b>Manoj Kandel, National Tsing Hua University, Taiwan</b>



2F Bella Room 好廳	
Student Oral (V)	
Judge: Prof. Tzu-Sen Yang	
09:00-09:10	<i>Novel of Hydroxyapatite Nanoparticle-Loaded Hydrogel Scaffold for Bone Regeneration</i> <b>Yi-Chieh Hsu, Taipei Medical University, Taiwan</b>
09:10-09:20	<i>Anti-aging biomaterial sturgeon chondroitin sulfate chelates biological functions to reprogram stem cell senescence and ameliorate aging to prolong longevity</i> <b>Abhinay Kumar Singh, Taipei Medical University, Taiwan</b>
09:20-09:30	<i>PEO-PLA/PEO core-shell structured fibers fabricated by coaxial electrospinning for controlled drug release</i> <b>Ji-Feng Wang, National Yang Ming Chiao Tung University, Taiwan</b>
09:30-09:40	<i>Oxidation-mediated scaffold engineering of hyaluronic acid-based microcarriers enhances corneal stromal regeneration</i> <b>Huan-Lun Ting, Chang Gung University, Taiwan</b>
09:40-09:50	<i>Highly retina-permeating and long-acting resveratrol/metformin nanotherapeutics for enhanced treatment of macular degeneration</i> <b>Chia-Jung Yang, Chang Gung University, Taiwan</b>
09:50-10:00	<i>Photocrosslinkable carboxymethyl cellulose/collagen/plate-rich plasma hydrogel for wound dressing</i> <b>Wei-Chieh Chang, National Taiwan University, Taiwan</b>
10:00-10:10	<i>The Development of Functionalized Oxidized Bacterial Cellulose-Based Hemostats</i> <b>Chonlachat Jaihao, Taipei Medical University, Taiwan</b>
10:10-10:20	<i>Methacrylate silatrane: Newly synthesized building block for advancement of surface silanization and functional polymers</i> <b>Van-Truc Vu, National Central University, Taiwan</b>
10:20-10:30	<i>Modification of plant-based starch powders for surgical anti-adhesion applications</i> <b>Tzu-Shan Fang, National Taipei University of Technology, Taiwan</b>
10:30-10:40	<i>Liquid foam as carrier of immune cells and anti-cancer agents for intraperitoneal immunotherapy</i> <b>Ulzijargal Sukhbat, China Medical University, Taiwan</b>
10:40-10:50	<i>Human pluripotent stem cell culture on dendrimer surface grafted with ECM-derived peptides</i> <b>Wen-Hui Chao, National Central University, Taiwan</b>
10:50-11:00	<i>GVHD treatment utilizing several types of stem cells cultivated on biomaterials</i> <b>Chang-Yen Tsai, National Central University, Taiwan</b>
11:00-11:10	<i>Culturing and Differentiation of Human Pluripotent Stem Cells on hydrogel mixture of E-cadherin- and ECM-derived peptides</i> <b>Zhao-Yu Hong, National Central University, Taiwan</b>
11:10-11:20	<i>Premixed calcium silicate bone cement with rapid setting and washout resistance</i> <b>Yi-Huei Huang, Chung Shan Medical University, Taiwan</b>
11:20-11:30	<i>3D printing of PEGDA-CAP-rhTM intervertebral cage increased stability on rat spinal fusion model and long-acting release protein drugs to promote intervertebral disc fusion</i> <b>Wei Huang, National Cheng Kung University, Taiwan</b>



### Speaker Name

**Vasif Hasirci**

### Current Position

Professor, Acibadem University, Istanbul Turkey  
 Chair, Graduate Dept. of Biomaterials  
 Director, Biomaterials Application and Research Center



### Education & training

- Ph. D. Reading University (U.K.)
- B.S. and M.S.: Middle East Technical University, Dept. Chemistry (Turkey)

### Professional experience

- Professor 2018-Present, Acibadem University, Dept. Biomedical Engineering
- Professor 1989-2016, METU Department of Biological Sciences, Ankara, Turkey
- Fulbright Fellow 1998-1999, Northeastern Univ, Dept. Chemical Engineering, Boston (USA)
- Assoc. Professor 1982-1988, METU Dept. of Biological Sciences, Ankara, Turkey
- Fulbright Fellow 1982-1984, Drexel Univ., Biomedical Eng. and Sci. Inst., Philadelphia. USA
- Asst. Professor 1978-1982, METU Department of Biological Sciences, Ankara, Turkey

### Honor/Awards

- 2018 Honorary Member European Society For Biomaterials
- 2017 Sedat Simavi Life Sciences Award (Turkey)
- 2013 Fellow, Science Academy (Turkey)
- 2013 Fellow, Royal Society of Chemistry (FRSC, UK)
- 2012 Fellow, International College of Fellows: Biomaterials Science and Engineering (IUS BSE)
- 2001 METU Prof. Mustafa Parlar Science Award (Turkey)

### Biography Brief

Dr. Vasif Hasirci has expertise in biomedical, biotechnological and nanotechnological applications of natural and synthetic polymers. He was the Founding Director of the Center of Excellence in Biomaterials and Tissue Engineering at the Middle East Technical University (METU) established jointly with his colleagues. He was a member of the Middle East Technical University Department of Biological Sciences until 2016 and is now a professor at Acibadem Mehmet Ali Aydinlar University, (ACU), Department of Medical Engineering in Istanbul. He has since established, jointly with colleagues from the department and the university, the ACU Biomaterials Center of which he is the founding Director and is also the Chair of the Biomaterials Graduate Program. He is an Associate Editor of the journal *Frontiers in Bioengineering and Biotechnology*. He also serves on the Editorial Boards of several journals including *Biomaterials*; *Bioactive materials*, and *J. Biomaterials Science: Polymer Edition*. He is a Fellow of the Science Academy (Turkey), the International College of Fellows of Biomaterials Science and Engineering (FBSE), and the Royal Society of Chemistry (FRSC) (UK). He is also a Honorary Member of the European Society for Biomaterials (ESB), and a member American Chemical Society, and Turkish Chemistry Society. He is the founding President of the Biomaterials and Tissue Engineering Society (Turkey).

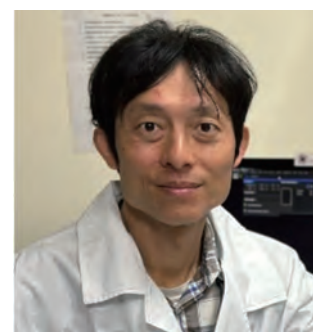
### Selected Publications

- T. Dursun Usal, M. Yesiltepe, D. Yucel, Y. Sara, V. Hasirci, 2022, Fabrication of a 3D Printed PCL Nerve Guide: In Vitro and In Vivo Testing, *Macromol. Biosci.* 2100389
- E Antmen, U Demirci, V Hasirci, 2021, Micropatterned surfaces: micropatterned surfaces expose the coupling between actin cytoskeleton-lamin/nesprin and nuclear deformability of breast cancer cells with different malignancies, *Advanced Biology* 5(1), 2170012 (Cover)
- C. Kilic Bektas, V. Hasirci, 2020, Cell loaded 3D bioprinted GelMA hydrogels for corneal stroma engineering, *Biomater. Sci.*, 2020, 8(1), 438-449



**Speaker Name****Chia-Hsien Hsu****Current Position**

Investigator, Institute of Biomedical Engineering and Nanomedicine,  
National Health Research Institutes

**Education & training**

- Ph. D. Mechanical Engineering, University of Washington, Seattle, WA., USA
- M.S. Mechanical Engineering, National Chung Cheng University, Taiwan
- B.S. Mechanical Engineering, National Chung Hsing University, Taiwan

**Professional experience**

- 2013-2022, Associate Investigator, Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Taiwan
- 2013-2022, Assistant Investigator, Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Taiwan
- 2009-2013, Assistant Investigator, Division of Medical Engineering, National Health Research Institutes, Taiwan
- 2006-2009 Research Associate, Harvard Medical School, Massachusetts General Hospital and Shriners Hospital for Children, Boston, MA., USA

**Honor/Awards**

- NHRI Outstanding Research Achievement Award /2023
- National Innovation Award /2022
- National Innovation Award /2021
- National Innovation Award /2020
- Technology Transfer Award of Taipei Biotech Awards /2022
- National Innovation Award /2019
- National Innovation Award /2018
- NHRI Young Scientist Research Achievement Award /2017
- National Innovation Award /2017
- MOST Young Scholar Fellowship/ 2017

**Biography Brief**

Chia-Hsien Hsu is an Investigator at the Institute of Biomedical Engineering and Nanomedicine at National Health Research Institutes (NHRI) in Taiwan, and holds jointly appointed faculty positions at the Institute of NanoEngineering and Microsystems of National Tsing Hua University and, and the Ph.D. Program in Tissue Engineering and Regenerative Medicine of National Chung Hsing University. Dr. Hsu obtained his Ph.D. degree from University of Washington in USA, and worked as a postdoctoral research fellow in Massachusetts General Hospital and Harvard Medical School prior to joining NHRI. Dr.

Hsu's research is centered about the development of microfluidics technologies for cell biology and medical applications in cancer, stem cell and regenerative medicine. He is currently research topics are focused on cell spheroids, organoids and organ-on-chip technologies. The long-term research goal of his laboratory is to turn microfluidics into enabling tools to make impact on biomedical research and medicine.

### Selected Publications

1. Didem Rodoplu, Cherng-Shyang Chang, Cheng-Yuan Kao, and Chia-Hsien Hsu, "A micro-pupil device for point-of-care testing of viable *Escherichia coli* in tap water", *Microchemical Journal*, 178, 107390 (2022).
2. Didem Rodoplu, Jefunnie Sierra Matahum, and Chia-Hsien Hsu, "A microfluidic hanging drop-based spheroid co-culture platform for probing tumor-angiogenesis", *Lab On A Chip* 22, 1275-1285 (2022). (Front Cover).
3. Chuan-Feng Yeh, Duane S. Juang, Ya-Wen Chen, Didem Rodoplu, Chia-Hsien Hsu\*, "A Portable Controllable Compressive Stress Device to Monitor Cancer Cell Protrusions at Single-Cell Resolution", *Frontiers in Bioengineering and Biotechnology* 10: 852318 (2022).
4. Didem Rodoplu, Cherng-Shyang Chang, Cheng-Yuan Kao and Chia-Hsien Hsu, "A simple magnetic-assisted microfluidic method for rapid detection and phenotypic characterization of ultralow concentrations of bacteria", *Talanta* 230, 12291 (2021). (Front Cover).
5. Tugba Tezcan and Chia-Hsien Hsu, "High-sensitivity SERS based sensing on the labeling side of glass slides using low branched gold nanoparticles prepared with surfactant-free synthesis", *RSC Advances* 10: 34290-34298 (2020).
6. Chuan-Feng Yeh, Ching-Hui Lin, Hao-Chen Chang, Chia-Yu Tang, Pei-Tzu Lia, and Chia-Hsien Hsu, "A Microfluidic Single-Cell Cloning (SCC) Device for the Generation of Monoclonal Cells", *Cells* 9 (6): E1482 (2020).
7. Hao-Chen Chang, Ching-Hui Lin, Duane S, Juang, Huei-Wen Wu, Che-Yen Lee, Chihchen Chen and Chia-Hsien Hsu, "Multilayer architecture microfluidic network array for combinatorial drug testing on 3D-cultured cells", *Biofabrication* 19: 1370-1377 (2019).
8. Cheng-Kun He, Ya-Wen Chen, Ssu-Han Wang and Chia-Hsien Hsu, "Hydrodynamic shuttling for deterministic high-efficiency multiple single-cell capture in a microfluidic chip", *Lab On A Chip* 19: 1370-1377 (2019). (Inside Back Cover).
9. Wu, Huei-Wen; Hsiao, Yi-Hsing; Chen, Chih-Chen; Yet, Shaw-Fang; Hsu, Chia-Hsien, "A PDMS-Based Microfluidic Hanging Drop Chip for Embryoid Body Formation", *Molecules* 21: no. 7: 882 (2016).
10. Duane S. Juang and Chia-Hsien Hsu, "Self-concentrating buoyant glass microbubbles for high sensitivity immunoassays", *Lab On A Chip* 16: 459-464 (2016). (Inside Front Cover).
11. Ching-Hui Lin, Yi-Hsing Hsiao, Hao-Chen Chang, Chuan-Feng Yeh, Cheng-Kun He, Eric M. Salm, Chihchen Chen, Ing-Ming Chiu and Chia-Hsien Hsu, "A microfluidic dual-well device for high-throughput single-cell capture and culture", *Lab On A Chip* 15: 2928-2938 (2015). (Front Cover).
12. Ching-Hui Lin, Don-Ching Lee, Hao-Chen Chang, Ing-Ming Chiu and Chia-Hsien Hsu, "Single cell enzyme-free dissociation of neurospheres using a microfluidic chip", *Analytical Chemistry* 85(24): 11920-11928 (2013).

**Speaker Name****NESRIN HASIRCI****Current Position**

Near East University (NEU), TRNC, Mersin, Turkey

- Tissue Engineering and Biomaterials Research Center

Middle East Technical University (METU), Ankara, Turkey

- BIOMATEN – Center of Excellence in Biomaterials and Tissue Eng.
- Department of Biomedical Engineering
- Department of Chemistry

**Education & training**

- 1982 Ph. D. in Polymer Chemistry, METU, Department of Chemistry, Turkey

**Professional experience**

- 1992 Professor of Physical Chemistry, METU, Department of Chemistry, Turkey
- 1986 Assoc. Professor of Physical Chemistry, METU, Department of Chemistry, Turkey
- 2010-2016 Vice-director of BIOMATEN Center of Excellence in Biomaterials and Tissue Eng.
- 1994-1995 Fulbright Scholar, Massachusetts Institute of Technology (MIT), Cambridge, USA
- 1982-1984 Postdoctoral Fellow and Consultant, Drexel University, Philadelphia, USA

**Honor/Awards**

- 2018 European Society of Biomaterials (ESB) Honorary Member
- 2016 Elected Fellow of Science Academy (Turkey)
- 2015 ELGINKAN Technology Award (Turkey)
- 2015 PARLAR Science Award (Turkey)

**Biography Brief**

Professor Nesrin Hasirci is working on Biomaterials and Tissue Engineering, especially on the synthesis, preparation, functionalization and characterization of polymeric composites prepared in different forms (as micro nanoparticles, sponges, electrospun mats, films, 3D-printed scaffolds, etc.) for soft and hard tissue supporting materials. She has more than 250 scientific papers in refereed journals; 6 patents (3 approved, 3 pending); 21 chapters in scientific books; 3 edited books (2 on Interdisciplinary Graduate Departments of METU and 1 about Biomaterials) and 2 books (Fundamentals of Biomaterials (Springer, 2018) and 'Biyomalzemelerin Temel İlkeleri (METU, Turkish) as one of the two authors). She presented more 500 talks on international and national congresses, conferences and symposia on which to some she was invited and been the plenary lecturer. She presented more than 100 social seminars to public communities, university or high and primary school students. She supervised or co-supervised more than 50 M.Sc. and 20 Ph.D. theses, some of the students are now professors.

**Selected Publications**

1. Colloids Surf. B: Biointerfaces, 2023, 222, 113087; <https://doi.org/10.1016/j.colsurfb.2022.113087>
2. J Biomater Sci Polym Ed, 2022, 33,14, 1866-1900; <http://doi.org/10.1080/09205063.2022.2088525>
3. Int J Pharms, 2022, 621, 121779; <https://doi.org/10.1016/j.ijpharm.2022.121779>



**Speaker Name****Petek Korkusuz****Current Position**

Hacettepe University Faculty of Medicine, Department of Histology and of Histology and Embryology, 06100 Sıhhiye/Ankara, Turkey

**Education & training**

- Medical Specialty, Hacettepe University, Faculty of Medicine (English), 1993-1997. Thesis Title: Evaluation of Cell Adhesion Molecules in Normal and Osteoarthritic Human Synovium: Immunohistochemical Study at Light Microscope Level (Advisor: Prof. Dr. Ülken Örs)
- Ph. D., Gazi University, Faculty of Medicine, Department of Medical Pharmacology, 1992-2000. Thesis title: The role of endothelial-derived factors in digoxin-induced arrhythmia in isolated perfused guinea pig heart (Advisor: Prof. Dr. Sevim Ercan)
- B.S., Gazi University, Faculty of Medicine, 1986-1991 (4th rank in faculty)

**Professional experience**

- Head of Department, (2019-2022), Hacettepe University/Faculty of Medicine (English)/Department of Basic Medical Sciences/Department of Histology and Embryology
- Professor, (2010~), Hacettepe University/Faculty of Medicine (English)/ Basic Medical Sciences/Department of Histology and Embryology
- Associate Professor, (2003-2010), Hacettepe University/Faculty of Medicine (English)/ Basic Medical Sciences/ Department of Histology and Embryology
- Assistant Professor, (1998-2003), Hacettepe University/Faculty of Medicine (English)/ Basic Medical Sciences/ Department of Histology and Embryology)
- Faculty Member in Interdisciplinary Programs, Institute of Science, Department of Nanomedicine and Nanotechnology, Department of Bioengineering and Institute of Health Sciences, Department of Stem Cell

**Honor/Awards**

- 15th National and 1st International Congress of Histology and Embryology Oral Presentation Second Prize.
- Merrill Reeh Pathology Award.
- 38th National Nephrology Congress Poster Presentation First Prize.
- Prof. Dr. Altan Günalp Research Third Prize.
- Güven Health Group, XIII. Dr. Aysun-Ahmet Küçükkel Basic Sciences Best Scientific Research Award, 2021.
- 4th Istanbul International Invention Fair (ISIF'19)- 3rd prize.
- Prof. Dr. Meliha Terzioğlu Science Award 2018.
- Güven Medicine Award.
- On/EORS Orthoregeneration Award.
- Türkan Erbenği Research Award.
- Rıdvan Ege Research Award, Turkish Orthopedics and Traumatology Association, 2009.
- International Robert Jackson Award.
- International Robert Jackson Award.

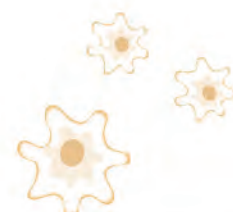


### **Biography Brief**

Petek Korkusuz received her MD degree from Gazi University Faculty of Medicine in 1991. She completed her residency in Histology and Embryology at Hacettepe University Faculty of Medicine in 1997 and received her Ph.D. in 2000 from Gazi University Faculty of Medicine Department of Medical Pharmacology Her professional appointments include Assistant Professor position in 1998, Associate Professor (award of tenure) in 2003 and full Professor in 2010 (present position) in Hacettepe University Faculty of Medicine Department of Histology and Embryology (Secondary appointments in Department of Nanomedicine and Nanotechnology, Department of Bioengineering, Department of Stem Cell Sciences, Department of Oral Biology). She received the Turkish Scientific and Research Council (TUBİTAK-BAYG) National Doctoral Scholarship between 1991 and 1993. She studied on endothelial cell cultures in 1993 in Bordeaux University INSERM Laboratory France, learned basic hybridoma technology and lymphocyte homing mechanisms in 1997 and 1998 in Osaka University Japan, worked on phage display technology and electron microscopic screening of phages in 1999 in Erasmus University Netherland with a postdoctoral scholarship (NATO-B1 grant) and she was a visiting professor in Harvard and Yale Universities IPSC Centers in 2015. She has 178 publications and 1366 citations in Science Citation Index (WOS) with an h index of 27 and 4636 citations with an h index of 33 in Google Scholar on June 2023. She owns 7 patents, several international and national book chapters and awards. Her research is focused on somatic and germ cell niche for soft/hard tissue engineering and regenerative medicine, infertility and cancer immunobiology and cannabinoids. She is an active member of Ortopaedic Research Society, International Stem Cell Research Society, European Society of Gene and Cell Therapy, European and Turkish Microscopy Societies, Turkish Pharmacology Society and Turkish Histology and Embryology Society.

### **Selected Publications**

1. Önen S., Atik A.C., Gizer M., Köse S., Yaman Ö., Külah H., Korkusuz P. A pumpless monolayer microfluidic device based on mesenchymal stem cell-conditioned medium promotes neonatal mouse in vitro spermatogenesis. *Stem Cell Research & Therapy* (2023) 14; 127 <https://doi.org/10.1186/s13287-023-03356-x>
2. Ciftci E, Bozbeyoglu N, Gursel I, Korkusuz F, Bakan Misirlioglu F, Korkusuz P. Comparative analysis of magnetically activated cell sorting and ultracentrifugation methods for exosome isolation. *PLoS One*. (2023) 28;18(2):e0282238. doi: 10.1371/journal.pone.0282238. PMID: 36854030; PMCID: PMC9974127.
3. Önen S., Köse S., Yersal N., Korkusuz P., Mesenchymal stem cells promote spermatogonial stem/progenitor cell pool and spermatogenesis in neonatal mice in vitro. (2022), *Scientific Reports*, 7;12(1):11494. doi: 10.1038/s41598-022-15358-5, (Research Article) PMID: 35798781; PMCID: PMC9263145.
4. Boyacioglu O., Bilgic E., Varan C., Bilensoy E., Nemetlu E., Sevim D., Kocaefe Ç., Korkusuz P., ACPA decreases non-small cell lung cancer line growth through Akt/PI3K and JNK pathways in vitro. (2021), *Cell Death & Disease*, 11;12(1):56. doi: 10.1038/s41419-020-03274-3. PMID: 33431819; PMCID: PMC7801394.
5. Yersal N., Kose S., Horzum U., Ozkavukcu S., Orwig K.E., Korkusuz P., Leptin promotes proliferation of neonatal mouse stem/progenitor spermatogonia, *Journal of Assisted Reproduction and Genetics* 37(11) (2020) 2825-2838.
6. Köse S., Yersal N., Önen S., Korkusuz P., Comparison of Hematopoietic and Spermatogonial Stem Cell Niches from the Regenerative Medicine Aspect, *Adv. Exp. Med. Bio., Cell Biology and Translational Medicine*, (2019), Volume 1107, Springer, Editor: K. Turksen, Edition: 1, ISBN:978-3-030-04184-7
7. Korkusuz P., Yersal N., Köse S., Önen S., Magnetic-Based Cell Isolation Technique for the Selection of Stem Cells, *Skin Stem Cells: Methods in Molecular Biology*, (2018), Springer, Editor: K. Turksen, Edition: 2, ISBN:978-1-4939-8870-9



**Speaker Name****Jiashing Yu****Current Position**

Professor, Department of Chemical Engineering, National Taiwan University (NTU)

**Education & training**

- PhD. Department of Bioengineering, UC Berkeley
- B.S. Department of Chemical Engineering, NTU

**Professional experience**

- 2008-2010 UC San Francisco, Cardiovascular Research Institute
- 2010-2015 Assistant Professor, Department of Chemical Engineering, NTU
- 2015-2019 Associate Professor, Department of Chemical Engineering, NTU
- 2019~Present Professor, Department of Chemical Engineering, NTU

**Honor/Awards**

- Recipient, International Lectureship of the 97th Annual Meeting of The Chemical Society of Japan (March 2017).
- Recipient, Outstanding Achievement and Contribution. Asia Pacific Society for Materials Research 2017..
- Young Investigator Award 2017.3th ISOMRM International Symposium of Materials on Regenerative Medicine.
- 2021, 2022 Exceptional Performance, National Taiwan University.
- 2021 Biomaterials and Control Release Society (BCRS) Young Investigator Award.
- 2022 Academic Progress Award from the College of Engineering at National Taiwan University and the Outstanding Scholar Award from the Chih-Sheng Foundation for Young Scholar Award.

**Biography Brief**

Dr. Yu received her B.S. in Chemical Engineering in 2003 from National Taiwan University, Taiwan, R.O.C and Ph.D. in 2008 from UC Berkeley/UC San Francisco Joint Graduate Group in Bioengineering. Dr. Yu worked as a postdoctoral researcher at UCSF Medical School and Cardiovascular Research Institute from 2008-2010. She relocated back to her alma mater in 2010 and was an Assistant Professor from 2010-2015 and Associate Professor from 2015-2019. Dr Yu is promoted to full Professor from Aug. 2019. Dr. Yu's group focus on customized and functional modification of biomaterials including surface modification of biomaterials to enhance cell and extracellular matrix (ECM) interaction. Antibody and peptides conjugated nanoparticles as biosensors and drug delivery vehicles for cancer therapy, cell encapsulation and 3D culture in various porous scaffold and hydrogel for stem cells differentiation. The group has representative publications in Biomaterials, Tissue Engineering, ACS Applied Materials and Interfaces, Journal of Materials Chemistry B and Biomaterials Sciences etc.

**Selected Publications**

1. Kai-Fu Yu, Ting-Yu Lu, Yi-Chen Ethan Li, Kuang-Chih Teng, Yin-Chuan Chen, Yang Wei, Tzu-En Lin, Nai-Chen Cheng, Jiashing Yu\*. (2022, Apr) Design and Synthesis of Stem Cell-Laden Keratin/Glycol Chitosan Methacrylate Bioinks for 3D Bioprinting. Biomacromolecules
2. Ting-Yu Lu, Wei-Fan Lu, Yin-Hsu Wang, Mei-Yi Liao, Yang Wei, Yu-Jui Fan, Er-Yuan Chuang\*, Jiashing Yu\* (2021, Aug) Keratin-Based Nanoparticles with Tumor-Targeting and Cascade Catalytic Capabilities for the Combinational Oxidation Phototherapy of Breast Cancer. ACS Applied Materials & Interfaces.





**Speaker Name****Chew Sing Yian****Current Position**

Associate Professor, School of Chemistry, Chemical Engineering and Biotechnology;

Lee Kong Chian School of Medicine; School of Materials Science and Engineering

**Education & training**

- Ph. D.: Johns Hopkins University
- B.Eng.: Nanyang Technological University

**Professional experience**

- Aug 2012 – present: Associate Professor, School of Chemistry, Chemical Engineering & Biotechnology, Nanyang Technological University (70%)
- Mar 2014 – present: Associate Professor, Lee Kong Chian School of Medicine, Nanyang Technological University (30%)
- Dec 2021 – present: Associate Professor, School of Materials Science & Engineering, Nanyang Technological University (Courtesy appointment)

**Honor/Awards**

- 2019 – 2022: Top 2% of most-cited scientists\* (single year impact), (career long impact 2021, 2022) \*:Ioannidis, John P.A. (2022), "September 2022 data-update for "Updated science-wide author databases of standardized citation indicators"", Mendeley Data, V5, doi: 10.17632/btchxktzyw.5", PLOS Biology
- 2009: Tan Chin Tuan Exchange Fellowship in Engineering

**Biography Brief**

Dr. Sing Yian CHEW is an Associate Professor at School of Chemical and Biomedical Engineering, Lee Kong Chian School of Medicine and School of Materials Science and Engineering at Nanyang Technological University, Singapore. She is known for her contributions in designing biomimetic scaffolds to understand and control cell fate. Dr. Chew's most significant contribution is in the field of scaffold-mediated delivery of gene-silencing and biomimicking physical signals for neural tissue regeneration and remyelination. Specifically, her lab engineers bio-functional platforms for long-term delivery of biologics. These scaffolding constructs may be used for understanding and directing neural tissue regeneration after traumatic injuries, stem cell fate and host-implant integration. Since joining NTU, Dr. Chew has continued to embark on scientific learning and exchanges by serving as visiting scholar/professor at Johns Hopkins University, University of Edinburgh, INSERM (U698 and U791); University of Paris 13; University of Nantes; Jinan University in Guangzhou, China; Wyss Institute at Harvard. She is an Associate Editor at ACS Applied Materials & Interfaces. She also serves as the editorial board member of Biomaterials, Experimental Neurology, Tissue Engineering, Journal of Biomedical Materials Research, Part A, Drug Delivery and Translational Research, Journal of Tissue Engineering.

**Selected Publications**

1. Milbreta U, Lin J, Pinese C, Ong W, Chin JS, Shirahama H, Mi R, Williams A, Bechler ME, Wang J, Ffrench-Constant C, Hoke A, Chew SY. Scaffold-mediated sustained, non-viral delivery of miR-219/miR-338 promotes CNS remyelination. *Mol Ther* 2019;27:411–23. <https://doi.org/10.1016/j.ymthe.2018.11.016> PMID: 30611662.
2. Zhang N, Lin J, Lin VPH, Milbreta U, Chin JS, Chew EGY, Lian MM, Foo JN, Zhang K, Wu W, Chew SY. A 3D Fiber-Hydrogel Based Non-Viral Gene Delivery Platform Reveals that microRNAs Promote Axon Regeneration and Enhance Functional Recovery Following Spinal Cord Injury. *Adv Sci* 2021;8:2100805. <https://doi.org/10.1002/adv.202100805>.
3. Ong W, Marinval N, Lin J, Nai MH, Chong Y-S, Pinese C, Sajikumar S, Lim CT, Ffrench-Constant C, Bechler ME, Chew SY. Biomimicking Fiber Platform with Tunable Stiffness to Study Mechanotransduction Reveals Stiffness Enhances Oligodendrocyte Differentiation but Impedes Myelination through YAP-Dependent Regulation. *Small* 2020;16:2003656. [https://doi.org/https://doi.org/10.1002/sml.202003656](https://doi.org/10.1002/sml.202003656).

**Speaker Name****Dinh Toi Chu****Current Position**

Dean, Faculty of Applied Sciences, International School, Vietnam National University, Hanoi, Vietnam

Director at the Center for Biomedicine and Community Health, International School, Vietnam

National University, Hanoi, Vietnam

**Education & training**

- Marie Curie Postdoc Fellow in Molecular Medicine November 2017  
Centre for Molecular Medicine Norway (NCMM), Nordic EMBL Partnership, University of Oslo and Oslo University Hospital, Norway
- PhD in Medicine September, 2015  
The Polish Academy of Sciences (PAN) in Olsztyn, Poland And Medical University of Bialystok
- Master of Biological Science February, 2011.  
School of Biological Science, University of Ulsan (UOU), South Korea

**Professional experience**

- Since Jan 2022- Now, Dean, Faculty of Applied Sciences, International School, Vietnam National University, Hanoi, Vietnam
- Since March 2021- Now, Director at the Center for Biomedicine and Community Health, International School, Vietnam National University, Hanoi, Vietnam
- March 2021- Jan 2022, Deputy Head of the Department of Natural Science and Technology, International School, Vietnam National University, Hanoi, Vietnam
- Nov 2018-Feb 2021  
Lecturer, Principal Investigator, Hanoi National University of Education, Ministry of Education and Training, Vietnam
- June 2021 – Dec 2021  
Visiting professor  
Department of Cell Biology & Anatomy, National Cheng Kung University, Taiwan
- Nov 2017 – Oct 2018  
Researcher  
Centre for Molecular Medicine Norway (NCMM), Nordic EMBL Partnership, University of Oslo and Oslo University Hospital, Norway  
Institute for Cancer Research, Oslo, Norway (Since June 2018)

**Honor/Awards**

- In the Top 2% Scientists in the World by the Stanford List 2022. <https://elsevier.digitalcommonsdata.com/datasets/btchxktyw/5>
- The teacher of the year 2022 at the Vietnam National University Hanoi.
- Outstanding scientists in international publication and patent application in 2022 of the Vietnam National University Hanoi.



### Honor/Awards

- Outstanding scientists in international publication and patent application in 2021 of the Vietnam National University Hanoi. Author of 9 articles published in journals listed in the group of 5% most prestigious journals in the respective field
- Dang Van Ngu Awards 2019. The highest research awards given by Hanoi Medical University annually.
- Golden Globe Award 2018 by Ministry of Science and Technology and Vietnam Central Youth Union in Vietnam (top 10 excellent young scientists)
- Medal of Creative Young Talents in 2018 by Vietnam Central Youth Union.
- Marie Curie Postdoctoral Research Fellowships in Medicine named Scientia Fellows by European Union and University of Oslo Norway, from November 2015 to November 2018.
- PhD scholarship from December 2011 to June 2015 in Welcome Program funded by European Union Structural Funds via the Foundation for Polish Science.

### Biography Brief

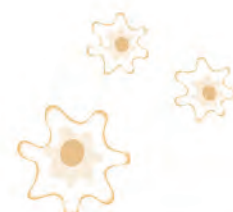
Ph.D. Dinh-Toi Chu currently is the Dean of the Faculty of Applied Sciences and Director of the Center for Biomedicine and Community Health, International School, Vietnam National University, Hanoi (VNU-Hanoi). He works focusing on molecular biomedicine and community health. In 2022, he was recognized as the Top 2% Scientists in the World by the Stanford List, the teacher of the year 2022 at VNU-Hanoi. Furthermore, he is outstanding scientists in international publication and patent application in 2021 and 2022 of the VNU-Hanoi.

Dr. Chu has made remarkable contributions to transnational research. He has over 190 WoS/Scopus publications with > 21000 citations (Scopus, updated by 5/2023, see: <https://www.scopus.com/authid/detail.uri?authorId=56239816300>) in prestigious journals such as the Journal of Biological Chemistry, Lancet, and JAMA Oncology. His involvement as a principal investigator or participant in 14 domestic and foreign collaborative research projects. Dr. Chu's works have highlighted his invaluable role in fostering international cooperation in fields such as lipid metabolism, community health, and biotechnology.

Up to now, he has reviewed for over 40 qualified scientific journals with more than 300 manuscripts, and handed over 250 manuscripts as an editor for several WoS/Scopus journals such as Bioengineered and PLOS ONE. Dr. Chu's contributions as both a reviewer and editor have undoubtedly played a vital role in maintaining the quality and integrity of scientific research on an international scale.

### Selected Publications

1. 2022. Adipogenesis of ear mesenchymal stem cells (EMSCs): adipose biomarker-based assessment of genetic variation, adipocyte function, and brown/brite differentiation. Dinh-Toi Chu\*, Dang Tien Truong, Hue Vu Thi, Nguyen Thi Lan Huong. Molecular and Cellular Biochemistry (\*First author; SCI/SCIE; Q1; IF=3.824). Link: <https://link.springer.com/article/10.1007%2Fs11010-021-04350-8>
2. 2021. Exploring the Potential of Stem Cell-Based Therapy for Aesthetic and Plastic Surgery. Dang-Khoa Tran, Thuy Nguyen Thi Phuong, Nhat-Le Bui, Vijai Singh, Qi Hao Looi, Benson Koh, Ungku Mohd Shahrin B Mohd Zaman, Jhi Biau Foo, Chia-Ching Wu, Pau Loke Show, Dinh-Toi Chu\*. IEEE Reviews in Biomedical Engineering (\*Corresponding author, SCI/SCIE; Q1; IF=7.073). Link <https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=4664312>
3. 2014. Expression of Adipocyte Biomarkers in a Primary Cell Culture Models Reflects Prewaning Adipobiology. Chu Dinh-Toi\*, Malinowska E, Gawronska-Kozak B, Kozak LP. Journal of Biological Chemistry, 289(26):18478-88 (\*First author; SCI/SCIE; Q1; IF=5.486). Link: <http://www.jbc.org/content/289/26/18478.long>







### Speaker Name

**Koichi Kato**

### Current Position

Professor, Department of Biomaterials, Graduate School of Biomedical and Health Sciences, Hiroshima University

### Education & training

- Ph. D.: 1996 Kyoto University
- M.S.: 1990 Kyoto University
- B.S.: 1988 Kyoto University

### Professional experience

- 1996–2001, Assistant Professor, Kobe University
- 2001–2011, Associate Professor, Kyoto University
- 2011–present, Professor, Hiroshima University
- 1996, JSPS Postdoctoral Fellow, Kyoto University
- 1999–2000, AvH Research Fellow, University of Freiburg
- 2016–2020, Dean, School of Dentistry, Hiroshima University
- 2021–present Associate Director, Res Inst for Nanodevices, Hiroshima University

### Honor/Awards

- Young Investigator Award from the Society of Polymer Science, Japan / 1998
- The Award for Young Investigator of Japanese Society for Biomaterials / 2004

### Biography Brief

Koichi Kato received his Bachelor's and Master's degrees in Agriculture from Kyoto University in 1988 and 1990, respectively, and obtained his Ph.D. degree in Polymer Chemistry from Kyoto University in 1996. He worked as JSPS postdoctoral research fellow at Research Center for Biomedical Engineering, Kyoto University in 1996 and then joined Department of Chemical Science and Engineering, Faculty of Engineering, Kobe University as Assistant Professor in 1996. From 1998 to 2000, he worked at Institute For Polymer Chemistry, Albert-Ludwigs-Universität Freiburg and Freiburg Materials Research Center as a research fellow supported by Alexander von Humboldt Foundation, Germany. In 2001, Prof. Kato was appointed as Associate Professor at Institute for Frontier Medical Sciences, Kyoto University. In 2011, he was moved to Graduate School of Biomedical and Health Sciences, Hiroshima University as Professor and started to direct Department of Biomaterials, conducting biomaterials research for use in tissue engineering and stem cell-based regenerative medicine. From 2016 to 2020, he served as Dean of the School of Dentistry. Currently, Prof. Kato is additionally appointed as Vice Director of Research Institute for Nanodevices, Hiroshima University. He also served as Visiting Professor at Airlangga University in 2016 and Brawijaya University in 2022, Indonesia. Prof. Kato received several prestigious awards in Japan including the Award for Encouragement of Research in Polymer Science, The Society of Polymer Science and the Award for Young Investigator of Japanese Society for Biomaterials. Prof. Kato has more than 100 papers in refereed journals, conference proceedings, and book chapters.

### Selected Publications

1. K. Kato, T. Ishimuro, I. Hirata, Y. Arima, H. Iwata. High-throughput immunophenotyping by surface plasmon resonance imaging. *Anal. Chem.* 79, 8616–23 (2007)
2. T. Nakaji-Hirabayashi, K. Kato, H. Iwata. Improvement of neural stem cell survival in collagen hydrogels by incorporating laminin-derived cell adhesive polypeptides. *Bioconjugate Chem.* 23, 212–21 (2012)
3. T. Ogasawara, R. Kuwabara, K. Kozai, K. Kato. Quantitative cell subset analysis using antibody microarrays. *ACS Appl. Bio Mater.* 4, 7673–81 (2021)



**Speaker Name****Ting-Hsuan Chen****Current Position**

Associate Professor, City University of Hong Kong

**Education & training**

- Ph. D. in Mechanical Engineering, University of California, Los Angeles (2007 – 2012)
- M.S. in Institute of MEMS, National Tsing Hua University (2003 – 2005)
- B.S. in Power Mechanical Engineering, National Tsing Hua University (1999 – 2003)

**Professional experience**

- Associate Professor, City University of Hong Kong (07/2012 – Present)
- Assistant Professor, City University of Hong Kong (08/2012 – 06/2018)
- Postdoctoral Scholar, University of California, Los Angeles, USA (04/2012 – 08/2012)
- Associate Engineer, Industrial Technology Research Institute, Taiwan (07/2006 – 07/2007)

**Honor/Awards**

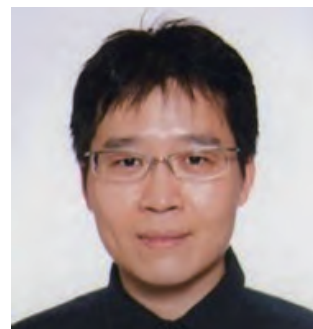
- Innovative CityU-Learning Awards – Semester A, 2021/22. /2021
- CENG Outstanding Teaching Award 2020-21. /2021
- Best Paper Award, The 6th International Multidisciplinary Conference on Optofluidics. /2016
- Best Conference Poster Award, The 10th IEEE international Conference on Nano/Micro Engineered and Molecular Systems. /2015

**Biography Brief**

Ting-Hsuan Chen received his B.S. degree (2003) and M.S. degree (2005) in National Tsing Hua University, Taiwan, and obtained his Ph.D. degree in Mechanical Engineering at University of California, Los Angeles (2012). He is currently an Associate Professor in Biomedical Engineering at City University of Hong Kong. Dr. Chen has been spearheading projects leveraging the micro/nanotechnology for biomedical applications. Using micropatterning to study the pattern formation of mammalian cells, he has made a fundamental discovery of cell's intrinsic left-right bias and successfully exploited this finding to engineer patterns of microtissue. In addition, he also endeavors to use nanotechnologies for measurement of cell rotational mechanics and developing DNA nanosensors that detect biomarkers in live cells. More recently, he has pioneered in combining microparticles in microfluidics for visual quantification of target molecules such as metal ions for intoxication or protein biomarkers for point-of-care applications. Many of his achievement was featured as cover stories in 2023 ISOMRM & BCRS Aug. 31 – Sep. 3 2023, Taipei, Taiwan prestigious journals such as Circulation Research, ACS Sensors, and Biotechnology and Bioengineering, or published in top-tier journals such as Science Advances, ACS Nano, Biomaterials, Biofabrication, Biosensors and Bioelectronics, ACS Applied Materials & Interfaces, and Analytical Chemistry.

**Selected Publications**

1. M. Wu, S. Wu, G. Wang, W. Liu, L. T. Chu, T. Jiang, H. K. Kwong, H. L. Chow, I. W. S. Li, T.-H. Chen\*, Microfluidic Particle Dam for Direct Visualization of SARS-CoV-2 Antibody Levels in COVID-19 Vaccinees, *Science Advances*, 8, eabn6064, 2022
2. S. Wu, L. Ruan, J. Wu, M. Wu, L. T. Chu, H. K. Kwong, M. L. Lam\* and Ting-Hsuan Chen\*, Scalable pattern formation of skeletal myotubes by synergizing microtopographic cues and chiral nematics of cells, *Biofabrication*, vol. 15, pp. 025015, 2023
3. C. Cui, C.-H. Lau, C. Tin, T.-H. Chen\*, Multimodal Detection of Flap Endonuclease 1 Activity through CRISPR/Cas12a Trans-cleavage of Single-strand DNA Oligonucleotides, *Biosensors and Bioelectronics*, 220, 114859, 2023
4. L. T. Chu, H. K. Kwong, H. Hartanto, T.-H. Chen\*, Detection of intracellular sodium ions based on phenotype-specific activation of NaA43 DNase, *Biosensors and Bioelectronics*, 218, 114753, 2022
5. G. Wang, J. Li, S. Wu, T. Jiang, and T.-H. Chen\*, "A Fully Integrated, Ready-to-Use Distance- Based Chemosensor for Visual Quantification of Multiple Heavy Metal Ions," *Analytical Chemistry*, 94, 46, 15925–15929, 2022



**Speaker Name****Ming-Fa Hsieh****Current Position**

Professor, Department of Biomedical Engineering, Chung Yuan Christian University (CYCU)

**Education & training**

- Sep. 1997 - Jul. 2001 PhD in Materials Science and Engineering, National Tsing-Hua University, Taiwan
- Sep. 1995 - Jul. 1997 MS in Materials Science and Engineering, National Tsing-Hua University, Taiwan
- Sep. 1992 - Jul. 1995 BS in Chemistry, Tamkang University, Taiwan

**Professional experience**

- 2013.8 - now Professor, Department of Biomedical Engineering, CYCU
- 2009.8 - 2013.7 Associate Professor, Department of Biomedical Engineering, CYCU
- 2006.2 - 2009.7 Assistant Professor, Department of Biomedical Engineering, CYCU

**Honor/Awards**

- 2016-now Reviewer for Medical Device Adverse Reaction Reporting, Taiwan Drug Relief Foundation for Drug Hazards (TDRF), Taiwan
- 2015-now Councilor, Taiwanese Society of Biomedical Engineering (TSBME)
- 2021.8-2021.12 Visiting Scholar, Institute of Biomedical Sciences, Academia Sinica Taiwan
- 2018.11.30-12.3 Co-Chair, 3rd Global Conference on Biomedical Engineering and 2018TSBME Annual Meeting, Taoyuan City, Taiwan
- 2017-2020 Reviewer Board Member of Biomedical Engineering, Department of Engineering and Technologies, MOST, Taiwan
- 2017.8 General Chair, 2017International Symposium of Materials on Regenerative Medicine (4th ISOMRM), Taoyuan City, Taiwan.
- 2016.8-2018.8 Trustee Board Member, Eminent II Venture Capital Corp., Taiwan
- 2012.1-2012.8 Visiting Scholar, Institute of Physics, Academia Sinica Taiwan
- 2010 Secretary General, 2010 International Symposium of Materials on Regenerative Medicine (1st ISOMRM), Nov. 3-5, NHRI Zhunan campus, Taiwan
- 2009 Asia-Pacific Travel Fellow, International Federation for Medical and Biological Engineering (IFMBE)
- 2009 - 2012 Young Professionals and Career Development Working Group, IFMBE
- 2003. 9-2003.10 Visiting Researcher, Department of Mechanical Engineering, University of Washington, Seattle, USA 3

**Biography Brief**

Recent Research Interests:

1. Near-Infrared Fluorescent Nanoprobes for Sentinel Lymph Node Tracking of Cancers
2. 3D-Printing Technology of Biphasic Scaffold for Cartilage Regeneration
3. Synergistic Effects of Growth Factors and Mechanical Stimulation on the Chondrogenesis of Adipose-derived Stem Cells
4. Human Umbilical Mesenchyme Stem Cells for Colitis Therapy





### Selected Publications

1. MF Hsieh, LH Perng, TS Chin\*, HQ Perng, "Phase purity of sol-gel-derived hydroxyapatite ceramic", *Biomaterials*, 22, 2601-2607 (2001).
2. MF Hsieh, LH Perng\*, TS Chin, "Hydroxyapatite coating on Ti6Al4V alloy using a sol-gel derived precursor", *Mater. Chem. Phys.*, 74, 245-250 (2002).
3. NV Cuong, JL Jiang, YL Li, JR Chen, SC Jwo, MF Hsieh\*, "Doxorubicin-Loaded PEG-PCL-PEG Micelle Using Xenograft Model of Nude Mice: Effect of Multiple Administration of Micelle on the Suppression of Human Breast Cancer", *Cancers*, 3(1), 61-78 (2011).
4. CH Chen, MF Hsieh\*, YN Ho, CM Huang, JS Lee, CY Yang, Y Chang, "Enhancement of Catechin Skin Permeation via a Newly Fabricated mPEG-PCL-graft-2-hydroxycellulose Membrane", *J. Membrane Sci.*, 371, 134-140 (2011).
5. NV Cuong, YL Li, MF Hsieh\*, "Targeted Delivery of Doxorubicin to Human Breast Cancers by Folate-Decorated Star-Shaped PEG-PCL Micelle", *J. Mater. Chem.*, 22, 1006-1020 (2012).
6. YL Li, NV Cuong, MF Hsieh\*, "Endocytosis pathways of the folate tethered star-shaped PEG-PCL micelles in cancer cell lines". *Polymers*, 6(3), 634-650.(2014).
7. YH Hsieh, BY Shen, YH Wang, B Lin, HM Lee, MF Hsieh\*, "Healing of Osteochondral Defects Implanted with Biomimetic Scaffolds of Poly( $\epsilon$ -Caprolactone)/Hydroxyapatite and Glycidyl-Methacrylate-Modified Hyaluronic Acid in a Minipig", *Int. J. Mol. Sci.*, 19, 1125(2018).
8. YL Chang, HY Lo, SP Cheng, KT Chang, XF Lin, SP Lee, MF Hsieh\*, CK Chan\*, "Therapeutic Effects of a Single Injection of Human Umbilical Mesenchymal Stem Cells on Acute and Chronic Colitis in Mice", *Scientific Reports*, 9(1), 5832 (2019).
9. CY Cheng\*, A Haque\*, MF Hsieh\*, SI Hassan, SH Faizi, N Dege and MS Khan,"1,4-Disubstituted 1H-1,2,3-Triazoles for Renal Diseases: Studies of Viability, Anti-Inflammatory, and Antioxidant Activities", *International Journal of Molecular Sciences*, 21(11), 3823 (2020 May 28).
10. L. Barro, JT Hsiao, CY Chen, YL Chang, and MF Hsieh\*. "Cytoprotective Effect of Liposomal Puerarin on High Glucose-Induced Injury in Rat Mesangial Cells", *Antioxidants*, 10, (8), 1177 (July 24, 2021).





### Speaker Name

**Pan Pan Chong**

### Current Position

Senior Lecturer, University of Malaya, Malaysia

### Education & training

- Ph. D.: Tissue Engineering
- M.S.: Biochemistry
- B.Sc. (Hons): Microbiology

### Professional experience

- Post-doctoral research fellow

### Honor/Awards

- First place winner, My UM Pitch Competition, Universiti Malaya Research Carnival 2022.
- 2nd Winner of Indonesian Orthopaedic Investigator Award - Asean Orthopaedic Research Society Awards (AORS) - Basic Science Category, Indonesian Orthopaedic Association, 2019.
- Business Idea Competition: 2nd Prize (Title: Plate-Derived Extracellular Vesicles), Innovation Forum Kuala Lumpur, 2018 (National)
- Orthopaedic Surgery Research Project Award: Research Proposal Competition, NOCERAL, Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya; Malaysia Orthopaedic Association (Moa); Stemtech International., Dec 16, 2017 (National)
- Finalist for The Best Podium Presentation, International Cartilage Repair Society (ICRS) Heritage Summit 2017, Gothenburg, Sweden., 2017 (International)
- Platinum Award – Young Investigator Best Paper Award. The 4th Asian Cartilage Repair Society Congress 2016 and the 19th China National Arthroscopy Skill Course, October 14 to October 17, 2016 at Vision Plaza, Beijing, China.
- Travel Award – The 4th Japan Medical Innovation Tour (JMIT) 2016, June 19th to June 24th 2016, administered by the Kyushu University, Japan. Purpose: Kyushu University seeks to promote the development of young medical innovators by acting as a hub in the west of Japan. (International)
- Young Investigator Award – travel award. The 20th International Bone Densitometry Workshop (IBDW 2014), Hong Kong. Date: 13-17 October 2014. (International)
- Three-minute Thesis Competition, Second place (University of Malaya, July 2013 faculty level)
- Postgraduate Research Award: 1st Prize (Biotechnology; PhD; Oral presentation) at the 19th Scientific Meeting of the Malaysian Society for Molecular Biology and Biotechnology (MSMBB), 30th October – 1st November 2012), Research Management & Innovation Complex (RMIC), University Malaya (National)
- L'Oréal Malaysia for Women in Science Fellowships 2010 (National)
- Travel Fellowship: 2nd HKU - Pasteur Cell Biology Course (18th March – 1st April 2010) for Research Postgraduate Students (MPhil and PhD), University of Hong Kong. (International)
- 8th Dr Ranjeet Bhagwan Singh National Fellowship, Human Embryonic Stem Cell: Culture and Maintenance. Organized by the Ministry Of Science, Technology and Innovation, Academy of Sciences Malaysia and the



International Medical University from 14th – 15th December 2009 at the International Medical University (National)

- Bronze Medal, The International Exposition of Research and Invention of Institutions of Higher Learning (2009), Kuala Lumpur Convention Centre, 8-10 October 2009. (National)
- Best Poster Presentation Award, Tissue Engineering and Regenerative Medicine (TERMIS) 2nd World Congress. In Conjunction with 2009 Seoul Stem Cell Symposium. Lotte Hotel World, Seoul, Republic of Korea. August 31 until September 3, 2009 (International) Title: Microarray-Based Discovery Of Potential Genes Involved In Chondrogenesis Of Mesenchymal Stem Cells Derived From Human Bone Marrow
- Travel Awards: 7th International Society for Stem Cell Research Congress, Barcelona, Spain, July 8th –11st July 2009 (International)

### **Biography Brief**

Dr. Chong Pan Pan is highly qualified with B.Sc. (Hons) in Microbiology, M.Sc. Biochemistry and successfully completed Ph.D. on her research on mesenchymal stem cells (MSCs) and skeletal tissue engineering. After that, she worked as a post-doctoral research fellow (2013-2016) and was later inducted as a senior lecturer (2016-now) at the National Orthopaedic Centre of Excellence in Research and Learning (NOCERAL), Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya (UM), Malaysia. Additionally, she is in charge of setting up the Good Manufacturing Practice (GMP) Laboratory in NOCERAL. She has also been put in charge of the newly provided clinical service using platelet-derived extracellular vesicles (P-EVs) to treat lateral epicondylitis, plantar fasciitis, osteochondral defect, delayed union and knee osteoarthritis, etc. The P-EVs service is provided in the University Malaya Medical Centre (UMMC) and the University Malaya Specialist Centre (UMSC). Her research interest involves the current and innovative area of tissue engineering and manipulation of adult mesenchymal stem cells (MSCs) for future use as biological therapies for poorly regenerating tissues. Her work focuses on driving the adult MSCs from bone marrow, peripheral blood and adipose tissue along chondrogenic lineages for later transplantation to replace worn-out joint cartilage in patients suffering from joint disorders, including trauma or osteoarthritis. To attest to her work, Dr. Chong has published in several high-quality (Q1/high impact factor) peer-reviewed journals and presented her works extensively and globally at numerous international-level conferences. At that time, she also won a number of awards, including top prizes at the regional level, such as the Young Investigator Awards, Young Investigator Best Paper Award, L'Oréal Malaysia for Women in Science, Best Poster/ Oral Presentations and travel fellowships, etc. In addition, she has participated in several biotechnology exhibitions and business idea competitions. Furthermore, she won many innovation awards for her work on MSCs and P-EVs as biological therapies for tissue regenerations. She has also developed intellectual property related to the novel work, which has been successfully patented.

### **Selected Publications**

1. 3. Foo, J. B., Looi, Q. H., Chong, P. P., Hassan, N. H., Yeo, G. E. C., Ng, C. Y., Koh, B., How, C. W., Lee, S. H., Law, J. X. (2021). Comparing the Therapeutic Potential of Stem Cells and their Secretory Products in Regenerative Medicine. *Stem Cells International*, Volume 2021, Article ID 2616807, 30 pages. doi:10.1155/2021/2616807
2. Aizah, N., Chong, P. P., & Kamarul, T. (2019). Early Alterations of Subchondral Bone in the Rat Anterior Cruciate Ligament Transection Model of Osteoarthritis. *CARTILAGE*. <https://doi.org/10.1177/1947603519878479> (ISI-Indexed)
3. Chong, P. P., Panjavarnam, P., Ahmad, W., Chan, C. K., Abbas, A. A., Merican, A. M., Pingguan-Murphy, B., & Kamarul, T. (2020). Mechanical compression controls the biosynthesis of human osteoarthritic chondrocytes in vitro. *Clinical biomechanics (Bristol, Avon)*, 79, 105178. <https://doi.org/10.1016/j.clinbiomech.2020.105178>



**Speaker Name****James Lai****Current Position**

Associate Professor, Department of Materials Science and Engineering,  
National Taiwan University of Science and Technology

**Education & training**

- Ph. D. in Chemical Engineering, New York University–Tandon School of Engineering, Brooklyn, NY
- B.S. in Chemical Engineering, University of Minnesota

**Professional experience**

- 2022 – present, Associate Professor, Department of Materials Science and Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan
- 2015 – 2022, Research Associate Professor, Department of Bioengineering, University of Washington, Seattle, WA
- 2009 – 2015, Research Assistant Professor, Department of Bioengineering, University of Washington, Seattle, WA
- 2005 – 2009, Senior Fellow, Department of Bioengineering, University of Washington, Seattle, WA

**Honor/Awards**

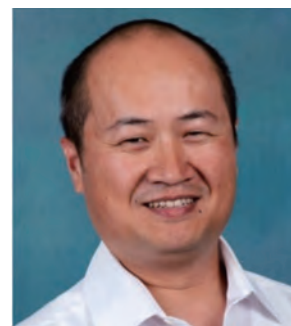
- 2020, Design by Biomedical Undergraduate Teams (DEBUT) 2nd prize, Faculty Advisor, National Institute of Biomedical Imaging and Bioengineering (NIBIB) and VentureWell
- 2017, Leaders in Future Trends (LiFT), Ministry of Science and Technology (Taiwan)

**Biography Brief**

Dr. James Lai currently serves as an Associate Professor in the Department of Materials Science and Engineering at the National Taiwan University of Science and Technology (Taiwan Tech). Dr. Lai received a Ph.D. in Chemical Engineering from the New York University—Tandon School of Engineering (formerly Polytechnic University) with emphasis in the field of nanomaterials. He also holds a bachelor's degree in Chemical Engineering from the University of Minnesota and an associated degree from the National Taipei University of Technology (formerly National Taipei Institute of Technology). Prior to joining Taiwan Tech, he served as a Bioengineering Faculty at the University of Washington. As an engineer Dr. Lai wants to remove technological boundaries by applying scientific principles. His research focuses on developing novel nanomaterials and reagents for bioprocessing to enhance biomarker detection/clinical assays, to improve therapeutic biologics manufacturing, and to enable life science research. He has over 10 years of experience as a Principal Investigator leading an independent group to conduct interdisciplinary research in academic and clinical settings. His research has been supported by National Institute of Health, Coulter Foundation, etc. Dr. Lai is also highly passionate about translating the technologies developed in research laboratories to potential clinical applications that benefit the standard of care received by patients. His research work has resulted in two biotech startups.

**Selected Publications**

1. Gulati GK, Panpradist N, Stewart SWA, Beck IA, Boyce C, Oreskovic AK, Garcia-Morales C, Avila-Rios S, Han PD, Reyes-Teran G, Starita LM, Frenkel LM, Lutz BR, Lai JJ. Simultaneous monitoring of HIV viral load and screening of SARS-CoV-2 employing a low-cost RT-qPCR test workflow. *Analyst*. 2022;147(14):3315-27
2. Lai JJ, Chau ZL, Chen SY, Hill JJ, Korpany KV, Liang NW, Lin LH, Lin YH, Liu JK, Liu YC, Lunde R, Shen WT. Exosome Processing and Characterization Approaches for Research and Technology Development. *Adv Sci (Weinh)*. 2022;9(15):e2103222.
3. Jauregui R, Srinivasan S, Vojtech LN, Gammill HS, Chiu DT, Hladik F, Stayton PS, Lai JJ. Temperature-Responsive Magnetic Nanoparticles for Enabling Affinity Separation of Extracellular Vesicles. *ACS Appl Mater Interfaces*. 2018;10(40):33847-56.



**Speaker Name****David J. Lundy****Current Position**

Assistant Professor, College of Biomedical Engineering, Taipei Medical University, Taiwan

**Education & training**

- Ph. D. Cell Biology. University of Durham, United Kingdom
- B.S. Biomedical Sciences. University of Durham, United Kingdom

**Professional experience**

- Assistant Professor - Taipei Medical University, Taiwan. 2019-present
- Postdoctoral Research Fellow - Academia Sinica, Taiwan. 2014-2018

**Honor/Awards**

- Young Scholar Fellowship (Einstein program). Ministry of Science & Technology

**Biography Brief**

Dr. David J. Lundy received his B.Sc. in Biomedical Sciences and PhD in Cell Biology from the University of Durham, UK. His Ph.D. thesis was an industrial collaborative partnership using a novel porous 3D scaffold to form an in vitro model of the skin epidermal barrier for drug testing. Following completion of his Ph.D., Dr. Lundy spent four years as a Postdoctoral Research Fellow at Academia Sinica, Taiwan, with Prof. Patrick CH Hsieh (謝清河). During this time, he conducted research on stem cells, nanomedicine, and drug delivery for ischaemic diseases, which resulted in publications in journals such as Science Translational Medicine, ACS Nano, Nanoscale, Cell Reports and others. Dr. Lundy is also an inventor on four USA and Taiwan patents relating to biomaterial-based drug delivery technologies. Dr. Lundy joined TMU College of Biomedical Engineering in January 2019 and continues to research cell therapy, cell-biomaterial responses, and cell-free therapies for cardiovascular diseases. His recent work has been published in respected journals, including Journal of Controlled Release, Journal of Extracellular Biology, Biomaterials and ACS Biomaterials Science & Engineering. Dr. Lundy was honoured with the 2020-2024 Young Scholar Fellowship award from the Ministry of Science & Technology and has presented his recent work at prestigious international conferences such as the World Biomaterials Congress (WBC) 2020, International Society for Extracellular Vesicles (ISEV) 2021, Biomedical Engineering Society (BMES) 2022, and others. He is a professional member of the American Heart Association (AHA), American Chemical Society (ACS) and ISEV.

**Selected Publications**

1. Jaimes MJV & Liao CT et al, 2023. J Extracellular Biology (In press) (\*Corresponding)
2. Nguyen et al, 2023. ACS Biomat Sci Eng. 2c00899 (\*Corresponding)
3. Czosseck A et al, 2022. J Control Rel, 352 (879-892). IF = 11.4 (\*Corresponding)
4. Chen SL, Lundy DJ et al, 2022. Biomaterials 202807. IF = 15.3
5. Cheng YY, Gregorich Z, Prajnamitra RP, Lundy DJ et al, 2022. Circulation. 815. IF = 39.9





### Speaker Name

**Liam M Grover**

### Current Position

Director of the Healthcare Technologies Institute, University of Birmingham  
Professor of Biomaterials Science, School of Chemical Engineering, University of Birmingham



### Education & training

- 2001 – 2005 – PhD in Dentistry, University of Birmingham
- 1998 – 2001 – BMedSc(Hons), Biomedical Materials Science, University of Birmingham

### Professional experience

- 2018-Present - Director of the Healthcare Technologies Institute, University of Birmingham
- 2013-Present - Professor of Biomaterials Science, School of Chemical Engineering, University of Birmingham
- 2012-2019 - Director of Research, School of Chemical Engineering, University of Birmingham
- 2012-2013 - Reader in Biomaterials Science, School of Chemical Engineering, University of Birmingham
- 2010-2012 - Senior Lecturer in Chemical Engineering, University of Birmingham
- 2006-2010 - Lecturer in Chemical Engineering, University of Birmingham
- 2004-2006 - CIHR Skeletal Health Scholar, McGill University, Montreal

### Honor/Awards

- 2023 - President's award - UKSB
- 2023 - Fellow of the Academy of Medical Sciences
- 2022 - Nominated for the OBN Best Start-up award – Healome Therapeutics
- 2022 - Materials Innovation Award – Antiviral Nasal Spray
- 2019-Present - Editorial Board – Advanced NanoBiomed Research
- 2018-Present Fellow of the Centre for the Advancement of Sustainable Medical Innovation
- 2018 - Special commendation from the IChemE on the development of a process to manufacture antifibrotic eye drops
- 2018-Present - External advisor to the Versus Arthritis Tissue Engineering Centre
- 2018-Present - ESRC Mental Health Panel
- 2018-Present - NIHR i4i Panel Member
- 2017-Present - Member of Editorial Board for APL Bioengineering
- 2016 - Awarded Civilian Membership of the for the Combined Services Orthopaedic Society for work on heterotopic ossification
- 2011-Present - Fellow of the Higher Education Academy, UK
- 2010-Present - Fellow of the Institute of Materials, UK
- 2004-2006 - CIHR Skeletal Health Scholarship, Faculty of Dentistry, McGill University, Montreal, Canada
- 2016 - Royal Society of Chemistry Annual Biomaterials Meeting
- 2014 - Cell Adhesion Century and Satellite Meeting on NanoBio Interactions (Royal Society)
- 2013 - Young Researchers Meeting, Biochemical Engineering Subject Group, IChemE
- 2010 - Cement and Concrete Science, International Conference, IOM3



### **Biography Brief**

Professor Grover is a materials scientist by training and completed his Ph.D. at the University of Birmingham before moving to McGill University (Montreal) to work as a CIHR skeletal health scholar. He returned to Birmingham in 2006 to establish a research group within the School of Chemical Engineering. He was the youngest Professor in the history of the University of Birmingham (32) and the youngest-ever Fellow of the Institute of Materials (30).

He has published widely on the development of new materials to replace the function of tissues (more than 180 papers) and has filed more than ten patents to protect technologies that range from osteogenic cement to scar-reducing dressings. He has given well over 50 invited talks outside the UK. Since starting his career, he has moved three technologies from concept through to

He is a recognized leader in medical innovation and is working with academics and companies across the country to move technologies rapidly into clinical use. His vision has resulted in the establishment of the Healthcare Technologies Institute (HTI) at the University of Birmingham, the activities of which will expand onto the Birmingham Health Innovation Campus (BHIC) through the Precision Health Technologies Accelerator (PHTA). He has worked with the West Midlands Combined Authority (WMCA) to secure government funding to drive growth in the Medical Technology sector across the Midlands. At present his team is working to provide education in medical innovation into both engineering and medical curricula.

### **Selected Publications**

1. Robinson, T. E.; Arkinstall, L. A.; Cox, S. C.; Grover, L. M., Determining the Structure of Hexametaphosphate by Titration and <sup>31</sup>P-NMR Spectroscopy. *Comments on Inorganic Chemistry* 2022, 42 (1), 47-59.
2. Cooke, M.; Jones, S.; Davis, E.; Grover, L. In *Spatial Bone Remodelling In Knee Osteoarthritis*, *JOURNAL OF BONE AND MINERAL RESEARCH*, WILEY 111 RIVER ST, HOBOKEN 07030-5774, NJ USA: 2022; pp 91-92.
3. Hughes, E. A. B.; Robinson, T. E.; Moakes, R. J. A.; Chipara, M.; Grover, L. M., Controlled self-assembly of chemical gardens enables fabrication of heterogeneous chemobronic materials. *Communications Chemistry* 2021, 4 (1), 145.
4. Hughes, E. A. B.; Jones-Salkey, O.; Forey, P.; Chipara, M.; Grover, L. M., Exploring the Formation of Calcium Orthophosphate-Pyrophosphate Chemical Gardens. 2021, 3 (4), e2000062.
5. Moakes, R. J. A.; Davies, S. P.; Stamataki, Z.; Grover, L. M., Formulation of a Composite Nasal Spray Enabling Enhanced Surface Coverage and Prophylaxis of SARS-COV-2. 2021, 33 (26), 2008304.
6. Bennett, N.; Hill, L. J.; Grover, L. M., Investigating Sodium Hexametaphosphate as a topical treatment for Band Keratopathy. *Investigative Ophthalmology & Visual Science* 2021, 62 (8), 727-727.
7. Au - Senior, J. J.; Au - Moakes, R. J. A.; Au - Cooke, M. E.; Au - Moxon, S. R.; Au - Smith, A. M.; Au - Grover, L. M., Agarose Fluid Gels Formed by Shear Processing During Gelation for Suspended 3D Bioprinting. *JoVE* 2023, (195), e64458.

**Speaker Name****Jin-Jia Hu****Current Position**

Professor at Dept. of Mechanical Engineering at NYCU, Taiwan

**Education & training**

- Ph. D. in Biomedical Engineering, Texas A&M University
- M.S. in Chemical Engineering, National Taiwan University
- B.S. in Chemical Engineering, National Taiwan University

**Professional experience**

- Associate Professor, Dept. of Biomedical Engineering, NCKU
- Assistant Professor, Dept. of Biomedical Engineering, NCKU
- Postdoctoral Associate, Dept. of Physiology, University of Massachusetts Medical School

**Honor/Awards**

- NHRI CDG / 2013
- NHRI IRG /2018

**Biography Brief**

Dr. Jin-Jia Hu is currently a Professor of Mechanical Engineering at National Yang Ming Chiao Tung University in Hsinchu, Taiwan. He obtained his BS and MS degrees in chemical engineering from National Taiwan University. He received his PhD degree in Biomedical Engineering at Texas A&M University in 2005 under the supervision of Professor Jay Humphrey. He obtained knowledge of mathematical modeling of soft tissues and mastered techniques for mechanical characterization of materials that are subjected to large deformation. His dissertation is about growth and remodeling of arteries of a hypertension porcine model. After graduation, he learned multiphoton microscopy for tissue engineering applications under the guidance of Professor Alvin Yeh. He moved to the University of Massachusetts Medical School to study cell mechanics and migration with Prof. Yu-li Wang in 2007. He was appointed to the Department of Mechanical Engineering at National Chiao Tung University as an Assistant Professor in 2008. He moved to the Department of Biomedical Engineering at National Cheng Kung University and promoted to Associate Professor in 2014. After 10 years in Tainan, he moved back to National Chiao Tung University in 2019. He has fairly broad research interests including polymer synthesis, electrospinning, materials characterization and mathematical modeling, and soft tissue engineering

**Selected Publications**

1. JJ Hu, WC Chao, PY Lee, CH Huang, Construction and characterization of an electrospun tubular scaffold for small-diameter tissue-engineered vascular grafts: A scaffold membrane approach, *Journal of the mechanical behavior of biomedical materials* 13, 140-155, (2012).
2. ZR You, MH Hu, HY Tuan-Mu, JJ Hu, Fabrication of poly (glycerol sebacate) fibrous membranes by coaxial electrospinning: Influence of shell and core solutions, *journal of the mechanical behavior of biomedical materials* 63, 220-231, (2016)
3. YL Wang, JJ Hu, Sub-100-micron calcium-alginate microspheres: Preparation by nitrogen flow focusing, dependence of spherical shape on gas streams and a drug carrier using acetaminophen as a model drug, *Carbohydrate Polymers* 269, 118262, (2021).



**Speaker Name****Subramaniam Sadhasivam****Current Position**

Associate Professor, Dept. of Extension, Bharathiar University  
DBT Ramalingaswami fellow, Dept. of Microbial Biotechnology, Bharathiar University

**Education & training**

- Ph. D. in Biotechnology (2003-2007)

**Professional experience**

- Associate Professor, Dept. of Extension, Bharathiar University (Since 2016)
- Senior Post-Doctoral fellow, Institute of Biomedical Engineering and Nanomedicine Research, National Health Research Institutes, Zhunan, Taiwan (April, 2012 to July, 2015)
- Post-Doctoral Researcher, Institute of Biomedical Engineering, National Taiwan University, Taiwan (October 2007 to December, 2011)
- DBT Ramalingaswami fellow, Dept. of Microbial Biotechnology, Bharathiar University, Coimbatore, Tamil Nadu, India (Since Aug 2015)

**Honor/Awards**

- DBT-Ramalingaswami Fellowship, Ministry of Science & Technology, Department of Biotechnology, Govt. Of India/ 2013-14.
- NSC and NHRI Post-Doc
- Junior Research Fellow in BU-DRDO CLS (2006-2007)
- Junior Project Fellow in DRDE funded Project (2003-2006)
- Recipient of bronze medal for securing University third rank in M.Sc., Biotechnology

**Biography Brief**

I began my research career in 2007 as a PhD scholar at Bharathiar University, where I had the opportunity to work as a junior project fellow in two different funded projects. During this time, I gained valuable experience in research and discovered my interest in the field of biomaterials. After completing my PhD, I continued my research as a post-doctoral fellow and later as a senior post-doctoral fellow at various prestigious institutions in Taiwan, including NHRI, NTU, and CMU. During this time, I focused on the development of biodegradable hydrogels for regenerative medicine, particularly for cartilage and neural tissue repair. This experience solidified my passion for biomaterials and their potential in regenerative medicine.

My research interests have since expanded to include the fabrication of biomaterials via non-chemical modes of synthesis, with a focus on developing effective extracellular matrix (ECM) mimics for tissue regeneration. Specifically, my lab has explored the use of hydrogels and thin films to regenerate skin tissue. We have also worked on developing biocompatible modified biomaterials and synergic polymer composites for drug delivery. Currently, our lab is investigating the use of endogenous signals within the body to induce tissue regeneration, as well as sustained drug release from polymer systems. We have also filed a patent for a novel biomaterial made of carbohydrate polymers with potential bioactivities.

Throughout my career, I have authored over fifty papers in high-impact journals such as Biomaterials, Biotechnology Advances, International Journal of Biological Macromolecules, Biomaterial Research, and Materials Science and Engineering C. I have also made significant contributions to papers on industrial enzymes for environmental applications published in renowned journals such as the Journal of Environmental Chemical Engineering and Environmental Pollution. In addition, I have presented my research at numerous national and international conferences and have been elected for prestigious fellowships, including the DBT-Ramalingaswami





Fellowship 2013-14, awarded by the Government of India's Ministry of Science & Technology and the Department of Biotechnology.

Overall, my research career has been focused on exploring the potential of biomaterials in regenerative medicine and developing innovative solutions for tissue repair and regeneration.

### **Selected Publications**

1. S. Sadhasivam, Yen-Hsin Fang, S. Savitha, Feng-Huei Lin, Chun-pin Lin (2016). Hydroxyapatite-calcium sulfate-hyaluronic acid composite encapsulated with collagenase as bone substitute for alveolar bone regeneration. *Biomaterials* 74; 99-108 [IF: 15.3]
2. Dhriya Chenthamara, SadhasivamSubramaniam, SankarGanesh, SwaminathanKrishnaswamy, Musthafa Mohamed Essa, Feng-Huei Lin, M. WalidQoronfleh. Therapeutic efficacy of nanoparticles and routes of administration. *Biomaterial Research*, (2019) 23(1),1-29. [IF: 15.86]
3. Robert B, Chenthamara D, Subramaniam S (2021). Fabrication and biomedical applications of Arabinoxylan, Pectin, Chitosan, Soy protein, and Silk fibroin hydrogels via laccase-ferulic acid redox chemistry. *International Journal of Biological Macromolecules*, 201, 539- 556 (IF: 8.025)
4. Prasathkumar, M., & Sadhasivam, S. (2021). Chitosan/Hyaluronic acid/Alginate and an assorted polymers loaded with honey, plant, and marine compounds for progressive wound healing—Know-how. *International Journal of Biological Macromolecules* [I.F-8025].
5. Savitha, S., Sadhasivam, S., Swaminathan, K. (2010) Regeneration and molecular characterization of an intergeneric hybrid between *Graphium putredinis* and *Trichoderma harzianum* by protoplasmic fusion. *Biotechnology Advances* 28; 285-292. [IF: 17.681]



**Speaker Name****Hsu-Wei Fang****Current Position**

Professor, Dept. of Chemical Engineering & Biotechnology,  
National Taipei University of Technology

**Education & training**

- Ph.D., Chemical Engineering, University of Maryland at College Park, 2003.
- M.S., Chemical Engineering, University of Maryland at College Park, 1996.
- B.S., Chemical Engineering, National Taiwan University, 1994.

**Professional experience**

- Joint Appointed Researcher, Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes (NHRI), 2009-
- Director, Biomaterials Research Center, National Taipei University of Technology, 2008-
- Director, Fomorsa Association Regenerative Medicine , 2012-
- Member, Bio Taiwan Committee (BTC), Taiwanese Cabinet, 2005-2009
- Vice President, Healthcare Industry Development Association across the Strait, Taiwan, 2014-
- Secretary-general, Healthcare Industry Development Association across the Strait, Taiwan, 2010-2014.
- Director, Innovation and Incubation Center, National Taipei University of Technology, 2008-2013.
- Associate Professor, Dept. of Chemical Engineering & Biotechnology, National Taipei University of Technology, 2006-2009.
- Assistant Professor, Dept. of Chemical Engineering & Biotechnology, National Taipei University of Technology, 2003-2006.
- Guest Researcher, Lab. of Materials Science & Engineering,  
National Institute of Standards and Technology (NIST), USA, 1996-2003.

**Honor/Awards**

- 6th National Industrial Innovation Award, Ministry of Economic Affairs, 2019.
- Pocket Protector and surgical devices, Future Tech Award, Ministry of Science and Technology, 2017.
- “Mr. Ta-Yu Wu Memorial Award” (Top award for young scientist in Taiwan) by National Science Council, Taiwan, 2009.
- Outstanding Industry-Academia Collaboration Award National Taipei University of Technology, 2011.
- 6th National Industrial Innovation Award, Biomaterials & Surface Engineering Industry-Academia Consortium, 2019
- “National Innovation Award”, by Institute for Biotechnology and Medicine Industry, 2008.

### **Biography Brief**

Dr. Hsu-Wei Fang, professor of chemical engineering and biotechnology at National Taipei University of Technology. He is also a joint appointed researcher at National Health Research Institutes of Taiwan. Prof. Fang is dedicated to the rapid commercialization of medical devices and building up the ecosystem of the innovative biotechnologies. He is the founder of Biotegy corporation and the co-founder of the CK seed angel fund. Prof. Fang is focusing on market-demand oriented research activities. By further integration of research institutes, manufacturers, and market distributors, the rapid commercialization of innovative smart medical devices is anticipated.

Prof. Fang obtained his MS and PhD from University of Maryland. His research topics include bio-tribology, biomaterials, tissue engineering and medical device development. He has published more than 120 journal papers, 25 international patents, and 20 technology transfers. Prof. Fang has been awarded Mr. Wu-Ta-Yu award, which recognizes the best young scientist in Taiwan, and innovative award from Minister of Economic Affairs of Taiwan. Prof. Fang has passions on the research integration and development and he is devoted himself to the scaling up the value of biotechnology innovations.

### **Selected Publications**

1. Chen-Ying Su, Luo Yongxiang, Chi-Hau Fang, Hsu-Wei Fang\*. The effects of antioxidant supplements on the inflammatory gene expression of osteoarthritis-like chondrocytes. *Applied Sciences*. 2021; 11(1): 239 (IF=2.474; Ranking: Engineering 32/91=35.16%).
2. Yi-En Liang, Balaji Barve, Yao-Haur Kuo, Hsu-Wei Fang, ting-Shen Kuo, and Wen-Tai Li. Metal Free, DBU-Mediated, Microwave-Assisted Synthesis of Benzo[c]xanthenes by Tandem Reactions of Alkynyl-1,3-diketones. *Advanced Syntheses and Catalysis*. 2021;363(2):505-511 (IF=5.851; Ranking: Organic Chemistry 10/183=5.46%).
3. Yin-Ju Chen, Zhi-Weng Wang, Tung-Ling Lu, Clinton B. Gomez, Hsu-Wei Fang, Yang Wei, and Ching-Li Tseng. The Synergistic Anticancer Effect of Dual Drug- (Cisplatin/Epigallocatechin Gallate) Loaded Gelatin Nanoparticles for Lung Cancer Treatment. *Journal of Nanomaterials*. 2020;Article ID 9181549, 15 pages. (IF=3.2; Ranking: MATERIALS SCIENCE 193/460=42%).
4. You-Cheng Chang, Chen-Ying Su, Chia-Hua Chang, Hsu-Wei Fang, and Yang Wei. Correlation between Tribological Properties and the Quantified Structural Changes of Lysozyme on Poly (2-hydroxyethyl methacrylate) Contact Lens. *Polymers*. 2020;12(8):1639-1648. (IF=3.364; Ranking: POLYMER SCIENCE17/87=19%).
5. Gwo-Che Huang, Chen-Ying Su, You-Cheng Chang, Yu-Jen Chen, Hsu-Wei Fang\*. Establishment of surface marker expression profiles for colorectal cancer stem cells under different conditions. *Translational Cancer Research*. 2020;9(4):2503-2510. (IF=0.44; Ranking: ONCOLOGY 260/320=81%).
6. Chen-Ying Su, Lung-Kun Yeh, Chi-Chun Lai, Kuan-Yi Li, Ching-Li Tseng, and Hsu-Wei Fang\*. Effects of lysosomal deposition on the friction coefficient of hydrogel contact lens. *Contact lens and Anterior Eye*. 2020 April; 43(2):144-148. (IF=1.77; Ranking: OPTOMETRY 2/9=22%).
7. Kuang-Ta Yao, Tsai-Yu Chang, Hsu-Wei Fang, Chang-Hung Huang, Ding-Han Wang, Ming-Lun Hsu\*. Abutment screw withdrawal after conical abutment settlement: a pilot study. *Clinical Oral Implants Research*. 2020 Feb; 31(2):144-152. (IF=3.83; Ranking: ORAL SURGERY 1/46=2%).
8. Chen-Ying Su, Lung-Kun Yeh, Chi-Chun Lai, Mihaela Dubuisson, Yi-Fei Tsao, Ching-Li Tseng, and Hsu Wei Fang\*. The Bio-Tribological Effect of Poly-Gamma-Glutamic Acid in the Lysozyme-Ionic Contact Lens System. *Polymers*. 2020 Jan; 12(1):156-1640. (IF=3.364; Ranking: POLYMER SCIENCE19/87=22%).



**Speaker Name****Min WANG****Current Position**

Professor, Department of Mechanical Engineering, The University of Hong Kong  
Member, Senate of the University, The University of Hong Kong

**Education & training**

- Ph. D.: in Mater. Sci. & Engg., University of London, U.K., 1991
- B.Sc.: in Mater. Sci. & Engg., Shanghai Jiao Tong University (SJTU), China, 1985

**Professional experience**

- Oct. 1997 – Feb. 2002: Assoc. Prof. (US System) (Jan.1999-Feb.2002; promotion on Jan.1, 1999), Lecturer (UK System) (Oct.1997-Dec.1998), Nanyang Tech Univ., S'pore
- Feb. 2002 – June 2003: Associate Professor, Hong Kong Polytechnic University (PolyU), Hong Kong
- June 2003 – Present: Professor (July 2008 – Present; tenured), Associate Professor (June 2003 – June 2008), University of Hong Kong (HKU), Hong Kong
- Oct. 1991 – Aug. 1997: Post-doctoral Researcher and Lab Supervising Scientist, Interdisciplinary Research Centre (IRC) in Biomedical Materials, Univ.of London, QMW, UK
- Guest Professor: Wuhan Univ. of Tech., Shanghai Jiao Tong Univ., Zhejiang Univ., Southwest Jiao Tong Univ., South China Univ. of Tech.; (2) Adjunct Professor: Dong Hua Univ., Tianjin Univ.

**Honor/Awards**

- Elected fellow / academician of professional societies / academy (FIMMM, 2001; FIMEchE, 2007; FHKIE, 2010; FBSE, 2011; FAIMBE, 2012; WAC Academician, 2013; FRSC, 2020)
- Editor / Editorial Board Member of leading int'l journals (e.g., Editor of Progress in Materials Science)
- Plenary/keynote/invited speaker at int'l conferences (e.g., 11th World Biomaterials Congress)
- Best Paper awards at int'l conferences

**Biography Brief**

Min Wang earned his BSc (1985) and PhD (1991) degrees, both in Materials Science and Engineering, at Shanghai Jiao Tong University, China, and University of London, U.K., respectively. Dr. Wang is a tenured professor at The University of Hong Kong (HKU) since 2008. He has also been a Guest Professor or Adjunct Professor of several universities in mainland China (Shanghai Jiao Tong University, Zhejiang University, Tianjin University, Southwest Jiaotong University, South China University of Technology, etc.). As Programme Director, he led HKU's interfaculty Medical Engineering Programme in 2013-2018. He is now an elected member of HKU's Senate. Prior to joining HKU in 2003, Dr. Wang conducted research and teaching in universities in the UK (1991-1997), Singapore (1997-2002) and Hong Kong (2002-2003). For his achievements and contributions, he is elected a fellow of professional societies in the UK, Hong Kong, USA and internationally (FIMMM, 2001; FIMEchE, 2007; FHKIE, 2010; FBSE, 2011; FAIMBE, 2012; WAC Academician, 2013; FRSC, 2020). His research interests include biomedical materials, tissue engineering, controlled release, and bionanotechnology. He has authored a large number of publications in peer-reviewed journals, books and conference proceedings. He has given many conference presentations, including more than 190 invited talks at international conferences. He and his team have won many awards at international conferences. He has been developing new biomaterials using the composite/hybridization approach since 1991 and has been conducting tissue engineering research since 1999.

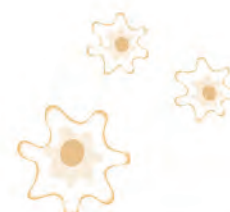




The seminal research on bioactive bone analogue materials for bone substitution conducted in London by him and his colleagues in the 1990s were widely reported by the press (The Times in the UK on Nov. 29, 1995, Chinese Science News in China on April 18, 1994, etc.). He is a leading researcher internationally on biomedical composite research and has authored chapters on biomedical composites in authoritative books such as Elsevier's Encyclopedia of Biomedical Engineering (2019) and Society for Biomaterials' Biomaterials Science: An Introduction to Materials in Medicine (4th Edition, 2020). He has given keynote talks on biomedical composites in premier conferences such as 11th World Biomaterials Congress (2020) and 8th International Congress on Ceramics (2021). His work on biomedical composites has been widely cited by researchers in many countries. Dr. Wang and co-workers have investigated various fabrication technologies for tissue engineering scaffolds, including freeze-drying, electrospinning and 3D printing, and the scaffolds developed are used to regenerate tissues such as bone, osteochondral tissue, blood vessel, peripheral nerve and gastrointestinal tract. His group has investigated/developed several 3D printing technologies/techniques, including selective laser sintering, digital light processing, cryogenic printing and hybrid printing, and performed pioneering research on 3D printing of novel tissue engineering scaffolds. His group also develops new materials and mechanisms for 4D printing in tissue engineering. He has authored chapters on 3D printing for authoritative books such as ASM Handbook Volume 23A: Additive Manufacturing in Biomedical Applications (2022) and has published reviews on 3D printing in leading journals such as Applied Physics Review (2021). Dr. Wang has been the Series Editor of Springer Series in Biomaterials Science and Engineering (<http://www.springer.com/series/10955>) books since 2012 and Editor or Associate Editor of journals (Medical & Biological Engineering & Computing, IET Nanobiotechnology, Progress in Materials Science, etc.). He served/serves in the Editorial Board of more than 20 international journals, including Journal of Materials Science: Materials in Medicine, Composites Science and Technology, Biomedical Materials, Biomaterials Research, and Journal of Orthopaedic Translation. Dr. Wang has served as Chair/Co-Chair and/or Organizer/Co-Organizer of 29 international conferences/symposia/workshops, including symposium/workshop in four World Biomaterials Congresses. Dr. Wang was/is an elected Council Member of Hong Kong Institution of Engineers, Chinese Society for Biomaterials (CSBM), Asian Biomaterials Federation, World Association for Chinese Biomedical Engineers (WACBE), and International Federation for Medical and Biological Engineering (IFMBE). Currently, he is also an elected member of the Steering Committee and Treasurer of IUS-BSE's International College of Fellows.

### Selected Publications

1. J.Lai, C.Wang, M.Wang, "3D Printing in Biomedical Engineering: Processes, Materials and Applications", Applied Physics Review, 8 (2021), 021322 (69pp)
2. B.Duan, et al., "Three-dimensional Nanocomposite Scaffolds Fabricated via Selective Laser Sintering for Bone Tissue Engineering", Acta Biomaterialia, 6 (2010), 4495–4505
3. Y.Wang, et al., "Digital Light Processing (DLP) of Nano Biphasic Calcium Phosphate Bioceramic for Making Bone Tissue Engineering Scaffolds", Ceramics International, 48 (2022), 27681-27692
4. C.Wang, et al., "Cryogenic 3D Printing of Heterogeneous Scaffolds with Gradient Mechanical Strengths and Spatial Delivery of Osteogenic Peptide/TGF- $\beta$ 1 for Osteochondral Tissue Regeneration", Biofabrication, 12 (2020), 025030
5. C.Wang, et al., "Advanced Reconfigurable Scaffolds Fabricated by 4D Printing for Treating Critical-size Bone Defects of Irregular Shapes", Biofabrication, 12 (2020), 045025
6. J.Lai, et al., "4D Printing of Highly Printable and Shape-morphing Hydrogels Composed of Alginate and Methylcellulose", Materials & Design, 205 (2021), 109699



**Speaker Name****Hsia-Wei Liu****Current Position**

Dean, Office of Business Development, Fu Jen Catholic University  
 Professor, Department of Life Science, Fu Jen Catholic University

**Education & training**

- Ph.D., Department of Chemical Engineering, National Tsing Hua University (2006)
- M.S., Department of Biomedical Engineering Chung Yuan Christian University (1997)
- Executive Master of Business Administration, National Chengchi University (2017)

**Professional experience**

- Professor, Graduate Institute of Applied Science and Engineering, Fu Jen Catholic University
- Associate Professor, Department of Life Science, Fu Jen Catholic University
- Assistant Professor, Department of Life Science, Fu Jen Catholic University
- Visiting Scholar, Institute of Physics, Academia Sinica
- Researcher, Material and Chemical Research Laboratories, ITRI
- Postdoctoral Fellow, Department of Orthopedic Surgery, Chang Gung Memorial Hospital

**Honor/Awards**

- Recipient of Special Outstanding Talent Award of the Ministry of Science and Technology (2015-2023)
- Recipient of Marquis Who's Who (2017/2019 Edition)
- Advisor of Student Merit Paper Award at 2013 Joint Symposium on Biomaterials and Controlled Release
- Recipient of Excellent Paper Award at 2010 Annual Meeting of Taiwanese Society of Biomedical Engineering
- Recipient of Best Paper Award at 2009 International Symposium on Ligaments & Tendons

**Biography Brief**

He has been the director of Biomedical and Photonic Interdisciplinary Research Center at Fu Jen Catholic University since 2015, and has been working on the academic and medical innovation research platforms featuring polymer hydrogels, nanomedicine-based photothermal therapy, microdroplet-based 3D cells culture and 3D bioprinting for tissue engineering.

**Selected Publications**

1. Hsia-Wei Liu, Wen-Ta Su, Ching-Yi Liu, Ching-Cheng Huang. Highly organized porous gelatin-based scaffold by microfluidic 3D-foaming technology and dynamic culture for cartilage tissue engineering. *International Journal of Molecular Sciences* 2022; 23(15): 8449
2. Wen-Ta Su, Ching-Cheng Huang, Hsia-Wei Liu\*. Evaluation and preparation of a designed kartogenin drug delivery system (DDS) of hydrazone-linkage-based pH responsive mPEG-Hz-b-PCL nanomicelles for treatment of osteoarthritis. *Frontiers in Bioengineering and Biotechnology* 2022; 10: 816664
3. Ching-Cheng Huang, Ying-Ju Chen, Hsia-Wei Liu\*. Characterization of composite nano-bioscaffolds based on collagen and supercritical fluids-assisted decellularized fibrous extracellular matrix. *Polymers* 2021; 13(24): 4326
4. Jui-Teng Lin, Jacques Lalevee, Hsia-Wei Liu\*. Efficacy analysis of in situ synthesis of nanogold via copper/iodonium/amine/gold system under a visible light. *Polymers* 2021; 13(22): 4013



**Speaker Name****Yukio Nagasaki****Current Position**

Professor, Department of Materials Science, University of Tsukuba  
Adjunct Professor, Department of Medical Sciences, University of Tsukuba  
Adjunct Professor, Department of Chemistry, The University of Tokyo

**Education & training**

- Ph. D. 1987, Department of Industrial Chemistry, Science University of Tokyo
- M.S. 1984, Department of Industrial Chemistry, Science University of Tokyo
- B.S. 1982, Department of Industrial Chemistry, Science University of Tokyo

**Professional experience**

- Professor (2004) Department of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba
- Professor (2003), Department of Industrial Chemistry, Science University of Tokyo
- Associate Professor (1999), Department of Industrial Chemistry, Science University of Tokyo
- Assistant Professor (1987), Department of Industrial Chemistry, Science University of Tokyo

**Honor/Awards**

- Fellow, the Society of Polymer Science, Japan (2021)
- Fellow, Biomaterials Science & Engineering, Society for Biomaterials (2020)
- Top 20 faculty members in University of Tsukuba (2018)
- Top 20 faculty members in University of Tsukuba (2017)
- The Award of the Society of Polymer Science, Japan (2017)
- 15th Japan DDS (Drug Delivery System) Society NAGAI Award (2015)
- The Award of the Japanese Society for Biomaterials (2014)
- The Award of The Japanese for Ulcer Society (2014)
- SPSJ Mitsubishi Chemical Award, 2010

**Biography Brief**

Yukio Nagasaki was born in 1959. After graduating from Science University of Tokyo in 1987, he worked at Science University of Tokyo as Research Associate, Assistant Professor, Associate Professor, and Professor. In 2004, he moved Faculty of Pure and Applied Sciences, University of Tsukuba. He is now working in concurrent posts of Adjunct Professor, Department of Medical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba, Principal Investigator, International Center for Materials Nanoarchitectonics Satellite (WPI-MANA), National Institute for Materials Science (NIMS) and Principal Investigator, Strategic Initiatives (Project type), University of Tsukuba, Adjunct Professor, Department of Chemistry, Graduate School of Science, The University of Tokyo. During his carrier, he was engaged in materials science, especially in the field of biology, pharmaceuticals, and medical science. He was primarily focusing on biointerface, drug delivery systems, and nanomedicine. He published more than 200 scientific papers. He received the excellent Ph.D. thesis award from the Inoue Foundation of Science in 1989, Young Researcher Award from the Polymer Society, Japan, in 1993, and SPSJ Mitsubishi Chemical Award from the Polymer Society, Japan, in 2010.

**Selected Publications**

1. Takuto Toriumi, Hajime Ohmori, Yukio Nagasaki, Design of antioxidant nanoparticle, which selectively locates and scavenges reactive oxygen species in the gastrointestinal tract, increasing the running time of mice, *Advanced Science*, accepted.
2. Yutaka Ikeda, Naoki Saigo, Yukio Nagasaki, Direct evidence for the involvement of intestinal reactive oxygen species in the progress of depression via the gut-brain axis, *Biomaterials*, 295 (2023) 122053
3. Babita Shashni, Yuya Tajika, Yutaka Ikeda, Yuji Nishikawa, Yukio Nagasaki, Self-assembling Polymer-based Short Chain Fatty Acid Prodrugs Ameliorate Non-alcoholic Steatohepatitis and Liver Fibrosis, *Biomaterials*, 295 (2023) 122047





### Speaker Name

**Chia-Wen (Kevin) Tsao**

### Current Position

Professor, Department of Mechanical Engineering, National Central University, Taiwan

### Education & training

- Ph. D. University of Maryland at College Park, College Park, MD, USA



### Professional experience

- Professor, Department of Mechanical Engineering, National Central University, Taoyuan, Taiwan
- Associate Professor, Department of Mechanical Engineering, National Central University, Taoyuan, Taiwan
- Assistant Professor, Department of Mechanical Engineering, National Central University, Taoyuan, Taiwan
- Director, Center for Academia and Industry Collaboration, National Central University, Taoyuan, Taiwan
- Deputy Director, Center for Academia and Industry Collaboration, National Central University, Taoyuan, Taiwan

### Honor/Awards

- National Central University Outstanding Research Award. 2021
- National Central University Outstanding Research Award. 2017
- National Central University Outstanding Research Award. 2013
- National Central University Outstanding Research Award. 2008

### Biography Brief

Chia-Wen Tsao is a Professor in Department of Mechanical Engineering, National Central University, Taiwan. He served as director of CAIC (Center for Academia and Industrial Collaboration), National Central University, Taiwan from 2018–2020. Dr. Tsao got his M.S. degree in Department of Mechanical Engineering in University of Colorado at Boulder in 2004 and a Ph.D. degree in Department of Mechanical Engineering in University of Maryland at College Park in 2008. He joined National Central University as assistant professor in 2008 after graduation. Before join university as professor, he also worked in industrial as mechanical engineer and MEMS process integrator for four years. His research interests include polymer microfluidic microfabrication technologies, nanostructured silicon fabrication and application, MEMS, and mass spectrometry technologies.

### Selected Publications

1. Chia-Wen Tsao\*, You-Shan Zheng, Ya-Sen Sun, and Yu-Che Cheng “Surface-enhanced Raman scattering (SERS) spectroscopy on localized silver nanoparticles decorated porous silicon substrate” *Analyst*, 2021, 146, 7645-7652
2. Chia-Wen Tsao, Qun-Zhan Huang, Cheng-Ye Yu, Shao-Yiu Hsu, Krzysztof Lamorski, Liang-Cheng Chang, and Cezary Sławiński “The effect of channel aspect ratio on air entrapment during imbibition in soil-on-a-chip micromodels with 2D and 2.5D pore structures” *Lab on a Chip*, 2021, 21, 385
3. Chia-Wen Tsao\* and Zhi-Jie Yang “High Sensitivity and High Detection Specificity of Gold-Nanoparticle-Grafted Nanostructured Silicon Mass Spectrometry for Glucose Analysis” *ACS applied materials & interfaces*, 2015 Oct 14;7(40):22630-7.

**Speaker Name****Chia-Ching (Josh) Wu (吳佳慶)****Current Position**

Professor, National Cheng Kung University (NCKU)

**Education & training**

- Ph. D. Biomedical Engineering

**Professional experience**

- Professor/Associate Professor/Assistant Professor, NCKU
- Associate Vice President for Research & Development, NCKU (2021-23)
- Division Director, Research Affairs of College of Medicine, NCKU (2020-21)
- Chairman, Department of Cell Biology and Anatomy, NCKU (2020-21)
- Division Director, Center for Micro/Nano Science and Technology, NCKU (2018-20)
- Postdoctoral Research Fellow, NHRI, Taiwan (2016-18)
- Postdoctoral Research Fellow, UC San Diego (2014-15)

**Honor/Awards**

- Merit of Ta-You Wu, MOST (2015)
- Excellent Research Award from Taiwan Comprehensive University System (2014)

**Biography Brief**

Dr. Wu has developed interdisciplinary approaches to study the mechanobiology for tissue engineering and regenerative medicine. In these investigations, Wu has integrated multi-disciplinary researches for elucidating (1) microenvironmental cues for stem cell differentiation and therapeutic application to rescue the nervous and vascular systems; (2) effects of flow-induced shear stress on autophagy formation in venous endothelial cells (ECs) and hence their signaling for pathological modulations in vein graft diseases; (3) smart system and non-invasive approaches to monitor wound injury and promote regeneration; (4) micro/nano manufacture of cellular chip for stem cell differentiation and cell-cell interactions; (5) certification and dynamics of exosome/extracellular vesicles for neurovascular diseases and stem cells. These results have provided new platforms to understand the cell-cell interaction, pathological progression of neuronal and vascular diseases, and potential therapeutic approach of cell-based therapy.

**Selected Publications**

1. Burnouf, P.A., Roffler, S.R., Wu, C.C., Yu-Cheng, S. Glucuronides: From biological waste to bio-nanomedical applications. *J Control Release*, (2022) 349: 765-782.
2. Yadav, A., Huang, T. C., Chen, S. H., Ramasamy, T. S., Hsueh, Y. Y., Lin, S. P., Lu, F. I., Liu, Y. H. & Wu, C. C.\* Sodium phenylbutyrate inhibits Schwann cell inflammation via HDAC and NFkappaB to promote axonal regeneration and remyelination. *J Neuroinflammation* 18(1): 238 (2021)
3. Wang, T. Y., Chang, M. M., Li, Y. J., Huang, T. C., Chien, S. & Wu, C. C.\* Maintenance of HDACs and H3K9me3 prevents arterial flow-induced venous endothelial damage. *Front Cell Dev Biol* 9, 642150, doi:10.3389/fcell.2021.642150 (2021)
4. Wu, Y. T., Wu, Y. T., Huang, T. C., Su, F. C., Jou, I. M. & Wu, C. C.\* Sequential inflammation model for Achilles tendinopathy by elastin degradation with treadmill exercise. *J Orthop. Translat.* 23, 113-121, doi:10.1016/j.jot.2020.03.004 (2020)
5. Huang, T. C., Wu, H. L., Chen, S. H., Wang, Y. T. & Wu, C. C.\* Thrombomodulin facilitates peripheral nerve regeneration through regulating M1/M2 switching. *J. Neuroinflammation* 17, 240, doi:10.1186/s12974-020-01897-z (2020)
6. Huang, C. W., Lu, S. Y., Huang, T. C., Huang, B. M., Sun, H. S., Yang, S. H., Chuang, J. I., Hsueh, Y. Y., Wu, Y. T. & Wu, C. C.\* FGF9 induces functional differentiation to Schwann cells from human adipose derived stem cells. *Theranostics* 10, 2817-2831, doi:10.7150/thno.38553 (2020)





**Speaker Name****Gabriel P. Lopez****Current Position**

Professor, Chemical and Biological Engineering, Center for Biomedical Engineering, University of New Mexico

**Education & training**

- Postdoctoral Fellow, Chemistry, Harvard University (1991-1993)
- Ph. D., Chemical Engineering, University of Washington (1991)
- B.S., Chemical Engineering, University of Colorado (1985)

**Professional experience**

- 2016-2023 Professor of Chemical and Biological Engineering, University of New Mexico
- 2016-2020 Vice President for Research, University of New Mexico
- 2010-2016 Professor of Biomedical Engineering, Mech. Eng. & Mater. Sci., Duke University
- 2011-2015 Founding Director, NSF Research Triangle Materials Research Science and Engineering Center (MRSEC)
- 2005-2010 Founding Director, Center for Biomedical Engineering, University of New Mexico

**Honor/Awards**

- Fellow, National Academy of Inventors/2017
- Fellow, American Institute for Medical & Biological Engineering/2011

**Biography Brief**

Gabriel P. Lopez is Professor of Chemical and Biological Engineering at the University of New Mexico. His current research interests include biointerfacial phenomena, biomaterials, and bioanalytical systems to address problems in health, biotechnology and environmental quality. Lopez has published  $\approx 200$  peerreviewed scientific papers and book chapters and is inventor on 42 issued U.S. patents. He has served as research advisor to 63 graduate students, 42 postdoctoral fellows and 82 undergraduate students; 18 of his former graduate students/postdocs have gone on to professional academic positions. He has served as PI or coPI on grants totaling  $\approx \$50$  million. He is a Fellow of the National Academy of Inventors, a Fellow the American Institute for Medical & Biological Engineering, a UNM Innovation Fellow and the recipient of the W. Moulton Distinguished Alumni Award from the University of Washington, the Stansell Family Distinguished Research Award from Duke University's Pratt School of Engineering, an NSF Faculty Early Career Development Award, and an Outstanding University Inventor Award from the Semiconductor Research Corporation.

**Selected Publications**

1. "Building a Community to Engineer Synthetic Cells and Organelles from the Bottom-Up," Staufer, O.; et al. eLife 2021, 10:e73556, <https://doi.org/10.7554/eLife.73556>.
2. "DNA-Binding by an Intrinsically Disordered Elastin-Like Polypeptide for Assembly of Phase Separated Nucleoprotein Coacervates," Diez Perez, T.; Quintana, A.; De Lora, J.A.; Shreve, A.P.; Lopez, G.P.; Carroll, N.J. Ind. Eng. Chem. Res. 2021, 60, 17408-16.
3. "Programming molecular self-assembly of intrinsically disordered proteins containing sequences of low complexity," Simon, J.R.; Carroll, N.J.; Rubinstein, M.; Chilkoti, A.; Lopez, G.P. Nature Chemistry, 2017, 9, 509-515.



**Speaker Name****Wilfrid BOIREAU****Current Position**

CNRS Senior Researcher at FEMTO-ST Institute, France

**Education & training**

- Ph.D. Université de Technologie de Compiègne (UTC), France

**Professional experience**

- Professor - CNRS senior Researcher

**Biography Brief**

Wilfrid Boireau, CNRS senior researcher, obtained his Ph.D degree in enzymatic engineering from the University of Technology of Compiègne (UTC, France) in 1999. After a post-doctoral position in the Center of Molecular Genetics (CGM, Gif/Yvette, France) in 2000-01, he joined the CNRS as a permanent researcher in 2001 in a laboratory of physics (LPMO) at Besançon, France. In 2004, at the creation of the FEMTO-ST institute (UMR6174 CNRS), he was responsible of a transversal project called “microtechniques for proteomic” at the University of Franche-Comté involving physicists and biochemists. In 2008, he co-founds the "Clinical - Innovation Proteomic Platform" (CLIPP), a platform devoted to the development of analytical solutions for clinical proteomics.

In 2012, he became responsible of the Multiphysics Microsystems team (MIMU team), one of the three teams of the Micro Nano Sciences & Systems department (MN2S) of FEMTO-ST Institute. During the period 2015-19, he was director of MN2S department and initiated a thematic restructuration that led to the creation of BioMicroDevices Group, a multidisciplinary team of researches involving biochemists, nanobioscientists, physicists and micro/nano technologists. He is now part from January 2023 of Nano2BIO team devoted to the multimodal qualification of biological objects of interest, from the molecule to the vesicle to the cell by using biophysical instrumentation and by developing new analytical methods (<https://www.femto-st.fr/en/nano2bio>).

His current researches are based at the interface of bio-engineering, microtechnologies and nanostructured materials for the development of biochips integrated in sensors and analytical platforms for clinical proteomics and diagnosis. He deeply investigates the domain of extracellular vesicles (EVs), especially their sorting with pre-analytical devices and their detection in biofluids.

Co-author of 74 publications (>6 500 citations; H Index = 19 in WoS) and of 4 patents since 1998, Dr Wilfrid Boireau has also presented, during the last decade, around 150 communications in national and international conferences and has been awarded three times for Outstanding Poster Presentation.

**Selected Publications**

1. Obeid S., Sung, P-S., Le Roy B., Chou M-L., Shieh S-L., Elie-Caille C., Burnouf T., Boireau W. NanoBioAnalytical characterization of extracellular vesicles in 75-nm nanofiltered human plasma for transfusion: a tool to improve transfusion safety. *Nanomedicine: Nanotechnology, Biology, and Medicine*, Vol 20, 101977, 2019
2. Remy-Martin F., El Osta M., Lucchi G., Zeggari R., Leblois T., Bellon S., Ducoroy P., Boireau W. Surface Plasmon Resonance imaging in Arrays coupled with Mass Spectrometry (SUPRA-MS): proof of concept of on-chip characterizations of a potential breast cancer marker in human plasma. *Analytical & Bioanalytical Chemistry*, 404 (2), 423-432, 2012
3. de Rougemont A., Ruvoen-Clouet N., Simon B., Estienney M., Elie-Caille C., Aho S., Pothier P., Le Pendu J., Boireau W., Belliot G. Qualitative and quantitative analysis of the binding of the GII.4 norovirus variants onto human blood group antigens. *Journal of Virology*, 85 (9), 4057-70, 2011

**Speaker Name****Masaya Yamamoto****Current Position**

Professor/Department Chair, Department of Materials Processing,  
Graduate School of Engineering, Tohoku University

**Education & training**

- Ph. D., Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University (1999)
- M.Eng., Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University (1996)
- B.Eng., Department of Polymer Chemistry, Faculty of Engineering, Kyoto University (1994)

**Professional experience**

- 2017 - present Professor, Graduate School of Engineering, Tohoku University
- 2011 - 2017 Associate Professor, Institute for Frontier Medical Sciences, Kyoto University
- 2000 - 2011 Assistant Professor, Institute for Frontier Medical Sciences, Kyoto University
- 2007 - 2008 Visiting Fellow, Weill Medical College, Cornell University, USA
- 1999 - 2000 Research Associate, Institute for Frontier Medical Sciences, Kyoto University
- 1999 Visiting Scientist, Institute for Polymer Research, Dresden, Germany
- JST CREST Program Principal Investigator, AMED Project Officer, TERMIS-AP council member, Japanese Society for Biomaterials council member, JST PRESTO Program Researcher

**Honor/Awards**

- The Award for Young Investigator, Japanese Society for Biomaterials /2010
- Young Scientist Award, Japanese Society for Regenerative Medicine/2010

**Biography Brief**

Dr. Masaya Yamamoto has been involved in the research area of Biomedical Polymers, Tissue Engineering, Drug Delivery Systems, and Regenerative Medicine. Recently he applied his research experiences in Biomaterials to understand toxicology for Nano/microplastics.

**Selected Publications**

1. I. Kanehara, T. Kimura, M. Yamamoto, T. Tanabe et al., Laser Manufact. Mater. Process., in press (2023)
2. P. Nattasit, K. Niibe, M. Yamamoto, H. Egusa et al, Macromol. Biosci., e2300021 (2023)
3. N. Morimoto, K. Ota, Y. Miura, H. Shin, M. Yamamoto, J. Mater. Chem. B., 10, 2649-2660 (2022)





**Speaker Name****Lun-De Liao****Current Position**

Associate Principal Investigator, Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Taiwan.

**Honor/Awards**

- National Innovation Award ( 國家創新獎 ), the 19th National Innovation Award by Research Center for Biotechnology and Medicine Policy, Taiwan. (2022)
- Tatler Generation T Award (Generation T 最具影響力且表現優秀的傑出青年), one of the most promising young leaders in Asia, selected by Tatler Taiwan. (2022)
- 59th Ten Young Outstanding Persons ( 第 59 屆十大傑出青年 ), Ten Outstanding Young Persons Foundation, Taiwan, ROC. (2021)
- Taiwan TIE Award (63 of 200), selected by the Department of Industrial Technology (DoIT) from by the Ministry of Economic Affairs (MOEA) for Taiwan Innotech Expo (TIE) 2021. (2021)
- Selected as Featured Paper and Editor's Choice, A published paper "In Vivo Assessment of Hypoxia Levels in Pancreatic Tumors Using a Dual-Modality Ultrasound/Photoacoustic Imaging System" in *Micromachines* (2021, 12(6), 668) has been selected by the scientific editor of *Micromachines* journal. (2021)
- Young Scientist Award ( 年輕學者研究獎 ), 2021 NHRI Research Achievement Award by National Health Research Institutes (NHRI), Taiwan. (2021)
- National Innovation Award ( 國家新創獎 ), the 17th National Innovation Award by Research Center for Biotechnology and Medicine Policy, Taiwan. (2020)
- Young Investigator Award, the 9th World Congress on Bioengineering (WACBE), WACBE 2019, Taiwan. (2019)
- Young Investigator Award, the award was presented to Dr. Lun-De Liao by the Global Conference on Biomedical Engineering (GCBME) President at the banquet of the GCBME 2018, Taiwan. (2018)

**Biography Brief**

Lun-De Liao received his Ph.D. degree in Electrical Engineering from National Chiao Tung University (NCTU), Taiwan in February of 2012. He was a Postdoctoral Researcher at the Brain Research Center (BRC) in NCTU, Taiwan from Feb - July 2012. He proposed the world's first bio-inspired dry EEG sensors and their corresponding circuit to intelligently image the human brain dynamics under the guidance of Prof. Chin-Teng Lin (Fellow of IEEE) at BRC in NCTU, Taiwan. After that, he was a Research Scientist at the Singapore Institute for Neurotechnology (SINAPSE) at the National University of Singapore from Aug 2012-May 2014. He was a Senior Research Scientist and led the Neurophotonics Group at SINAPSE from May 2014-2016. Since 2015, he served as the Head of Publicity/Memberships for The Society for Neuroscience (SfN), Singapore Chapter, providing membership service to SfN members in Singapore. In Nov 2015, he joined the Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Taiwan as an Assistant Principal Investigator and leading NanoNeurophotonics Lab there. In July 2020, he was promoted to Associate Principal Investigator in IBEN, NHRI, Taiwan.

Dr. Liao's research activity and expertise are focused on the topic of neurophotonics, nano-biosensors, brain-computer interfaces, biomedical devices, and their applications. Dr. Liao has made many important discoveries after he joined IBEN, NHRI. He was the first in the world to show that how the neurovascular coupling works in single cortical blood vessels via the novel photoacoustic technique with the skull intact of rats and disease models. These have been presented at both national and international meetings and received numerous recognitions. He has published over 108 peer-reviewed SCI journal papers, including *Journal of Cerebral Blood Flow & Metabolism* (IF: 6.2) and *Pain* (IF: 6.961), *Advanced Materials* (IF: 30.84), and *Small* (IF: 10.856) journals, and more than 14 issued patents.

He was selected/nominated for more than 50 international awards since 2004, including 2005 Best Paper Award from the National Society of Engineers, Taiwan; 2009 SID Travel Fellowship; 2009 IEEE Intermag Travel



Fellowship; 2010 Best Paper Award from International Symposium on Biomedical Engineering. In 2011, he also won 1st place of the Young Investigator's Awards from the world association for Chinese biomedical engineers for his contributions on the medical imaging & bioelectronics domain. He was also selected for an Outstanding Research Award of 2012 from National Chiao Tung University, for his outstanding research performance. In 2014, he was selected as First Place of IFMBE Young Investigator Award from IFMBE society. In 2021, he was selected as the 59th Ten Outstanding Young Persons in Taiwan (第59屆十大傑出青年) from Ten Outstanding Young Persons Foundation, Taiwan. In 2021, he was selected for the Young Scientist Award from NHRI, Taiwan. In 2022, he was selected as the Generation T Award, one of the most promising young leaders in Asia, selected by Tatler Asia.

### Selected Publications

1. Shaoyu Yen, Hong-Yi Wu, Yuhling Wang, Chih-Mao Huang, Changwei W. Wu, Jyh-Horng Chen, and Lun-De Liao\*, "Revisiting the Effects of Exercise on Cerebral Neurovascular Functions in Rats using Multimodal Assessment Techniques," 26, 106354, *iScience*, 2023. (IF: 6.10) [\*Corresponding author]
2. Yuhling Wang, Yu-Lin Chen, Chih-Mao Huang, Li-Tzong Chen, and Lun-De Liao\*, "Visible CCD Camera-Guided Photoacoustic Imaging System for Precise Navigation during Functional Rat Brain Imaging," 13(1), 107, *Biosensors*, 2023. (IF: 5.743) [\*Corresponding author]
3. Ju-Yu Wu, Congo Tak-Shing Ching, Hui-Min David Wang, and Lun-De Liao\*, "Emerging Wearable Biosensor Technologies for Stress Monitoring and Their Real-World Applications," (12), 12, *Biosensors*, 2022. (IF: 5.743) [\*Corresponding author]
4. Yuhling Wang, Chia-Hua Tsai, Tsung-Sheng Chu, Yun-Ting Hung, Mei-Yi Lee, Hwei-Hsien Chen, Li-Tzong Chen, Tzong-Rong Ger, Nai-Jung Chiang, Yung-Hsuan Wang, and Lun-De Liao\*, "Revisiting the cerebral hemodynamics of awake, freely moving rats with repeated ketamine self-administration using a miniature photoacoustic imaging system," 9(4):045003, *Neurophotonics*, 2022. (IF: 4.2) [\*Corresponding author]
5. Chin-Teng Lin, Yanqiu Tian, Yu-Kai Wang, Tien-Thong Nguyen Do, Yao-Lung Chang, Jung-Tai King, KuanChih Huang, and Lun-De Liao\*, "Effects of Multisensory Distractor Interference on Attentional Driving," DOI: 10.1109/TITS.2022.3149884, *IEEE Transactions on Intelligent Transportation Systems*, 2022. (IF: 9.1) [\*Corresponding author]
6. Yuhling Wang, Tsung-Sheng Chu, Chia-Hui Tsao, Chia-Hua Tsai, Tzong-Rong Ger, Li-Tzong Chen, Wun-Shaing Wayne Chang\*, and Lun-De Liao\*, "Assessment of Brain Functional Activity Using Miniaturized Head-Mounted Scanning Photoacoustic Imaging System in Awake and Freely Moving Rats," 2021, (11), 429, *Biosensors*, 2021. (IF: 5.519) [\*Corresponding author]
7. Chin-Teng Lin\*, Wei-Ling Jiang, Sheng-Fu Chen, Kuan-Chih Huang and Lun-De Liao\*, "Design of a Wearable Eye-Movement Detection System Based on Electrooculography Signals and Its Experimental Validation," 11 (9), 343, *Biosensors*, 2021. (IF: 5.519) [\*Corresponding author]
8. Yuhling Wang, De-Fu Jhang, Tsung-Sheng Chu, Chia-Hui Tsao, Chia-Hua Tsai, Chiung-Cheng Chuang, Tzong-Rong Ger, Li-Tzong Chen\*, Wun-Shaing Wayne Chang\*, and Lun-De Liao\*, "An Adjustable Dark-Field Acoustic-Resolution Photoacoustic Imaging System with Fiber Bundle-Based Illumination," 11 (8), 262, *Biosensors*, 2021. (IF: 5.519) [\*Corresponding author]
9. Chin-Teng Lin\*, Yi-Hsin Yu, Jung-Tai King, Chi-Hsien Liu, and Lun-De Liao\*, "Augmented Wire-Embedded Silicon-Based Dry-Contact Sensors for Electroencephalography Signal Measurements," 20 (7), 3831-3837, *IEEE Sensors Journal*, 2019. (IF: 3.301) [\*Corresponding author]





<b>Note:</b>	
● Poster Exhibition: 08:50-17:00.	
● Poster Competition (I): 12:00-13:30.	
<b>3F Emerald Room/Corald Room 翡翠廳/珊瑚廳</b>	
<b>Poster (I)</b>	
Judge: Prof. Yung-Hsin Cheng and Prof. Chieh-Cheng Huang	
P1-1	<i>Enhancing Prediction of Cardiology Clinical Features of Coronary Heart Diseases Using Ensemble Learning Approaches</i> <b>Po-Yin Chang, National Quemoy University, Taiwan</b>
P1-2	<i>Melanoma Lesion Detection Enhancement Using Deep Hybrid Segmentation</i> <b>Po-Yin Chang, National Quemoy University, Taiwan</b>
P1-3	<i>Design of biodegradable silk fibroin neural probe, for deep-brain chemical sensing and electrical stimulation</i> <b>Hung-Yu Hsu, National Yang Ming Chiao Tung University, Taiwan</b>
P1-4	<i>Application of the U-net model for cell segmentation and cell migration evaluation</i> <b>Yi-Yong Chong, Taipei Medical University, Taiwan</b>
P1-5	<i>Multilabel Object Detection To Predict Breast Cancer Lesions On Mammograms</i> <b>Quang-Hien Kh, Taipei Medical University, Taiwan</b>
P1-6	<i>A deep learning algorithm to diagnose pediatric forearm fracture based on AO/OTA classification</i> <b>Le Nguyen Binh, Taipei Medical University, Taiwan</b>
P1-7	<i>Identification and validation of novel hypoxia-and immune-related gene signature for gastric cancer prognosis</i> <b>Mai Hanh Nguyen, Taipei Medical University, Taiwan</b>
P1-8	<i>Optimizing Embryo Selection in IVF through AI-Based Non-Invasive Ploidy Prediction: Integration of Time-Lapse and Clinical Data</i> <b>Thi-My-Trang Luong, Taipei Medical University, Taiwan</b>
P1-9	<i>Concentrates Urinary Biomarkers Via the Osmosis Processors</i> <b>Chia-Yu Lee, National Taiwan University of Science and Technology, Taiwan</b>
P1-10	<i>Fucoidan microneedles with adjuvant effect for effectively enhancing antigen-specific immune responses</i> <b>Yen-Chin Chen, National Cheng-Kung University, Taiwan</b>
P1-11	<i>Investigating the effects of 830 nm low level lasers on ROS and melanin in melanocytes by single-cell analysis and evaluating their potential in the treatment of gray hair</i> <b>Liang-Chen Pan, Taipei Medical University, Taiwan</b>
P1-12	<i>Machine learning for drug response prediction in lung cancer cell lines</i> <b>Thi-Oanh Tran, Taipei Medical University, Taiwan</b>
P1-13	<i>ddPCR test of AI automated counting for COVID-19</i> <b>Wei-Lun Liang, Industrial Technology Research Institute, Taiwan</b>
P1-14	<i>Detection of Blood by Utilizing the Surface Enhanced Raman Spectroscopy Technique with The Help of Gold Nanorods and Silver Nanoparticles</i> <b>Uğur Koroğlu, Hacettepe University, Turkey</b>
P1-15	<i>Bacteriophage grafted superparamagnetic nanoparticle for detection of Shiga-toxin Escherichia coli (E.coli O157:H7)</i> <b>Jen-Yu Liao, National Taipei University of Technology, Taiwan</b>
P1-16	<i>An ultra-thin soft electrode combined with portable multi-channel EEG acquisition system</i> <b>Wei-Han Huang, National Yang Ming Chiao Tung University, Taiwan</b>
P1-17	<i>Using Multifunctional Hydrogel Conductivity to Detect Antibacterial Activity</i> <b>Hsin Cheng, National Taipei University of Technology, Taiwan</b>
P1-18	<i>Using a FET biosensor to measure the binding affinity between resveratrol and the serotonin 5-HT<sub>2A</sub> receptor</i> <b>Mei-Wen Tseng, Chung Yuan Christian University, Taiwan</b>
P1-19	<i>Development of an easy-to-use solid phase nucleic acid extraction device for next step isothermal amplification and CRISPR detection of target sequences</i> <b>Yun-Hsien Chung, National Tsing Hua University, Taiwan</b>
P1-20	<i>Establish isothermal reverse transcriptase recombinase polymerase amplification (RT-RPA) for quick and highly sensitive nucleic acid analysis on a microfluid chip</i> <b>Tao-Yun Yen, National Tsing Hua University, Taiwan</b>
P1-21	<i>Development of a microfluidic device for high resolution liquid biopsy screening with an isothermal control</i> <b>Wei-Chun Lan, National Tsing Hua University, Taiwan</b>
P1-22	<i>Silver Nano-island Arrays Deposited on Cicada Wings for Raman Enhancing Detection</i> <b>Ting-Yu Liu, Ming Chi University of Technology, Taiwan</b>
P1-23	<i>Low cost paper-based glucose sensor prepared by using commercial printer</i> <b>Binghuan Zhang, I-Shou University, Taiwan</b>
P1-24	<i>Preparation of novel membrane-based nucleic acid 3D printed biosensor platform and validating its target DNA detection</i> <b>Hsu-Hung Kuo, Yuan Ze University, Taiwan</b>



P1-25	<i>Biodegradable Adhesive Tissue-Mimicked Multichannel Microelectrode Arrays for Electrophysiological measurements applied to nerve, brain and cardiomyocytes</i> <b>Tzu-Ya Cheng, National Yang Ming Chiao Tung University, Taiwan</b>
P1-26	<i>Extracellular Matrix-Inspired All Hydrogel Biohybrid Neural Interfaces for Combined Microelectrode Array Technologies, Tissue Scaffolding, and Stem Cell Therapy</i> <b>Wan-Lou Lei, National Yang Ming Chiao Tung University, Taiwan</b>
P1-27	<i>Photo-Responsive Nanozyme Sensor: Harnessing Emissive Oxidase-mimic Nanozyme for On-Site Antioxidant Detection in Human Saliva</i> <b>Sanskruti Swain, National Central University, Taiwan</b>
P1-28	<i>Enhancing Peripheral Neural Cell Activity through the Combination of Conductive Hydrogels and Electrical Stimulation</i> <b>Jin-Xiu Yu, Feng Chia University, Taiwan</b>
P1-29	<i>A Magnetic-Responsive Injectable Photocrosslinkable Ink for the Applications of 4D Printed Bioactuators</i> <b>Tzu-Ching Chen, Feng Chia University, Taiwan</b>
P1-30	<i>Biodegradable Phosphocholine Cross-Linker With Ion-Pair Design for Tough Zwitterionic Hydrogel</i> <b>Yi-Yin Chen, National Central University, Taiwan</b>
P1-31	<i>Complete zwitterionic double network hydrogels with great toughness and resistance against foreign body reaction and thrombus</i> <b>Ying-Chieh Chuang, National Central University, Taiwan</b>
P1-32	<i>Development of methacrylic anhydride-modified carboxymethylcellulose hydrogels to deliver corticosteroids for corneal wound healing</i> <b>Ying-Qi Chen, National Taiwan University of Science and Technology, Taiwan</b>
P1-33	<i>Encouraging Enthesis Organ Development through Drug Release of Ligament, Bone, and Endochondral Ossification Cues using Mesoporous Silica Nanoparticles</i> <b>Qing-Xu Shi, National Taipei University of Technology, Taiwan</b>
P1-34	<i>Platelet-derived extracellular vesicles plus reduced graphene oxide co-laden polymer-coordinated hydrogel promotes diabetic wound restoration</i> <b>Ping-Chien Hao, Taipei Medical University, Taiwan</b>
P1-35	<i>Alginate-Tyramine Gel with Reinforcement by Plasma for Treatment of Arthritis</i> <b>Yu-Ming Chen, Taipei Medical University, Taiwan</b>
P1-36	<i>Development of modified hydroxypropyl methylcellulose hydrogel with drug loading as a vitreous substitute</i> <b>Chang-Lun Hsieh, Taipei Medical University, Taiwan</b>
P1-37	<i>Polypyrrole-polyethyleneimine nanopigments-woven medical products for restoring follicle</i> <b>Wei-Yung Huang, Taipei Medical University, Taiwan</b>
P1-38	<i>Harnessing Controlled-Degradable Microgel for Effective Chondrogenic and Osteogenic Differentiation of Human Mesenchymal Stem Cells</i> <b>Yu-Han Chen, National Tsing Hua University, Taiwan</b>
P1-39	<i>Effects of alginate hydrogel containing bacteriophage cocktail on macrophage-mediated inflammation and fibroblast migration</i> <b>Qiu-Yun Zheng, National Taipei University of Technology, Taiwan</b>
P1-40	<i>Novel Polypeptide Composite Fibrous Scaffold with Internal Chemical Boundary</i> <b>Chia-Hsien Lee, Ming-Chi University of Technology, Taiwan</b>
P1-41	<i>Development of Cancer Cell Membrane-Coated Indocyanine Green-Camptothecin-Loaded Perfluorinated Nanoparticles for Photodynamic Therapy in Triple-Negative Breast Cancer (MDA-MB 231): Material Fabrication and Functional Validation</i> <b>Ying-Ju Lin, National Central of University, Taiwan</b>
P1-42	<i>Extraction of ulvan and incorporation into thermosensitive electrospun fibers as a wound dressing</i> <b>Ping-Yu Chang, National Taiwan Ocean University, Taiwan</b>
P1-43	<i>Lanthanide Hydrogel: A Versatile Biomaterial with Stretchability and Self-Healing Abilities for Bioimaging</i> <b>Cheng-Zhen Yuan, National Kaohsiung University of Science and Technology, Taiwan</b>





<b>Note:</b>	
● Poster Exhibition: 08:50-17:00.	
● Poster Competition (II): 15:10-16:40.	
<b>3F Emerald Room/Corald Room 翡翠廳/珊瑚廳</b>	
<b>Poster (II)</b>	
P2-1	<i>Gelated cells as a robust cell-mimicking biomaterial system for cancer immunotherapy and tissue engineering</i> <b>Jung-Chen Lin, Academia Sinica, Taiwan</b>
P2-2	<i>Chitosan-based nerve guiding conduit for peripheral nerve repair</i> <b>Yi-Dan Chang, Asia University, Taiwan</b>
P2-3	<i>Photocrosslinkable Microbeads for Delivery of Dietary Supplement</i> <b>Huan-Jin Guo, Feng Chia University, Taiwan</b>
P2-4	<i>Gelatin-based Composite Microneedle patches for the Treatment of Keloid Scars</i> <b>Yong-Ji Chen, I-Shou university, Taiwan</b>
P2-5	<i>Development adhesive microneedles as an oral patch for recurrent aphthous stomatitis treatment</i> <b>Chi-Hsiang Wu, I-Shou university, Taiwan</b>
P2-6	<i>Development of Indocyanine Green and Camptothecin loaded Hyaluronic Acid Hydrogel for Photochemotherapy of Skin Cancer</i> <b>Chieh-Lin Chung, National Central University, Taiwan</b>
P2-7	<i>Smart Hydrogels for Trans-mucosal Drug Delivery: Evaluation the Efficacy of New Targeted Hyaluronic Acid-Drugs to Treatment Inflammatory Bowel Disease</i> <b>Pei-Xhan Wu, National United University, Taiwan</b>
P2-8	<i>Development of in situ dual-crosslinkable (dcHA) hyaluronic acid based injectable hydrogel as a dermal filler</i> <b>Bang Yu Wen, Yuanpei University of Medical Technology, Taiwan</b>
P2-9	<i>Development and evaluation of thermosensitive hydrogels for long-acting injection formulations</i> <b>Chih-Yu Hsieh, Taipei Medical University, Taiwan</b>
P2-10	<i>Dual-crosslink of Self-assemble and Photocrosslinking Collagen Hydrogel Promote Vascular Tissue Engineering</i> <b>Kuan-Ho Pan, National Tsing Hua University, Taiwan</b>
P2-11	<i>Pre-spheroidized by Chitosan Prompt Osteoblast-like MG63 Cells to Osteogenesis on NaOH Etching 3D printing Ti-alloy Scaffolds</i> <b>Ching-Wen Tsai, National Applied Research Laboratories, Taiwan</b>
P2-12	<i>Development of Perfluorinated Cancerous Exosomes for Enhanced Target Photochemotherapy in Triple-Negative Breast Cancer</i> <b>Zhi-Qiao Zuo, National Central University, Taiwan</b>
P2-13	<i>Vitamin B12 Loaded Methylcellulose/Hyaluronic Acid Thermosensitive Hydrogel Ring for Ocular Drug Delivery</i> <b>Yi-Xin Liu, National United University, Taiwan</b>
P2-14	<i>Versatile photothermal nanozymes with glutathione depletion and thermal/acidity-triggered hydroxyl radical generation for combination cancer therapy</i> <b>Wen-Hsuan Chiang, National Chung Hsing University, Taiwan</b>
P2-15	<i>Mechanism of GNR@MIL-100(Fe) induced Macrophage Activation</i> <b>Yen-Chang Chen, National Taiwan University, Taiwan</b>
P2-16	<i>The effect of metformin on carbonic anhydrase type 8 and glucose transporter type 2 in kidney and HK-2 cells</i> <b>Hsiang-Yu Liu, Tunghai University, Taiwan</b>
P2-17	<i>Hyaluronic acid surface-modified nanomedicine for the treatment of retinopathy in mice with blue light-induced damage</i> <b>Yen-Jen Lee, Taipei Medical University, Taiwan</b>
P2-18	<i>NIR-activated organic molecule-based nanocomposites with photothermal and photodynamic effects for cancer treatment</i> <b>Ming-Hsin Liu, National Taiwan University, Taiwan</b>
P2-19	<i>Nitrogen-doped polymer dots with tunable crosslinking density for nonconventional fluorescence and antibacterial behavior</i> <b>Jia-Qi Chen, China Medical University, Taiwan</b>
P2-20	<i>A three-in-one injectable hydrogel for reprogramming the immunosuppressive tumor</i> <b>Wu- Xun Chen, National Tsing Hua University, Taiwan</b>
P2-21	<i>IR820-loaded Fe(III)-rich nanozymes for glutathione-depletion/thermo enhanced chemodynamic/photothermal synergistic therapy</i> <b>Tzu-Chen Lin, National Chung Hsing University, Taiwan</b>
P2-22	<i>Development of AFP-targeting ICG-CPT-encapsulated PLGA nanoparticles emulsions for photochemotherapy of lung cancer</i> <b>Yen Po-Lung, National Central University, Taiwan</b>
P2-23	<i>Calcium-Zoledronic Acid Coordination Complex of Nanoparticles Combination with Thermal Effect for Treatment Breast Cancer Bone Metastasis</i> <b>Wong-Jin Chang, Taipei Medical University, Taiwan</b>



P2-24	<i>The feasibility of tea polyphenol nanoparticles as a drug for stimulating hair growth</i> <b>Chao-Yun Yen, Taipei Medical University, Taiwan</b>
P2-25	<i>Evaluation of eye drops contained small compound extracted from He Shou Wu for dry eye mice treatment</i> <b>Ting-Ying Huang, Taipei Medical University, Taiwan</b>
P2-26	<i>Investigating the Cardiac Effects of Drug Loaded Mesoporous Silica Nanoparticles on Heart Failure in Zebrafish</i> <b>Hong-Wei Wang, Taipei Medical University, Taiwan</b>
P2-27	<i>Stem cell-nanomedicine system as a theranostic bio-gadolinium agent for targeted neutron capture cancer therapy</i> <b>Yen-Ho Lai, China Medical University Hospital, Taiwan</b>
P2-28	<i>Development of functional polymers for drug delivery and bio-application</i> <b>Ruo-Yun Tao, Yuan Ze University, Taiwan</b>
P2-29	<i>Sorafenib-Loaded Superparamagnetic Nanoparticles Combined with External Electromagnetic Field for Precision Liver Cancer Treatment</i> <b>Xiao-Zhu Tang, National Taipei University of Technology, Taiwan</b>
P2-30	<i>Development of bacterial membrane coating-Indocyanine green and camptothecin co-loaded perfluorocarbon double nanoparticles for photochemoimmunotherapy of colorectal cancer</i> <b>Chin-Yu Tan, National Central University, Taiwan</b>
P2-31	<i>Development of controllable decorative tumor antigen-tethered spiked Virus-Like-PLGA-Nanoparticles (sVLPN) to induce potent immunogenicity against tumors in mice</i> <b>Yan-Ting Shen, Taipei Medical University, Taiwan</b>
P2-32	<i>Development of in situ thermosensitive poloxamer gels as ocular drug delivery systems of sodium phenylbutyrate for the treatment of open-angle glaucoma</i> <b>Chen-Hsuan Hsu, Taipei Medical University, Taiwan</b>
P2-33	<i>Bispecific T-cell engagers non-covalently decorated on PEGylated liposome fused with MHC molecular tumor antigen expressed exosomes derived from dendritic cells for colon cancer immunotherapy</i> <b>Ting-Wei Lin, Taipei Medical University, Taiwan</b>
P2-34	<i>Development of glycosylated PLGA nanoparticles as dendritic cell targeting delivery vehicles for therapeutic cancer vaccination</i> <b>Tung-Han Tsai, Taipei Medical University, Taiwan</b>
P2-35	<i>Treatment of skin cancer with dissolving ulvan microneedles containing curcumin in combination with X-ray radiation therapy</i> <b>Hsin-Yu Sun, National Taiwan Ocean University, Taiwan</b>
P2-36	<i>Developing a Local and Sequential Release System for Non-healing Diabetic Ulcer Therapy</i> <b>Tun-Hsiang Kao, National Taiwan University of Science and Technology, Taiwan.</b>
P2-37	<i>Anti-fibrotic microRNA/chitosan-based nanoparticles for the treatment of pulmonary fibrosis</i> <b>Yu-Chia Chang, Taipei Medical University, Taiwan</b>
P2-38	<i>Effect of a Topical Collagen Tripeptide on Antiaging and Barrier Dysfunction of Skin</i> <b>Kai-Wen Chang, Kaohsiung Medical University, Kaohsiung, Taiwan</b>
P2-39	<i>Using <math>\gamma</math>-PGA / MAO composite coatings for improvable biocompatibility and controllable drug release</i> <b>An-Nghia Nguyen, National Cheng Kung University, Taiwan</b>
P2-40	<i>Perioperative anesthetics combined hyperthermia on cancer precision medicine</i> <b>Wen-Hui Hsieh, Chun-Jen Huang, Jui-Aa Lin and Hsu-Wei Fang*</b>
P2-41	<i>A simple green design of modification of doxorubicin onto GQD-nanogold composite for the inhibition of colon cancer</i> <b>Tseng-Yu Yeh, National Taipei University of Education, Taiwan</b>
P2-42	<i>Using the technology of DNA origami and the simulation of Magic DNA to develop various structures for drug delivery</i> <b>Hao-Wei Liu, Feng Chia University, Taiwan</b>





<b>Note:</b>	
● Poster Exhibition: 09:00-17:10.	
● Poster Competition (III): 12:10-13:40.	
<b>3F Emerald Room/Corald Room 翡翠廳/珊瑚廳</b>	
<b>Poster (III)</b>	
Judge: Prof. Wei-Chen Huang	
P3-1	<i>Development of silver-containing mesoporous bioactive glass combined Ebselen for wound dressing</i> <b>Chu-Yun Wei, Kaohsiung Medical University, Taiwan</b>
P3-2	<i>Degassing a decellularized scaffold enhances wound healing and reduces fibrosis during tracheal defect reconstruction: A preliminary animal study</i> <b>Nguyen-Kieu Viet-Nhi, Taipei Medical University, Taiwan</b>
P3-3	<i>Pd@VNU-2 and its Application in Radiation-Photothermal Combined Cancer Therapy</i> <b>Yu-Sheng Yu, National Taiwan University, Taiwan</b>
P3-4	<i>Development of Nanoparticle Loaded Microneedle Mediated Gene Delivery on the Application of Cancer Treatment</i> <b>Zi-Han Chen, National Tsing Hua University, Taiwan</b>
P3-5	<i>Study on Gelatin Methacryloyl / Hyaluronic Acid Methacryloyl Composite Hydrogel Cross-linked with Visible Light for Wound Dressings</i> <b>Wan-Rong Lin, National Taipei University of Technology, Taiwan</b>
P3-6	<i>Development of Antibacterial Composite Materials for the Bottom Layer of Dissolving Microneedles</i> <b>Zi-Hao Chen, National United University, Taiwan</b>
P3-7	<i>Development of magnetic temperature fiber materials for drug releasing</i> <b>Jou-Hsuan Huang, Chung Yuan Christian University, Taiwan</b>
P3-8	<i>Nanocomposite hydrogel-delivered GM-CSF and fucoidan-based nanoparticulate vaccine for inhibition of tumor growth and metastasis</i> <b>Tsai-Hsuan Lin, Taipei Medical University, Taiwan</b>
P3-9	<i>In Situ Forming Transparent Quercetin/Hyaluronic Acid Hydrogel as A Vitreous Substitute</i> <b>Ching-Wen Chang, National United University, Taiwan</b>
P3-10	<i>Study on novel composite tissue-engineered tracheal grafts with bacteriostasis and photocurable 3D printing</i> <b>You-Cheng Tsai, Kaohsiung Medical University, Taiwan</b>
P3-11	<i>Development of a microfluidic device encapsulating mitochondria in liposomes for cell therapy</i> <b>Yen-Chin Hsu, Taipei Medical University, Taiwan</b>
P3-12	<i>In vitro studies of kaempferol action on osteoblasts and osteoblasts</i> <b>Pei-Ju Chang, China Medical University, Taiwan</b>
P3-13	<i>Development of a novel extraction wound dressing containing bimetallic nanoparticles bioactive glass for the prevention of medication-related osteonecrosis of the jaw</i> <b>Yi-Heng Dai, Kaohsiung Medical University, Taiwan</b>
P3-14	<i>3D Bioceramic burr hole scaffold fabricated by digital light processing for bone regeneration in rabbit calvarial defects</i> <b>Chih-Yun Lee, Kaohsiung Medical University, Taiwan</b>
P3-15	<i>Plasma-Enabled Graphene Quantum Dot Hydrogel – Magnesium Composites as the Bioactive Scaffolds for In Vivo Bone Defect Repair</i> <b>Pei-Chun Wong, Taipei Medical University, Taiwan</b>
P3-16	<i>Novel artificial tricalcium phosphate and magnesium composite graft facilitates angiogenesis in bone healing</i> <b>Yuan-Hsin Tsai, National Chung Hsing University, Taiwan</b>
P3-17	<i>Applying multiple surface treatments to enhance osseointegration of titanium dental implant through regulating bone remodeling</i> <b>Her-Hsiung Huang, National Yang Ming Chiao Tung University, Taiwan</b>
P3-18	<i>Chitosan wound dressing modified with bacteriophage promotes antibacterial activity against Staphylococcus aureus and bone cell growth</i> <b>Yu-Sheng Chen, National Taipei University of Technology, Taiwan</b>
P3-19	<i>Development of Biomimetic Gel with Osteoconductivity for Fixation of Permanent Bone Implants</i> <b>Chun-Yu Lin, National Central University, Taiwan</b>
P3-20	<i>Evaluation the effect of biomaterials on BMP-2 binding activity to BMPR-1A receptor</i> <b>Shu-Hui Wu, National Health Research Institutes, Taiwan</b>
P3-21	<i>Synergy of bone microenvironment stiffness and BMP-2 enhances breast tumor calcification by using a 3D model</i> <b>An-Lun Kuo, National Health Research Institutes, Taiwan</b>
P3-22	<i>Fucoidan-Decorated Epigallocatechin Gallate/Protamine Nanoparticles for Plaques-Targeted Delivery and Controlled Release of cargoes in Anti-Atherosclerosis Therapy</i> <b>Chi Lin, Taipei Medical University, Taiwan</b>



P3-23	<i>The Effect of heart and metabolites in PTZ induced heart abnormalities zebrafish</i> <b>Kuan-Lun Li, National Taiwan University, Taiwan</b>
P3-24	<i>Constructing Heart-specific Exosome Profile to Enable Research of Cardiovascular Disease</i> <b>Rosie Kao, National Taiwan University of Science and Technology, Taiwan</b>
P3-25	<i>Biomimetic Platelet Motor for Propelling Hirudin Peptide Delivery for Remotely Site-Specific Phototherapeutic Thrombolysis</i> <b>Yan-Ting Chen, Taipei Medical University, Taiwan</b>
P3-26	<i>Cold Atmospheric Plasma-Derived Nanoclusters for Lesion-Specific Multimodal Photo/Magnetic Thrombus Therapy</i> <b>Pei-Ru Jheng, Taipei Medical University, Taiwan</b>
P3-27	<i>Exosome/Secretome-derived from pcMSCs promoting endogenous progenitor stem cell and suppressing inflammatory condition in LPS-induced ARDS/ALI model</i> <b>Kajal Singh, Taipei Medical University, Taiwan</b>
P3-28	<i>In Vitro Treatment Effect of 3D cultured MSC-derived Exosomes on IL-1<math>\beta</math> Treated Chondrocyte : Exosomes Characterization and Anti-inflammation Evaluation</i> <b>Yu-Ping Chen, National United University, Taiwan</b>
P3-29	<i>Enabling Rapid Extracellular Vesicle Isolation from Cell Culture Media by Osmosis</i> <b>Casey Huang, National Taiwan University of Science and Technology, Taiwan</b>
P3-30	<i>Platelet-derived Extracellular vesicles (pEVs) based therapy for glaucoma-associated neuroinflammation and efficacy in ophthalmic drug delivery</i> <b>Huynh-Ngoc-Truc Nguyen, Taipei Medical University, Taiwan</b>
P3-31	<i>Mechanism of MIL-100(Fe) Induced Macrophage Activation &amp; Its Application in Fibrosis Inhibition</i> <b>Po-Hsiu Cheng, National Taiwan University, Taiwan</b>
P3-32	<i>Fluorescent carbon nanodots via hydrothermal process from animal-derived materials for biolabeling and their antibacterial activity</i> <b>Shu-Ting Tung, China Medical University, Taiwan</b>
P3-33	<i>Aerosol delivery of Nintedanib in nanoformulation for pulmonary fibrosis treatment</i> <b>Hong-Ming Lin, Taipei Medical University, Taiwan</b>
P3-34	<i>MXene-Modified Injectable Microbeads for Gene Therapy in Neuron Regeneration for Traumatic Brain Injury Treatment</i> <b>Wan-Chi Pan, National Tsing Hua University, Taiwan</b>
P3-35	<i>Exploiting Erythrocyte-Mediated Delivery of PB-DLNP@RBC for Enhanced Drug Delivery and Gene Therapy</i> <b>Hao-Min Chang, National Tsing Hua University, Taiwan</b>
P3-36	<i>TiO<sub>2</sub> Based Photodynamic and Photothermal Therapies for Glioblastoma Treatment</i> <b>Yu-Sheng Lee, National Tsing Hua University, Taiwan</b>
P3-37	<i>Development of magnetic triggered membrane for drug releasing application</i> <b>Jou-Hsuan Huang, Chung Yuan Christian University, Taiwan</b>
P3-38	<i>Single-Shot Nanosell Vaccine Eradicates MHC-low HPV-associated Tumor</i> <b>Chen-Hsueh Pai, Academia Sinica, Taiwan</b>
P3-39	<i>Evaluation of Eye Drops Containing Carbon Quantum Dots in Mice with Dry Eye Syndrome</i> <b>Po-Yu Lin, Taipei Medical University, Taiwan</b>
P3-40	<i>Contextual STING activation by 2'3'cGAMP-daunorubicin nanoparticle amplifies adaptive immunity in systemic cancer chemoimmunotherapy</i> <b>Kai-Chieh Yang, Academia Sinica, Taiwan</b>
P3-41	<i>Precision antigenic programming enhances anticancer vaccine efficacies</i> <b>Po-Cheng Tsai, Academia Sinica, Taiwan</b>
P3-42	<i>A Flexible and Fabric-Based Nanocomposite Design for Wound Healing Applications</i> <b>Po-En Hsu, National Central University, Taiwan</b>





<b>Note:</b>	
● Poster Exhibition: 09:00-17:10.	
● Poster Competition (IV): 15:20-16:50	
<b>3F Emerald Room/Corald Room 翡翠廳/珊瑚廳</b>	
<b>Poster (IV)</b>	
Judge: Prof. Yi-Chen Li, Prof. Ming-You Shie and Prof. Anup Pandith	
P4-1	<i>Cytotoxicity, Transport, and Cellular uptake after exposure to polypropylene micro/nanoplastics produced by thermal oxidation reaction</i> <b>Suphatra Hiranphinyophat, Tohoku University, Japan</b>
P4-2	<i>Development of Kaempferol-Loaded Gelatin Nanoparticles for the Treatment of Choroidal Neovascularization</i> <b>Erh-Hsuan Hsieh, Taipei Medical University, Taiwan</b>
P4-3	<i>Temperature-Responsive Polymer-Antibody Conjugate for Biomarker Separation</i> <b>Maggie Shen, National Taiwan University of Science and Technology, Taiwan</b>
P4-4	<i>One-pot synthesis non-conventional fluorescent polymer dots with non-conjugated hyperbranched structure for drug delivery and bioimaging</i> <b>Siao-Cian Fan, China Medical University, Taiwan</b>
P4-5	<i>Associations between altered microbiota and functional brain images in fibromyalgia</i> <b>Nguyen Thanh Nhu, Taipei Medical University, Taiwan</b>
P4-6	<i>Additive manufacturing of Schwann cell-laden collagen nerve guidance conduits by freeform reversible embedding regulate neurogenesis towards peripheral nerve regeneration</i> <b>Su, Ching-Feng, China Medical University, Taiwan</b>
P4-7	<i>The abnormalities and metabolites of brain in pentylenetetrazol-induced seizures zebrafish</i> <b>Wen-Xu Wei, Chinese Culture University, Taiwan</b>
P4-8	<i>Neuron protective drug in an in-vitro model of glutamate-mediated neurotoxicity</i> <b>Chu-Chun Liang, National Tsing Hua University, Taiwan</b>
P4-9	<i>Application of decellularized small intestinal submucosa crosslinked with anthocyanin as an artificial nerve guiding conduits</i> <b>Xiang-Ting Huang, Asia University, Taiwan</b>
P4-10	<i>DEVELOP A TECHNOLOGY FOR MRI-MONITORING BREAST CANCER CELL SITUATION</i> <b>Yu-Jing Huang, National Health Research Institutes, Taiwan</b>
P4-11	<i>Effects of decellularization extracellular matrix on the behavior and differentiation of intestinal epithelial cells in both static and dynamic microfluidic environments.</i> <b>Aye Chan Phyu, National Taiwan University of Science and technology, Taiwan</b>
P4-12	<i>Preparation of Tumor Tissue Rich in Extracellular Matrix for Toxicity Test of Cancer Therapeutic Drugs</i> <b>Szu-Yi Ho, National Health Research Institutes, Taiwan</b>
P4-13	<i>The Process of Mouse Cochlear Hair Cell Differentiation Stimulated by Dynamically Regulating Ion Concentration</i> <b>Feng-Yuan Chien, National Central University, Taiwan</b>
P4-14	<i>A Tumor Accelerator Based on Multicomponent Bone Scaffolds and Cancer Cell Homing</i> <b>Chen-Ji Huang, National Health Research Institutes, Taiwan</b>
P4-15	<i>Biomimetic of a 3D breast cancer spheroid model using decellularized extracellular matrix for personalized therapeutics investigation</i> <b>Yen-Hong Lin, China Medical University, Taiwan</b>
P4-16	<i>Vessel on a chip with Hydrogel Based 3D Bioprinting Vessel-Like Construct</i> <b>Li-Ying Peng, National Tsing Hua University, Taiwan</b>
P4-17	<i>Development of bioinks for 3D bioprinting of breast cancer microenvironment modeling</i> <b>Ting-Wei Chang, National Tsing Hua University, Taiwan</b>
P4-18	<i>Effects of regenerative medicine in combination with physiotherapy for knee osteoarthritis: a network meta-analysis of randomized controlled trials</i> <b>Chun-De Liao, Taipei Medical University, Taiwan</b>
P4-19	<i>Therapeutic Potential of Chenopodium Formosanum Extracts for Early-Stage Osteoarthritis: Free radical scavenging activity and cell-compatibility</i> <b>Wan-Yi Xiao, National United University, Miaoli, Taiwan</b>
P4-20	<i>The prospect of applying 3D cultured osteogenic cell spheroids in surgical interventions for Empty Nose Syndrome</i> <b>Jing-Ke Chen, National Central University, Taiwan</b>
P4-21	<i>Promotion of Peripheral Nerve System Remyelination (and underline mechanism) by Cell Therapy</i> <b>Pei-Yi Ou Yang, National Cheng Kung University, Taiwan</b>
P4-22	<i>PLLA microparticle-loaded double-layered microneedle patches for effectively stimulating dermal collagen regeneration</i> <b>Chih-Chi Chang, National Cheng Kung University, Taiwan</b>
P4-23	<i>Advancement of Three-Dimensional Biomimetic Skin Substitutes for Burn Injury Skin Regeneration</i> <b>Ching-Yun Chen, National Central University, Taiwan</b>



P4-24	<i>Application of porcine-derived cartilage extracellular matrix to enhance the therapeutic efficacy of rheumatoid arthritis drug</i> <b>Sung-Han Jo, Pukyong National University, Korea</b>
P4-25	<i>Reduce cytotoxicity induced by fine particulate matter (PM2.5) via transporting mitochondria to human cardiomyocyte cells exposure to PM2.5</i> <b>Uyen Thi-Nhat Nguyen, Taipei Medical University, Taipei, Taiwan</b>
P4-26	<i>Mechanism of cutaneous wound repair in nude mice skin by picosecond laser-induced optical breakdown combined with polymer dots dressings</i> <b>Hoi-Man Iao, China medical university, Taiwan</b>
P4-27	<i>Improving cartilage reconstruction using the cell sheet engineering</i> <b>Yuan Tseng, National Taiwan University, Taiwan</b>
P4-28	<i>Polydopamine-dressed 3D stem cell spheroid-derived decellularized extracellular matrix scaffolds with for promoting tissue regeneration</i> <b>Pei-Ching Yang, National Tsing Hua University, Taiwan.</b>
P4-29	<i>3D bioprinting electrically conductive bioink on the application of Neural Tissue Engineering</i> <b>Yu-Chun Yeh, National Tsing Hua University, Taiwan.</b>
P4-30	<i>3D spheroids of bone marrow mesenchymal stem cells ameliorate traumatic brain injury by alleviating neuroinflammation and glutamate excitotoxicity</i> <b>Grace H. Chen, National Tsing Hua University, Taiwan.</b>
P4-31	<i>Development of nerve guidance conduit with spatial gradients of Schwann cells for repairing peripheral nervous system</i> <b>Chia-Hsin Ho, National Tsing Hua University, Taiwan.</b>
P4-32	<i>Transplantation of 3D spheroids of adipose-derived stem cells promotes rabbit Achilles tendon healing by enhancing tenocyte proliferation and suppressing M1 macrophages</i> <b>Shao-Wen Liu, National Tsing Hua University, Taiwan.</b>
P4-33	<i>Regulation of differentiation potential and sub-population by histone trimethylation and HDAC5 during spheroid formation of human adipose-derived stem cells</i> <b>Ming-Min Chang, National Cheng Kung University, Taiwan</b>
P4-34	<i>Enhanced <math>\beta</math> cell survival in subcutaneous space after co-transplantation of 3D stem cell spheroids with pro-angiogenic and anti-apoptotic potential</i> <b>Ying-Chi Kao, National Tsing Hua University, Taiwan.</b>
P4-35	<i>Cell Screening Approaches for Cochlear Progenitor Cells: Pre-Plate and Lgr5 Binding Protein as Antibody-Free Alternatives</i> <b>Sheng-Wen Chang, National Central University, Taiwan</b>
P4-36	<i>Effect of Near-infrared Laser Irradiance Photobiomodulation on Mitochondria Membrane Potential for Different Passages of Human Adipose-derived Stem Cell</i> <b>Wei-Chen Lin, Taipei Medical University, Taiwan</b>
P4-37	<i>Fabrication of 3D adipose tissue using engineered composite spheroids</i> <b>Jeongbok Lee, Hanyang University, Korea</b>
P4-38	<i>MicroRNAs-mediated cartilage regeneration using a lithium-containing calcium silicate bi-layered scaffold laden with exosome-based therapy</i> <b>Ting-You Kuo, China Medical University, Taiwan</b>
P4-39	<i>Dermal fibroblast-laden 3D-printed electroactive hydrogels for enhancing cutaneous wound healing through electrical stimulation</i> <b>Tai-Yi Hsu-Jiang, China Medical University, Taiwan</b>
P4-40	<i>Harnessing the multifunctional of ADSC-derived exosomes for accelerating healing of diabetic chronic wounds</i> <b>Min-Hua Yu, China Medical University, Taiwan</b>
P4-41	<i>Nano-Layered Magnetic Nanoparticles for Heat-Triggered Drug Release</i> <b>Nanami Fujisawa, National Institute for Materials Science, Japan</b>
P4-42	<i>OSMOTIC CONCENTRATION OF URINARY LIPOARABINOMANNAN FOR RAPID AND SENSITIVE DETECTION OF TUBERCULOSIS</i> <b>John J. Hill, National Taiwan University of Science and Technology, Taiwan</b>



# Taipei Tech (NTUT)

## Biomaterials Research and Commercialization forum

Date: September 1, 2023 (Friday)

Time: 13:30 – 15:30

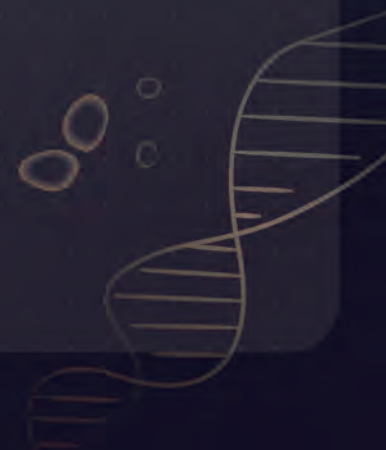
Location: Fullon Hotel Tamsui, Jixiang Room (2F)

Organizer: High-value Biomaterials Research and Commercialization Center,

### Taipei Tech Biomaterials Research and Commercialization Forum

Moderator: Prof. Hsu-Wei Fang

13:30-13:40	<b>Opening Address</b> Distinguished guests Prof. Ho-Chiao Chuang (Dean of R&D, NTUT)
13:40-13:55	<b>Introduction of High-value Biomaterials Research and Commercialization Center</b> Prof. Hsu-Wei Fang (Director of HBRCC, NTUT)
13:55-14:10	<b>MOU Signing ceremony, group photo</b> High-value Biomaterials Research and Commercialization Center (HBRCC), NTUT, Taiwan University of Tsukuba, Japan Healthcare Technologies Institute (HTI), University of Birmingham, UK Smart Biomaterials Consortium (SBMC), The Netherlands (online)
14:10-14:20	<b>Invited Talk</b> : Biomaterials for Unmet Needs Prof. Yukio Nagasaki University of Tsukuba, Japan
14:20-14:30	<b>Invited Talk</b> : Introducing Healthcare Technologies Institute, University of Birmingham Prof. Liam Grover Healthcare Technologies Institute, University of Birmingham, UK
14:30-15:30	<b>Panel discussion</b> Chairman: Prof. Hsu-Wei Fang (HBRCC, NTUT) Prof. Ren-Jei Chung (HBRCC, NTUT) Prof. Yukio Nagasaki (University of Tsukuba) Prof. Liam Grover (HTI, University of Birmingham) Dr. Huang-Chien Liang (Wiltrom Co., Ltd.) Prof. Feng-Huei Lin (National Taiwan University) Prof. Chia-Wen Wu (National Health Research Institutes)



# ISOMRM Satellite Conference

## NTUT

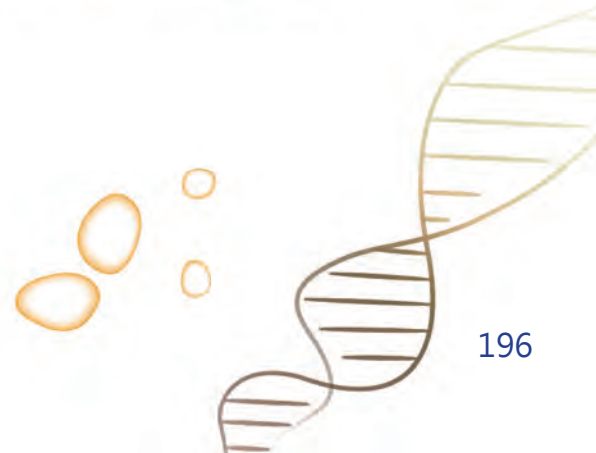
### Taipei Tech Biomaterials Research and Commercialization Forum



Prof. Yukio Nagasaki  
Biomaterials for Unmet Needs



Professor Liam M Grover  
Introducing Healthcare Technologies  
Institute, University of Birmingham







### Speaker Name

**Yukio Nagasaki**

### Current Position

Professor, Department of Materials Science, University of Tsukuba  
Adjunct Professor, Department of Medical Sciences, University of Tsukuba  
Adjunct Professor, Department of Chemistry, The University of Tokyo

### Education & training

- Ph. D. 1987, Department of Industrial Chemistry, Science University of Tokyo
- M.S. 1984, Department of Industrial Chemistry, Science University of Tokyo
- B.S. 1982, Department of Industrial Chemistry, Science University of Tokyo

### Professional experience

- Professor (2004) Department of Materials Science, Faculty of Pure and Applied Sciences, University of Tsukuba
- Professor (2003), Department of Industrial Chemistry, Science University of Tokyo
- Associate Professor (1999), Department of Industrial Chemistry, Science University of Tokyo
- Assistant Professor (1987), Department of Industrial Chemistry, Science University of Tokyo

### Honor/Awards

- Fellow, the Society of Polymer Science, Japan (2021)
- Fellow, Biomaterials Science & Engineering, Society for Biomaterials (2020)
- Top 20 faculty members in University of Tsukuba (2018)
- Top 20 faculty members in University of Tsukuba (2017)
- The Award of the Society of Polymer Science, Japan (2017)
- 15th Japan DDS (Drug Delivery System) Society NAGAI Award (2015)
- The Award of the Japanese Society for Biomaterials (2014)
- The Award of The Japanese for Ulcer Society (2014)
- SPSJ Mitsubishi Chemical Award, 2010

### Biography Brief

Yukio Nagasaki was born in 1959. After graduating from Science University of Tokyo in 1987, he worked at Science University of Tokyo as Research Associate, Assistant Professor, Associate Professor, and Professor. In 2004, he moved Faculty of Pure and Applied Sciences, University of Tsukuba. He is now working in concurrent posts of Adjunct Professor, Department of Medical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba, Principal Investigator, International Center for Materials Nanoarchitectonics Satellite (WPI-MANA), National Institute for Materials Science (NIMS) and Principal Investigator, Strategic Initiatives (Project type), University of Tsukuba, Adjunct Professor, Department of Chemistry, Graduate School of Science, The University of Tokyo. During his carrier, he was engaged in materials science, especially in the field of biology, pharmaceuticals, and medical science. He was primarily focusing on biointerface, drug delivery systems, and nanomedicine. He published more than 200 scientific papers. He received the excellent Ph.D. thesis award from the Inoue Foundation of Science in 1989, Young Researcher Award from the Polymer Society, Japan, in 1993, and SPSJ Mitsubishi Chemical Award from the Polymer Society, Japan, in 2010.

### Selected Publications

1. Takuto Toriumi, Hajime Ohmori, Yukio Nagasaki, Design of antioxidant nanoparticle, which selectively locates and scavenges reactive oxygen species in the gastrointestinal tract, increasing the running time of mice, *Advanced Science*, accepted.
2. Yutaka Ikeda, Naoki Saigo, Yukio Nagasaki, Direct evidence for the involvement of intestinal reactive oxygen species in the progress of depression via the gut-brain axis, *Biomaterials*, 295 (2023) 122053
3. Babita Shashni, Yuya Tajika, Yutaka Ikeda, Yuji Nishikawa, Yukio Nagasaki, Self-assembling Polymer-based Short Chain Fatty Acid Prodrugs Ameliorate Non-alcoholic Steatohepatitis and Liver Fibrosis, *Biomaterials*, 295 (2023) 122047



### Speaker Name

**Liam M Grover**

### Current Position

Director of the Healthcare Technologies Institute, University of Birmingham  
Professor of Biomaterials Science, School of Chemical Engineering, University of Birmingham



### Education & training

- 2001 – 2005 – PhD in Dentistry, University of Birmingham
- 1998 – 2001 – BMedSc(Hons), Biomedical Materials Science, University of Birmingham

### Professional experience

- 2018-Present - Director of the Healthcare Technologies Institute, University of Birmingham
- 2013-Present - Professor of Biomaterials Science, School of Chemical Engineering, University of Birmingham
- 2012-2019 - Director of Research, School of Chemical Engineering, University of Birmingham
- 2012-2013 - Reader in Biomaterials Science, School of Chemical Engineering, University of Birmingham
- 2010-2012 - Senior Lecturer in Chemical Engineering, University of Birmingham
- 2006-2010 - Lecturer in Chemical Engineering, University of Birmingham
- 2004-2006 - CIHR Skeletal Health Scholar, McGill University, Montreal

### Honor/Awards

- 2023 - President's award - UKSB
- 2023 - Fellow of the Academy of Medical Sciences
- 2022 - Nominated for the OBN Best Start-up award – Healome Therapeutics
- 2022 - Materials Innovation Award – Antiviral Nasal Spray
- 2019-Present - Editorial Board – Advanced NanoBiomed Research
- 2018-Present Fellow of the Centre for the Advancement of Sustainable Medical Innovation
- 2018 - Special commendation from the IChemE on the development of a process to manufacture antifibrotic eye drops
- 2018-Present - External advisor to the Versus Arthritis Tissue Engineering Centre
- 2018-Present - ESRC Mental Health Panel
- 2018-Present - NIHR i4i Panel Member
- 2017-Present - Member of Editorial Board for APL Bioengineering
- 2016 - Awarded Civilian Membership of the for the Combined Services Orthopaedic Society for work on heterotopic ossification
- 2011-Present - Fellow of the Higher Education Academy, UK
- 2010-Present - Fellow of the Institute of Materials, UK
- 2004-2006 - CIHR Skeletal Health Scholarship, Faculty of Dentistry, McGill University, Montreal, Canada
- 2016 - Royal Society of Chemistry Annual Biomaterials Meeting
- 2014 - Cell Adhesion Century and Satellite Meeting on NanoBio Interactions (Royal Society)
- 2013 - Young Researchers Meeting, Biochemical Engineering Subject Group, IChemE
- 2010 - Cement and Concrete Science, International Conference, IOM3



### **Biography Brief**

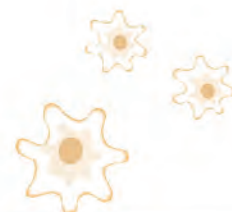
Professor Grover is a materials scientist by training and completed his Ph.D. at the University of Birmingham before moving to McGill University (Montreal) to work as a CIHR skeletal health scholar. He returned to Birmingham in 2006 to establish a research group within the School of Chemical Engineering. He was the youngest Professor in the history of the University of Birmingham (32) and the youngest-ever Fellow of the Institute of Materials (30).

He has published widely on the development of new materials to replace the function of tissues (more than 180 papers) and has filed more than ten patents to protect technologies that range from osteogenic cement to scar-reducing dressings. He has given well over 50 invited talks outside the UK. Since starting his career, he has moved three technologies from concept through to

He is a recognized leader in medical innovation and is working with academics and companies across the country to move technologies rapidly into clinical use. His vision has resulted in the establishment of the Healthcare Technologies Institute (HTI) at the University of Birmingham, the activities of which will expand onto the Birmingham Health Innovation Campus (BHIC) through the Precision Health Technologies Accelerator (PHTA). He has worked with the West Midlands Combined Authority (WMCA) to secure government funding to drive growth in the Medical Technology sector across the Midlands. At present his team is working to provide education in medical innovation into both engineering and medical curricula.

### **Selected Publications**

1. Robinson, T. E.; Arkinstall, L. A.; Cox, S. C.; Grover, L. M., Determining the Structure of Hexametaphosphate by Titration and  $^{31}\text{P}$ -NMR Spectroscopy. *Comments on Inorganic Chemistry* 2022, 42 (1), 47-59.
2. Cooke, M.; Jones, S.; Davis, E.; Grover, L. In *Spatial Bone Remodelling In Knee Osteoarthritis*, *JOURNAL OF BONE AND MINERAL RESEARCH*, WILEY 111 RIVER ST, HOBOKEN 07030-5774, NJ USA: 2022; pp 91-92.
3. Hughes, E. A. B.; Robinson, T. E.; Moakes, R. J. A.; Chipara, M.; Grover, L. M., Controlled self-assembly of chemical gardens enables fabrication of heterogeneous chemobronic materials. *Communications Chemistry* 2021, 4 (1), 145.
4. Hughes, E. A. B.; Jones-Salkey, O.; Forey, P.; Chipara, M.; Grover, L. M., Exploring the Formation of Calcium Orthophosphate-Pyrophosphate Chemical Gardens. 2021, 3 (4), e2000062.
5. Moakes, R. J. A.; Davies, S. P.; Stamataki, Z.; Grover, L. M., Formulation of a Composite Nasal Spray Enabling Enhanced Surface Coverage and Prophylaxis of SARS-COV-2. 2021, 33 (26), 2008304.
6. Bennett, N.; Hill, L. J.; Grover, L. M., Investigating Sodium Hexametaphosphate as a topical treatment for Band Keratopathy. *Investigative Ophthalmology & Visual Science* 2021, 62 (8), 727-727.
7. Au - Senior, J. J.; Au - Moakes, R. J. A.; Au - Cooke, M. E.; Au - Moxon, S. R.; Au - Smith, A. M.; Au - Grover, L. M., Agarose Fluid Gels Formed by Shear Processing During Gelation for Suspended 3D Bioprinting. *JoVE* 2023, (195), e64458.





# International Conference on Gene Editing

Date: September 1, 2023 (Friday)

Time: 12:30-17:00

Location: Fullon Hotel Tamsui, Ruyi Room (2F)

Organizer: Development Center for Biotechnology

## International Conference on Gene Editing

Time	Topic	Speaker
12:30-13:00	<b>Registration Office on 3F</b>	
13:00-13:10	<b>Welcome Address</b>	<b>Honorable Guest</b>
13:10-13:15	<b>Group Photo</b>	<b>All Distinguished Guests</b>
13:15-13:35	Engineering of human natural killer cells for cancer immunotherapy	<b>Dr. Steven Lin</b> Institute of Biological Chemistry, Academia Sinica
13:35-13:55	Gene therapy with rAAV2-hAADC for patients with aromatic L-amino acid decarboxylase deficiency	<b>Dr. Ni-Chung Lee</b> Genetic Counseling Program, National Taiwan University College of Medicine
13:55-14:15	One-stop Solution Supplier for Viral Vector	<b>Dr. Tatung Yuan</b> TFBS Bioscience
14:15-14:35	Virus-Free Quantum Engine™ for Next-Generation Gene Therapy	<b>Dr. Karen Wen</b> GenomeFrontier Therapeutics, Inc.
14:35-15:00	<b>Tea Break</b>	
15:00-15:20	Precision and Flexibility with TALEN Gene Editing	<b>Jasmin Tseng</b> Thermo Fisher Scientific, Taiwan
15:20-15:50	Improved method for large HDR knock-ins using Alt-R HDR Donor Blocks and Alt-R HDR Enhancer V2	<b>Dr. Edward Wong Sern Yuen</b> Integrated DNA Technologies IDT. MEDCLUB SCIENTIFIC
15:50-16:10	Knockout and Verify the Guide Design for CRISPR Engineered Cell	<b>Synthego Corporation &amp; Biotools</b>
16:10-16:50	Panel Discussion	<b>Moderator and All Distinguished Guests</b>



# ISOMRM Satellite Conference

## BMCC

### International Conference on Gene Editing



**Dr. Steven Lin**

Engineering of human natural killer cells for cancer immunotherapy

**Dr. Ni-Chung Lee, M.D., Ph.D**  
Gene therapy with rAAV2-hAADC for patients with aromatic L-amino acid decarboxylase deficiency



**Dr. Tatung Yuan**

One-stop Solution Supplier for Viral Vector

**Dr. Karen Wen**  
Virus-Free Quantum Engine™  
for Next-Generation Gene Therapy







**Dr. Steven Lin 凌嘉鴻**

- Assistant Research fellow, Institute of Biological Chemistry, Academia Sinica / 中央研究院生物化學研究所 助研究員
- Adjunct assistant professor, Institute of Biochemical Sciences, National Taiwan University, Taiwan / 國立臺灣大學生化科學研究所合聘助理教授

**Topic : Engineering of human natural killer cells for cancer immunotherapy**

**Abstract**

Natural killer (NK) cells are a promising cell type for cancer immunotherapy owing to unique cancer recognition, safe allogeneic transfer, and low risk of severe immune reactions. However, our understanding of NK cell immunology is limited and hindered by the lack of efficient genetic tools for NK cell research. The major bottleneck is that NK cells are highly sensitive to exogenous DNA such as plasmids and viral vectors, which are needed to introduce gene modifications of interest. Conventional DNA delivery approaches such as plasmid and synthetic DNA transfection and electroporation lead to rapid NK cell death. Retroviral and lentiviral transductions are feasible, but require high viral dosages and poses a risk of insertional mutagenesis. My lab is interested in overcoming these limitations. In this talk, I will present a robust CRISPR genome editing platform and recombinant viral vectors to study NK immunology, rewire the immunological circuitry and enhance the anti-cancer activities of NK cells.

**Education/Training**

Postdoc, University of California, Berkeley, USA

PhD in Microbiology, University of Illinois at Urbana-Champaign, USA

MS in Biochemistry, The Ohio State University, USA

BS in Biology, University of British Columbia, Canada

**Selected publications**

1. Huang RS, Lai MC, Shih HA and Lin S, "A robust, integrated platform for expansion and CRISPR-Cas9 genome editing of primary human natural killer cells", *J Exp Med*, 218(3):e20201529, (2021).
2. Huang KY, Lin MS, Kuo TC, Chen CL, Lin CC, Chou YC, Chao TL, Pang YH, Ka HC, Huang RS, Lin S, Chang SY and Yang PC, "Humanized COVID-19 decoy antibody effectively blocks viral entry and prevents SARS-CoV-2 infection", *EMBO Mol Med*, 13(1):e12828, (2021).
3. Huang RS, Shih HA, Lai MC, Chang YJ and Lin S, "Enhanced NK-92 Cytotoxicity by CRISPR Genome Engineering Using Cas9 Ribonucleoproteins", *Front Immunol*, 11:1008, (2020).
4. Schumann K\*, Lin S\*, Boyer E, Simeonov DR, Subramaniam M, Gate RE, Haliburton GE, Ye CJ, Bluestone JA, Doudna JA and Marson A, "Generation of knock-in primary human T cells using Cas9 ribonucleoproteins", *Proc Natl Acad Sci*, 112:10437-10442, (2015). \*Co-first author.
5. Lin S\*, Staahl B\* and Doudna JA, "Enhanced homology-directed human genome engineering by controlled timing of CRISPR/Cas9 delivery", *eLife*, 3:e04766, (2014). \*Co-first author.





**Dr. Ni-Chung Lee, M.D., Ph.D/ 李妮鍾**

- Attending Physician, Department of Medical Genetics, Department of Pediatrics, NTUH / 臺大醫院基因學部暨小兒部主治醫師
- Adjunct Professor, Genome and Systems Biology Degree Program, NTU / 臺灣大學基因體與系統生物學學位學程合聘教授

**Topic: Gene therapy with rAAV2-hAADC for patients with aromatic L-aminic acid decarboxylase deficiency**

**Abstract**

Aromatic L-amino acid decarboxylase (AADC) deficiency is a rare autosomal recessive disorder resulting in congenital deficiency of dopamine, serotonin, and downstream monoamine neurotransmitters. Patients with severe AADC deficiency present hypokinesia and dystonic since early infancy, followed by a characteristic movement disorder, oculogyric crisis (OGC). In a natural history study in Taiwan, patients usually stopped growing after one year of age, and most of patient did not develop any meaningful motor milestone, including head control. Three clinical trials have been conducted in Taiwan, employing a recombinant adeno-associated virus serotype 2 containing the human cDNA encoding the AADC enzyme (rAAV2-hAADC). Viral vector was administered bilaterally in the putamen with a total of  $1.8 \times 10^{11}$  vg or  $2.4 \times 10^{11}$  vg. Patients were assessed using the Peabody Developmental Motor Scales, 2nd Edition (PDMS-2) and 18F-DOPA-PET. We recently published the treatment outcomes of 26 patients. Increase in PDMS-2 score and PET signal were seen in all patients. Improvements in non-motor symptoms, including emotion instability, OGC, excessive sweating, and temperature instability, were also seen. Younger age at the time of treatment was a significant prognostic factor. The most commonly reported TEAEs across all three studies were pyrexia and dyskinesia. Post-gene transduction dyskinesia was transient and may be related to receptor hypersensitivity. In conclusion, this gene therapy is safe and highly effective. It is currently under commercialization by PTC therapeutics as a brand name of Eladocagene exuparvovec.

**Education**

- 2014 Ph.D., Graduate Institute of Clinical Medicine, College of Medicine, National Taiwan University
- 1999 M.D., Medical College, National Yang-Ming University

**Brief Chronology of Employment**

- 2021-now: Clinical Professor, Department of Pediatrics, National Taiwan University Hospital, Taipei, Taiwan
- Adjunct Professor, Genome and Systems Biology Degree Program, NTU
- 2005- now: Attending Physician, Department of Medical Genetics and Pediatrics, NTUH

**Awards**

- 2020 Taiwan Innovation Award
- 2020 Best VS of the year at NTUH
- 2019 Moderated Poster Award, 15th Asian and Oceanian Congress of Child Neurology, Kuala Lumpur, Malaysia
- 2015 Annual Best Reviewer Award, Journal of Formosa Medical Association, Taipei, Taiwan
- 2014 Young Investigator Award, 218th biannual meeting of Taiwan Pediatric Association. April





**Dr. Tatung Yuan 阮大同**

–2016.10-present, Chairman and Chief Executive Officer, TFBS Biosciences, Inc.

**Topic : One-stop Solution Supplier for Viral Vector**

**Abstract**

TFBS Bioscience Inc. was founded in 2016 as the first Contract Research Organization (CRO) providing biological testing in Taiwan. In 2019, TFBS has launched the first viral vector Contract Development and Manufacturing Organization (CDMO) facility in Taiwan, providing fully integrated end-to-end contract development and manufacturing services for the needs of clinical trials. Nowadays, with our manufacturing expertise and state-of-the-art facility, we will be the best partner offering clients a one-stop-shop solution for gene and cell therapy. This integrated approach saves time and resources while ensuring seamless coordination and consistent quality.

Dr. Ta Tung Yuan is currently President and CEO of TFBS Bioscience, Inc. Before founding TFBS in 2016, Dr. Yuan was Vice-President of Development Center of Biotechnology (DCB) in Taiwan, responsible for drug discovery and development. During his 12-year tenure at DCB, Dr. Yuan oversaw the R&D departments including Biologics and Chemistry teams with over 270 scientists. He has led research teams to develop antibody to treat human diseases including cancer, infectious diseases, and autoimmune diseases. He has been involved in licensing activities and research collaborations with academic institutes and companies. Prior to joining DCB in 2005, Dr. Yuan was a Research Scientist of the HCV Group at Roche Pharmaceutical in Palo Alto, California; and a Postdoctoral Scientist in the Gene Therapy Division of Berlex Bioscience in Richmond, California (now Bayer).

Dr. Yuan holds the degrees and completed the postdoctoral research as follows:

- University of Texas, Medical Branch in Galveston, postdoctoral research
- University of Pennsylvania, Ph.D. in Biochemistry
- National University of Taiwan, B.S. in Chemistry

**TFBS Biosciences Inc.**



**Address:** 3F., No.103, Ln. 169, Kangning St., Xizhi Dist., New Taipei City, Taiwan

**Web site:** [www.tfbsbio.com](http://www.tfbsbio.com)





**Dr. Karen Wen 溫國蘭**

- 2019.3 – present, Chief Strategy Officer (CSO), GenomeFrontier therapeutics, Inc.
- 2011-2018 President of Mycenax Biotech Inc.
- 2001-2011 Vice President and Manager, Department of Quality Assurance of Mycenax Biotech Inc.

**Topic : Virus-Free *Quantum Engine*™ for Next-Generation Gene Therapy**

**Abstract**

Chimeric antigen receptor (CAR) T cell therapy has made significant strides in the treatment of B-cell malignancies, but its application in treating solid tumors still poses significant challenges. Viral vectors are widely used to deliver transgenes into the immune cells for their nature characteristics. But they still have the limitations with high costs consideration and regulatory restrictions along with the limited payload capacity which may hinder design of the multiplexed gene of interest and the affect the therapeutic efficacy and safety. Non-viral methods, such as transposon/transposase and clustered regularly interspaced short palindromic repeats (CRISPR)/Cas systems, offer promising alternatives for stable transgene insertion in gene-modified cells. These methods offer the potential to increase accessibility and efficiency in the development and delivery of gene-modified cell therapies with the solutions of the challenges with low integration efficiency and potential genotoxicity. The proprietary non-viral *Quantum Engine*™ system, which produces tumor-specific, genetically reprogrammed therapeutic cell products, will be shared in this presentation and we believe the platforms have a significant impact on the advancement of gene therapy.

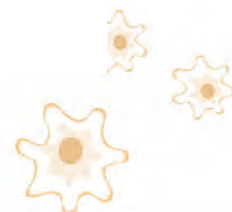
Dr. Karen Wen joined GenomeFrontier Therapeutics Inc. (GF), a startup company as the Chief Operation Officer and Chief Strategy Officer in 2019. Prior to GF, Dr. Wen is a pioneer in the field of biological product development specialized in process development and PIC/S GMP production including peptide, proteins, monoclonal antibodies, DNA vaccine and antibody-cell conjugate product and is expanding her professionals in the area of gene and cellular therapy. Karen is the co-founder and ex-CEO of Mycenax Biotech Inc., the first biological CDMO in Taiwan in 2001~2018.

**Experience**

- 2011-2018 President of Mycenax Biotech Inc.
- 2001-2011 Vice President and Manager, Department of Quality Assurance of Mycenax Biotech Inc.
- 1993-2000 Research Fellow of Development Center for Biotechnology, and head of research and development of ISO plant for IVD

**Education**

- 1988-1993 Ph. D., Department of Biomedicine, Old Dominion University and Eastern Virginia Medical School
- 1984-1988 B.S., Department of Chemistry, National Taiwan University





# Chau-Jen Lee seminar-BCRS



**林峯輝** 教授

台大醫學工程學研究所特聘教授



**薛敬和** 教授

Emeritus Distinguished Chair Professor, National Tsing Hua University.  
Contract Chair Professor, National Chung Hsing University.  
Founder & Honorary President, Biomaterials and Controlled Release Society  
of Taiwan, ROC

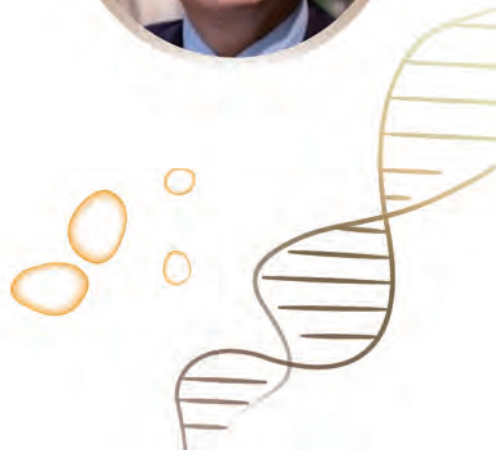


**鍾次文** 教授

國立陽明交通大學 醫學工程中心副主任/研究員

**Prof. San-Yuan Chen**

Chair Professor, Department of Materials Science and Engineering,  
National Yang Ming Chiao Tung University





## 林峯輝 台大醫學工程學研究所特聘教授

主要研究方向：生物醫學材料、再生醫學

個人簡介：

### Education

1. Dept. Mater. Sci., National Cheng-Kung University, Taiwan, Ph.D., 1985/09~1989/11, Institute of Materials Sciences, Biomaterials; 2. Dept. Mater. Sci., National Cheng-Kung University, Taiwan, Master, 1983/09~1985/06, Institute of Materials, Biomaterials; 3. Dept. Earth Sci., National Cheng-Kung University, Taiwan, Bachelor, 1976/10~1980/06, Dept Earth Science

### Experiences

1. 2022/09- Researcher, IBEN, National Health Research Institute (NHRI)
2. 2012/08-, Tenure Distinguish Prof., Inst. of Biomed.Eng., NTU
3. 2014/08-2022/09, Director, Institute of Biomed Eng, NHRI, Taiwan
4. 2008/08-2011/07, Director, Biomed.Eng. Div., NHRI
5. 2006/12-2009/12, Convivision, Dept Eng. & Appl Sci., NSC, Taiwan
6. 2005/08-2008/07, Director, Inst. Biomed. Eng., NTU
7. 2002/08-2005/07, Director, Dept. Biomener, BME Ded. Eng., NTU-Hospital, NTU

### Editorial Board Member (selected)

1. International Journal of Molecular Sciences, (SCI, IF 6.208), 2017-1103-,
2. Frontiers in Bioengineering and Biotechnology, (SCI, IF 6.064), 2018-0501-,
3. The Journal of APL Bio-engineering, (SCI, IF 6.578) 2020-01-

### Editor-in-chief

Journal of Biomedical Engineering, (SCI), 2007-2011

### Awards (selected)

2004、2010、2015 Outstanding Research Award, NSC & MOST (國科會傑出研究獎); 2008 Taiwan Medicine Society, Dr. Cong-Ming Tu Outstanding Research Award (杜聰明學術研究獎); 2013 Outstanding Professor or Engineering, Taiwan Society of Engineering (工程師學會傑出工程教授獎); 2013 Lecture Professor Award (2013年徐有庠基金會生技醫藥類組科技講座); 2019 Outstanding Research Achievement Award of NHRI (國家衛生研究院傑出研究成就獎); 2019 Outstanding Research Scholar of Dr. Zhao-ren Li Scholarship for Biomedical Engineering and Development Foundation (李昭仁教授生醫工程發展基金會研究學者獎); 2020 Gold Medal of Innotech & Invention Expo; 2020 Outstanding Research Achievement and Contribution Award of Wang Ming-Ning Memorial foundation(王民寧傑出研究及貢獻獎); 2022 Distinguished Alumni Award of National Cheng Kung University (成大傑出校友)

Over 410 SCI published since 1990; Discipline H-index 70; citations 14,228; World top 2% scientists consecutive 2 years (by Stanford University, USA); Ranking 32 in Materials Sciences in Taiwan.

## Speaker Name

**Prof. Ging-Ho Hsiue (薛敬和)**

## Current Position

Emeritus Distinguished Chair Professor, National Tsing Hua University.  
Contract Chair Professor, National Chung Hsing University.  
Founder & Honorary President, Biomaterials and Controlled Release Society of Taiwan, ROC



## Education & training

B.S. Nippon University 1965 (Industrial Chemistry)  
M.S Tokyo University 1967 (Polymer Synthesis)  
Ph.D. Tohoku University 1972 (Polymer Science)

## Professional experience

### During National Tsing Hua University:

Associate Professor, Dept. of Industrial Chemistry (1973-1979); Professor, Dept. of Chemical Engineering (1979-2003); Director, Biomedical Engineering Center (2000); Tsing Hua Chair Professor (2003-2006); Tsing Hua Distinguished Chair Professor (2006-2009); Founder & Director, Center for Biomedical Science and Engineering (2007-2009); Emeritus Tsing Hua Distinguished Chair Professor (No.1, 2009-Present) Adjunct Professor, Inst. Medical Eng., National Yang Ming Medical College (1984-1987); Visiting Professor, Yuan Ze Institute of Technology (1991-1993)

### During National Chung Hsing University:

Founder, Chairman & Professor, Dept. of Chemical Engineering (1993-1997); Dean, College of Engineering, National Chung Hsing University (2000-2002); Vice President (2000-2001); Acting President (Feb. 2001-Nov. 2001); Founder & Director, Biotechnology R&D Center (Apr. 2001- Jul. 2001); Contract Chair Professor (2010-Present)

### Visiting Professors:

- Dept. of Macromolecule Science, Case Western Reserve University, U.S.A. (1983-1984)
- Department of Material Systems Engineering, Tokyo University of Agriculture and Technology, Japan (Jul/Aug 1989)
- Institute of Organic Chemistry, Mainz University, Germany (Jan/Feb 1991-Jul / Aug 1991)
- Tokyo University of Science (2011 Feb/Mar) Chair Professors

### Chair Professors ( 講座教授 ):

- Department of Chemical Engineering/ R&D Center for Membrane Technology, Chung Yaun University (2009-2015)
  - Chung Shan Medical University (2009-2012)
  - National Taipei University of Technology (2011-2015)
- Vice Coordinator and Member of Section of Basic Sciences and Advanced Technologies, Advisory Committee of Sciences, Office of the President (2001-2006)  
Coordinator, Planning Project of National Hsinchu Biomedical Science Park ( 新竹生物醫學園區 ) (2007-2009)

## Honor/Awards

- Award of Society of Chinese Institute of Chemical Engineering (1985)
- Award of Distinguished Research Professor (1986-1996) ( 國科會傑出研究獎 5 次 ); Merit Research Fellow (1996-2002) ( 國科會特約研究員 2 次 ); Distinguished Research Fellow Award of National Science Council (2003) ( 傑出特約研究員獎 )
- Chung-San Award for Academic Research (1990) ( 中山學術著作獎 )
- Award of Distinguished Engineering Professor from Chin. Inst. Eng. Soc.(1992) ( 中國工程師學會傑出教授獎 )
- Advanced Outstanding Fellow, Novel Prize Laureate Lee Yuan Tze Foundation.(1996-2002) ( 傑出人才講座 )





### Honor/Awards

- Distinguished Academic Excellence Award, Ministry of Education, ROC (1997) (教育部學術獎)
- APAM Member, Asia Pacific Academy of Materials (1997-present)
- Outstanding Achievement Award from Hou Chin-Dwei Foundation (1999) (傑出榮譽獎)
- IUPAC Member of Commission on Macromolecular Nomenclature (1999-2000)
- IUPAC Member of Commission on Functional Polymers (2000-2001)
- IUPAC Fellow, International Union Pure and Applied Chemistry (2002)
- 「International Award」 of Japan Polymer Society (2003) (日本高分子學會「國際賞」)
- Tsing Hua Chair Professor of Engineering (2003-2005) (清華工程講座教授)
- IUSBSE Fellow, International Union of Societies for Biomaterials Sci. and Engi. (2008 – present)
- Lifetime Achievement Award, The Polymer Society, Taiwan, ROC (2005) (高分子學會終身成就獎)
- National Chair Professor, Ministry of Education, R.O.C. (2006-2009) (教育部國家講座)
- Tsing Hua Distinguished Chair Professor (2006-2009) (清華特聘講座教授)
- Award for Distinguished Contribution in Advancement of Biomaterials Science, Japanese Society for Biomaterials, 2012. (日本生物醫學材料學會「科學功績賞」)

### Academic Activities:

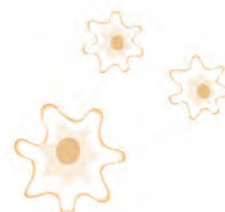
- Member, The Society of Polymer Science, Japan (1964- present)
- APAM Member, Asia Pacific Academy of Materials (1997-present)
- Organizer and Chief Editor of IUPAC International Polymer Symposium on Functional and High Performance Polymers (Taipei 1994)
- Symposium Editor, Pure and Applied Chemistry, 67(12), 1951-2046, “IUPAC International Symposium on Functional and High Performance Polymers (Taipei 1994)
- Organizer and Chairman of ROC-Japan Symposium on Polymer Science for 3 times (Hsinchu 1990, Tokyo 1991, Tokyo 1993)
- Organizer and Chairman of R.O.C. – Japan Joint Symposium on Biomaterials/Artificial Organs and Controlled Release for 3 times (1998, 2000, 2001)
- Organizer and Chairman of Global Chinese Symposium/Workshop on Biomaterials and Controlled Release, Taipei (1999)
- Organizer and Chairperson, Polymer Chemistry Session, The 8th Asian Chemical Congress, Taipei (1999)
- Organizer and Chairperson, Y2K Prospective Developments in Global Pharmaceutical Industry Workshop, Hsinchu (2000)
- Organizer and Chairman of Y2K R.O.C. - Japan Joint Symposium/Workshop on Biomaterials and Artificial Organs, Hsinchu (2000)
- Organizer and Chairman of 2001 R.O.C. - Japan Joint Symposium on Biomaterials and Controlled Release, Taipei (2001)
- Organizer and Chairman, The 25th R.O.C. Polymer Symposium, Taichung (2002)
- Organizer and Chairman, 3rd Asian International Symposium on Biomaterials and Drug Delivery Systems, Taipei (2002)
- Organizer and Chairman, International Workshop on Biomaterials and Drug Delivery System, Taipei (April 16, 2002)
- Organizer and Chairman, Global Biotechnology/Pharmaceutical Research and Development — Current Challenges and Opportunities, Hsinchu (Sept. 29/30, 2002)
- Mini Symposium Chairman and Organizer, “Advanced Smart Materials for Gene Delivery”, 7th World Biomaterials Congress, Sydney, Australia. (2004).
- President, Taiwan Chapter, International Tissue Engineering Society, Asia-Pacific Regional Leaders Meeting, Seoul, Korea. (2005)
- Organizer and Chairman Annual Conference of Tissue Engineering and Regenerative Medicine International Society – Asia Pacific Region (TERMIS-AP) (2008)

### Research Interests:

Functional Polymers, Polymeric Membranes, Biosensors, Biomaterials, Drug Delivery System, Tissue Engineering and Regenerative Medicine, Nanotechnology, Electro-Optical Polymers, etc.

### Publications:

Over 300 Original Articles, 32 Patents and 20 Books (Design and Synthesis of Polymers, Polymer Chemistry, Laboratory Preparation for Polymer Chemistry, Life Sciences and Engineering, Introduction to Biomedical Engineering, Advanced Nanomaterials, etc.



## 鍾次文 教授



### 現職

國立陽明交通大學 醫學工程中心副主任 / 研究員 (111/02- )

### 學歷

- Univ. of Oklahoma, USA 化工 / 材料所博士 (1987.01 - 1990.09)
- 清大化工所 ; 成大化工系經歷
- 國立陽明大學 生物醫學工程系 教授 (102.08~111/01)
- Rice University, USA Department of Bioengineering 訪問教授 (2005.07 - 2005.09)
- Univ. of Oklahoma, 醫學工程研究中心 - 資深科學家 (2005).

### 研究簡介

蠶絲絲心蛋白材料的應用：

A. 蠶絲絲心蛋白材料在心臟修復之應用 - 受傷心肌細胞修復：1. 製備絲心蛋白為主配合 HA 及甲殼素之生醫材料對於受傷心肌修復的綴補片 (SF/HA cardiac patch)- 促進心肌修復，血管增生 .. 等動物實驗結果；2. 絲心蛋白的結晶行為可引導球型幹細胞成細胞團 (micro-tissues) 形成之研究與成果 - 體外培養形成並從促進傷口癒合之體外 scratch migration assay 結果證實；3. 絲心蛋白 (含水膠) 可成功轉化靜態的心肌細胞為可導電性之規律跳動的心竇結 (SA node) (或心房組織) 之細胞 - 以生醫材料達到過去以 human stem cell 或基因轉殖的製療效果，具備大量生產的可行性。B. 絲心蛋白材料配合其他材料 (聚多巴胺為主) 奈米粒子及水膠在藥物制放的應用 - 發展具多功能性 (光熱感應，抗氧化，據黏著性...等) 絲心蛋白材料為主的應用。上述之研究成果發表於 Nature Biomedical Engineering, Biomaterials, Carbohydrate Polymers, Int. J. Nanomedicine, Biomaterials Science, ...等期刊及國內外專利。

### 榮譽

1. 2014 AIMBE Fellow ( 院士 )- American Institute for Medical and Biological Engineering
2. 2016 IUSBSE Fellow ( 會士 )- Inter. Union of Societies for Biomaterials Science and Engineering
3. 2012,2016 年李昭仁教授生醫工程發展基金會 -- 生醫工程獎及研究學者獎
4. 2021-02, "Molecule" Journal, Co-Guest Editor, MDPI publications.; 2021-12 "Pharmaceutics" ,Guest Editor, MDPI publications. (SCI)
5. 2021-08, 陽明交通大學陽明校區 110 年第 2 季重要論文及 2021-10 陽明交通大學學校首頁 (NYCU E-News-13 期); Int. J. Biol. Macro.; 2022-10, 陽明交通大學陽明校區 110 年第 3 季重要論文及 2021-12 陽明交通大學學校首頁 (NYCU E-News-17), Nature Biomedical Engineering, 2022. ,,
6. 科技部「延攬及留住大專校院特殊優秀人才實施彈性薪資方案」獎助；陽明大學校 / 院級 (105~112 年度) 獎助。

### 論文著作 (Selected papers)

1. Yu-Feng Hu\*, An-Sheng Lee, ... Tze-Wen Chung\*, et al., Nature Biomedical Engineering, 2022, Vol. 6, 421-434. (SCI)
2. Tze-Wen Chung\*, Yu-Chang Tyan, Sheng-Wei Lin, et al., Int. J. Biol. Macro. 2021, Vol. 185, 122-133. (SCI)
3. Pei-Chi Lee, Bo-Shen Zan, ... Tze-Wen Chung\*, Int. J. Nanomedicine, 2019, 14, 1533-1549. (one of the most highly cited paper in the last 5 years), (SCI).



### Speaker Name

**San-Yuan Chen**

### Current Position

Chair Professor, Department of Materials Science and Engineering,  
National Yang Ming Chiao Tung University

### Education & training

- Ph.D.: Department of Mater. Sci. and Eng. University of Michigan
- M.S. : Institute of Materials Science, National Sun Yat-Sen University
- B.S. : National Taiwan University

### Professional experience

- Chairman, Department of Materials Science and Engineering, NCTU (2012~ 2014)
- Director, Institute of Nanotechnology, NCTU. (2012~ 2014)
- Chair Professor, Department of Materials Science and Engineering, NYCU (2017~)

### Honor/Awards

- The Academic Award, Ministry of Education (2021)
- National Innovation Award for Biotechnology and Medicine Industry (2014, 2018, 2020)
- TECO Technology Foundation Award (2018)
- Ho Chin Tui Outstanding Research Award (2018)
- Academician, Asia-Pacific Academy of Materials (2017)
- Fellow, International Union of Societies for Biomaterials Science and Engineering (2016)
- Ministry of Science and Technology, Outstanding Research Award, Taiwan (2009, 2014, 2017)
- Y-Z HSU Bio-medical Scientific/Technology Chair Professor (2014)

### Biography Brief

Prof. San-Yuan is a Chair Professor of Department of Materials Science and Engineering in NCTU. Currently, Prof. Chen has focused the major research on multi-functional nanomedicine, nanomaterials design with controllable drug/gene delivery system, and biomedical electronic sensor and implant devices. Up to now, Prof. Chen has published over 285 peer-reviewed papers and also have received a total citation of over 15500 times and an h-index of 70.

### Selected Publications

1. Chun-Kuo Peng, Yu-Chang Lin, Yu-Cheng Huang, Chung-Li Dong, Jian-Feng Li, San-Yuan Chen\*, Yan-Gu Lin\*, Nature Communications, 14(1), 529 (Feb. 2023)
2. Yen-Ho Lai, Hung-Wei Cheng, Long-Bin Jeng, Chih-Sheng Chiang\*, Woei-Cherng Shyu\* and San-Yuan Chen\*, Nature Communications, 14(1), 285 (Jan. 2023)
3. Min-Yu Chiang, Hung-Wei Cheng, Yu-Chih Lo, Shwu-Jen Chang, You-Yin Chen\*, Wei-Chen Huang, San-Yuan Chen\*, Biomaterials, 271, 120762 (2021)
4. Yen-Han Lai, Yung-Hsin Chen, Arnab Pal, Syun-Hong Chou, Shwu-Jen Chang, E-Wen Huang, Zong-Hong Lin\*, San-Yuan Chen\*, Nano Energy, 90, 106545 (2021)
5. Chih-Sheng Chiang, Yen-Ho-Lai, Hung-Wei Cheng, Chia-Hung Hsieh, Woei-Cherng Shyu\*, and San-Yuan Chen\*, Nature Nanotechnology, 13(8),746 (August 2018)





# Cell Therapy Center - TMUH

SEP 02, 2023 / Sat. 13:00-17:30 淡水福容大飯店 吉祥廳

Time	Topic	Speaker	Moderator
12:30-13:00	Registration Office on 2F		
13:00-13:05	Opening Remarks	<b>Chun-Ming Shih</b> Superintendent, Taipei Medical University	
<b>Session 1 : Cancer Cell Therapy</b>			
13:05-13:30		<b>Kun-San Clifford Chao</b> M.D., Ph.D. Vice President, China Medical University	<b>Jeng-Fong Chiou M.D., Ph.D.</b> Professor, Taipei Medical University
13:30-13:35	Q&A session		
13:35-14:00		<b>Leo David Wang, M.D. Ph.D.</b> Assistant Professor City of Hope, USA	<b>James S. Miser, M.D., Ph.D.</b> City of Hope, USA
14:00-14:05	Q&A session		
14:05-14:30		<b>Yen-Ling Chiu, MD. PhD.</b> Director, Department of Medical Research Far Eastern Memorial Hospital	<b>Long-Sheng Lu, M.D., Ph.D.</b> Director, Center for Cell Therapy Taipei Medical University Hospital
14:30-14:35	Q&A session		
14:35-14:50	Tea Break		
<b>Session 2 : Regenerative Cell Therapy</b>			
14:50-15:15		<b>Yen-Wen Liu, MD. PhD.</b> Director, Center for Cell Therapy National Cheng Kung University Hospital	<b>Chun-Yao Huang, M.D., Ph.D.</b> Director, Internal Medicine Department Taipei Medical University Hospital
15:15-15:20	Q&A session		
15:20-15:45		<b>David J. Lundy</b> Assistant Professor, Taipei Medical University	<b>Ching-Ho Hsieh, M.D., Ph.D.</b> Division Chief, Academia Sinica
15:45-15:50	Q&A session		
15:50-16:15		<b>Yen-Ling Chiu, MD. PhD.</b> Director, Department of Medical Research Far Eastern Memorial Hospital	<b>Long-Sheng Lu, M.D., Ph.D.</b> Director, Center for Cell Therapy Taipei Medical University Hospital
16:15-16:20	Q&A session		
<b>Session 3 : Precision Medicine</b>			
16:20-16:45		<b>Stacy W. Gray, M.D., A.M.</b> Professor and Chief City of Hope, USA	<b>Teh-Ying Chou, M.D., Ph.D.</b> Vice President, Taipei Medical University Hospital
16:45-16:50	Q&A session		
16:50-17:15		<b>Yen-Lin Liu, MD, PhD.</b> Vice Director, Center for Cell Therapy Taipei Medical University Hospital	<b>Mu-Lii Liang, MD. PhD</b> Assistant Professor MacKay Medical College
17:15-17:20	Q&A session		
17:20-17:30	Final discussion time	Moderator and All Distinguished Guests	



臺北醫學大學附設醫院  
TAIPEI MEDICAL UNIVERSITY HOSPITAL





## Cellular Horizons: Expanding the Frontiers of Cancer Therapy and Regeneration

### 細胞視野：拓展癌症治療和再生新境界

細胞治療是當今醫學領域引人矚目的前瞻性療法，尤其在癌症治療和組織再生方面具有巨大潛力。本次研討會上，我們將全面探究細胞療法在癌症治療中的各種應用，從免疫療法到CAR-T細胞，剖析這些創新療法對於攻克癌症的重大貢獻，同時探討其未來發展的潛力，了解這些革命性療法如何為癌症患者帶來新希望，以及對於癌症治療領域的深遠影響。此外，我們將聚焦細胞再生的奧妙，探索細胞醫學領域的前瞻性發展，並強調現代科技在癌症治療和組織再生方面的突破。

我們將帶大家親身感受細胞治療及再生技術的魅力，見證這些技術為未來醫療領域開創全新的前景、對於人類健康帶來更廣闊的可能性。無論您是醫學科技的專家、醫療專業人士，還是只是對細胞生物學領域感到好奇，我們都熱烈歡迎您參與這一趟探索之旅，共同探究細胞學的奧秘，期待為人類健康和未來帶來巨大貢獻。

Cellular therapy is a cutting-edge and forward-looking approach in the field of medicine, particularly with immense potential in cancer treatment and tissue regeneration. In this symposium, we will comprehensively explore the various applications of cellular therapies in cancer treatment, ranging from immunotherapy to CAR-T cells. We will analyze the significant contributions of these innovative therapies in combating cancer, while also discussing their future development potential and the profound impact they have on the field of cancer treatment. Additionally, we will focus on the wonders of cellular regeneration, exploring the forward-looking developments in the field of cellular medicine, with a special emphasis on breakthroughs in cancer treatment and tissue regeneration using modern technologies.

During this event, we will lead the audience to experience firsthand the allure of cellular therapy and regenerative techniques, witnessing the potential of these technologies to open new horizons in future medical practices and bring broader possibilities for human health. Whether you are an expert in medical technology, a healthcare professional, or simply curious about the realm of cellular biology, we warmly welcome you to participate in this exploration journey. We look forward to your involvement as we delve into the mysteries of cellular science together, and collectively anticipate its significant contributions to human health and the future.

# ISOMRM Satellite Conference

## TMUH

### Cellular Horizons: Expanding the Frontiers of Cancer Therapy and Regeneration



Leo David Wang, M.D., Ph.D.  
Assistant Professor City of Hope, USA



Stacy W. Gray, M.D., A.M.  
Professor and Chief City of Hope, USA





# BCRS Industry-Academia Conference

Date: September 2, 2023 (Saturday)

Location: Fullon Hotel Tamsui, Ruyi Room (2F)



Dr. Kuo-Chi Chiu

Additive Manufacturing on Medical Device Applications



Dr. Chun-Li Lin

Development of a 3D printed medical implant with mechanically macro structural topology and micro bionic lattices based on the FDA regulation functional testing



Prof. Yi-Wen Chen

Lung-cancer spheroid development for clinical precision therapeutics



### Speaker Name

**Chun-Li Lin**

### Current Position

Distinguish Professor, Dean, School of Biomedical Engineering & Science,  
National Yang Ming Chiao Tung University, Taiwan

### Education & training

- PhD: Institute of Biomedical Engineering, National Cheng Kung University, Taiwan
- MS: Institute of Biomedical Engineering, National Cheng Kung University, Taiwan

### Professional experience

- Director, Department of Biomedical Engineering, National Yang-Ming Chiao Tung University, Taiwan.
- Dean of the Research & Development Department, National Yang-Ming University, Taiwan.
- Director of Industry and Education Operations Center, National Yang-Ming University, Taiwan.
- Professor/Associate Professor, Department of Biomedical Engineering, National Yang-Ming University, Taiwan.
- Visiting Scholar, Minnesota Dental Research Center of Biomaterial & Biomechanics, University of Minnesota, USA.

### Honor/Awards

- National Innovation Award (Development of tongue pressure device/Development of orbital bone plate/Clinical application of orbital bone plate) (Taiwan) (2020, 2021, 2022)
- Special Award for Industry-University Cooperation Program of Ministry of Science and Technology (Taiwan) (2022)
- GSIC Global Student Innovation Assistive Device Competition MERIT Awards (2020)

### Biography Brief

Dr. Chun-Li Lin joined the Department of Biomedical Engineering at National Yang-Ming University, Taiwan, in August 2010. Dr. Lin's research interests included Dental/Craniofacial Orthopedic Biomechanics and Medical Implant Design & Testing. He worked closely with hospitals to address clinical unmet needs and has led projects focused on Dental/Orthopedic/Plastic Implants designs and computer simulation to the one-stop study of manufacturing, functional testing and clinical applications. His laboratory has assisted more than 30 manufacturers to perform more than 300 implant functional tests and obtain FDA approval.

### Selected Publications

1. P.L. Lai, C.M. Chang, S.F. Huang, P.H. Liu, C.L. Lin\*, "Design a novel 3D printed oblique lumbar interbody fusion cage with embedded fixation screws and bionic lattice structure for patients with osteoporosis", *International Journal of Bioprinting*, 9(5), 445-458, 2023. (SCI, IF=7.422)
2. Y.T. Wang, C.M. Chang, P.H. Liu, C.L. Lin\*, "Feasibility evaluation of a new lattice for porous surface design in additive manufacturing medical implants under interfacial tensile bonded testing", *Additive Manufacturing*, 66(25): 103455, 2023. (SCI, IF=11.632)
3. C.L. Lin\*, Y.T. Wang, C.M. Chang, C.H. Wu, W.H. Tsai, "Design Criteria for Patient-specific Mandibular Continuity Defect Reconstructed Implant with Lightweight Structure using Weighted Topology Optimization and Validated with Biomechanical Fatigue Testing." *Int J Bioprinting*, Dec 10;8(1):437, 2021 (SCI, IF=7.422)





### Speaker Name

**Kuo-Chi Chiu**

### Current Position

Senior Director, Digital-Can Tech, Taiwan

### Education & training

- Ph. D.: National Chiao Tung University

### Professional experience

- Engineer/Manager: Industry Technology Research Institute (1994.10~2015.08)
- Senior Director: Gredmann Group (2015.08~2017.07)
- Senior Director: Digital-Can Tech (2017.07~)

### Biography Brief

Dr. Kuo-Chi Chiu worked at Industrial Technology Research Institute (ITRI) for more than 20 years. His study included different technologies of brushless motor, optical storage, lithography, IP, biophotonics, medical device, etc. During that time, he represented ITRI many times to participate in international meetings to create digital versatile disc (DVD) specifications, and established the only one Class-A DVD verification laboratory in Taiwan. This lab helped a lot of Taiwan DVD manufacturers their products comply with requirements of DVD specifications before going into the market.

Then he joined Gredmann Group as a sales senior director to sell equipment and materials for various industrial applications. From scratch, he set up a new business department and established a sales team. Besides, he also formulated marketing strategies for business promotion, and developed the military industry, additive manufacturing (AM) material market, and worldwide suppliers for the group.

After that, he entered Digital-Can Tech (DCT) to help establish a metal AM trial run factory. This factory is the largest and complete one in Taiwan and equips with professional printers to service customers for various applications such as medical devices, aerospace, and so on. It has passed ISO13485, ISO9001, AS9100D, TUV and Nadcap international quality certification. In addition, he helped DCT obtain the qualification supplier certification of Aerospace Industrial Development Corporation (AIDC) and National Chung-Shan Institute of Science and Technology (NCSIST) to produce some AM components used in Taiwan's fifth generation advanced jet trainer. He has now certificated more than 30 patents, and published more than 60 papers.

### Selected Publications

1. T.W.Liu, T.L.Cheng, K.C.Chiu, J.K.Chen, "Permeability of Additive Manufactured Cellular Structures—A Parametric Study on 17-4 PH Steels, Inconel 718, and Ti-6Al-4V Alloys", *J. Manuf. Mater. Process.*, (2022), 6(5), 114. (<https://doi.org/10.3390/jmmp6050114>)
2. A.Dhinakar, B.E.Li, Y.C.Chang, K.C.Chiu and J.K.Chen\*, "Air Permeability of Maraging Steel Cellular Parts Made by Selective Laser Melting", *Materials*, (2021), 14, 3118, <https://doi.org/10.3390/ma14113118>)



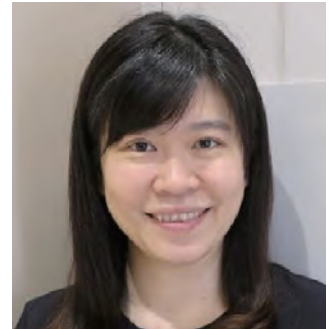


### Speaker Name

**Yi-Wen Chen**

### Current Position

Professor, Graduate Institute of Clinical Medical Science, China Medical University, Taiwan  
Deputy Director, xD for Medicine Center, China Medical University Hospital, Taiwan



### Education & training

- Ph. D.: Ph. D. in Industrial and Manufacturing Engineering (Nanomaterial Group) Florida State University, USA
- M.S.: M.S. in Industrial and Manufacturing Engineering (Nanomaterial Group) Florida State University, USA
- B.S.: B.S. in Industrial Engineering and Enterprise Information, Tunghai University, Taiwan

### Professional experience

- Assistant Professor, Industrial Engineering & Enterprise Information Department, Tunghai University
- Associated Professor, Graduate Institute of Clinical Medical Science, China Medical University
- Researcher, Industrial Technology Research Institute, Green Energy & Environment Research Lab

### Honor/Awards

- International Innovation Award/2022
- National Innovation Award/2022
- Named in the world's top 2% of Scientists List by Stanford University/2021
- NSTC Future Tech Award/2021

### Biography Brief

Prof. YiWen Chen is the Deputy Director of xD for Medicine Center at China Medical University (CMU) in Taiwan, whom is designated to lead a research team of bio-printing for medicine and is responsible for the development of an integrated, campus-wide, clinical-engaged 3D Printing medical innovation strategy and the execution of that strategy.

Working closely with a team of professionals in clinical innovation, business incubation, intellectual properties, technology transfer as well as engineering and science interdisciplinary for bio-printing medical researches and applications, her team has demonstrated several advanced and pioneer investigations and engaged them in whole healthcare system. She serves as a Supervisor on the Additive Manufacturing Association of Taiwan (AMAT) and has consults several enterprises in 3D printing medicine fields. She is an enthusiastic and results-driven researcher and inventor who continuously demonstrate a high level of commitment and management acumen. Many works from her team have been recognized by scientific publications in high impact journals/media/conferences.

### Selected Publications

1. M. Y. Shie, H. Y. Fang, K. W. Kan, C. C. Ho, C. Y. Tu, P. C. Lee, P. R. Hsueh, C. H. Chen, A. K. Lee, N. Tien, J. X. Chen, Y. C. Shen, J. G. Chang, Y. F. Shen, T. J. Lin, B. Wang, M. C. Hung, D. Y. Cho, Y. W. Chen, *Adv. Sci.* 2023, 10, 2206603.
2. T. L. Lin, Y. H. Lin, Alvin K. X. Lee, T. Y Kuo, C. Y. Chen, K. H. Chen, Y. T. Chou, Y. W. Chen, M. Y. Shie, *Mater. Today Bio.* 2023, 22, 100728



# Luncheon Meeting

**Date:** Sep. 1st, 2023

**Time:** 12:00-13:00

**Venue:** Lotus Room



**Topic:** Micro-environment matters-How physiological oxygen impacts your cell products

**Speaker:** Kalucia Tsai 蔡慈予

**Title:** Business Manager, Asia Pacific, The Baker Company



**騰達行**

UNIMED

**Topic:** Celvivo System- Stress free 3DTM cell culture technology

**Speaker:** Nora Yu

**Title:** Product specialist, Unimed healthcare INC.

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**Date:** Sep. 2nd, 2023

**Time:** 12:00-13:00

**Venue:** Lotus Room



**Topic:** Introduction to the precious instrument service of the Institute of Biomedical Engineering & Nanomedicine, National Health Research Institutes

**Speaker:** Li-Wei Kuo, Ph.D.

**Title:** Associate Investigator, Institute of Biomedical Engineering and Nanomedicine, National Health Research Institutes, Miaoli, Taiwan



**NoetherTech™**

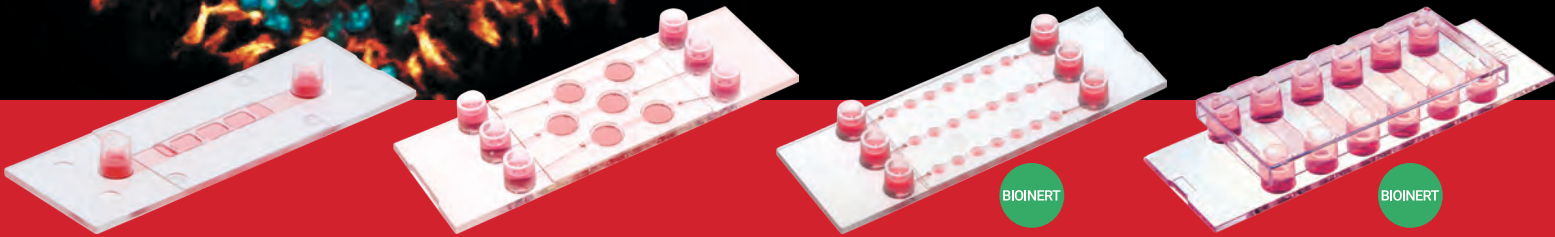
**Topic:** From Minimal Invasive to Non-invasive – EMBP and Neurorestoration

**Speaker:** Michael Huang

**Title:** Director of CHIEN-PO Clinic/Chief Medical Officer of Noether Sciences and Technologies Inc.

# 3D CELL CULTURE UNDER FLOW

## 流體環境3D細胞培養玻片



**μ-Slide I Luer 3D**

Uncoated, Cat# IB-87171

**μ-Slide III 3D Perfusion**

Uncoated, Cat# IB-80371

**μ-Slide Spheroid Perfusion**

Bioinert, Cat# IB-80350

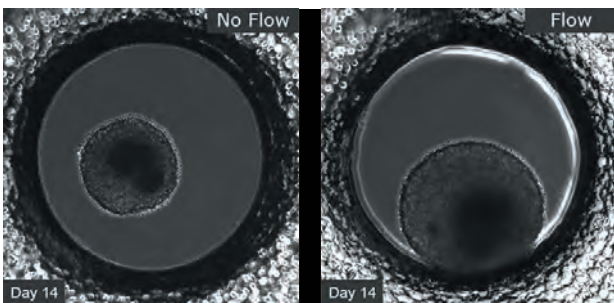
**μ-Slide VI 0.4 Bioinert**

Bioinert, Cat# IB-80600

- 德國工藝製造，可連接幫浦系統 (如 ibidi pump system) 進行流體環境 3D 細胞培養實驗
- Bioinert 底部經 Polyol hydrogel 特殊處理，使細胞完全無法貼附，特別適合球狀體細胞 (spheroids)、類器官 (organoids) 的長時間培養與觀測
- μ-Slide I Luer 3D 與 μ-Slide III 3D Perfusion 的培養槽構造可供注入 gel matrix (例如 Matrigel®, collagen) 形成細胞基質膠層，營造 3D 細胞培養環境
- 低自發螢光材質製成，底部厚度符合 #1.5 蓋玻片，可於倒立式顯微鏡上直接觀察，影像清晰易觀測



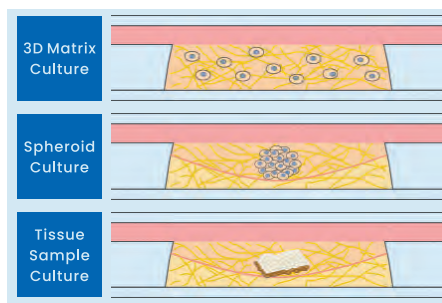
詳細說明



在流體環境中培養球狀體細胞，可以大幅提高細胞生長速率。

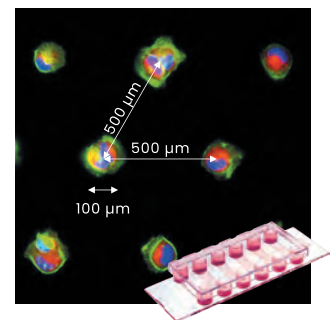
L929 fibroblasts show spheroid formation in the **μ-Slide Spheroid Perfusion, Bioinert**, days 1-14, seeding concentration  $5 \times 10^5$  single cells/ml.

**Left:** no perfusion, medium exchange every second day. **Right:** perfusion with the ibidi Pump System, 0.75 ml/min. Phase contrast microscopy, 10x objective lens, well diameter 800 μm.



**μ-Slide I Luer 3D 與 μ-Slide III 3D**

**Perfusion** 的培養槽注入 gel matrix 以後，可適用於單細胞培養、球狀體細胞或組織 3D 培養、細胞基質研究開發...等**多種應用**。



**μ-Slide VI 0.4 μ-Pattern**

**RGD** (Cat# IB-83602) 是在 μ-Slide VI 0.4 Bioinert 產品底部再共價鍵結上源自於 Fibronectin 結合區域的 RGD 三胜肽，使其形成正圓形的細胞附著生長區域 (彼此間距 500 μm)，讓球狀體細胞可以間隔排列生長於玻片上。





Ceno Biologics  
*Technology Enhancing Life*



# Amnipatch®

原生基質膜

Amnipatch® 為乾燥保存的生物基質膜，可幫助促進軟組織再生修復、減少疤痕組織生成及減輕發炎反應。



臺灣骨庫  
Taiwan Bone Bank

地址：台中市北屯區文心路四段696號8F-2  
電話：(04)22376616



# PSI-HTO

精準保膝 矯正新技術

- ✓ 力線確實轉移
- ✓ 手術時間短
- ✓ HA/PRP有效加成
- ✓ 精準矯正
- ✓ 內側關節腔壓力釋放



Total solution for OA knee



衛福部核准之

## 細胞基質PRP

### 利奇關節注射液

優於PRP血小板 遠勝HA玻尿酸

- ✓ 第3等級醫療器材
- ✓ 瑞士原裝進口



# 再生醫學材料 開發核心技術

## 如何快速且穩定地完成生醫材料？



### Exosome-Depleted UltraGRO™-PURE GI

- 去除 hPL 中95%以上奈米顆粒，避免內源性 Exosomes 干擾
- 適合 hMSC-derived Exosomes 生產&收集



無異種  
來源



### Vivaspin® Turbo

吸附低，回收率高  
適用於多數蛋白質樣品



有效  
蛋白濃縮



### Rotary Cell Culture System

## 先研究再開發



- NASA 專利培養技術
- 低剪切力且不含破壞性壓力



### Chromogenic Endotoxin Testing

內毒素  
管制監控



適用蛋白含量高、  
內含複合物較多的樣品

# 更多訊息請洽當區業務



### 峇祥股份有限公司

台北：02-27851156  
台中：04-24710255

新竹：03-5307592  
高雄：07-3431735

台南：06-2071392  
info@thco.com.tw



官網



LINE@

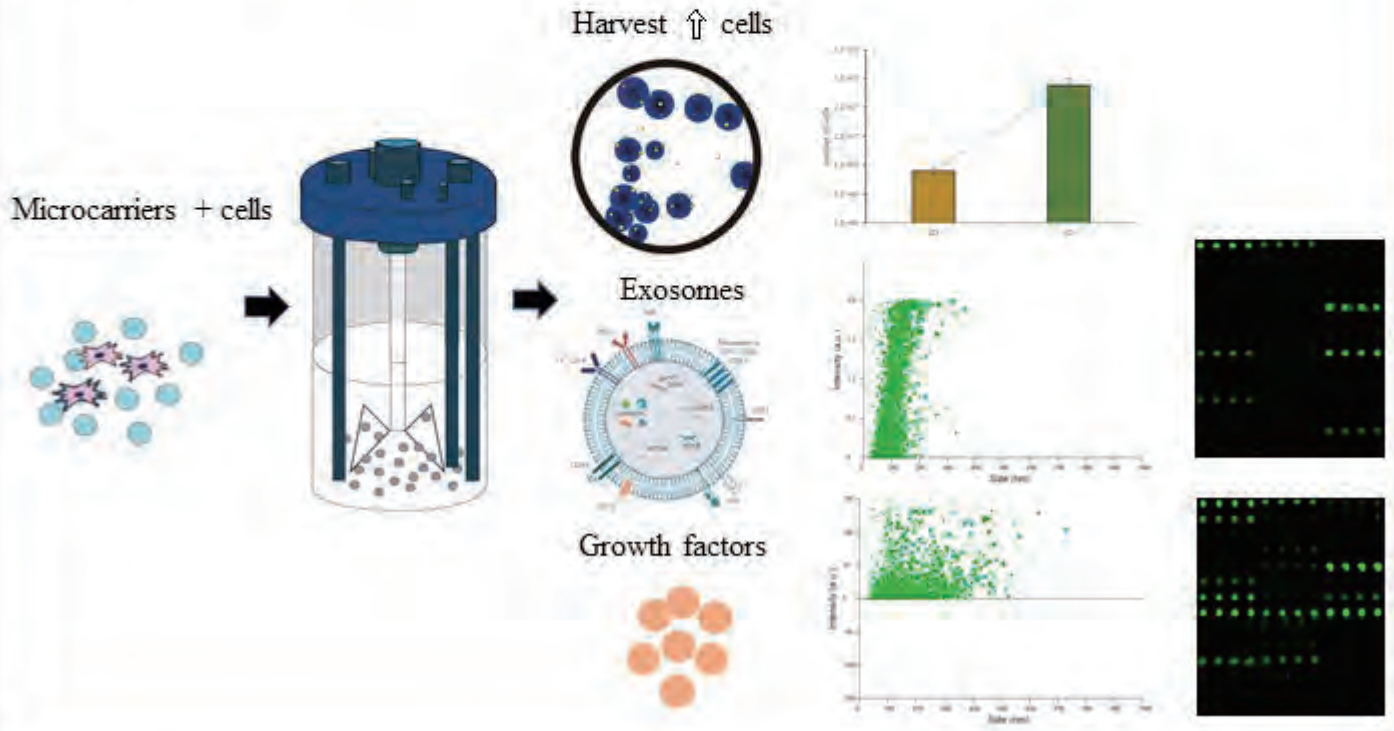


FB

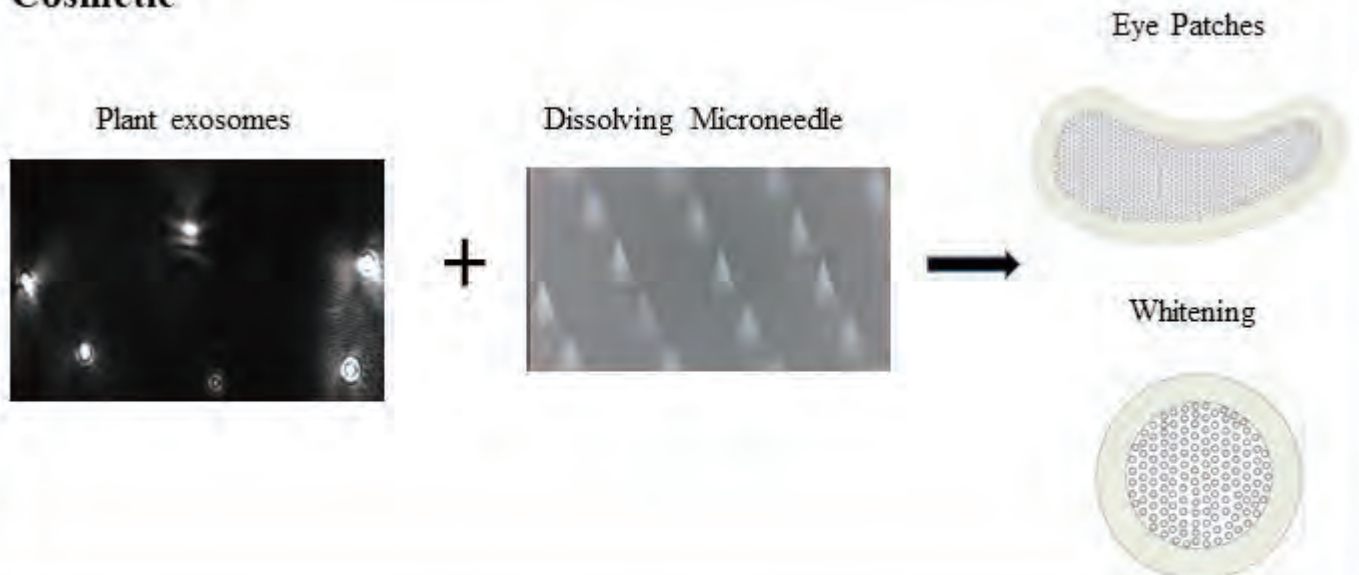




## Microcarrier Culture



## Cosmetic



Address: 10 F., No. 1492-6, Chunri Rd., Bianzhou Vil., Taoyuan Dist., Taoyuan City 330022, Taiwan (R.O.C.)

Email: jieyi0239@gmail.com





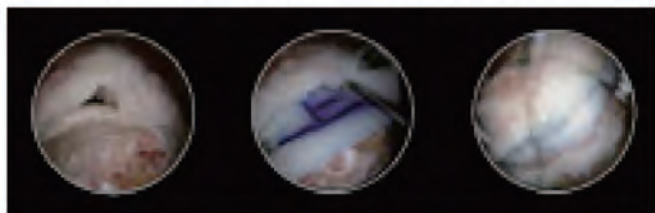
### 1. Massive tear case : Augmentation



### 2. Retear case



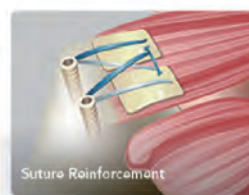
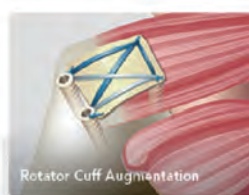
### 3. Small tear case : Interposition



## Clinical Benefits

- + Augmentation of soft tissue repairs
- + Biologically versatile scaffold for ready incorporation to support regeneration
- + Protects delicate tissue with a durable and safe matrix

Case	Size (cm)	Thickness (mm)
Massive tear case : Augmentation	3X3 , 4X7	1.0-5.0
Retear case	3X3 , 4X7	1.0-5.0
Small tear case : Interposition	1X3	0.7-0.9



Rotator Cuff Repair  
 肩袖重建

台灣區總代理  
 普營股份有限公司/君品實業股份有限公司



FDA藥字第1121400527號  
 衛授食字第1111402522號  
 衛授食字第1101407189號

產品諮詢 : 04-2371-2731 # 生技部門





# Global Biotech Pioneers



## 健康 分享 關懷

專注於：  
呼吸道及腸胃道檢測

疾病診斷  
檢驗試劑

疾病治療  
藥品

專注於：  
腎臟科  
泌尿科  
皮膚科  
疼痛科 (開發中)

專注於：  
逆齡發展  
微創手術  
凍齡發展  
健康保養 健康保健

延緩老化  
抗衰老產品

疾病預防  
消毒

專注於：  
醫療院所第一市占率  
居家環境消毒 (開發中)  
長照籍看護中心 (開發中)



PIC/GMP 藥廠  
**寶齡富錦生技**  
Panion & PF Biotech inc.

台北市南港區園區街3號16樓F棟  
• TEL:02-2655-8218 • FAX:02-2655-8318

<http://www.pbf.tw>





惠民製藥

國際頂級原料、藥品賦形劑總代理

藥品原料目錄



EASTMAN

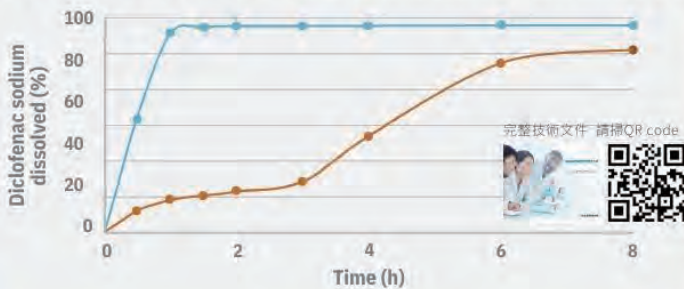
# BioSustane™ SAIB NF

非聚合賦形劑 Sucrose Acetate Isobutyrate  
緩釋、長效注射劑、提高生體可利用率

已用於上市藥品:

- Posimir® -針劑, bupivacaine drug
- Methydur® -思有得, methylphenidate HCL
- SucroMate® -針劑 動物用藥, deslorelin acetate

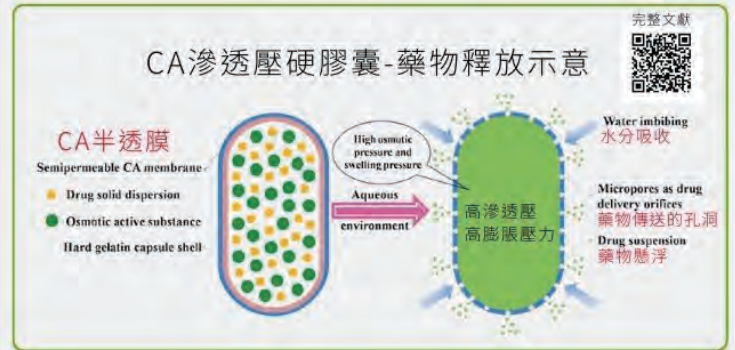
緩釋劑型溶離比較 — Diclofenac sodium: BioSustane 1:1  
— Diclofenac sodium: BioSustane 1:5



EASTMAN

# Cellulose Acetate, CA

醋酸纖維素 新劑型Osmotic Pump Capsules  
緩釋滲透壓硬膠囊配方



FLUIDINOVA 葡萄牙 Hydroxyapatite (HAP) "奈米"羟基磷灰石, nanoXIM

敏感牙齒救星

- 修補牙齒琺瑯質
- 修補牙齒表面琺瑯質及牙本質的微觀缺損
- 幫助牙齒損傷表面重新建構防護層
- 增強牙齒釉質再礦化作用·減少牙齒敏感性
- 可作為水性糊劑或粉末形式

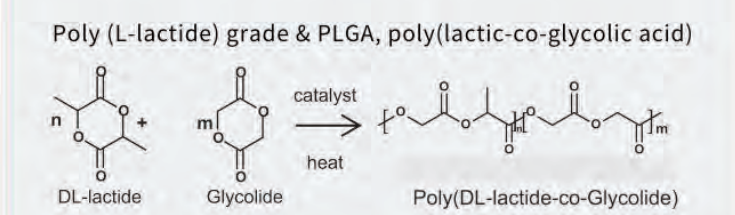
Medical 醫材 骨/醫美

受損骨骼使用nanoXIM填充過程

骨頭受損 → 使用 nanoXIM 進行缺陷填充 → 原生骨生長和材料吸收 → 骨重建再生 → 材料整合和骨形成的開始

Corbion PLGA、PDLG、PLG Purasorb 可生物降解聚合物

- 藥物輸送 (Medical Device)
- 醫材裝置 (Drug Delivery)
- 心臟、傷口和組織再生 (Cardio, Wound & Tissue Regeneration)







# BASF Soluplus 助力幹細胞培養



Soluplus®  
Nature 全文

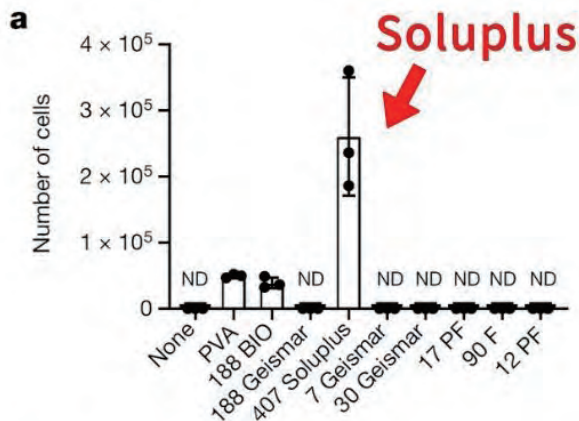


## 培養基加入Soluplus®可促進功能性人造血幹細胞(HSCs)在體外大量高效複製擴增(Clone)

Chemically defined cytokine-free expansion of human haematopoietic stem cells  
Nature volume 615, p127-133 (2023).

### Soluplus®

中文名	聚乙烯己內酰胺-聚醋酸乙烯酯-聚乙二醇接枝共聚物
英文名	Polyvinyl caprolactam-polyvinyl acetate-polyethylene glycol graft copolymer
US/DMF	23504/ 23626
登記號	F20210000495
複驗期	36個月



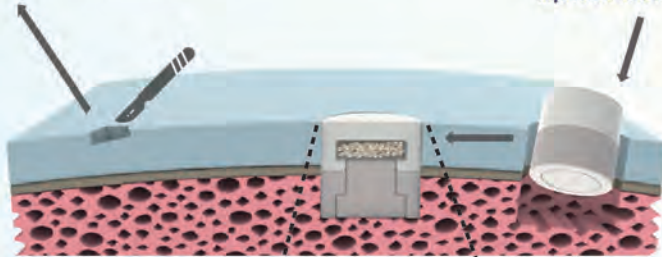
Caprolactam-polymer-based 3a medium supports the efficient expansion of human HSCs ex vivo. (a), Total cell numbers generated after a 7-day culture of  $2 \times 10^4$  human cord blood CD34<sup>+</sup> cells in 3a medium containing various synthetic polymers (see Methods for details). No polymer (None) was used as a negative control. Mean  $\pm$  s.d. of three independent cultures. ND, not detected.



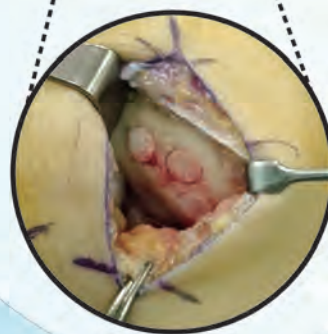


# RevoCart®

One-step autologous cartilage repair system



⑤ Drilling a hole at defect site and implanting the chondroplug



## ONE-STEP!! CARTILAGE REPAIR AND REGENERATION TECHNIQUE

# 愛膝康 一次性自體軟骨修補系統

衛部醫器製字第 006689號

- ◆ Single-stage autologous cartilage repair surgery (regeneration within natural environment)
- ◆ Grow durable hyaline-like cartilage
- ◆ Restore ability to play competitive sport and maintain for at least five years



### Approved indication:

Cartilage defect (including chondral or osteochondral defect) in the knee

### Other applications with clinical evidences:

- ※ Early osteoarthritis
- ※ Cartilage defect in elbow or ankle
- ※ Cartilage defect in tibial plateau



國家藥物科技  
研究發展獎



台灣精品 2023  
TAIWAN EXCELLENCE  
Everyday Excellence

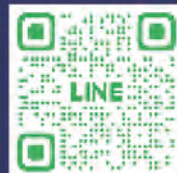
榮獲國家級獎項肯定



## BioGend

BioGend Therapeutics Co., Ltd.

Develop advanced, high-quality products for bone and joint regeneration



<https://www.biogend.com>





旭能醫藥生技股份有限公司於竹南科學園區全新建立國際級的製藥廠，同時擁有堅強的專業團隊，在2019年通過PIC/S GMP的審查。

在2020年新增闢特殊營養食品食品廠在竹南科學園區。

為造福台灣地區，歡迎合作夥伴協力促進台灣健康事業升級，

目前可合作業務：

※新產品及劑型開發

※代工製造與包裝

※代辦查驗登記、許可證展延、變更及轉移代理等相關業務

旭能醫藥生技研究中心可開發之製劑技術

一般製劑技術：錠劑、糖衣、膜衣、膠囊劑、粉顆粒劑、液劑、懸浮劑、軟膏、BA/BE之處方設計及生產技術。

特殊劑型：控釋型製劑技術、微粒膠囊製造技術、間質錠劑、膜衣控釋錠劑、圓粒控釋劑型、口腔速溶錠、自乳化/微乳化藥物輸藥技術、親水性凝膠技術。



合作夥伴請Mail至：[shiner@shinerpharm.com](mailto:shiner@shinerpharm.com)





## 規劃設計建置

- (BSL-2)P2實驗室~(BSL-3)P3實驗室等級之生物安全實驗室
- TAF / GLP、GMP廠房、GTP實驗室 / CPU細胞製備場所等功能性實驗室或廠房
- 精準醫療實驗室、食安檢驗實驗室、生殖醫學實驗室、質譜儀實驗室
- 冷房、動物房、無塵室、生物化學實驗室、負壓室

所有之實驗室規劃建置皆有其整合方案，搭配符合標準的實驗室設備服務，客製化設備適合之硬體設施，對認證所需之SOP將更容易規劃，滿足各使用單位的需求!

### 歡迎與我們聯繫

普世康生物科技有限公司

☎ (02)2702-9591

🏠 (02)2702-9597

✉ [service@prolifeconn.com.tw](mailto:service@prolifeconn.com.tw)

📍 台北市大安區信義路四段30巷27弄13號3樓

更多資訊▼





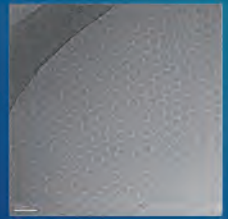
## 相信予宇 予宇同行

予宇的核心團隊熟稔商品化過程中製劑開發的關鍵物化特性及遞送技術，為了病患福祉及業界的發展。

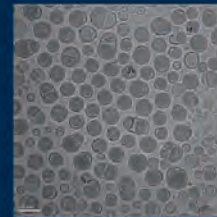
予宇以特色遞送技術-脂質奈米載體為核心，開發高技術門檻新藥，其包含可控制釋放及合併治療的雙效微脂體和靶向肝臟的脂質奈米粒 (LNP)。



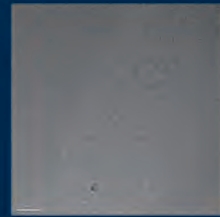
*Ingenious  
(Dual Liposome)*



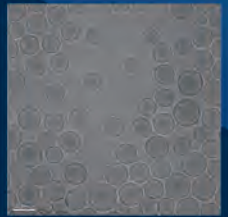
*Consistent  
(Small Liposome)*



*Flexible  
(Lipid nanoparticle)*



*Prospective  
(Lipid nanoparticle)*

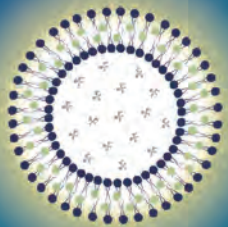


*Assiduous  
(Large Liposome)*

## 予宇脂質奈米載體技術特色

- 克服傳統放大生產之困境
- 提高藥物包覆量
- 可控制的藥物釋放模式

## 創新研究發展



• 治療藥物 • 光感物質

### 雙效微脂體

結合光驅動技術及獨家專利雙包覆微脂體技術，可達合併治療之目的，並能控制釋放，降低副作用。



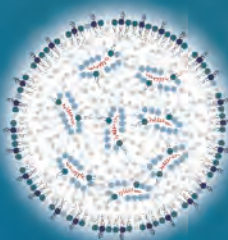
創新的脂質載體技術  
光驅動釋放技術



合作開發  
國立臺灣大學  
臺大醫院



全球市值預估  
12.2億美元  
頭頸癌



### LNP-CRISPR

獨特的LNP遞送技術，可將CRISPR基因編輯組送入細胞中進行DNA的編輯，以達到根除傳染性疾病的治療效果。



獨特的LNP遞送系統  
LNP- CRISPR  
基因編輯遞送系統



合作開發  
國立臺灣大學  
臺大醫院



傳染性疾病全球市值預估  
356.3億美元  
29.41% CAGR





## AQUIPHER™ 材質應用領域



傷口敷料  
Dressing



美容保養  
Skincare



營養保健  
Health  
Supplements



經皮藥物劑型  
TTS

## 新式醫療器材與藥物釋放平台開發

### 高吸水性

吸水倍率佳，可吸附高達自身重量**20倍**水分，可應用於傷口敷料素材

### 超薄材質 透氣舒適

厚度僅有**0.3mm**，敷感舒適、透氣，維護舒適環境

### 溫/濕度平衡

保持皮膚溫度，維持皮膚溼度平衡

### 四方彈性拉伸

多向彈性基材，柔軟彎曲服貼於肌膚

### 植物萃取、複方承載平台

皮膚保養品、營養保健品、中草藥複方最佳經皮釋放平台

### 藥物釋放平台

膠體具有超飽和藥物釋放特性，可做為有效成分的經皮吸收載具

## 歡迎合作 共創雙贏







# 毛囊友善洗髮粉

## 溫和洗淨 減少頭皮油癢臭

### 五百位洗髮粉長期使用者問卷調查

89%

超過 89% 使用者認為洗髮粉為  
整體頭皮困擾帶來改善

85%

超過 85% 使用者認為有效舒緩  
搔癢、紅腫脫皮等感受

75%

超過 75% 使用者認為改善出油  
及長痘狀況

瞭解更多 decent rossi



Website



Instagram



Facebook



Line@

無色素  
香料

無精油

無陽離子  
柔軟劑

無水配方



無矽靈



動物友善

### 問卷統計

「超過 89% 長期使用者認為洗髮粉改善頭皮困擾」

飽受頭皮脂漏性皮膚炎困擾，藥師羅西經歷數年頭皮紅腫痛落髮後，於執業時亦發現大量病患與自己同病相憐，不堪其擾遂發想設計適合的洗沐產品。

選用非硫酸鹽類的 SCI 界面活性劑設計極簡配方，推出只含六種成分的洗髮粉，捨棄香料、精油及陽離子柔軟劑，溫和洗淨減少脆弱頭皮及毛囊的負擔。

適用對象：皮膚脆弱者、頭皮敏弱者、植髮術後者、孕婦嬰幼兒、因藥物治療導致皮膚弱化者、素食者、對精油香料色素不耐受者。

官網及實體  
銷售通路

醫療體系 台大醫院皮膚科、植髮診所療程使用、健保藥局、皮膚科診所、家醫科診所  
風尚體系 星宇航空機上販售、誠品書店、高階髮廊、潮人物商店 / 書店 ChewpeopleChoice  
健身體系 DR.GYM 運動醫療訓練中心、瑜珈會館、健身中心



# 一起加入這場藥物基因體學的革命

藥物基因體學 (PGx) 運用患者的基因訊息，以優化藥物的安全性、療效，以幫助選擇適當的藥物

## PGx 為何重要？



多數藥物並不適合所有人

# 高達 70%

高達 70% 患者的治療皆使用最暢銷的藥物\*



# 82%

82% 的美國成年人至少服用一種藥物



# 3 百萬

藥物不良反應影響近 300 萬人，是美國第四大死因<sup>2,3</sup>



# 50 億

每年開出的處方箋超過 50 億張<sup>4</sup>

## PGx 測試可以做什麼？



實現精準的處方決策



減少重覆試誤情況



有助於預測有效、安全的藥物和劑量



降低醫療保健成本<sup>5,6</sup>



有助於縮小健康差距<sup>7</sup>

## PGx 研究可以影響：



精神病學和心理健康



心臟病學



腫瘤學



疼痛治療



周術期照護和術後護理

\*90% 的暢銷藥物僅適用於治療 30-50% 的患者<sup>1</sup>

### 參考文獻

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- Maciel A、Cullers A、Lukowiak AA、Garces J (2018)。真實臨床環境中，藥物基因體學在抑鬱症檢測上預計節省的成本。《神經精神疾病和治療期刊》(Neuropsychiatric disease and treatment) 14：225-230。  
<https://doi.org/10.2147/NDT.S145046>

- 藥物基因體學檢測的經濟評估.pdf (pro-genex.com)
- pgs-18-1541.pdf (nih.gov)

想了解更多詳情，請參閱以下網址：[thermofisher.com/pharmacogenomics](https://thermofisher.com/pharmacogenomics)

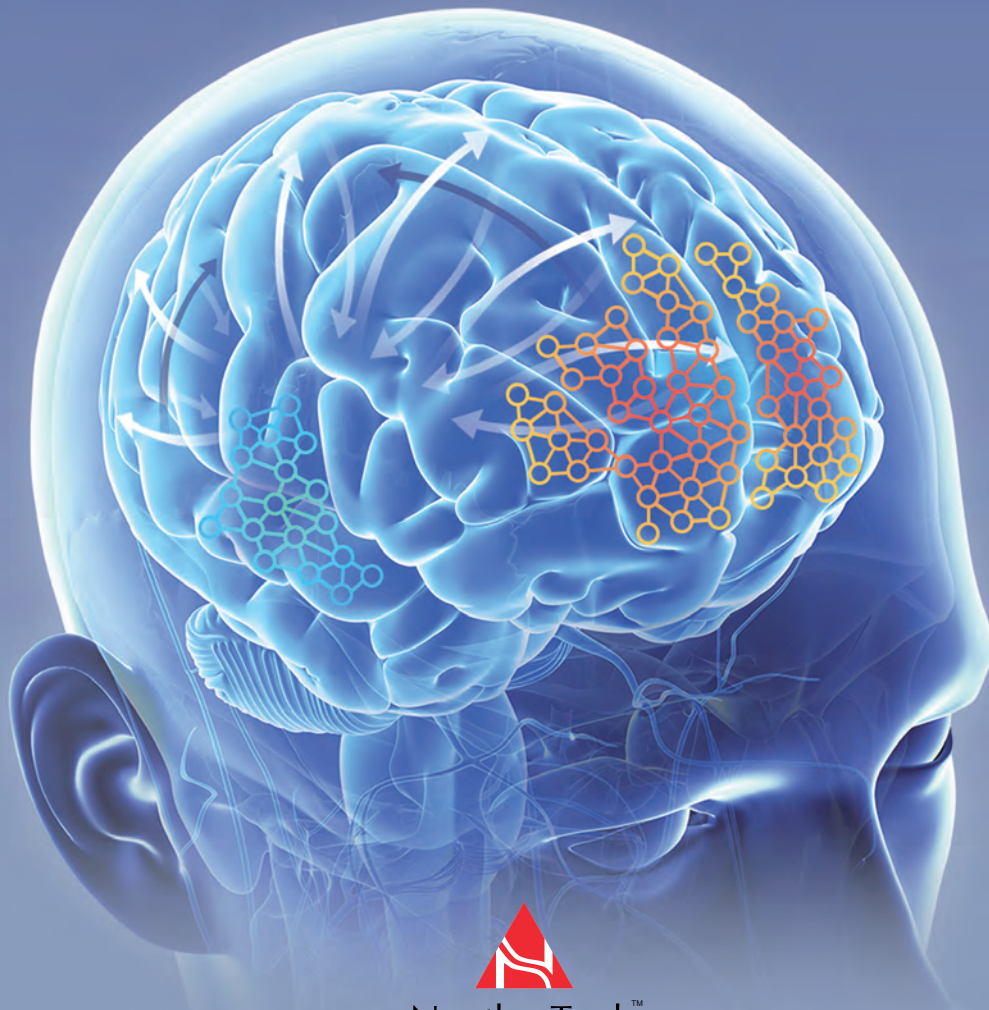


# Electromagnetic Brain Pulsing Treatment (EMBP™)

## EMBP™ 電磁腦脈衝

Brain-wave-guided transcranial magnetic stimulation treatment was discovered by Yi Jin, MD, through his academic research and clinical applications over the past 30 years. It has been developed in combination with his knowledge of the first principles of thermodynamics, information processing of the brain, and his clinical experiences in psychiatry.

According to his theory, cognition and its anomalies are epiphenomena of underlying survival strategies of the central nervous system. Abnormal behaviors are modeled as phenomena caused by deviations from the default state and subsequent compensatory changes in the brain. Electromagnetic Brain Pulsing Treatment (EMBP™) is a new, advanced, and proprietary technology developed and patented by NoetherTech. In essence, the treatment identifies the patient's brain condition through quantitative analyses and delivers a customized, pulse-matching, electromagnetic stimulation to normalize the brain condition.



NoetherTech™  
noethertech.com

# Multi-Organ Microphysiological Systems are Poised for Expansive Integration



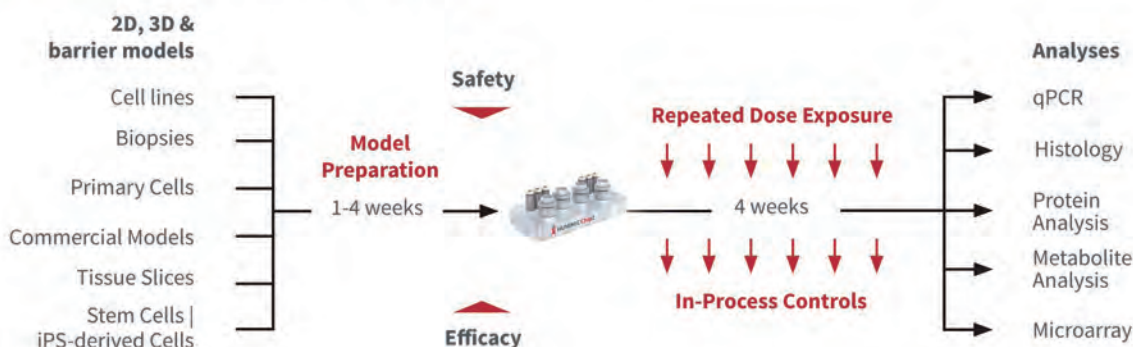
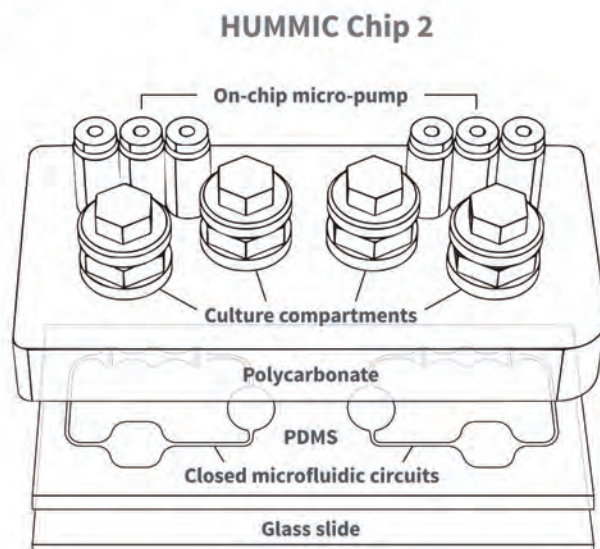
## 多器官整合生物晶片

### Concept & Technology

We improve predictability of substance safety & efficacy by Multi-Organ-Chip testing.

TissUse's proprietary technology platform is a miniaturised construct that closely simulates the activity of multiple human organs in their true physiological context at the smallest possible biological scale.

The versatile TissUse approach addresses multiple organs & tissues to make **the right chip for the right assay**.



### Product offering



**HUMIMIC** – a concept of art of “HUMAN” and “MIMIC.” After all, that is exactly what our HUMIMIC heroes do for you.



2023 HUMIMIC Catalogue



Compatible with your organs of interest, e.g.:





# Established HUMIMIC assays

NR.	ORGAN MODEL	SCHEMATIC	CONTEXT OF USE	LEVEL OF READINESS	SPECIES
1	Blood-Brain-Barrier – Neuro – Liver		BBB permeability, organ toxicity, metabolite neurotoxicity	III	Human
2	Bone marrow		Bone marrow toxicity, chemotherapy scheduling	III	Human
3	Intestine – Liver		Absorption, metabolism	III	Human
4	Intestine – Liver – Kidney – Neuro		ADME-profiling, PBPK, first-path metabolism, primary & secondary organ toxicity	III	Human
5	Intestine – Liver – Kidney – Neuro + Vasculature		ADME-profiling, PBPK, first-path metabolism, primary & secondary organ toxicity	III	Human
6	Lung – Liver		Hazard identification	III	Human
7	Pancreas – Liver		Diabetes target finding, mathematical modeling	III	Human
8	Skin – Liver		Compound PK/PD, skin irritancy, toxicity, first-path metabolism	III	Human
9	Skin – Liver – Thyroid		Repeated dose topical and systemic administration	III	Human
10	Skin – Tumor		Anti-tumor antibodies	III	Human
11	Endometrium		Physiology/Pathology	II	Human
12	Hair follicle		Hair growth agents	II	Human
13	Kidney (glomerulus) – Liver		Therapeutic effect of MSC-derived extracellular vesicles	II	Human
14	Kidney (proximal tubules) – Liver		Repeated dose proximal tubules toxicity	II	Human
15	Liver		Drug evaluation	II	Human
16	Lung		Nanoparticle toxicity	II	Human
17	Testis – Liver		Testicular toxicity	II	Human
18	Thyroid – Liver		Endocrine disruption	II	Human vs. Rat
19	Vasculature – Pancreas – Tumor		Anti-tumor therapy	II	Human
20	Bone		Nanoparticle toxicity	I	Human
21	Bone marrow		Erythropoiesis	I	Human
22	Cardio – Liver		Metabolite cardiotoxicity	I	Human
23	Intestine – Skeletal muscle		Muscle growth agents	I	Human vs. Pig
24	Neuro – Liver		Metabolite neurotoxicity	I	Human
25	Immunocompetent Skin – Gingiva		Skin and oral toxicity	I	Human
26	Skin including dermal papillae		Skin sensitizer	I	Human
27	Skin – Leukocytes		Allograft rejection therapies	I	Human
28	Tumor (DLBCL) – Liver		Personalized automatized cancer treatment	I	Human

## Publications & Media



- DMPK / Safety / Hazard identification
- Mode of Action / Efficacy

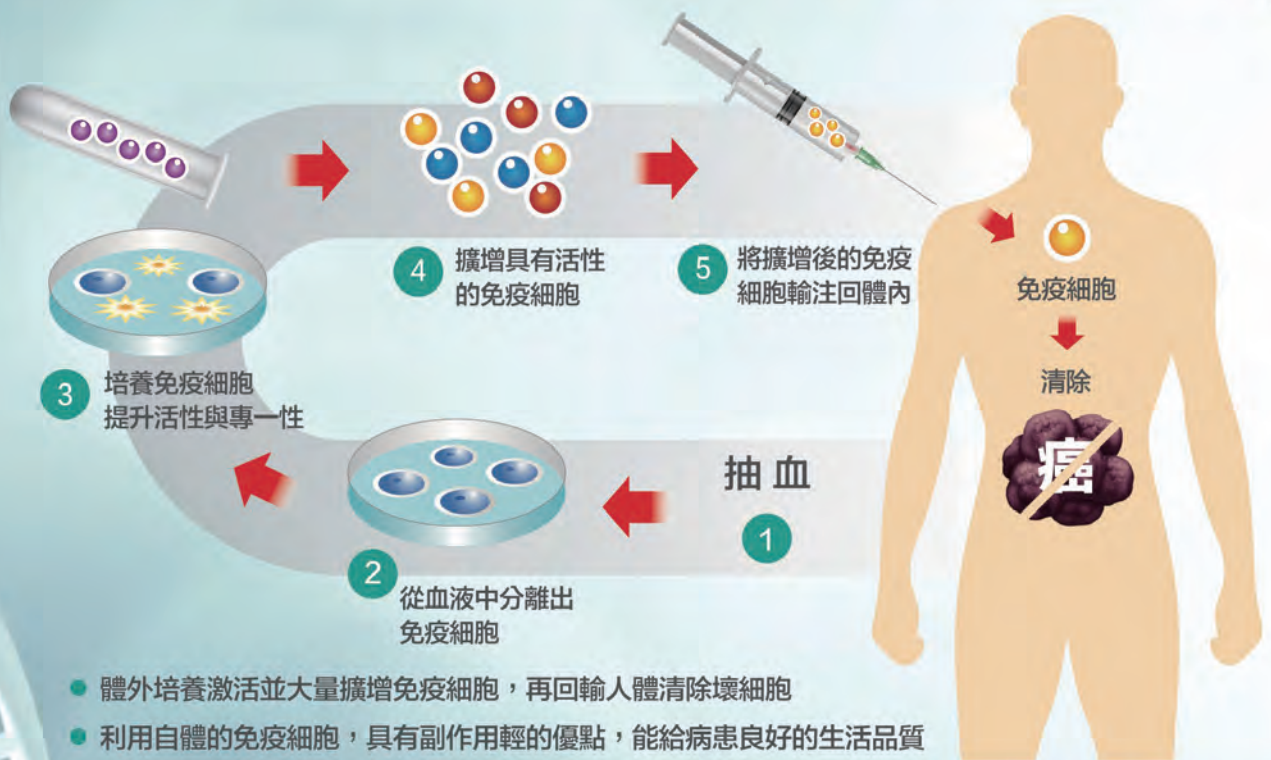
- III **Assay established**, available for testing/assay transfer
- II **Model established** available for assay establishment
- I **Proof of Concept** available for model/assay development





鑫品生醫DC樹突細胞治療技術  
與多家醫療院所取得特管辦法核准，適應症包括腦癌、非小細胞肺癌、食道癌、胃癌、胰腺癌、大腸直腸癌、肝細胞癌、腎細胞癌、乳癌、卵巢癌等十種以上實體腫瘤。

# 免疫細胞治療 重建抗癌免疫力



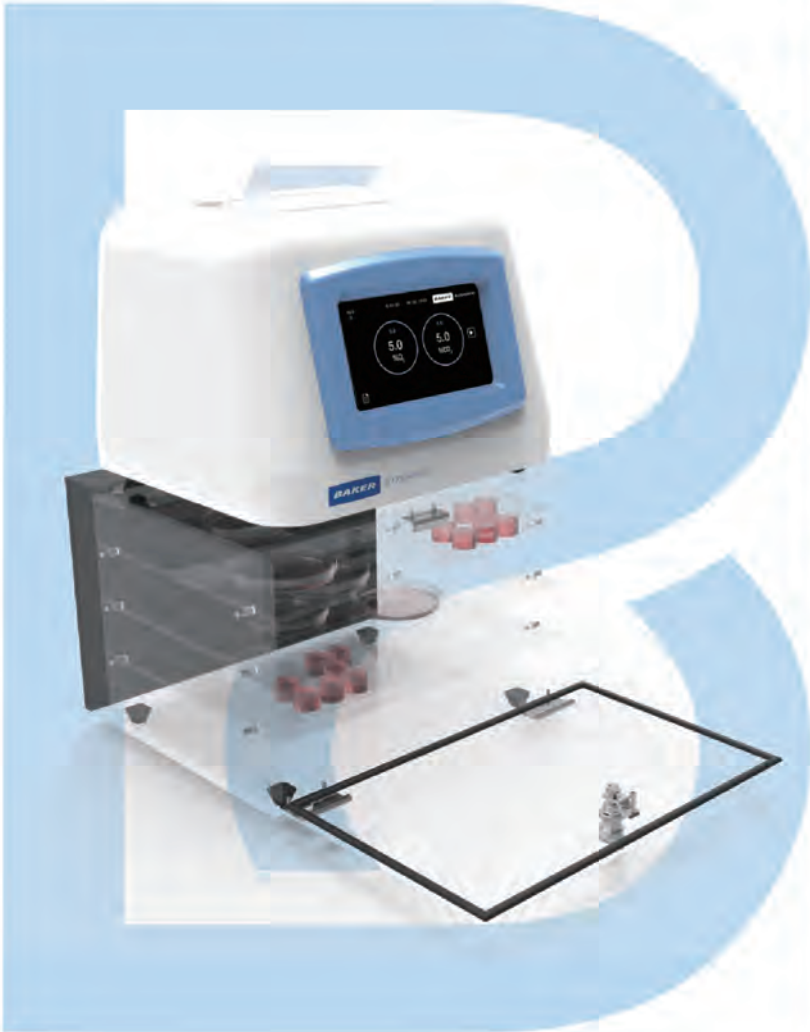
亞洲細胞領航 · 國際級細胞實驗室 —  
鑫品生醫科技 亞太細胞儲存與應用研發中心  
Vectorite Asia-Pacific research center for cell cryopreservation and application.





# PhO<sub>2</sub>x Box

## 細胞低氧 培養

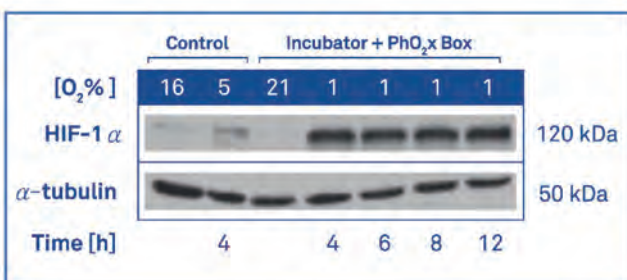


### PhO<sub>2</sub>x Box 功能特色

- 提供 **O<sub>2</sub>** 和 **CO<sub>2</sub>** 控制
- 可以放置在培養箱或操作台內部
- **SD card** 紀錄歷史數據
- 低氧培養循環設定
- 簡易安裝及低價運行成本



Scan for more options



來自 **University of Oulu Finland** 的 **Western blot** 實驗，顯示放在標準二氧化碳培養箱中的 **PhO<sub>2</sub>x Box** 其低氧情況

bakerco.com



Contact: [ktsai@bakerco.com](mailto:ktsai@bakerco.com)

**Baker**  
Performance by **Ruskin**





# 智慧健康產業研發中心

## Smart Healthcare Research Center

### 關於我們 ABOUT US

國立臺北科技大學「智慧健康產業研發中心」著重在幫助高階智慧醫材進行快速商品化，目前研發和導入的技術包括有智慧植入物材料的開發、AI診斷醫材之臨床試驗規劃，研發中心近年來已成功輔導多項二三等級之高階醫材快速上市，並在市場和臨床使用上獲得好評！

Smart Healthcare Research Center at National Taipei University of Technology focuses on rapid commercialization for high-value smart medical devices. The Center currently involves in the development of materials for smart implants, as well as in the planning of clinical trials for artificial intelligence-based software. Smart Healthcare Research Center has successfully assisted few class II and class III high-value medical devices to be launched rapidly, and has gained a reputation in the market and clinical applications.

### 合作夥伴 PARTNER

#### 台灣微創醫療器材(股)公司

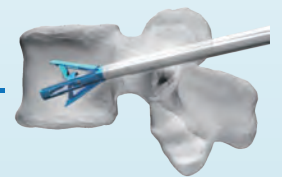
Wiltrom CO., Ltd. (上櫃6767)

台微醫著重於研發與製造第二、三類的植入式高階醫療器材。產品開發強調創新性並結合臨床醫師之需求，開發及製造一系列具有創新、國際競爭性且符合醫療需求之高階醫療器材產品，解決臨床未被滿足的需求。

Wiltrom is dedicated in the research and production of a wide range of various high-end, implantable, Class II and III medical devices. The development of products is strongly focused on innovation and to create a highly competitive private brand on the market internationally.

[Vertebral Compression Frx. Surgery](#)

Vertebral Augmentation System



### 合作模式 COOPERATION MODEL

本中心協助台灣微創醫療器材(股)公司  
補足各項關鍵KEY POINT  
加速優質醫療器材  
上市與推廣



A

脊椎生醫材料植入物研發

Research and development of biomaterial implants for spinal surgery.

B

智慧醫療應用之手術方案開發

Development of smart medical device for surgery.

C

智慧醫材商品化諮詢輔導

Consulting and guidance on the commercialization of smart medical device.

**We are actively seeking collaboration opportunities with international partners.**

聯繫我們 Contact Us

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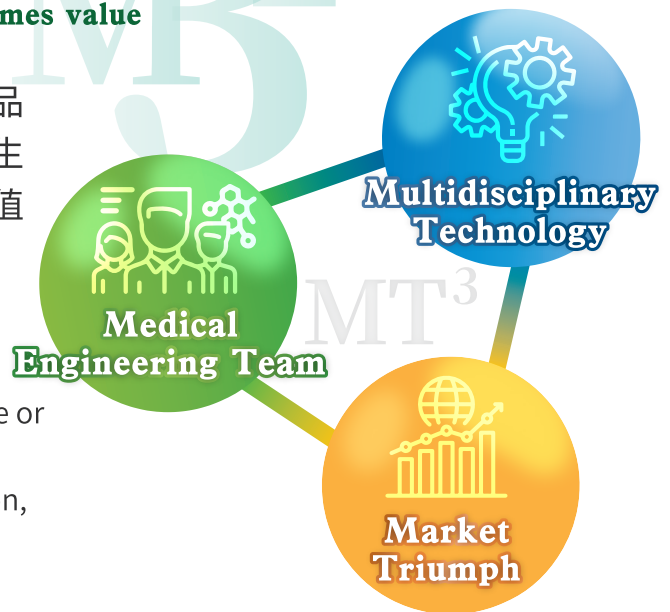
# 以終為始 **Begin with the end in mind**

## 從需求看創新，從創新看價值

From need comes innovation, and from innovation comes value

國立臺北科技大學「高值生醫材料研究與商品化中心」是以生醫植入物劑型優化與製程放大、生醫植入物器械開發與優化為發展主軸，並針對高值生醫材料工程商品提供一站式快速商品化服務。

High-value Biomaterials Research and Commercialization Center (HBRCC) assists researchers and industries to optimize formulas and mass production of powder/granule or liquid/gel biomaterials and derive high value biomedical implants. We also offer biomaterial rapid commercialization, a one-of-a-kind service.



### KEY FACTORS

### 關鍵核心技術



**醫材快速商品化**  
Rapid commercialization



**劑型優化**  
Formulation optimization



**製程放大**  
Mass production (scale-up)

### CROSS-INDUSTRY LINKING AND INTEGRATION

### 跨業串連與整合



**We are actively seeking collaboration opportunities with international partners**



# 再生醫學新典範 醫美抗衰新紀元



潤霈生技股份有限公司



## LINK YOU TO THE BEST LIFE



### EXCELLENT TECHNOLOGY



細胞療法



再生醫學



臨床醫療



醫美抗衰

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