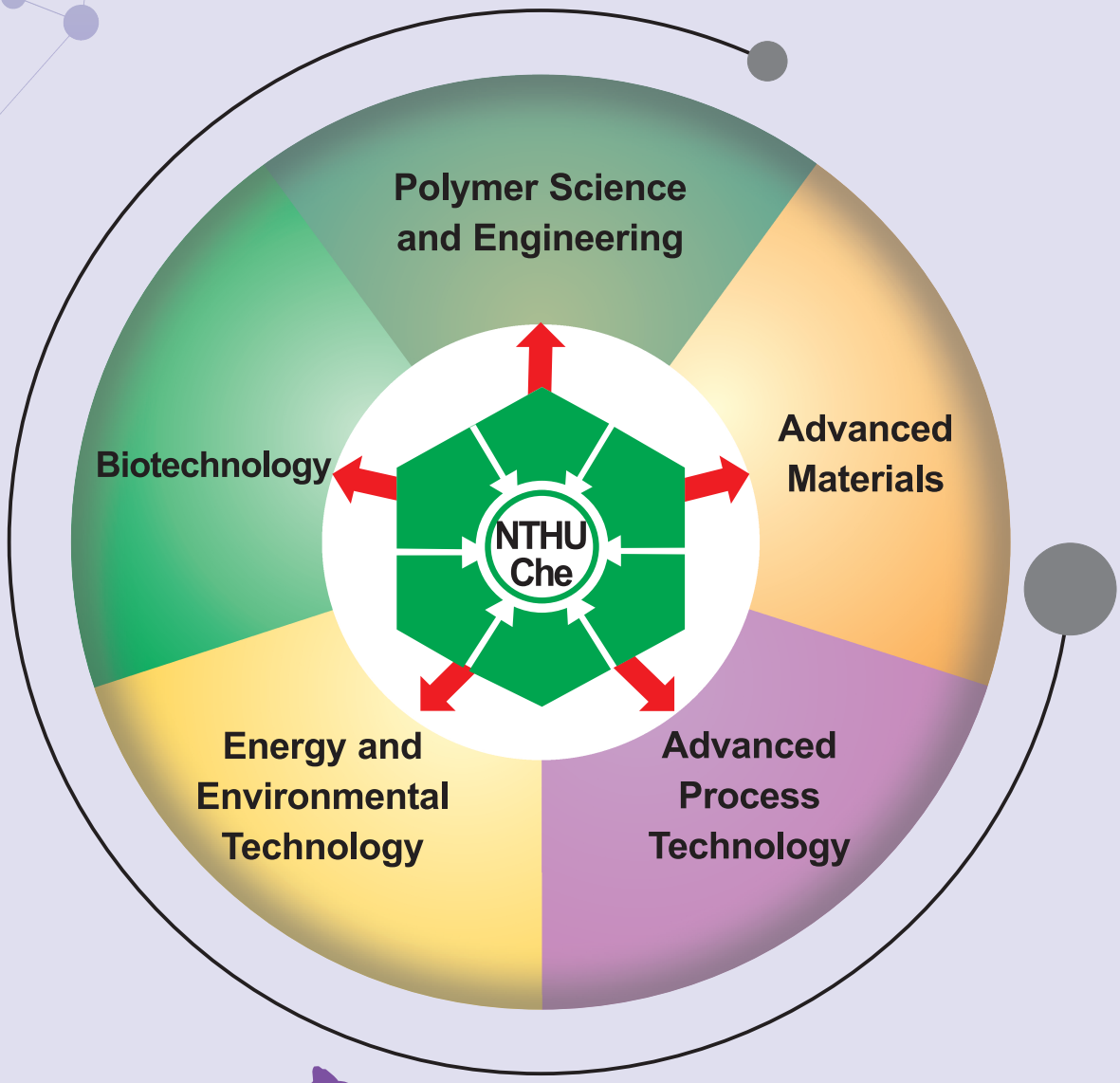
National Tsing Hua University

Department of Chemical Engineering

國立清華大學化學工程學系



清大化工

教授著作目錄 (2021～2025)

Publication List of Faculty Members

August, 2026

Faculty Members

Publications of Hsin-Lung Chen (陳信龍)

A. Journal Papers (* Corresponding author)

2025

1. Lai, Y.-C.; Chen, C.-Y.; Su, C.-J.*; **Chen, H.-L.**, Mesomorphic phases of the electrostatic complexes of amphiphilic surfactants with low-generation dendrimers, *Giant*, 2025, 25, 100369.

2. Cheng, Y.-H.; Chang, T.-W.; Nishimura, T.; Lai, Y.-C.; Su, C.-J.; Wang, J.; Isono, T.*; Satoh, T.*; **Chen, H.-L.***, Accessing Frank–Kasper Phases via Blending of Architecturally Distinct and Sustainable Sugar-Based Block Co-Oligomers, *Macromolecule*, 2025, 58, 16, 8686–8697.

3. Nishimura, T.; Cheng, C.-J.; Oishi, Y.; Li, F.; Borsali, R.; Yamamoto, T.; Tajima, K.; **Chen, H.-L.***; Satoh, T.*; Isono, T.*, POSS–Oligosaccharide Hybrid Materials as a Versatile Platform for Constructing Unique Spherical Phases, *Macromolecules*, 2025, 58, 14, 7094–7103.

4. Sahare, P.D.*; Bai, B.; Sahare, A.; **Chen, H.-L.**, Study of Li3PO4:Dy3+ TLD phosphor for its application in high-temperature environment dosimetry of UV, X-rays and γ-rays, *J. Alloys Compd.*, 2025, 1037, 182473.

5. Lin, Y.H.; Chen, Y.C.; Sahare, A.; Lai, Y.C.; Su, C.J.; Tsai, J.C.; Yamamoto, K.*; **Chen, H.-L.***, Interface Densification in Microphase-separated Diblock Copolymer Resolved by Small Angle X-ray Scattering, *J. Appl. Cryst.*, 2025, 58, 869-878.

6. Sahare, A.; Lin, Y. H.; Chen, C. Y.; **Chen, H. L.***, Thermally Induced Distortion of the Hexagonal Close-Packed Latticeof Block Copolymer Micelles, *Macromolecules*, 2025, 58, 9, 4689–4698.

7. Hsieh, T.Y.; Mansel, B. W.*; **Chen, H. L.**; Chen, Y. F.*, Drastic Elevation in the Glass Transition Temperature of Poly(2-vinylpyridine) by the Entanglement-Promoting Palladium Nanoparticles, *Macromolecules*, 2025, 58, 5, 2336–2344.

8. Nishimura, T.; Lee, C.; Nunokawa, R.; Cheng, Y.-H.; Li, F.; Yamamoto, T.; Tajima, K.; Borsali, R.; **Chen, H.-L.***; Satoh, T.*; Isono, T.*, Molecular Design of a Discrete Oligosaccharide-block-Oligodimethylsiloxane System: Toward Microphase Separation with 1 nm Domain Size and Angstrom-Scale Size Control, *Macromolecules*, 2025, 58, 1, 266–278.

9. Sahare, A.; Sahare, P.D.*; Sharma, L.; **Chen, H.-L.***, Effect of phase change, particle size and annealing in reducing and oxidizing atmospheres on UV-dosimetry characteristics of $SrAl_2O_4$ mechanoluminescence technique, *J. Alloys Compd.*, 2025, 1010, 177830.

2024

10. Hsiao, Y.-J.; Huang, Z.-E.; Sahare, A.; Chen, M.-Z.; Lin, Y.-H.; **Chen, H.-L.***, Accessing the Frank–Kasper Phase of Block Copolymer via Selective Incorporation of Metal Salt, *Macromolecules*, 2024, 57, 22, 10657–10668.

11. Tung, C.-H.; **Chen, H.-L.**; Huang, G.-R.; Porcar, L.; Impéror, M.; Carrillo, J.-M. Y.; Wang, Y.; Sumpter, B. G.; Shinohara, Y.; Taylor, J.; Do, C.; Chen, W.-R., Identifying Topological Defects in Lamellar Phases through Contour Analysis of Complex Wave Fields, *Macromolecules*, 2024, 57, 15, 6979–6989.

12. Hsieh, Y.-C.; Ouyang, H.; Zhang, Y.; Chiang, D.; Yang, F.; **Chen, H.-L.**; Lee, S.*, Analysis of the Thermal Aging Kinetics of Tallow, Chicken Oil, Lard, and Sheep Oil, Molecules, 2024, 29, 17, 4191.

13. Zhang, H.-H.*; Chen, M.-Z.; Yu, X.; Bonnesen, P. V.; Wu, Z.; **Chen, H.-L.**; O'Neill, H., Synthesis of Perdeuterated Alkyl Amines/Amides with Pt/C as Catalyst under Mild Conditions, *J. Org. Chem.*, 2024, 89, 11, 8262–8266.

14. Siboro, P. Y.; Sharma, A. K.; Lai, P.-J.; Jayakumar, J.; Mi, F.-L.; **Chen, H.-L.**; Chang, Y.; Sung, H.-W. Harnessing HfO_2 Nanoparticles for Wearable Tumor Monitoring and Sonodynamic Therapy in Advancing Cancer Care, *ACS Nano* 2024, 18, 2485.

15. Lee, C.; Ree, B. J.; Chen, K.; Komaki, R.; Katsuhara, S.; Yamamoto, T.; Borsali, R.; Tajima, K.; **Chen, H.-L. ***; Satoh, T*.; Isono, T*. Ultrasmall 3D network morphologies from biobased sugar–terpenoid hybrid block co-oligomers in the bulk and the thin film states, *Giant*, 2024, 17, 100211.

16. Tung, C.-H.; Hsiao, Y.-J.; **Chen, H.-L.***; Huang, G.-R.; Porcar, L.; Chang, M.-C.; Carrillo, J.-M.; Wang, Y.; Sumpter, B. G.; Shinohara, Y.; Taylor, J.; Do, C.; Chen, W.-R.*, Unveiling mesoscopic structures in distorted lamellar phases through deep learning-based small angle neutron scattering analysis, *Journal of Colloid and Interface Science*, 2024, 659, 739.

17. Hsu, C.-C., Lin, Y.-T., Hong, S.-H., Jeng, U., **Chen, H.-L.**, Yu, J., Liu, C.-L., 3D Printed Gelatin Methacrylate Hydrogel-Based Wearable Thermoelectric Generators, *Adv. Sustainable Syst*. 2024, 8, 2400039.

18. Nouri, B., **Chen, H.-L.***, Building blocks of order: block copolymer micelles and colloidal particles in complex packing structures, *J Polym Res* 2024, 31, 120.

19. Hong, S.-H., Hsu, C.-C., Liu, T.-H., Lee, T.-C., Tung, S.-H., **Chen, H.-L.**, Yu, J., Liu, C.-L., Extremely large Seebeck coefficient of gelatin methacryloyl (GelMA)-based thermogalvanic cells by the dual effect of ion-induced crystallization and nanochannel control, *Mater. Today Energy* 2024, 42, 101546.

20. Chen, K., Lee, C., Chen, C.-Y., Satoh, T., Isono, T.*, **Chen, H.-L.***, Phase Behavior of Sugar-based Block Co-oligomer Modulated by Molecular Chirality, *Giant* 2024, 19, 100308.

21. Chiu, W.-C., Cheng, Y.-H., Lin, J.-H., Tung, C.-H., Nishimura, T., Chen, C.-Y., Isono, T.*, Satoh, T., **Chen, H.-L.***, Tuning the Complex Spherical Phase of Sugar-Based Block Co-Oligomer via Single-Monomer-Mediated Composition Variation, *Macromolecules*, 2024, 57, 6076.

22. Lin, Y.-T., Hsu, C.-C., Hong, S.-H., Lee, L.-C., Jeng, U., **Chen, H.-L.**, Tung, S.-H., Liu, C.-L., Highly conductive triple network hydrogel thermoelectrochemical cells with low-grade heat harvesting, *J. Power Sources* 2024, 609, 234647.

23. Chen, C.-Y.; Chen, Y.; Chang, T.-Y.; Lee, M.-T.; Liu, S.-Y.; Yu, Y.-C.; Lin, Y.-H.; Lee, C.-H.; **Chen, H.-L.**; Wu, K.-Y., Thermophilic artificial water channels of a lipid-like dendron stabilized by water containing hydrogen-bonded network. *Giant* 2024, 17, 100220

24. Tung, C.-H., Chen, M.-Z., **Chen, H.-L.**, Huang, G.-R., Porcar, L., Chang, M.-C., Carrillo, J.-M., Wang, Y., Sumpter, B. G., Shinohara, Y., Do, C., Chen, W.-R., Inferring effective electrostatic interaction of charge-stabilized colloids from scattering using deep learning, *J. Appl. Cryst.* 2024, 57, 1047.

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25. Lai, Y.-C.; Mansel, B. W.; Chen, C.-Y.; Liu, C.-Y.; Chen, Y.-H.; Chun-Jen Su, C.-J.; Jeng, U.-S.; **Chen, H.-L.*** Helical micelle of an achiral surfactant from the template interaction with dendrimer, *Giant*, 2023, 14, 100147.

26. Lin, P.-Y.; Chuang, E.-Y.; Chiu, Y.-S.; **Chen, H.-L.**; Lin, K.-J.; Juang, J.-H.; Chiang, C.-H.; Mi, F.-L.; Sung, H.-W. Corrigendum to "Safety and efficacy of self-assembling bubble carriers stabilized with sodium dodecyl sulfate for oral delivery of therapeutic proteins, *Journal of Ophthalmology Clinics and Research*, 2023, 362, 764.

27. Chen, M.-Z.; Tung, C.-H.; Chen, C.-Y.; **Chen, H.-L.*** Expanding the window of the Frank-Kasper σ phase of block copolymer/homopolymer blend by selective incorporation of metal salt, *Phys. Rev. Materials*, 2023, 7, 115604.

28. Chen, K.; Chen, C.-Y.; **Chen, H.-L*.**; Komaki, R.; Kawakami, N.; Isono, T.; Satoh, T.; Hung, D.-Y.; Liu, Y.-L. Self-Assembly Behavior of Sugar-Based Block Copolymers in the Complex Phase Window Modulated by Molecular Architecture and Configuration, *Macromolecules*, 2023, 56, 28.

2022

29. Tung, C.-H.; Chang, S.-Y.; **Chen, H.-L.**; Wang, Y.-Y.; Hong, K.-L.; Carrillo, J. C.; Sumpter, B. G.; Shinohara, Y.; Do, C.-W.; Chen, W.-R. Small angle scattering of diblock copolymers profiled by machine learning, *The Journal of Chemical Physics*, 2022, 156, 131101.

30. Siboro, P. Y.; Nguyen, V. K. T.; Miao, Y.-B.; Sharma, A. K.; Mi, F.-L.; **Chen, H.-L.**; Chen, K.-H.; Yu, Y.-T.; Chang, Y.; Sung, H.-W. Ultrasound-Activated, Tumor-Specific In Situ Synthesis of a Chemotherapeutic Agent Using ZIF-8 Nanoreactors for Precision Cancer Therapy, *ACS Nano.* 2022, 16, 12403.

31. Lin, P.-Y.; Chuang, E.-Y. Chiu, Y.-H.; **Chen, H.-L.**; Lin, K.-J.; Juang, J.-H.; Chiang, C.-H.; Mi, F.-M.; Sung, H.-W. Safety and efficacy of self-assembling bubble carriers stabilized with sodium dodecyl sulfate for oral delivery of therapeutic proteins, *Journal of Controlled Release*, 2022, 259, 168.

32. Isono, T.; Komaki, R.; Kawakami, N.; Chen, K.; **Chen, H.-L.**; Lee, C.-H.; Suzuki, K.; Ree, B. J.; Mamiya, H.; Yamamoto, T.; Borsali, R.; Tajima, K.; Satoh, T. Tailored Solid-State Carbohydrate Nanostructures Based on Star-Shaped Discrete Block Co-Oligomers, *Biomacromolecules*, 2022, 23, 3978.

33. Wong, C.-C.; Lu, C.-X.; Cho, E.-C.; Lee, P.-W.; Chi, N.-W.; Lin, P.-Y.; Jheng, P.-R.; **Chen, H.-L.**; Mansel, B. W.; Chen, Y.-M.; Chen, C.-H.; Chuang, E.-Y. Calcium peroxide aids tyramine-alginate gel to crosslink with tyrosinase for efficient cartilage repair, *International Journal of Biological Macromolecules*, 2022, 208, 299.

34. Shi, Z.-H.; Hsu, F.-M.; Mansel, B. W.; **Chen, H.-L.**; Fruk, L.; Chuang, W.-T.; Hung, Y.-C. Kinetics and Mechanism of In Situ Metallization of Bulk DNA Films, *Nanoscale research letters*, 2022, 17, 1.

35. Nouri, B.; Chen, C.-Y.; Lin, J.-M.; Chen; **Chen, H.-L.*** Phase Control of Colloid-like Block Copolymer Micelles by Tuning Size Distribution via Thermal Processing, *Macromolecules*, 2022, 55, 9820.

36. Chen, M.-Z.; Huang, Y.-T.; Chen, C.-Y.; **Chen, H.-L.*** Accessing the Frank–Kasper σ Phase of Block Copolymer with Small Conformational Asymmetry via Selective Solvent Solubilization in the Micellar Corona, *Macromolecules*, 2022 55, 10812.

2021

37. Young, C.-M.; Chang, C.-L.; Chen, Y.-H.; Chen, C.-Y.; Chang, Y.-F.; **Chen, H.-L.*** Dendrimer-mediated Columnar Mesophase of Surfactant. *Soft Matter*, 2021, 17, 397.

38. Mansel, B.W.; **Chen, H.-L.*** Structure of DNA-PAMAM Dendrimer Complexes Studied Using Small-angle Scattering Techniques. *Current Medicinal Chemistry*, 2021, 28, 7529.

39. Chiu, Y.-L.; Chen, S.-C.; Su, C.-J.; Hsiao, C.-W.; Chen, Y.-M.; **Chen, H.-L.**; Sung, H.-W. pH-triggered injectable hydrogels prepared from aqueous N-palmitoyl chitosan: In vitro characteristics and in vivo biocompatibility. *BIOMATERIALS*, 2021, 30, 4877.

40. Mansel, B.W.; Su, C.-J.; Chen, C.-Y.; Young, C.-M.; Huang, Y.-C.; Yang, C.-C.; **Chen, H.-L.*** Superhelical DNA liquid crystals from dendrimer-induced DNA compaction. *Soft Matter*, 2021, 17, 7287.

41. Lin, Y.-H.; Shiu, C.-C.; Chen, T.-L.; **Chen, H.-L.***; Tsai, J.-C. Solubilization Behavior of Homopolymer in Its Blend with the Block Copolymer Displaying the Feature of Lower Critical Ordering Transition. *Polymers*, 2021, 13, 3415.

42. Chen, L.-T.; Huang, Y.-T.; Chen, C.-Y.; Chen, M.-Z.; **Chen, H.-L.*** Thermodynamically Originated Stacking Fault in the Close-Packed Structure of Block Copolymer Micelles. *Macromolecules*, 2021, 54, 8936.

43. Nouri, B.; Chen, C.-Y.; Huang, Y.-S.; Mansel, B.W. Chen; **Chen, H.-L.*** Emergence of a Metastable Laves C14 Phase of Block Copolymer Micelle Bearing a Glassy Core. *Macromolecules*, 2021, 54, 9195.

44. Bolouki, N.; Hsu, Y.-N.; Hsiao, Y.-C.; Jheng, P.-R.; Hsieh, J.-H.; **Chen, H.-L.**; Mansel, B.W.; Yeh, Y.-Y.; Chen, Y.-H.; Lu, C.-X.; Lee, J.-W.; Chuang, E.-Y. Cold atmospheric plasma physically reinforced substances of platelets-laden photothermal-responsive methylcellulose complex restores burn wounds. *International Journal of Biological Macromolecules*, 2021, 192, 506.

45. Chen, Y.-H.; Chuang, E.-Y.; Jheng, P.-R.; Hao, P.-C.; Hsieh, J.-H.; **Chen, H.-L.**; Mansel, B.W.; Yeh, Y.-Y.; Lu, C.-X.; Lee, J.-W.; Hsiao, Y.-C.; Bolouki, N. Cold-atmospheric plasma augments functionalities of hybrid polymeric carriers regenerating chronic wounds: In vivo experiments. *Materials Science and Engineering: C*, 2021, 131, 112488.

46. Chu, C.-Y.; Chen, M.-Z.; Li, W.-H.; Tsai, J.-C.; **Chen, H.-L.*** Confined crystallization in the binary blends of diblock copolymers bearing stereoisomeric isotactic and syndiotactic polypropylene. *Polymer Crystallization*, 2021, 4, 10213.

Publications of Show-An Chen (陳壽安)

A. Journal Papers (* Corresponding author)

2024

1. Kuan-Hsun Lu, Wei-Ru Wu, Chun-Jen Su, Po-WeiYang, Norifumi L. Yamada, Hong-Jun Zhuo, **Show-An Chen**, Wei-Tsung Chuang, Yi-KangLan, An-ChungSu* and U-Ser Jeng*, "Modulating phase segregation during spin-casting offullerene-based polymer solar-cell thin films uponminor addition of a high-boiling co-solvent", *J. Appl. Cryst. 2024. 57, 1871–1883.*

2. Yi-Hen Mao, Miao-Ken Hung, Shang-Ting Chung, Sunil Sharma, Kuen-Wei Tsai, and **Show-An Chen*** *"*Interacting Emission Species among Donor and Acceptor moieties in Donor-Grafted Polymer Host/TADF-Guest System and their Effects on Photoluminescence and Electroluminescence", *ACS Applied Materials and Interfaces, 2024, 16, 60715−60731.*

2023

3. Wei-Chih Cheng and **Show-An Chen***, "Creation of Dual Thermally Activated Delayed Fluorescence Exciplexes in Bulk Emitting Layer and Its Interface with Electron Transport Layer for Promoting Performance of TADF Organic Light-Emitting Diodes Fabricated by Solution Process", *ACS Appl. Mater. Interfaces, 2023,15, 31692−31702.*

4. Yi-Hen Mao, Miao-Ken Hung, Shang-Ting Chung, Sunil Sharma, Kuen-Wei Tsai, and **Show-An Chen*** *"*Interacting Emission Species among Donor and Acceptor moieties in Donor-Grafted Polymer Host/TADF-Guest System and their Effects on Photoluminescence and Electroluminescence", *ACS Appl. Mater. Interfaces 2024, 16, 60715–60731.*

2022

5. Miao-Ken Hung, Shang Ting Chung, Kuen-Wei Tsai, Sunil Sharma, Jun-Yi Wu, and **Show-An Chen***, Poly(Acridan Grafted Biphenyl Germanium) as Universal Host for High-Efficiency Thermally Activated Delayed Fluorescence Full-Color and their Hybrid with Phosphor for White Light Electroluminescence, *ACS Appl. Mater. Interfaces, 2022, 14, 55873−55885.*

6. Shuo En Wu, Sunil Sharma, Hsin-Lung Chen, **Show-An Chen***, Pavel V. Komarov, Viktor A. Ivanov, and Alexei R. Khokhlov, "Effective Hole Injection to Core-Shell Quantum Dot for Electroluminescence Across Large Barrier 1.4 eV Through Single Conjugated Polymer with Four Stepwise HOMO Levels in Inverted QLED", *Advanced Optical Materials*, 2022, 1~6, 2102508.

2021

7. Dang-Trung Nguyen, Sunil Sharma, **Show-An Chen***, Pavel V. Komarov, Viktor A. Ivanov, and Alexei R. Khokhlov, "Polymer-quantum dot composite hybrid solar cells with bi-continuous network morphology by using the block copolymer Poly(3-hexylthiophene)-b-polystyrene or its blend with Poly(3-hexylthiophene) as donor", *Materials Advances,2021, 2, 1016-1023*.

B. Conference Presentations

2023

1. **Show-An Chen***, "Molecular Design on Semiconductive Polymers for Opto-Electronics with High Device Performance: Single Polymer Approach", The 4th International Conference on Materials Science & Nanotechnology is scheduled for October 23- 27, 2023, in Valencia, Spain **(Featured Speaker)**

C. Patents

1. 一種可溶性自身酸摻雜聚苯胺衍生物之結構及其製法
(A water Soluble Self-Doped Polyaniline Derivatives and process for preparing the same)
發明人：(inventors)：**陳壽安 (Show-An Chen)**, 林顯光
(中華民國發明專利(ROC Patent),第 472069 號 (2002.1.11-2018.3.10)
(U.S. Patent, 5,891,970 (1998.7.2~2018.7.1))

2. 可發射近白光寬頻光譜之高分子發光二極體之製作方法
(Fabrication of Polymer Light-Emitting Diodes with Broad Emission Spectra Near White Light)
發明人：(inventors)：**陳壽安 (Show-An Chen)**, 張恩崇, 莊坤儒
(中華民國專利(ROC Patent),第 115288 號 (2000.6.1-2018.3.10))
(日本發明專利(Japanese Patent) 審查中，1997 年)
(US. Patent 6, 127, 693 (1995.6.8-2015.6.7))

3. 高陰電性雜環基團改質之電致發光共軛高分子製備方法及其在高分子發光二極體上之應用
(Electroluminescent Conjugated Polymers Modified with High Electronegative Heterocyclic Moieties and Their Applications in Polymeric Light Emitting Diodes)
發明人：(inventors)：**陳壽安 (Show-An Chen)**, 李裕正
(中華民國專利(ROC Patent),第 143285 號 (2001.10.21-2019.5.12))
(US Patent 6,495,644 B1 (2002.10.15-2020.12.29))

4. 非水溶液之有機二次電池
(Non-aqueous organic secondary battery)
發明人：(inventors)：**陳壽安 (Show-An Chen)**, 梁凱閔, 楊蘭生, 李仁傑
(中華民國專利(ROC Patent), 第 173442 號 (2003.03.01-2021.10.4))

5. 適合作為二次電池之隔離膜的化學交聯聚丙烯腈高分子電解質的製作方法 (Method for preparation of chemically crosslinked polyacrylonitrile polymer electrolyte as separator for secondary battery)
發明人：(inventors)：**陳壽安 (Show-An Chen)**, 薛淵傑, 李仁傑, 王博生
(中華民國專利(ROC Patent), 第 I 237643 號 (2005.08.11-2022.05.13))

6. 含磷光發光基團之發光共軛高分子及其在發光二極體上之應用 (Electroluminescent conjugated polymers containing phosphorescent moieties and the application thereof in LED)
發明人：(inventors)：**陳壽安 (Show-An Chen)**, 陳希文, 廖金龍, 梁永民
(中華民國專利，第 I 267545 號)(2006.12.1-2023.6.16)
(US. Patent, 7,098,295 B2 (2003.12.16-2020.12.15))

7. 側鏈帶有兩種以上相對於主鏈具階梯式離子化位能(或電子親和性)載子傳輸基團之發光共軛高分子及其在發光二極體上之應用
(Conjugated polymers grafted with graded charge transporting moieties and their application in light-emitting diodes)
發明人(inventors)：**陳壽安 (Show-An Chen)**, 黃智偉, 彭剛勇, 劉景洋
(中華民國專利: 第 I 362409 號 (2012-04-21~2027-09-05))

8. 以濕式浸潤擴散法進行高分子發光二極體光色調控、效能提升以及多色元件製作(Method of increasing β-phase content in a conjugated polymer useful as a light emitting layer in a polymer light emitting diode)
發明人(inventors)：**陳壽安 (Show-An Chen)**, 盧信宏
(US patent, US 8287941 B2 (2012.10.16-2028.8.7)

9. 一種可應用於高分子發光二極體之由具有電子注入/傳遞功能的金屬離子鑲嵌入冠醚側鏈之共軛高分子與具有電洞阻擋功能的高分子組成之具水/醇類可溶解性電子注入/電洞阻擋複合層 (A water/alcohol soluble composite layer consisting of electron-injection/electron-transport crown ether/metal-ion grafted conjugated polymer and hole-blocking polymer and their application in organic light-emitting diode and organic solar cell)
發明人(inventors)：**陳壽安 (Show-An Chen)**, 盧信宏, 廖思豪
(中華民國專利: 第 I 480309 號 (2012.06.29-2032.06.28))
(US Patent:9,105,851 B2 (2015.08.11-2032.06.05)

D. Other

1. Educational Ministry: Academic Award in Engineering (one person, 1984); National Chair in engineering and applied science (1999.8-2002.7; 2002.8-2005.7; life-time National Chair).

2. National Science Council, Outstanding Research Award (1985-1995); Distinguished Researcher (1995-2001).

3. Chung-Shan Academic Foundation, Academic Research Award (1982).

4. Outstanding Scholarship Award, Foundation for the Advancement of Outstanding Scholarship, (1995-2000; 2006-2010).

5. Science and Technology Award offered, Executive Yuan of ROC, (Dec. 22, 2003).

6. Teco Technology Foundation, TECO technology award received (Nov. 10, 2004).

7. Pan Wen-Yuan Foundation, Outstanding Research Award received (June 2007).

8. Asian-Pacific Academy of Advanced Materials, Fellow (2000-date).

9. Chairman, Macro Congress 2008, International Union of Pure and Applied Chemistry (IUPAC), Taipei, Taiwan, June 29-July 4, 2008.

10. Life-time Achievement Award, The Polymer Society, Taipei, (2009).

11. National Tsing Hua University: Honorary Chair (2010.8-2016.7); Tsing Hua Hou Jin-Duei Senior Chair (2010.8-2013.7);

12. Alumni Outstanding Achievement Award, National Chung-Kung University, (2011.7.19).

13. Fellow, Taiwan Institute of Chemical Engineers (First Time)，2013.

14. Fellow, The Polymer Society, Taipei, (First Time)，2015.

15. Honorary Doctor Degree (*Doctor Honoris Causa*), Russian Academy of Sciences (RAS), December 13, 2016.

16. Member of EU Academy of Sciences (2017-date)

17. 台湾石化合成公司「學術貢獻獎」, December 21, 2019.

Publications of Sinn-wen Chen (陳信文)

A. Journal Papers (* Corresponding author)

2025

1. H.-C. Lin, Y.-T. Chuang, P.-E. Jan, H.-M. Chen, P.-Y. Chen, K.-W. Huang, M.-T. Kuo, **S.-W. Chen**, H.-W. Lin, "Efficient Cs3Cu2I5 X-ray Scintillators by Mass-Production-Applicable Fast-Closed-Space-Evaporation", ACS Applied Electronic Materials, Vol. 7, pp. 8492-8500 (2025).

2. H.-D. Chiang, C.-H. Ho and ***S.-W. Chen**, "Bi-Co-Sb phase equilibria and Co/(Bi,Sb) interfacial reactions", Materials Chemistry and Physics, Vol. 346, 131372, (2025).

3. ***S.-W. Chen**, T.-W. Lin, H.-C. Huang, C.-H. Ho,.C. Zhang, and J. Zhu, "Phase transformation temperatures of the Sn–In–Ni–Zn quaternary system", CALPHAD: Computer Coupling of Phase Diagrams and Thermochemistry, Vol. 90, 102854, (2025) (107-2923-E-007-005-MY3 and 113-2221-E-007-031-MY3)

4. Y.-C. Tsai, Y. Hutabalian and ***S.-W. Chen**, "Phase diagrams and microstructures related to the miscibility gap of the Ag-Cu-Se system", Journal of Alloys and Compounds, Vol. 1036, 181751 (2025) (NSTC-111-2221-E-007-014-MY3).

5. ***S.-W. Chen**, Y.-A. Lee, T.-W. Lin, C. Zhang, H.-C. Huang and C.-H. Ho, "Phase transformation temperatures of Sn-Ag-Bi-Cu quaternary system", Calphad, Vol. 89, 10282, (2025). (NSTC 107-2923-E-007-005-MY3).

6. Y. Hutabalian, ***S.-W. Chen** and Y.-C. Tsai, "Ag-Cu-Te phase equilibria isothermal sections at 600℃ and 400℃", Metallurgical and Materials Transactions A, Vol. 56A, pp. 77-87, (2025). (NSTC 111-2634-F-007-008)

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7. ***S.-W. Chen**, P.-S. Huang, Y.-C. Tsai and Y. Hutabalian, "Liquidus projection and miscibility gap of the Ag-Cu-Te ternary system", Calphad-Computer Coupling of Phase Diagrams and Thermochemistry, Vol. 87, 102765, (2024). (MOST-111-2221-E-007-014-MY3)

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12. *Y. Hutabalian, G. N. Hermana, A. D. Laksono, **S.-W. Chen**, "Phase equilibria and thermodynamics assessment of the Co–Fe–Nb ternary system", Intermetallics, Vol. 168, 108243, (2024)

13. Y.-F. Tsai,Y.-C. Chao, C.-R. Hsing, K.-K. Wang, Y.-H. Tung, C.-C. Yang, **S.-W. Chen**, G. J. Snyder, H.-W. Yen, C.-M. Wei, P.-C. Wei, *H.-J. Wu, "From stoichiometric to off-stoichiometric GeTe: Phase diagram reconstruction and thermoelectric performance reassessment", Acta Materialia, Vol. 265, 119644, (2024).

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15. Y.-T. Lee, E. J.-W. Liou* and **S.-W. Chen**, "Comparison between microporous and nanoporous orthodontic miniscrews: An experimental study in rabbits", Journal of Orofacial Orthopedics,Vol. 85, pp. 1-12 (2024).

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16. ***S.-W. Chen**, Y. Chen, H.-C. Yang and C.-H. Ho, 2023, "Ni/GeTe interfacial reactions and Ni-Ge-Te phase equilibria", Journal of Electronic Materials, Vol. 52, pp. 8019–8029. (MOST 111-2221-E-007-014-MY3) and (MOST 111-2634-F-007-008).

17. Y.-H. Lai, H.-C. Yang and ***S.-W. Chen**, 2023, "Co-Sb-Te phase equilibria and Co/Sb_2Te_3 interfacial reactions", Journal of Phase Equilibria and Diffusion, Vol. 44, pp. 468–482. (MOST 107-2923-E-007-005-MY3) and (MOST 111-2634-F-007-008).

18. C.-Y. Liu, Y.-Y. Liu, S.-H. Chen, **S.-W. Chen**, A. Dębski, W. Gąsior and *W. Gierlotka, 2023, "Thermodynamic modeling of the Sb-Te system supported by DSC measurement and ab initio calculations", Journal of Materials Research, Vol. 38, pp. 4287–4302.

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21. C.-C. Ching, Y. Hutabalian, C.-C. Chen and ***S.-W. Chen**, 2023, "Phase diagrams of thermoelectric Bi-Sb-Se system", Calphad, Vol. 81, 102559 (MOST-104-2221-E-007-090-MY3) and (MOST 111-2634-F-007-008)

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28. ***S.-W. Chen**, H.-H. Chen and Y. T. Kuo, 2022, "Co/SnSe2 and (Co,Ni)/SnSe2 interfacial reaction", Journal of the Taiwan Institute of Chemical Engineers, Vol. 139, 104491, (MOST 107-2923-E-007-005-MY3 and MOST 111-2634-F-007-008-).

29. Y.-T. Lee, E. J.-W. Liou* and **S.-W. Chen**, 2022, "Comparison between microporous and nanoporous orthodontic miniscrews: An experimental study in rabbits", Journal of Orofacial Orthopedics, DOI10.1007/s00056-022-00398-3.

30. *O. Zobač, A. Zemanova, **S.-W. Chen** and A. Kroupa, 2022, "CALPHAD-type assessment of the Pb-Se-Sn system", Journal of Phase Equilibria and Diffusion, Vol. 43, pp. 243–255. (MOST 107-2923-E-007-005-MY3).

31. Y. Hutabalian, C.-M. Chen, H.-H. Chen, Z.-K. Hu and ***S.-W. Chen**, 2022, "Interfacial reactions in Ni/Se-90at%Te and Ni/Pb1-xSnxSe couples", Materials Chemistry and Physics, Vol.282, 125959. (MOST 107-2923-E-007-005-MY3) and (MOST 110-2634-F-007-024).

32. **S.-W. Chen**, *Aleš Kroupa, J.-Y. Du, A. Zemanová, Y. Hutabalian, J. Vřešťál and K.-C. Chiu, 2022, "Experimental and theoretical study of the Ag-Sn-Te phase diagram", Journal of Phase Equilibria and Diffusion, Vol. 43, pp. 139–163 (2022 (MOST 107-2923-E-007-005-MY3).

33. ***S.-W. Chen**, Z.-K. Hu and C.-C. Ching, 2022, "Ni-Pb-Te phase equilibria and interfacial reactions in Ni/PbTe couples", Journal of the Taiwan Institute of Chemical Engineers, Vol. 133, 104194 , (MOST 107-2923-E-007-005-MY3 and MOST 110-2634-F-007-024-).

34. A. Ramakrishnana and ***S.-W. Chen**, 2022, "Interfacial reactions in Sn/Cu2Se couples", Journal of Electronic Materials, Vol. 51, pp. 2475–2484, (MOST 106-2221-E-007-094-MY3 and MOST-109-2811-E-007-052).

35. Z.-K. Hu and ***S.-W. Chen**, 2022, "Interfacial reactions in Cu/PbTe and Cu/PbSe couples", Journal of Alloys and Compounds, Vol. 899, 163299, (MOST 107-2923-E-007-005-MY3) and (MOST 110–2634-F-007–024-).

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36. Y. Hutabalian and ***S.-W. Chen**, 2021, "Interfacial reactions in Ag/Se, Ag/Se-30at%Te and Ag_2Te/Se couples and the phase equilibria of the Ag-Se-Te ternary system", Journal of Alloys and Compounds, Vol. 889, 161580, (MOST 107-2923-E-007-005-MY3).

37. Y.-T. Lee, *E. J.-W. Liou, L.-L. Huang, H.-J. Wu and **S.-W. Chen**, 2021, "Effect of anodization on friction behavior of β-titanium orthodontic archwires", Journal of Orofacial Orthopedics, https://doi.org/10.1007/s00056-021-00347-6.

38. O. Fikar, J. Vrestal, A. Kroupa*, and **S.-W. Chen**, 2021, "The Study of the Pb-Se-Te Phase Diagram: Part 2 – The Thermodynamic Assessment of the Se-Te and Pb-Se-Te systems", Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, Vol. 74, 102309, (MOST 107-2923-E-007-005-MY3).

39. ***S.-W. Chen**, T.-Y. Huang, Y.-H. Hsu, J.-X. Liu, A. Zemanova and A. Kroupa, 2021, "Phase diagram of Pb-Se-Te system I: Experimental study", Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, Vol. 74, 102310, (MOST 107-2923-E-007-005-MY3)

40. A. F. Musa and ***S.-W. Chen**, 2021, "Interfacial reactions in Ni/Se-Sn, Ni/Se-Te, Ni/Sn-Te and Ni/Se-Sn-Te couples", Journal of Electronic Materials, Vol. 50, pp. 4346-4357 (MOST-107-2923-E-007-005 -MY3).

41. *W. Gierlotka, I.-T. Lin, **S.-W. Chen**, W. Gąsior and A. Dębski, 2021, "Re-optimization of the binary Sb-Se system aided by ab-initio calculations", Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, Vol. 73, 102257.

42. ***S.-W. Chen**, T.-N Kuo, J.-X. Liu, P.-C. Lo and Y.-W. Yen, 2021, "Phase equilibria and wetting of Al–Co–Cu and Al–Co–Ni quasicrystals", Materials Chemistry and Physics, Vol. 263, pp. 124409 (1-19). (MOST106-2221-E-007 - 094 -MY3)

43. ***S.-W Chen**, Y.-H. Hsu, H.-W. Shih and H.-C. Huang, 2021, "Ag-Sb/Cu interfacial reactions and Ag-Cu-Sb phase equilibria", Journal of Alloys and Compounds, Vol. 855, 157239. (MOST 107-2923-E-007-005-MY3).

B. Conference Presentations

2025

1. C.-H. Ho, Y.-Y. Chen and **S.-W. Chen** (2025, Dec.). CALPHAD-assessment of Ag-Cu-Sb ternary system. 2025 TwiChE.

2. C.-H. Ho, H.-C. Huang and **S.-W. Chen** (2025, Nov.). CALPHAD-assessment of Bi-Cu-Sn ternary system. MRS-Taiwan Annual Meeting 2025.

3. C.-H. Ho, H.-D. Chiang and **S.-W. Chen** (2025, May). Bi-Co-Sb phase equilibria and Co/(Bi,Sb) interfacial reactions. 52nd International Conference on Computer Coupling of Phase Diagrams and Thermochemistry.

4. C.-H. Ho, H.-C. Huang and **S.-W. Chen** (2025, May). Liquidus projections and miscibility gaps in the Sn-Bi-Cu-Te quaternary system. 52nd International Conference on Computer Coupling of Phase Diagrams and Thermochemistry.

5. C.-H. Ho, H.-D. Chiang and **S.-W. Chen** (2025, Mar.). Phase equilibria of Co-Ge-Sb system. 154th TMS Annual Meeting & Exhibition.

6. C.-H. Ho, J.-R Chang, H.-D. Chiang and **S.-W. Chen** (2025, Mar.). Unexpected interfacial reactions in Co/Bi_2Te_3 and Co/GeTe couples. 154th TMS Annual Meeting & Exhibition.

7. C.-H. Ho, Y. Chen and **S.-W. Chen** (2025, Feb.). Unexpected interfacial reactions in Co/GeTe and Ni/GeTe couples. 13th Taphad.

8. Y. C. Tsai, C. H. Ho and **S. -W. Chen** (2025, Nov.). Phase equilibria of Co-Ge-Sb system. 2025 年台灣化工學會年會.

9. Y. C. Tsai, C. Y. Chuang and **S. -W Chen** (2025, Nov.). Cu-Co-Sb ternary phase diagrams and Cu / CoSb3 interfacial reactions. MRS-Taiwan Annual Meeting 2025

10. Y. C. Tsai, C. H. Ho and **S. -W. Chen** (2025, May). Phase equilibria of Co-Ge-Sb system. 2025 CALPHAD meeting.

11. Y. C. Tsai, Y. J. Chuang and **S. -W. Chen** (2025, May). Liquidus projection and liquid miscibility gaps in Ag-Cu-Se and Cu-Se-Te ternary systems. 2025 CALPHAD meeting.

12. Y. C. Tsai, Y. J. Chuang and **S. -W. Chen** (2025, Mar.). Miscibility gaps in the Ag-Cu-Se-Te quaternary system. 154th TMS Annual Meeting & Exhibition.

13. W. Y. Chang, Y. C. Tsai, C. H. Ho and **S. -W. Chen** (2025, Mar.). Phase equilibria, solidification and properties of Al-Cu-Ni-Sn alloys. 154th TMS Annual Meeting & Exhibition.

14. **S. -W. Chen***, T. W. Lin, Y. C. Tsai and C. H. Ho (2025, Mar.). Liquidus and invariant reaction temperatures of Sn-In-Ni-Zn alloys. 154th TMS Annual Meeting & Exhibition.

15. **S. -W. Chen***, Y. C. Tsai, Y. J. Chuang and H. C. Huang (2025, Mar.). Miscibility gaps in multicomponent systems. 154th TMS Annual Meeting & Exhibition.

16. M. H. Lee and **S. -W. Chen** (2025, Nov.). Ni/CoGe 界面反應與 Co-Ni-Ge 三元系統相平衡，2025 年台灣化工學會年會.

17. C. Y. Chuang and **S. -W Chen** (2025, Nov.). Liquidus projection and liquid miscibility gap of Sn-Cu-Te system. MRS-Taiwan Annual Meeting 2025

18. S. T. Liu and **S. -W Chen** (2025, Nov.). Fe-V-Zr 三元合金的相平衡、機械性質及腐蝕性質，MRS-Taiwan Annual Meeting 2025

19. Y. H. Lin and **S. -W. Chen** (2025, Nov.). Ni-Bi-Sb 三元系統相平衡，2025 年台灣化工學會年會.

20. R. Z. Yang and **S. -W. Chen** (2025, Nov.). 通電對 Ag-Cu-Sb 合金的微結構與 Ni 基材界面反應，2025 年台灣化工學會年會.

21. R. Z. Yang and **S. -W. Chen** (2025, Nov.). 通電對 Cu-Sb 合金與 Co 及 Ni 基材界面反應之影響，MRS-Taiwan Annual Meeting 2025

2024

1. Y. C. Tsai, Y. J. Chuang and S. -W Chen, 2024, “Miscibility gaps in the Ag-Cu-Se-Te quaternary system”, MRS-Taiwan Annual Meeting 2024, Taichung, Taiwan.莊詠任, 蔡永濬, **陳信文**, 2024, “Ag-Se-Te 和 Cu-Se-Te 三元系統的混溶間隙與液相線投影圖”, 2024 年中國材料科學學會年會, 中興大學.

3. 林翰辰, 蔡永濬, **陳信文**, 2024, “Ag-Sn-Te / Co 與 Ag-Sn-Te / Ni 的界面反應”, 2024 年中國材料科學學會年會, 中興大學.

4. Y. C. Tsai, P. S. Huang and **S. -W. Chen**, 2024, “Ag and Cu whiskers in the Ag-Cu-Se ternary system”, 153rd TMS Annual Meeting & Exhibition, Orlando, Florida, USA.

5. **S. -W. Chen***, Y. C. Tsai, P. S. Huang and Y. Hutabalian, 2024, “Phase diagram, whisker and miscibility gap of the Ag-Cu-Te ternary system”, 153rd TMS Annual Meeting & Exhibition, Orlando, Florida, USA.

6. Y. C. Tsai, H. C. Yang, C. H. Ho and **S. -W. Chen**, 2024, "Co/Bi2(Se,Te)3 interfacial reactions and Bi-Co-Se-Te phase equilibria", 153rd TMS Annual Meeting & Exhibition, Orlando, Florida, USA.

7. 林德威, **陳信文**, 2024, "Liquidus and invariant temperatures of Sn-based Sn-Ag-Cu-Bi and Sn-In-Ni-Zn alloys.", 2024 年第 12 屆台灣相圖會議, 清華大學.

8. C.-H. Ho, H.-C. Yang, Y. C. Tsai and **S.-W. Chen**, 2024, "Co/Bi2Se3 interfacial reactions and Bi-Co-Se phase equilibria", 153rd TMS Annual Meeting & Exhibition, Orlando, Florida, USA.

9. C.-H. Ho, J.-R Chang. H.-C. Yang and **S.-W. Chen**, 2024, "Co/Bi2Te3 interfacial reactions and Bi-Co-Te phase equilibria", 153rd TMS Annual Meeting & Exhibition, Orlando, Florida, USA.

10. C.-H. Ho, J.-R Chang, H.-D. Chiang and **S.-W. Chen**, 2024, "Unexpected interfacial reactions in Co/Bi2Te3 and Ni/Bi2Te3 couples", MRS-Taiwan Annual Meeting 2024, Taichung, Taiwan.

11. H.-C. Huang, C.-H. Ho and **S.-W. Chen**, 2024, "Sn-Bi-Cu 三元系統液相線投影圖與無變度反應之探討", MRS-Taiwan Annual Meeting 2024, Taichung, Taiwan.

2023

12. Y. C. Tsai, Y. Hutabalian and **S. -W. Chen**, 2023, "Liquidus projections of Ag-Cu-Te and Ag-Cu-Se systems", 2023 TwIChE, Taipei, Taiwan.

13. 張文俞, **陳信文**, 2023, "Phase diagrams of the Al-Cu-Ni-Zn system", 2023 年中國材料科學學會年會, 清華大學.

14. 林德威, **陳信文**, 2023, "Thermal analysis, solidification and microstructures of Sn-based Sn-In-Ni-Zn alloys.", 2023 年中國材料科學學會年會, 清華大學.

15. C.-H. Ho and **S.-W. Chen**, 2023, "Stability diagram of Co-Ni-Sb and Co-Ge-Sb systems", 2023 TwIChE, Taipei, Taiwan.

16. **陳信文**, 2023, "AI 快速發展，化工教育是否需要變化?以化工熱力學為例", presented at the 2023 TwIChE annual meeting, Taipei, Taiwan.

17. **S.-W. Chen**, Y.-C. Liu and S.-K. Lin, 2023, "Phase diagrams in the modern age: changed and unchanged", presented at the 2023 MRS-T International Conference, Hsinchu, Taiwan.

18. **S.-W. Chen**, J.-R. Chang and H.-C. Yang, 2023, "Interfacial stabilities in thermoelectric devices", presented at the AIChE conference, Orlando, USA.

19. **S.-W. Chen**, J.-R. Chang and H.-C. Yang, 2023, "Interfacial reactions in Co/Bi2Te3 abd Co/Bi2Se3 couples", presented at the MS&T 23 conference, Columbus, USA.

20. **S.-W. Chen**, P.-S. Huang and J.-Y. Lin, 2023, "Ag and Cu whiskers", presented at the 4th Annual Meeting of Taiwan Thermoelectric Society, Hwalien, Taiwan.

21. **S.-W. Chen**, Y. A. Lee and T.-W. Lin, 2023, "Eutectic and liquidus temperatures of Sn-based alloys", presented at the 50th International Conference on Computer Coupling of Phase Diagrams and Thermochemistry, Boston, USA.

22. **S.-W. Chen**, 2023, "Understanding peculiar behaviors of electronic materials through phase diagrams", presented at the 2023 International Conference on Electronic Packaging, Kumamoto, Japan.

23. **S.-W. Chen**, C.-H. Wang, J.-R. Chang and H.-C. Yang, 2023, "Unexpected reactions observed in Ni/SnSe2 couples", presented at the 152nd TMS annual meeting, San Diego, USA.

24. **S.-W. Chen**, P.-S. Huang and Y. Hutabalian, 2023, "Ag and Cu Whisker Formation", presented at the 152nd TMS annual meeting, San Diego, USA.

2022

25. 李怡安、**陳信文**, 2022, "錫-銀-鉍-銅四元系統中錫基合金液相線溫度量測", 2022 台灣化學工程學會年會,淡江大學.

26. 張家瑞、**陳信文**, 2022, "Co/Bi2Te3 的界面反應", 2022 台灣化學工程學會年會，淡江大學.

27. 楊賀程、**陳信文**, 2022, "Co/Bi2Se3 界面反應與 Bi-Co-Se 相平衡", 2022 台灣化學工程學會，淡江大學.

28. Y. Hutabalian and **S.-W. Chen**, 2022, "Thermodynamics assessments of Cu-Pb-Te system by Calphad method", 2022 台灣化學工程學會，淡江大學.

29. **S.-W. Chen**, 2022, "Expected and unexpected whisker formation", 60 KIChE annual meeting, Korea.

30. Y. Hutabalian and **S.-W. Chen**, 2022, "Liquidus projection of the ternary Ag-Cu-Te thermoelectric material system", 2022 中國材料科學學會年會，聯合大學.

31. 黃品碩、**陳信文**, 2022, "Ag-Cu-Se-Te 四元系統晶鬚成長之分析", 2022 中國材料科學學會年會，聯合大學.

32. **S.-W. Chen**, 2022, "Phase equilibria of thermoelectric Bi-Sb-Se-Te quaternary system",2022 CHISA, Prague, Czech.

2021

33. **S.-W. Chen**, 2021, "Unexpected phenomena observed in metallurgical studies", presented at the 150th TMS annual meeting, (virtual).

34. **S.-W. Chen**, Y.-H. Hsu, H.-W. Shih and S.-K. Lin, "Interfacial reactions in the Bi2Te3 thermoelectric modules", presented at the 150th TMS annual meeting, (virtual).

35. Y. Hutabalian and **S.-W. Chen**, 2021, "Interfacial Reaction in Ag/Se, Ag/Te, Ag_2Te/Se and Ag_2Te/Se-30at.%Te couples and their Related Phase Diagram", presented at the 150th TMS annual meeting, (virtual).

36. Y. Hutabalian, Z.-K. Hu, H.-H. Chen and **S.-W. Chen**, 2021, "Ni/Pb-Te and Ni/Se-Sn Interfacial Reactions and Their Related Phase Diagrams", presented at the 150th TMS annual meeting, (virtual).

37. Y. Hutabalian and **S.-W. Chen**, 2021, "Diffusion Couples in Cu/Se, Cu_2Se/Te, and Cu_2Te/Se at 300^{o}C and phase equilibria in the Cu-Se-Te ternary system", presented at the Materials Research Society-Taiwan International Conference, (virtual).

38. Y. Hutabalian and **S.-W. Chen**, 2021, "Liquidus projection and isothermal section of the Cu-Se-Te ternary system" presented at the 69th TwIChE annual meeting, Kaohsiung, Taiwan.

39. C.C. Ching and **S.-W. Chen**, 2021, "Bi-Sb-Se-Te quaternary system: Experimental measurement and Calphad calculation" presented at the 69th TwIChE annual meeting, Kaohsiung, Taiwan.

40. 賴運宏、**陳信文**、2021、"(Cu-Ni)/Sb-Ge-Te 界面反應與其相關系統相圖"，2021 台灣化學工程學會 69 周年年會、高雄。

41. 陳奕、**陳信文**、2021、"(Cu-Ni)/GeTe 界面反應與其相關系統相圖"，2021 台灣化學工程學會 69 周年年會、高雄。

42. 郭燿德、**陳信文**、2021、"Co-Fe-Ge 三元系統相圖:實驗量測與 Calphad 計算"，110 中國材料科學學會、台北。

C. Invited Articles (受邀期刊專稿)

1. **陳信文**、林士剛，2020, "材料與化學工程整合計算專輯前言"， 化工，Vol. 67(6), p. 105.

2. 陳志銘、劉博韜、郭修伯、陳炳宏、陳嘉明、王銘忠、呂春美、**陳信文**，2020， "培育化工人才策略與建議", 化工，Vol. 67(6), pp. 246-266.

D. Award and service

1. 中國材料學會理事長， 2024/01/01-迄今

2. 國立清華大學教師會理事長，2023/01/01-2024/12/31

3. 陸志鴻獎 (Tse-Hong Loh award)，中國材料科學學會 (Materials Resarch Society-Taiwan)，(2023)。

4. 石延平教授論文獎，台灣化學工程學會, (2023)

5. 特約研究計畫(Special research project)，國家科學及技術委員會(National Science and Technology Council) (2022/8/1 起).

6. 中技社化工學術獎，台灣化學工程學會(CTCI foundation Chemical Engineering Academic Award, Taiwan Institute of Chemical Engineers), (2022)

7. 108 年度科技部傑出研究獎，科技部 (Outstanding Research Award, Ministry of Science and Technology) (2020)

8. 台灣化學工程學會會士 (Fellow of Taiwan Institute of Chemical Engineers).

9. 亞太材料學院院士 (Asia Pacific Academy of Materials (APAM) Academician).

10. 中國材料科學學會會士 (Materials Research Society-Taiwan Fellow).

11. 美國金屬學會會士 (Fellow, ASM International).

12. 台灣化工學會理事長 2019/1/1~2020/12/31

13. 中國材料學會副理事長 2017/1/1~2018/12/31

14. (理)監事: 中國工程師學會新竹分會, 2010~迄今

15. 理事：中國材料學會, 2009~迄今

16. 理事: 台灣化工學會, 2017~迄今

17. Committee Member: Alloy Phase Diagram Committee, ASM, 2006/8~now

18. Education committee member, TMS, 2017/2~2020/12

19. Editorial committee member: Journal of Phase Equilibria and Diffusion, 2010/1~now

20. Associate editor: Journal of Electronic Materials, 2006/8 ~2025/12

Publications of Ching-Tien Chen (陳靖天)

A. Journal Papers (* Corresponding author)

2025

1. Ching-Tien Chen, Anna Sviripa, Sugandha Verma, Christopher Paolucci*, David W. Flaherty*, "Reactions of Surface Peroxides Contribute to Rates and Selectivities for C_2H_4 Epoxidation on Silver" *ACS Catal.* 15, 1387-1398 (2025).

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2. Jyun-Yi Yeh, Ching-Tien Chen, Yi-Lin Yang, Jing-Chun Chen, Wen-Yueh Yu, Yi-Pei Li*, Kevin C.-W. Wu* "Reductive amination of furfural and furfurylamine with methoxides and MIL-53-NH_2 (Al)-derived Ru catalyst", *J. Taiwan Inst. Chem. Eng.* 158, 104884 (2024).

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3. Phuc Khanh Lam, Jian-Jie Liao, Miao-Chun Lin, Yu-Hsiu Li, Tsu-Hao Wang, Hsin-Kai Huang, Yu-An Hsu, Hao-Ying Patterson Hsieh, Pu-Yun Kuan, Ching-Tien Chen, Guo-Xiu Hao, Chia-Kuang Tsung, Kevin C.-W. Wu, Andris Šutka, Martynas Kinka, Lien-Yang Chou*, Fa-Kuen Shieh* "Controlled Encapsulation of Gold Nanoparticles into Zr-Metal–Organic Frameworks with Improved Detection Limitation of Volatile Organic Compounds via Surface-Enhanced Raman Scattering", *Inorg. Chem.* 62, 14896–14901 (2023).

4. Raquel Simancas, Masamori Takemura, Ching-Tien Chen, Kenta Iyoki, Tatsuya Okubo, Toru Wakihara* "Amorphous Aluminosilicates as Efficient Ion-Exchangers for Ammonium Cation Removal from Aqueous Solutions", *J. Non-Cryst. Solids* 605, 122172 (2023).

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5. Ren-Xuan Yang*, Kalsoom Jan, Ching-Tien Chen, Wan-Ting Chen*, and Kevin C.-W. Wu* "Thermochemical Conversion of Plastic Waste into Fuels, Chemicals, and Value-Added Materials: A Critical Review and Outlooks", *ChemSusChem* 15, e202200171 (2022).

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6. Pei-Hsiang Hsu, Chien-Chun Chang, Tsu-Hao Wang, Phuc Khanh Lam, Ming-Yu Wei, Ching-Tien Chen, Chin-Yu Chen, Lien-Yang Chou*, and Fa-Kuen Shieh* "Rapid Fabrication of Biocomposites by Encapsulating Enzymes into Zn-MOF-74 via a Mild Water-Based Approach", *ACS Appl. Mater. Interfaces* 13, 52014-52022 (2021).

7. Babasaheb M. Matsagar, Hsiang-Ling. Sung, Jyun-Yi Yeh, Ching-Tien Chen, and Kevin C.-W. Wu* "One-Step Hydrogenolysis of 5-Hydroxymethylfurfural to 1,2,6-Hexanetriol using a Pt@MIL-53-Derived Pt@Al_2O_3 Catalyst and NaBH4 in Aqueous Media", *Sustain. Energy Fuels* 5, 4087-4094 (2021).

8. Keita Yamashita, Zhendong Liu*, Kenta Iyoki, Ching-Tien Chen, Shoko Miyagi, Yutaka Yanaba, Yusuke Yamauchi, Tatsuya Okubo, and Toru Wakihara* "Synthetic and Natural MOR Zeolites as High-Capacity Adsorbents for the Removal of Nitrous Oxide", *ChemComm* 57, 1312-1315 (2021).

9. Ching-Tien Chen, Kenta Iyoki*, Peidong Hu, Hiroki Yamada, Sohei Sukenaga, Mariko Ando, Hiroyuki Shibata, Koji Ohara, Tatsuya Okubo, and Toru Wakihara*, "Reaction Kinetics-Regulated Formation of Short-Range Order in an Amorphous Matrix During Zeolite Crystallization", *J. Am. Chem. Soc.* 143, 10986-10997 (2021).

B. Conference Presentations

2025

1. (Invited Speaker) 2025 Metal-Organic Frameworks Conference in Taiwan (MOF Taiwan 2025). Title: Reactions Kinetics Between Ingredients Affect the Structure of Amorphous Aluminosilicates and the Crystallization of Zeolites. June 22nd, 2025, National Taiwan University, Taiwan.

2. (Oral Presentation) 6th Euro-Asia Zeolite Conference (EAZC2025). Title: Reactions Kinetics Between Ingredients Affect the Structure of Amorphous Aluminosilicates and the Crystallization of Zeolites. January 20th, 2025, Hotel Alicante Golf, Alicante, Spain.

3. (Invited Speaker) 18th Taiwan-Japan Joint Symposium on Catalysis (18th TJJSC). Title: Reactive Forms of Oxygen in Ethylene Epoxidation: Insights from Operando Raman Spectroscopy and DFT Calculations. January 10th, 2025, Kyushu University Tsukushi Campus, Fukuoka, Japan.

2024

4. (Invited Speaker) 2nd International HCMUS-Chemistry Conference on Emerging Trends in Sustainable Chemistry (ESTC2024). Title: Critical Factors for Regulating the Crystallization of Zeolites. November 18th, 2024, Ho Chi Minh City University of Science, Ho chi Minh City, Vietnam.

5. (Invited Speaker) 台灣化學工程學會71週年年會。Title: Amorphous Aluminosilicates with Higher Degree of Short-Range Order Facilitate the Crystallization of Zeolites. 2024年11月10日於中原大學。

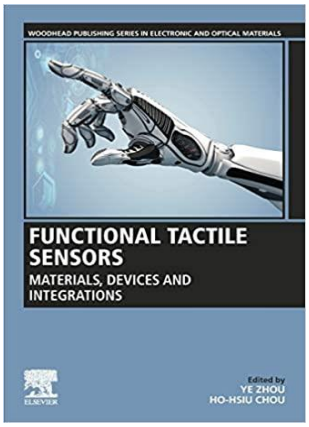
6. (Poster Presentation) 18th International Congress on Catalysis (ICC2024). Title: Operando Raman Spectroscopy Revealing Reactive Forms of Oxygen in Ethylene Epoxidation. July 15th, Lyon Convention Center, Lyon, France.

C. Others

1. Early-Career Editorial Board Member, *Chemical Engineering Journal*, 2025/11 ~ now

Publications of HO-HSIU CHOU (周鶴修)

A. Book Chapters (* Corresponding author)



Functional Tactile Sensors: Materials, Devices and Integrations (Woodhead Publishing Series in Electronic and Optical Materials)

- 作者: Ye Zhou, **Ho-Hsiu Chou**
- 出版者: Woodhead Publishing; 第 1 版 (8 2 月 2021)
- 語言: English
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- ISBN-13: 978-0128206331

B. Journal Papers (* Corresponding author)

2025

1. Yun Ku, Yi-An Chen, Hung-Yi Huang, Rou-Han Lai, Yi-Heng Tu, **Ho-Hsiu Chou***, Chi-Chang Hu*, "Bioinspired Poly (acrylic acid)-regulated Crosslinked Self-healing, Quasi-solid Polymer Electrolytes for Flexible Supercapacitor Applications" ***Journal of Materials Chemistry A***, 2026, 14, 3975-3984

2. Swatilekha Pratihar, **Ho-Hsiu Chou***, "Design and Synthesis of Hydrophilic Semiconducting Polymers for Superior Solar-Driven Hydrogen Evolution from Water: A Review of Current Approaches" ***Journal of Chemical Engineering of Japan***, 2025, 58, 2527270

3. **Ho-Hsiu Chou***, "Design and synthesis of semiconducting polymers for solar-driven hydrogen evolution from water" Physical Chemistry of Semiconductor Materials and Interfaces XXIV(會議論文), 2025, 13593, 22-25

4. Tse-Fu Huang, Kuei-Jhong Lin, Ying-Rang Zhuang, Yu-En Sun, Wei-Cheng Lin, Chun-Hao Li, Chien-Cheng Lin, En-Chi Chang, Chih-Li Chang, Yung-Ching Liu, Ling-Yu Hsu, Bing-Heng Li, Wan-Ling Chang, Pimjai Pimbaotham, Cheng-Yun Bai, Wei-Hsiang Huang, Dung Chau Kim Hoang, Khanh Do Gia Huynh, Yi-Chan Huang, Chao-Yan Chung, Mohamed M Elsenety, Chia-An Chang, Hsin-Ni Huang, Siriporn Jungsuttiwong, Chih-Wen Pao, Hsin-Lung Chen, Tien-Lin Wu, Chia-Chih Chang, Bo-Han Chen, Shang-Da Yang, Kun-Han Lin*, **Ho-Hsiu Chou***, "Flexible, nonfused sulfone functionalized polymer with enhanced active site access for photocatalytic sacrificial hydrogen evolution" ***Science Advances***, 2025, 11, eadx1629

5. Rou-Han Lai, Yi-An Chen, Chung-Ying Chou, Hung-Yi Huang, Wassana Mongkonkan, Chia-An Chiu, Yan-Heng Chen, Min-Han Yu, Chi-Chang Hu, Siriporn Jungsuttiwong, **Ho-Hsiu Chou***, "Toughening self-healable and recyclable PDMS supramolecular elastomers through an end-capping agent and a metallic crosslinker" ***Journal of Materials Chemistry A***, 2025, 13, 14588-14600 (Front Cover)

6. Khanh Do Gia Huynh, Yu-Ting Huang, Meng-Che Tsai, Islam M.A. Mekhemer, Jayachandran Jayakumar, Yu-Tung Lin, Chun-Hao Li, Swatilekha Pratihar, Tse-Fu Huang, Dung Chau Kim Hoang, Shang-Da Yang, **Ho-Hsiu Chou***, Masaki Horie*, "Boosting photocatalytic hydrogen evolution from binary mixture of hydrophilic-hydrophobic conjugated polymer dots with variable saponification degrees and molecular weights" ***Chemical Engineering Journal***, 2025, 509, 161082

7. Wei-Cheng Lin, Yu-En Sun, Ying-Rang Zhuang, Tse-Fu Huang, Kuei-Jhong Lin, Mohamed M Elsenety, Jui-Chen Yen, Hung-Kai Hsu, Bo-Han Chen, Chen-Yu Chang, Je-Wei Chang, Hsin-Ni Huang, Bing-Heng Li, Siriporn Jungsuttiwong, Toton Haldar, Shin-Huei Wang, Wan-Chi Lin, Tien-Lin Wu, Chin-Wen Chen, Chi-Hua Yu, An-Chung Su, Kun-Han Lin*, U-Ser Jeng*, Shang-Da Yang*, **Ho-Hsiu Chou***, " Optimally Miscible Polymer Bulk-Heterojunction-Particles for Nonsurfactant Photocatalytic Hydrogen Evolution" ***Journal of the American Chemical Society***, 2025, 147, 2537–2548

8. Ming-Jaan Ho*, Kuan-Ying Chen*, Minsi Yan*, Yun-Ting Chen*, Wei-Syuan Jhuang*, **Ho-Hsiu Chou***, Jui-Ming Yeh*, "Effect of three distinctive crosslinking agents on the dielectric properties of as-prepared polyimide aerogels prepared from super-critical fluid technique" ***Microporous and Mesoporous Materials***, 2025, 383, 113406

9. Mohamed Gamal Mohamed*, Islam MA Mekhemer, Ahmed FH Selim, Andreas Katsamitros, Dimitrios Tasis*, Abdul Basit, **Ho-Hsiu Chou***, Shiao-Wei Kuo*, "Molecular engineering of donor–acceptor-type conjugated microporous polymers for dual effective photocatalytic production of hydrogen and hydrogen peroxide" ***Materials Horizons***, 2025, DOI: 10.1039/D5MH00735F

10. Pei-En Jan, Hao-Chi Liang, Ren-Wei Cheng, Christopher R Greve, Yung-Tang Chuang, Yung-Ling Chiu, Guang-Hsun Tan, Mohamed M Elsenety, Chih-Li Chang, Dalia M Dorrah, Hoong-Lien Lai, Po-Wei Chiu, Sheng-Yuan Sun, Yun-Li Li, Eva M Herzig*, **Ho-Hsiu Chou***, Hao-Wu Lin*, "Molecular Design Strategy for Meta-Substituted Aromatic Organic Halides in Zero-Lead-Release Halide Perovskites with Efficient Waterproof Light Emission" ***Advanced Functional Materials***, 2025, 35, 202408323 (Back cover)

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11. Islam Mekhemer, Yi-Chieh Chiu, Mohamed M Elsenety, Ahmed M Elewa, Dalia M Dorrah, Khanh Do Gia Huynh, Dung Chau Kim Hoang, Chia-Chih Chang, **Ho-Hsiu Chou***, "Solar-driven photocatalytic hydrogen production thiophene-quinoxaline-based polymer dots with tunable molecular weight" ***Polymer Journal***, 2024, 56, 1079-1088

12. Islam MA Mekhemer, Ahmed M Elewa, Mohamed M Elsenety, Maha Mohamed Samy, Mohamed Gamal Mohamed, Ahmed Fouad Musa, Tse-Fu Huang, Tzu-Chien Wei, Shiao-Wei Kuo, Bo-Han Chen, Shang-Da Yang, **Ho-Hsiu Chou***, "Self-condensation for enhancing the hydrophilicity of covalent organic polymers and photocatalytic hydrogen generation with unprecedented apparent quantum yield up to 500 nm" ***Chemical Engineering Journal***, 2024, 154280

13. Yi-An Chen, Rou-Han Lai, Wan-Chi Lin, Hung-Yi Huang, Szu-Jou Chen, Chun-Ming Yeh, Hsiang-Ling Huang, Mohamed M Elsenety, Chi-Chang Hu, Chi-Hua Yu*, **Ho-Hsiu Chou***, "Enhancing Self-Healing and Mechanical Robustness through Aluminum Acetylacetonate-Driven Metal–Ligand Coordination for Skin-Inspired Sensing" ***ACS Applied Polymer Materials***, 2024, 6, 6976–6987

14. Wei-Cheng Lin, Yi-Hsiang Wu, Yu-En Sun, Mohamed M Elsenety, Wan-Chi Lin, Jui-Chen Yen, Hung-Kai Hsu, Bo-Han Chen, Hung-Yi Huang, Chia-An Chang, Tse-Fu Huang, Ying-Rang Zhuang, Yuan-Ting Tseng, Kun-Han Lin, Shang-Da Yang, Chi-Hua Yu, **Ho-Hsiu Chou***, "Symmetry-breaking of Dibenzo[b,d]thiophene Sulfone Enhancing Polaron Generation for Boosted Photocatalytic Hydrogen Evolution" ***Angewandte Chemie International Edition***, 2024, 136, e202407702

15. Shih-Yuan Chen*, Li-Yu Wang, Kai-Chun Chen, Cheng-Hsi Yeh, Wei-Chih Hsiao, Hsin-Yu Chen, Masayasu Nishi, Martin Keller, Chih-Li Chang, Chien-Neng Liao, Takehisa Mochizuki, Hsin-Yi Tiffany Chen*, **Ho-Hsiu Chou***, Chia-Min Yang*, "Ammonia synthesis over cesium-promoted mesoporous- carbon-supported ruthenium catalysts: Impact of graphitization degree of the carbon support" ***Applied Catalysis B: Environment and Energy***, 2024, 346, 123725

16. Ahmed M. Elewa, Islam M. A. Mekhemer, Ahmed F. M. EL-Mahdy, Amr Sabbah, Shih-Yuan Chen, Li-Yu Ting, Shimaa Abdelnaser, **Ho-Hsiu Chou***, "Room-Temperature Synthesis of Covalent Organic Frameworks using Gamma-Irradiation in Open-Air Conditions" ***Small***, 2024, 2311472

17. Islam M. A. Mekhemer, Mohamed M. Elsenety, Ahmed M. Elewa, Khanh Do Gia Huynh, Maha Mohamed Samybd, Mohamed Gamal Mohamed, Dalia M. Dorrah, Dung Chau Kim Hoang, Ahmed Fouad Musa, Shiao-Wei Kuo, **Ho-Hsiu Chou***, "Push–pull–pull interactions of 2D imide–imine-based covalent organic framework to promote charge separation in photocatalytic hydrogen production" ***Journal of Materials Chemistry A***, 2024, 12, 10790-10798

18. Tse-Fu Huang, Ying-Rang Zhuang, Chih-Li Chang, Ching-Li Huang, Wei-Cheng Lin, Zi-Cheng Jiang, Li-Yu Ting, Islam M. A. Mekhemer, Yu-En Sun, Pinit Kidkhunthod, Jeng-Lung Chen, Yi-Chan Huang, Hung-Kai Hsu, Yuan-Ting Tseng, Yi-Hsiang Wu, Bing-Heng Li, Shang-Da Yang, Yen-Ju Cheng, **Ho- Hsiu Chou***, "Indanone-based conjugated polymers enabling ultrafast electron transfer for visible light-driven hydrogen evolution from water" ***Journal of Materials Chemistry A,*** 2024, 12, 3633-3643

19. Verner Sääsk*, Yi-An Chen, Tse-Fu Huang, Li-Yu Ting, Ting-An Luo, Saki Fujii, Dr. Kaija Põhako-Esko, Dr. Masaki Yoshida, Masako Kato*, Tien-Lin Wu*, **Ho-Hsiu Chou***, "Photophysical Tuning of Imidazolium Tetrahalidomanganate (II) Complexes towards Highly Efficient Green Emitters with Near-Unity Quantum Yield" ***European Journal of Inorganic Chemistry***, 2024, 27, e202300562

20. Ahmed E Hassan, Ahmed M Elewa, Mai SA Hussien, Ahmed FM El-Mahdy, Islam MA Mekhemer, Ibrahim S Yahia, Tarek A Mohamed*, **Ho-Hsiu Chou***, Zhenhai Wen*, "Designing of covalent organic framework/2D g-C3N4 heterostructure using a simple method for enhanced photocatalytic hydrogen production" ***Journal of Colloid and Interface Science***, 2024, 653, 1650-1661

21. Islam M. A. Mekhemer, Ying-Sheng Wu, Ahmed M. Elewa, Wen-Chang Chen, Chu-Chen Chueh*, **Ho-Hsiu Chou***, "Naphthalenediimide-Based Polymer Dots with Dual Acceptors as a New Class of Photocatalysts for Photocatalytic Hydrogen Generation under Visible Light Irradiation" ***Solar RRL***, 2024, 8, 2300994

22. Li-Yu Ting, Bing-Heng Li, Qian-Ci Huang, An-Rong Chen, Yu-En Sun, Chih-Li Chang, Wei-Cheng Lin, Ahmed M. Elewa, Zong-Hong Lin, Tzu-En Lin, **Ho-Hsiu Chou***, "3D-Printable and Robust All-in-One Polymer-Entangled Photocatalytic Microreactors for Visible-Light-Driven Hydrogen Evolution" ***ACS Applied Energy Materials***, 2024, 7, 657-664

23. Mohamed Hammad Elsayed, Mohamed Abdellah, Ahmed Zaki Alhakemy, Islam M. A. Mekhemer, Ahmed Esmail A. Aboubakr, Bo-Han Chen, Mohamed Gamal Mohamed, Chih-Hsuan Lu, Shang-Da Yang, Shiao-Wei Kuo, Chen-Hsiung Hung, Li-Chyong Chen, Kuei-Hsien Chen, **Ho-Hsiu Chou***, "Overcoming Small-Bandgap Charge Recombination in Visible and NIR-Light-Driven Hydrogen Evolution by Engineering the Polymer Photocatalyst Structure" ***Nature Communications***, 2024, 15, 707

24. Zihao Feng, Ahmed M Elewa, Islam MA Mekhemer, Wenbiao Niu, Xin-Qi Ma, Ziqi Jia, JiYu Zhao, Su-Ting Han, **Ho-Hsiu Chou***, Ye Zhou*, "A covalent organic polymer-based transistor with multifunctional memory and synaptic functions" ***Journal of Materials Chemistry C***, 2024, 12, 1334-1340

25. Tse-Fu Huang, Jia-Jen Liu, Ze-Yu Lai, Je-Wei Chang, Ying-Rang Zhuang, Zi-Cheng Jiang, Chih-Li Chang, Wei-Cheng Lin, Yan-Heng Chen, Yi-Hsiang Wu, Yu-En Sun, Ting-An Luo, Yi-Kuan Chen, Jui-Chen Yen, Hung-Kai Hsu, Bo-Han Chen, Li-Yu Ting, Chia-Yeh Lu, Yu-Tung Lin, Ling-Yu Hsu, Tien-Lin Wu, Shang-Da Yang, An-Chung Su, U-Ser Jeng*, **Ho-Hsiu Chou***, "Performance and Solution Structures of Side-Chain-Bridged Oligo (Ethylene Glycol) Polymer Photocatalysts for Enhanced Hydrogen Evolution under Natural Light Illumination" ***Small***, 2024, 20, 2304743

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26. Chih-Li Chang, Tse-Fu Huang, Wei-Cheng Lin, Li-Yu Ting, Chin-Hsuan Shih, Yan-Heng Chen, Jia-Jen Liu, Yu-Tung Lin, Yuang-Ting Tseng, Yi-Hsiang Wu, Yu-En Sun, Mohamed Hammad Elsayed, Chin-Wen Chen*, Chi-Hua Yu*, **Ho-Hsiu Chou***, "Synergistic Effect of Crown Ether and Main-Chain Engineering for Boosting Hydrogen Evolution of Polymer Photocatalysts in Seawater" ***Advanced Energy Materials***, 2023, 13, 2300986 (Back cover) (Covered by Liberty Times, AP, Boston Herald, FOX 40, KTTC, Telegraph, and more than ten other domestic and international news media outlets.)

27. Yi-An Chen, Szu-Jou Chen, Li-Yen Lee, Rou-Han Lai, Chun-Ming Yeh, Chia-An Chiu, Jhao-Yu Lai, Ying-Chih Lai*, **Ho-Hsiu Chou***, "Fluoro-based organic small molecules as sliding crosslinkers for boosting stretchability and self-healability of polymers for hybrid human-motion sensing and energy harvesting" ***Nano Energy***, 2023, 117, 108882 (Front cover)

28. Wei-Ting Chung, Islam M.A. Mekhemer, Mohamed Gamal Mohamed, Ahmed M. Elewa, Ahmed F.M. EL-Mahdy, **Ho-Hsiu Chou***, Shiao-Wei Kuo*, Kevin C.-W. Wu*, "Recent advances in metal/covalent organic frameworks based materials: Their synthesis, structure design and potential applications for hydrogen production" ***Coordination Chemistry Reviews***, 2023, 484, 215066

29. Wei-Cheng Lin, Chih-Li Chang, Chin-Hsuan Shih, Wan-Chi Lin, Ze- Yu Lai, Je-Wei Chang, Li-Yu Ting, Tse-Fu Huang, Yu-En Sun, Hung-Yi Huang, Yu-Tung Lin, Jia-Jen Liu, Yi-Hsiang Wu, Yuan-Ting Tseng, Ying-Rang Zhuang, Bing-Heng Li, An-Chung Su, Chi-Hua Yu, Chin-Wen Chen, Kun-Han Lin, U-Ser Jeng, **Ho-Hsiu Chou***, "Sulfide Oxidation on Ladder-Type Heteroarenes to Construct All-Acceptor Copolymers for Visible-Light-Driven Hydrogen Evolution" ***Small***, 2023, 19, 2302682

30. Ahmed Fathi Saber, Ahmed M Elewa, **Ho-Hsiu Chou***, Ahmed FM EL-Mahdy*, "Donor to Acceptor Charge Transfer in Carbazole-based Conjugated Microporous Polymers for Enhanced Visible-Light-Driven Photocatalytic Water Splitting" ***ChemCatChem***, 2023, 15, e202201287

2022

31. Ahmed M. Elewa, Chuang-Yi Liao, Wei-Long Li, Islam M. A. Mekhemer, and **Ho-Hsiu Chou***, "Benzo[d] [1,2,3] thiadiazole-Based Polymer Dots as Photocatalysts for Enhanced Efficiency and Stability of Photocatalytic Hydrogen Evolution under Visible Light Irradiation" ***Macromolecules***, 2022, 56, 1352–1361 (Front cover)

32. Chih-Li Chang, Wei-Cheng Lin, Li-Yu Ting, Chin-Hsuan Shih, Shih-Yuan Chen, Tse-Fu Huang, Hiroyuki Tateno, Jayachandran Jayakumar, Wen-Yang Jao, Chen-Wei Tai, Che-Yi Chu, Chin-Wen Chen, Chi-Hua Yu, Yu-Jung Lu, Chi-Chang Hu, Ahmed M Elewa, Takehisa Mochizuki, **Ho-Hsiu Chou***, "Main-chain engineering of polymer photocatalysts with hydrophilic non-conjugated segments for visible-light-driven hydrogen evolution" ***Nature Communications***, 2022, 13, 5460

33. Ahmed M Elewa, Ahmed FM EL-Mahdy, **Ho-Hsiu Chou***, "Effective remediation of Pb2+ polluted environment by adsorption onto recyclable hydroxyl bearing covalent organic framework" ***Environmental Science and Pollution Research***, 2022, 32371–32382

34. Chih-Ling Chang, Ahmed M Elewa, Jing Han Wang, **Ho-Hsiu Chou***, Ahmed FM EL-Mahdy*, "Donor–acceptor conjugated microporous polymers based on Thiazolo [5, 4-d] thiazole building block for high-performance visible-light-induced H_2 production" ***Microporous and Mesoporous Materials***, 2022, 345, 112258

35. Dinesh Bhalothia, Zan-Xiang Wang, Li-Yu Ting, Yung-Tang Chuang, Jyh-Pin Chou, Hao-Wu Lin, Fan-Gang Tseng, **Ho-Hsiu Chou***, Tsan-Yao Chen*, "Electron Coupling between the Linear-Conjugated Polymer Nanocluster and TiO2 Nanoparticle Enables a Quantum Leap for Visible Light-Driven Hydrogen Evolution" ***Journal of Physical Chemistry C***, 2022, 44, 18596-18604

36. Ahmed F Saber, Ahmed M Elewa, **Ho-Hsiu Chou***, Ahmed FM EL-Mahdy*, "Donor-acceptor carbazole-based conjugated microporous polymers as photocatalysts for visible-light-driven H_2 and O_2 evolution from water splitting" ***Applied Catalysis B: Environmental***, 2022, 316, 121624

37. Li-Yu Ting, Yves Ira A Reyes, Bing-Heng Li, Mohamed Hammad Elsayed, J Ching-Wen Chan, Jayachandran Jayakumar, Chih-Li Chang, Wei-Cheng Lin, Yu-Jung Lu, Carmine Coluccini, Hsin-Yi Tiffany Chen*, **Ho-Hsiu Chou***, "Mechanistic Understanding of Visible-Light-Driven Hydrogen Evolution on Pt Sites in Organic Nanohybrids Enhanced with Hydroxyl Additives" ***ACS Applied Energy Materials***, 2022, 7, 7950-7955

38. Maha Mohamed Samy, Islam MA Mekhemer, Mohamed Gamal Mohamed, Mohamed Hammad Elsayed, Kun-Han Lin, Yi-Kuan Chen, Tien-Lin Wu, **Ho-Hsiu Chou***, Shiao-Wei Kuo*, "Conjugated Microporous Polymers Incorporating Thiazolo [5, 4-d] thiazole Moieties for Sunlight-Driven Hydrogen Production From Water" ***Chemical Engineering Journal***, 2022, 446, 137158

39. Ahmed M. Elewa, Ahmed FM EL-Mahdy, Ahmed E. Hassan, Zhenhai Wen, Jayachandran Jayakumar, Tsung-Lin Lee, Li-Yu Ting, Islam M. A. Mekhemer, Tse-Fu Huang, Mohamed Hammad Elsayed, Chih-Li Chang, Wei-Cheng Lin, **Ho-Hsiu Chou***, "Solvent Polarity Tuning to Enhance the Crystallinity of 2D-Covalent Organic Frameworks for Visible-light-driven Hydrogen Generation" ***Journal of Materials Chemistry A***, 2022, 10, 12378-12390

40. Shih-Yuan Chen*, Chih-Li Chang, Masayasu Nishi, Wei-Chih Hsiao, Yves Ira A Reyes, Hiroyuki Tateno, **Ho-Hsiu Chou***, Chia-Min Yang*, Hsin-Yi Tiffany Chen*, Takehisa Mochizuki, Hideyuki Takagi, Tetsuya Nanba, "Unraveling the active sites of Cs-promoted Ru/γ-Al2O3 catalysts for ammonia synthesis" ***Applied Catalysis B: Environmental***, 2022, 310, 121269

41. Mohamed Gamal Mohamed, Swetha V Chaganti, Meng-Syuan Li, Maha Mohamed Samy, Santosh U Sharma, Jyh-Tsung Lee, Mohamed Hammad Elsayed, **Ho-Hsiu Chou***, Shiao-Wei Kuo*, "Ultrastable Porous Organic Polymers Containing Thianthrene and Pyrene Units as Organic Electrode Materials for Supercapacitors" ***ACS Applied Energy Materials***, 2022, 5, 6442–6452

42. Wei-Cheng Lin, Jayachandran Jayakumar, Chih-Li Chang, Li-Yu Ting, Tse-Fu Huang, Mohamed Hammad Elsayed, Ahmed M Elewa, Yu-Tung Lin, Jia-Jen Liu, Yuan-Ting Tseng, **Ho-Hsiu Chou***, "Sulfide oxidation tuning in 4,8-bis(5-(2-ethylhexyl)thiophen-2-yl)benzo[1,2-b:4,5-b′]dithiophene based dual acceptor copolymers for highly efficient photocatalytic hydrogen evolution" ***Journal of Materials Chemistry A***, 2022, 12, 6641-6648

43. Ahmed M Elewa, Jayachandran Jayakumar, Yen-Wen Huang, Mohamed Hammad Elsayed, Chih-Li Chang, Li-Yu Ting, Wei-Cheng Lin, Chu-Chen Chueh*, **Ho-Hsiu Chou***, "Biaxially extended side-chain conjugation of benzodithiophene-based polymer dots for superior photocatalytic stability under visible-light irradiation" ***Journal of Environmental Chemical Engineering***, 2022, 10, 106927

44. Tzung-You Han, Chun-Hsiu Lin, Yu-Sheng Lin, Chun-Ming Yeh, Yi-An Chen, Hsin-Ya Li, Yu-Ting Xiao, Je-Wei Chang, An-Chung Su, U-Ser Jeng*, **Ho-Hsiu Chou***, "Autonomously self-healing and ultrafast highly-stretching recoverable polymer through trans-octahedral metal-ligand coordination for skin-inspired tactile sensing" ***Chemical Engineering Journal***, 2022, 438, 135592

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45. Mohamed Hammad Elsayed, Mohamed Abdellah, Yi-Hao Hung, Jayachandran Jayakumar, Li-Yu Ting, Ahmed M Elewa, Chih-Li Chang, Wei-Cheng Lin, Kuo-Lung Wang, Mahmoud Abdel-Hafiez, Hsiao-Wen Hung, Masaki Horie, **Ho-Hsiu Chou***, "Hydrophobic and Hydrophilic Conjugated Polymer Dots as Binary Photocatalysts for Enhanced Visible-Light-Driven Hydrogen Evolution through Förster Resonance Energy Transfer" ***ACS Applied Materials & Interfaces***, 2021, 13, 56554–56565

46. Mohammed G Kotp, Ahmed M Elewa, Ahmed FM EL-Mahdy*, **Ho-Hsiu Chou***, Shiao-Wei Kuo*, "Tunable pyridyl-based conjugated microporous polymers for visible light-driven hydrogen evolution" ***ACS Applied Energy Materials***, 2021, 4, 13140–13151

47. Meng-Ju Yu, Chih-Li Chang, Hao-Yu Lan, Zong-Yi Chiao, Yu-Chia Chen, Ho Wai Howard Lee, Yia-Chung Chang, Shu-Wei Chang, Takuo Tanaka, Vincent Tung, **Ho-Hsiu Chou***, Yu-Jung Lu*, "Plasmon-Enhanced Solar-Driven Hydrogen Evolution Using Titanium Nitride Metasurface Broadband Absorbers" ***ACS Photonics***, 2021, 8, 3125–3132

48. Wei-Cheng Lin, Jayachandran Jayakumar, Chih-Li Chang, Li-Yu Ting, Mohamed Hammad Elsayed, Mohamed Abdellah, Kaibo Zheng, Ahmed M.Elewa, Yu-Tung Lin, Jia-Jen Liua, Wen-Shin Wang, Chia-Yeh Lu, **Ho-Hsiu Chou***, "Effect of energy bandgap and sacrificial agents of cyclopentadithiophene-based polymers for enhanced photocatalytic hydrogen evolution" ***Applied Catalysis B: Environmental***, 2021, 298, 120577

49. Ahmed M. Elewa, Ahmed F. M. EL-Mahdy*, Mohamed Hammad Elsayed, Mohamed Gamal Mohamed, Shiao-Wei Kuo*, **Ho-Hsiu Chou***, "Sulfur-doped triazine-conjugated microporous polymers for achieving the robust visible-light-driven hydrogen evolution" ***Chemical Engineering Journal***, 2021, 421, 129825

50. Mohamed Hammad Elsayed, Bing-Huang Jiang, Yi-Peng Wang, Po-Yen Chang, Yu-Cheng Chiu, Ru-Jong Jeng, **Ho-Hsiu Chou***, Chih-Ping Chen*, "Indacenodithiophene-based N-type conjugated polymers provide highly thermally stable ternary organic photovoltaics displaying a performance of 17.5%" ***Journal of Materials Chemistry A***, 2021,9, 9780-9790

51. Ming-Yun Liao, Mohamed Hammad Elsayed, Chih-Li Chang, Yun-Chi Chiang, Wen-Ya Lee, Wen-Chang Chen, **Ho-Hsiu Chou*** and Chu-Chen Chueh*, "Realizing Nonvolatile Photomemories with Multilevel Memory Behaviors Using Water-Processable Polymer Dots-Based Hybrid Floating Gates" ***ACS Applied Electronic Materials***, 2021, 3, 4, 1708–1718

52. Ahmed M Elewa, Mohamed Hammad Elsayed, Ahmed FM EL-Mahdy, Chih-Li Chang, Li-Yu Ting, Wei-Cheng Lin, Chia-Yeh Lu, **Ho-Hsiu Chou***, "Triptycene-based discontinuously-conjugated covalent organic polymer photocatalysts for visible-light-driven hydrogen evolution from water" ***Applied Catalysis B: Environmental***, 2021, 285, 119802

53. Mohamed Hammad Elsayed, Jayachandran Jayakumar, Mohamed Abdellah, Tharwat Hassan Mansoure, Kaibo Zheng, Ahmed M. Elewa, Chih-Li Chang, Li-Yu Ting, Wei-Cheng Lin, Hsiao-hua Yu, Wen-Hsin Wang, Chih-Chia Chung, **Ho-Hsiu Chou***, "Visible-light-driven hydrogen evolution using nitrogen-doped carbon quantum dot-implanted polymer dots as metal-free photocatalysts" ***Applied Catalysis B: Environmental***, 2021, 283, 119659

54. Mohamed Gamal Mohamed, Mohamed Hammad Elsayed, Ahmed Elewa, Ahmed FM EL-Mahdy, Cheng-Han Yang, Ahmed AK Mohammed, **Ho-Hsiu Chou***, Shiao-Wei Kuo*, "Pyrene-Containing Conjugated Organic Microporous Polymers for Photocatalytic Hydrogen Evolution from Water" ***Catalysis Science & Technology***, 2021, 11, 2229-2241

55. Chun-Ming Yeh, Chun-Hsiu Lin, Tzung-You Han, Yu-Ting Xiao, Yi-An Chen, **Ho-Hsiu Chou***, "Disulfide bond and Diels–Alder reaction bond hybrid polymers with high stretchability, transparency, recyclability, and intrinsic dual healability for skin-like tactile sensing" ***Journal of Materials Chemistry A***, 2021, 9, 6109-6116 (Back cover)

56. Jayachandran Jayakumar, Wei-Ling Wu, Chih-Li Chang, Tzung-You Han, Li-Yu Ting, Chun-Ming Yeh, Hsiao-Wen Hung, **Ho-Hsiu Chou***, "Highly thermal stable electron-transporting materials using triptycene derivatives for OLEDs" ***Organic Electronics***, 2021, 88, 106013

C. Conference Presentations

- 2025/12 Topic Plenary talk: The International Chemical Congress of Pacific Basin Societies 2025(Pacifichem 2025), Honolulu, Hawaii（受邀三場演講）
- 2025/10 Invited Speaker: 2025 Empowering Connectivity in Chemistry-Thailand-Taiwan Bilateral Symposium in Bangkok, Thailand
- 2025/9 Invited Speaker: The 15th International Conference on Flexible and Printed Electronics (ICFPE 2025), Tokyo, Japan
- 2025/9 Invited Speaker: Plastic Circular Economy International Symposium 2025 (PCEIS2025), Osaka, Japan
- 2025/8 Invited Speaker: Okinawa Institute of Science and Technology (OIST) 受邀演講，Okinawa, Japan

- 2025/8 Invited Speaker: 2025 Physical Chemistry of Semiconductor Materials and Interfaces XXIV, San Diego, California, US
- 2025/7 Invited Speaker: The 19th Pacific Polymer Conference 第十九屆太平洋聚合物會議 (PPC19), Fukuoka, Japan
- 2025/6 Invited Speaker: 16th International Symposium on Functional π-Electron Systems (FPi-16), Jeju, Korea
- 2025/5 Invited Speaker: The 5th Materials Research Society of Thailand International Conference in conjunction with the 1st ECS Thailand Meeting (MRS-Thailand 2025), Bangkok, Thailand
- 2025/4 Invited Speaker: NTHU-Nagoya Joint Symposium 臺灣清華大學-日本名古屋大學聯合研討會, Nagoya, Japan
- 2025/3 Invited Speaker: Connecting Expertise: Collaborative Innovations in Materials and Energy Science Symposium, Thailand (Mahidol University) Bangkok, Thailand
- 2025/3 Invited Speaker: International Chemical Engineering Symposia IChES2025/SCEJ 90th Annual Meeting, Tokyo, Japan (SCEJ Award Lecture)
- 2025/2 Invited Speaker: 1st Catalytic Biorefinery International Conference (CBIC 2025), Bangkok, Thailand
- 2024/12 Invited Speaker: The 12th Singapore International Chemistry Conference (SICC-12), Singapore.
- 2024/11 Invited Speaker: The 16th Asian Conference on Organic electronics （A-COE 2024), Osaka, Japan.
- 2024/11 Invited Speaker: The 2024 International HCMUS-Chemistry Conference “Emerging Trends in Sustainable Chemistry (ETSC24)”, Ho Chi Minh, Vietnam.
- 2024/11 Invited Speaker: International Conference on Smart Materials and Nanotechnology (SMARTMAT@2024), Chiang Mai, Thailand.
- 2024/10 Invited Speaker: The 7th International Conference on Active Materials and Soft Mechatronics (AMSM 2024), Incheon,Korea.
- 2024/09 Invited Speaker: Korea-Taiwan Joint Symposium: Recent Advances in Polymer Science and Engineering:From Fundamentals to Applications (PSK), Busan, Korea.
- 2024/09 Plenary Speaker: International Symposium on Carbon Materials Breakthrough in the Next Generation (CMB-next2024), Miyazaki, Japan.
- 2024/08 Invited Speaker: Special Seminar on Advanced Catalysts Applications and Characterizations, Bangkok, Thailand.
- 2023/11 Invited Speaker: Nano Thailand 2023, Pattaya, Thailand.

- 2023/11 Invited Speaker: TW-TH BILATERAL CATALYSIS SYMPOSIUM, Bangkok, Thailand.
- 2023/9 Invited Speaker: 2023 海峽兩岸高分子學術研討會，江西南昌，中國。
- 2023/7 Invited Speaker: 2023 Thailand-Taiwan bilateral symposium, Ayutthaya, Thailand.
- 2023/7 Invited Speaker: The 13th SPSJ International Polymer Conference, Hokkaido, Japan.
- 2023/2 Keynote Speaker: 2023 MRS-Thailand, Thailand
- 2022/8 Keynote Speaker: 2022 Chemical Engineering, Chemical Equipment Design and Automation (CHISA), Czech Republic
- 2022/12 Invited Speaker: 2022 Pacific Polymer Conference, Australia
- 2022 Invited Speaker: 2022 International Trilateral Symposium, Vietnam
- 2022 Invited Talk: 2022 The 22nd International Meeting on Information Display (IMID 2020), Virtual Meeting
- 2021 Keynote Speaker: 2021 Chemical Engineering, Chemical Equipment Design and Automation (CHISA), Czech Republic, Virtual Meeting
- 2021 Invited Talk: 2021 Japan - Taiwan Joint Symposium, Virtual Meeting

D. Patents

類別	專利名稱	國別	專利號碼	發明人	專利權人
A	半導體化合物之用途 (原案件名稱: 半導體化合物、其用途與產氫裝置)	TW	I749335	**周鶴修**,張之勵,林韋澄	NTHU
A	鹵化物材料及包含該鹵化物材料之光學單元和光電元件	TW	I770866	**周鶴修**,林皓武,張之勵,陳建宇,楊琳	NTHU
A	鹵化物材料及包含該鹵化物材料之光學單元和光電元件	US	11737348	**周鶴修**,林皓武,張之勵,陳建宇,楊琳	NTHU
A	非富勒烯受體聚合物	TW	I826786	**周鶴修**,埃爾賽德,穆罕默德哈馬德,阮智暐,黃則傅	NTHU

類別	專利名稱	國別	專利號碼	發明人	專利權人
A	NON-FULLERENE ACCEPTOR POLYMER	US	11,993,676	**周鶴修**,埃爾賽德穆罕默德哈馬德,阮智暐,黃則傅	NTHU
A	太赫茲光調制器及太赫茲空間光調制器	TW	I803954	**周鶴修**,楊尚樺,麥家銘,埃爾賽德穆罕默德哈馬德	NTHU
A	TERAHERTZ MODULATOR AND TERAHERTZ SPATIAL LIGHT MODULATOR	US	12,282,213	**周鶴修**,楊尚樺,麥家銘,埃爾賽德穆罕默德哈馬德	NTHU
A	可修復且可回收之聚醯亞胺高分子樹脂及其修復與回收方法	TW	I827139	**周鶴修**,莊貴貽	
A	HEALABLE AND RECYCLABLE POLYIMIDE POLYMER RESIN, HEALING METHOD AND RECYCLING METHOD THEREOF	US	12,252,591	**周鶴修**,莊貴貽	Stanford
A	含非對稱具磺醯基之稠環單元的衍生物、其用途、產氫裝置以及光電組件	TW	I804168	**周鶴修**,林韋澄,曾圓婷	Stanford
A	ASYMMETRIC FUSED AROMATIC RING DERIVATIVE CONTAINING SULFONYL GROUP, USE THEREOF, HYDROGEN PRODUCTION DEVICE AND OPTOELECTRONIC COMPONENT	US	12,264,166	**周鶴修**,林韋澄,曾圓婷	NTHU

E. Other

Editorial board membership

- Editorial Board Member & Guest Editor: Polymer (Rank=17/94, Q1 Journal) 2020-2025
- Editorial Board Member: Cambridge Prisms: Carbon Technologies

Honors & Awards

- 國立清華大學第十二屆傑出產學研究獎 (2025)
- 113 學年度工學院傑出產學研究獎 (2025)
- 113 年度清華卓越傑出人才講座 (2025)
- 中華民國高分子學會傑出高分子學術研究獎 (2024)
- Rising Stars in Polymer Science (Polymer Journal) (2024)
- 台灣碳材料學會優秀年輕學者獎 (2024)
- 日本化學工程師學會 2024 年傑出亞洲研究員暨工程師獎 (2024)
- 台灣氫能與燃料電池學會優秀年輕學者獎 (2024)
- 台灣觸媒學會傑出研究論文獎(2024)
- 112 年度清華傑出人才講座 (2024)
- 國科會科創計畫拔尖計畫（全台僅 2 團隊獲選）(2024)
- 李長榮學術研究傑出青年教授獎 (2022)
- 吳大猷先生紀念獎 (2021)
- 清華大學新進人員研究獎（院、校級均獲獎）(2021)
- 材料學會華立材料創新獎 (2021)

Publications of Rong-Ming Ho (何榮銘)

A. Journal Papers (* Corresponding author)

2025

1. C.Y. Chang, G. M. Manesi., Y. H. Chen, Y.H. Chen, Y. J. Tsai, H. Y. Su, A. Avgeropoulos, **R. M. Ho***, "Architecture Effect on Network Phase Formation from Controlled Self-Assembly of High-χ Block Copolymers", *Macromolecules*, **58**, 12574-12581 (2025). (SCI Impact Factor=5.2; SCI Rank Factor: 15/94) (Google citation numbers:0, WOS citation numbers:0)

2. A. S. Panda, C. H. Tung, J. C. Chuang, T. A. Nguyen, T. Trinh, P. C. Chen, T. Shastry, F. R, Chen, M.. C. Lee, C. C. Lee, **R. M. Ho***, Stress-Induced Directed Self-Assembly of Perpendicularly Oriented Block Copolymer Lamellae for Lithographic Density Multiplication, *ACS Appl. Mater. Inter*. **17**, 56542-56552 (2025) (SCI Impact Factor=8.2; SCI Rank Factor: 83/461) (Google citation numbers:0, WOS citation numbers:0)

3. C.C. Kuo, S.W. Shao, P. Puneet, E. Yashima, **R. M. Ho***, "Induced Circularly Polarized Luminescence of Dynamically Racemic Luminophores Assisted by Formation of Helical Phase via Self-Assembly of Chiral Block Copolymers", *Macromolecules*, **58**, 8308-8315 (2025). (SCI Impact Factor=5.2; SCI Rank Factor: 15/94)

4. W.C. Huang, T. Shastry, P.C. Chen, A. AP, K.P. Liu, **R. M. Ho***, "Controlled Orientation of Polystyrene-b-Poly (L-lactide) Nanostructured Thin Films by Air Plasma Treatment via Thermal Annealing", *Giant*, 25, 100367 (2025) (SCI Impact Factor=4.9; SCI Rank Factor: 19/94) (Google citation numbers:0, WOS citation numbers:1)

5. T. W. Liang, C. Chen, S. Kusaka, S. K. Siddique, C. Y. Chang, R. Matsuda, **R. M. Ho***, "Mesoporous Metal-Organic Framework from Templated Synthesis as Mechanical Metamaterials", *J. Am. Chem. Soc.*, **147**, (2025) (SCI Impact Factor: 15.7; SCI Rank Factor: 17/239) (Google citation numbers:3, WOS citation numbers:1)

6. S. L. Yeh, C. Y. Chang, **R. M. Ho***, "Reticulation of Block Copolymer Nanostructures from Perforation", *ACS Appl. Mater. Inter*. 17, 12676-12685 (2025) (SCI Impact Factor=8.2; SCI Rank Factor: 83/461) (Google citation numbers:0, WOS citation numbers:0)

7. A. S. Lin, S. K. Siddique, Y. T. Xie, C. C. Lee, H. Sadek*, **R. M. Ho***, "Well-Ordered Nanonetwork Invar from Templated Electrochemical Deposition as Mechanical Metamaterials", *Small*, **21**, 2502361 (2025) (SCI Impact Factor=12.1; SCI Rank Factor: 24/439) (Google citation numbers:1, WOS citation numbers:1)

8. H. W. Tsai, S. W. Shao, P. T. Chiu, C. Y. Chang, Y. C. Sung, G. H. Li, Y. C. Chen, A. Kumagai, H. Jinnai, Y.C. Hung, J. C. Tsai, **R. M. Ho***, "Helically deployed Au nanoparticles using block copolymer templates as chiral plasmonic

monoliths", *Giant*, **21**, 100350 (2025) (SCI Impact Factor=4.9; SCI Rank Factor:19/94) (Google citation numbers:0, WOS citation numbers:0)

9. Y. C. Chuang, J. W. Su, Y. C. Sung, J. C. Tsai*, J. W. Huang, S. W. Shao, **R. M. Ho***, "Synthesis and self-assembly of a diblock copolymer consisting of a cyclic olefin copolymer and polycaprolactone", *Polym. Chem*, **16**, 2162-2171 (2025) (SCI Impact Factor=4.0; SCI Rank Factor: 32/94) (Google citation numbers:0, WOS citation numbers:0)

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10. C. H. Tung, F. Ye, W. Y. Li, T. A. Nguyen, M. C. Lee, T. Wen, Z. H. Guo, S. Z. D. Cheng*, **R. M. Ho***, "Directed Self-Assembly of Polystyrene-Block-Polyhedral Oligomeric Silsesquioxane Monolayer by Nano-Trench for Nanopatterning", *Small*, **20**, 2403581 (2024) (SCI Impact Factor=12.1; SCI Rank Factor: 24/439) (Google citation numbers:6, WOS citation numbers:6)

11. H. Sadek, S. K. Siddique, C. Chen, **R. M. Ho***, "Well-Ordered Bicontinuous Nanohybrids from a Bottom-Up Approach for Enhanced Strength and Toughness", *Nano Lett.*, **24**, 11020-11027 (2024) (SCI Impact Factor=9.1; SCI Rank Factor: 34/239) (Google citation numbers:2, WOS citation numbers:3)

12. T. Shastry, J. Xie, C. H. Tung, T. Y. Lynn, A. S. Panda, A. C. Shi, **R. M. Ho***, "Sequential Self-Assembly of Polystyrene-block-Polydimethylsiloxane for 3D Nanopatterning via Solvent Annealing", *ACS Appl. Mater. Inter.*, **16**, 40263-40274 (2024) (SCI Impact Factor=8.2; SCI Rank Factor: 83/461) (Google citation numbers:3, WOS citation numbers:3)

13. C. Y. Chang, G. M. Manesi, J. Xie, A. C. Shi, T. Shastry, A. Avgeropoulos, **R. M. Ho***, "Topology Effect on Order–Disorder Transition of High-χ Block Copolymers", *Macromolecules.*, **57**, 7087-7097 (2024) (SCI Impact Factor=5.2; SCI Rank Factor:15/94) (Google citation numbers:7, WOS citation numbers:6)

14. S. K. Siddique, H. Sadek, T. L. Lee, G. M. Manesi, A. Avgeropoulos, C. W. Wang, C. C. Lee, E. L. Thomas, **R. M. Ho*** "Topological Effect on Mechanical Properties of Self-Assembled Block Copolymer"*Giant*, **17**, 100205(2024) (SCI Impact Factor=5.4; SCI Rank Factor:56/231)

15. S. H. Lien, P. H. Lin, S. W. Shao, P. T. Chiu, C. Y. Chang, Y. C. Sung, J. C. Tsai*, **R. M. Ho***, "Peculiar Transition between Chiral and Achiral Networks in Self-Assembly of Chiral Block Copolymers" *Macromolecules*, (2024) (SCI Impact Factor=5.1; SCI Rank Factor:12/94)

16. G. M. Manesi, C. Y. Chang, I. Moutsios, **R. M. Ho***, A. Avgeropoulos* "Tuning the Morphology of Silicon Containing Copolymers via Macromolecular Architecture Effect" *Giant*, **16**, 100190(2023) (SCI Impact Factor=5.4; SCI Rank Factor: 64/230) (Google citation numbers:2)

17. J. Yuan, P. T. Chiu, X. Liu, J. Zhou, Y. Y. Wang, **R. M. Ho***, T. Wen*, "Cross-domain Chirality Transfer in Self-Assembly of Chiral Block Copolymers" *Angew. Chem. Int. Ed.*, **63**, e202317102(2024) (SCI Impact Factor=16.1; SCI Rank Factor:13/230) (Google citation numbers:1, WOS citation numbers:1)

18. C. Y. Chang, Y. H. Chen, **R. M. Ho***, "Metastable Network Phases from Controlled Self-Assembly of High-χ Block Copolymers", *Phys. Rev. Materials*, **8**, 030301(2024) (SCI Impact Factor=3.1; SCI Rank Factor: 204/438) (Google citation numbers:0, WOS citation numbers:0)

19. S. W. Shao, P. Puneet, M. C. Li, T. Ikai, E. Yashima, **R. M. Ho***, "Chiral Luminophore Guided Self-Assembly of Achiral Block Copolymers for the Amplification of Circularly Polarized Luminescence" *ACS Macro Lett.*, **13**, 734-740(2024) (SCI Impact Factor=15.8; SCI Rank Factor: 12/94) (Google citation numbers:0, WOS citation numbers:0)

20. K. P. Liu, A. S. Panda, W. C. Huang, **R. M. Ho***, "Vacuum-Driven Orientation of Nanostructured Polystyrene-block-Poly (L-lactide) Block Copolymer Thin Films for Nanopatterning" *Giant*, **19**, 100303(2024) (SCI Impact Factor=5.4; SCI Rank Factor: 64/230) (Google citation numbers:0, WOS citation numbers:5)

21. C. Y. Chang, G. M. Manesi, W. E. Wang, Y. C. Hung, A. Avgeropoulos, **R. M. Ho***, "Frank-Kasper–like network phase from self-assembly of high-χ star-block copolymers" *Sci. Adv.*, **10,** eado4786(2024) (SCI Impact Factor=11.7; SCI Rank Factor:11/134)

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22. A. S. Panda, Y. C. Lee, T. Shastry, G. M. Manesi, A. Avgeropoulos, **R. M. Ho*** "Controlled Orientation of Silicon-Containing Diblock Copolymer Thin Films by Substrate Functionalization under Vacuum" *Macromolecules*, **56**, 841-849(2023) (SCI Impact Factor= 5.5; SCI Rank Factor:11/86) (Google citation numbers:2, WOS citation numbers:1)

23. S. K. Siddique, H. Sadek, C. W. Wang, C. C. Lee, C. Y. Tsai, S. Y. Chang, C. L. Li, C. H. Hsueh, **R. M. Ho*** "Diamond-structured nanonetwork gold as mechanical metamaterials from bottom-up approach" *NPG Asia Materials*, **15**, 36(2023) (SCI Impact Factor= 9.7; SCI Rank Factor:49/344) (Google citation numbers:1, WOS citation numbers:0)

24. T. C. Lin, C. Y. Yang, T. L. Lee*, J. W. Lin, Y. T. Liang, Y. T. Xie, Z. H. Xie, Y. C. Hung*, **R. M. Ho*** "Gyroid-structured Nanoporous Chitosan from Block Copolymer Template for UVC Reflection" *NPG Asia Materials*, **15**, 13(2023) (SCI Impact Factor= 9.7; SCI Rank Factor:49/344)

25. C. J. Hung, A. S. Panda, Y. C. Lee, S. Y. Liu, J. W. Lin, H. F. Wang, A. Avgeropoulos, F. G. Tseng, F. R. Chen*, **R. M. Ho*** "Direct Visualization of the Self-Alignment Process for Nanostructured Block Copolymer Thin Films by Transmission Electron Microscopy" *ACS Macro Letters*, **12**, 570-576(2023) (SCI Impact Factor= 5.8; SCI Rank Factor:9/86) (Google citation numbers:1, WOS citation numbers:1)

26. H. Sadek, S. K. Siddique, C. W. Wang, P. T. Chiu, C. C. Lee, **R. M. Ho*** "Starfish-Inspired Diamond-Structured Calcite Single Crystals from a Bottom-up Approach as Mechanical Metamaterials" *ACS nano*, **17**, 15678-15686(2023) (SCI Impact Factor= 17.1; SCI Rank Factor:12/108) (Google citation numbers:1, WOS citation numbers:0)

27. T. Shastry, A. S. Panda, G. M. Manesi, A. Avgeropoulos, **R. M. Ho*** "Controlled Orientation of Plasma-Treated Diblock Copolymer Films from the Responsive Functionalized Substrate through Solvent Annealing" *Macromolecules*, **56**, 5651-5660(2023) (SCI Impact Factor= 5.5; SCI Rank Factor:11/86)

28. I. Moutsios, K. Ntetsikas, G. M. Manesi, G. Liontos, E. A. Nikitina, C. Y. Chang, L. Vidal, N. Hadjichristidis, **R. M. Ho**, D. A. Ivanov, A. Avgeropoulos* "Defining Morphological Transformations of "Soft Nature" Diblock Viscoelastic Structured Polymers" *Macromolecules*, **56**, 6232-6246(2023) (SCI Impact Factor= 5.5; SCI Rank Factor:11/86) (Google citation numbers:1, WOS citation numbers:1)

29. S. K. Siddique, H. Sadek, T. L. Lee, G. M. Manesi, A. Avgeropoulos, C. W. Wang, C. C. Lee, E. L. Thomas, **R. M. Ho*** "Topological Effect on Mechanical Properties of Self-Assembled Block Copolymer"*Giant*, 100205(2023) (SCI Impact Factor= 7; SCI Rank Factor: 12/93)

30. G. M. Manesi, C. Y. Chang, I. Moutsios, **R. M. Ho***, A. Avgeropoulos* "Tuning the Morphology of Silicon Containing Copolymers via Macromolecular Architecture Effect" *Giant*, **16**, 100190(2023) (SCI Impact Factor= 7; SCI Rank Factor: 12/93)

2022

31 Y. K. Chao, N. M. Praveema, K. C. Yang*, E. B. Gowd*, **R. M. Ho*** "Crystallization of Polylactides Examined by Vibrational Circular Dichroism of Intra- and Inter-chain Chiral Interactions" *Soft Matter*,**18**, 14 (2022). (SCI Impact Factor= 4.046; SCI Rank Factor:25/90)

32 P. T. Chiu, Y. C. Sung, K. C. Yang, J. C. Tsai*, H. F. Wang*, **R. M. Ho*** "Curving and Twisting in Self-Assembly of Triblock Terpolymers Driven by a Chiral End Block" *Macromolecules*, **55**, 1185-1195 (2022). (SCI Impact Factor= 6.057; SCI Rank Factor:10/90)

33 S. K. Siddique, H. Sadek, T. L. Lee, C. Y. Tsai, S. Y. Chang, H. H. Tsai, T. S. Lin, G. M. Manesi, A. Avgeropoulos, **R. M. Ho*** "Block Copolymer Modified Nanonetwork Epoxy Resin for Superior Energy Dissipation" *Polymers*, **14**, 9, 1891 (2022) (SCI Impact Factor= 4.967; SCI Rank Factor:16/90)

34 K. Gu, W. L. Yang, T. Wen, Q. Wang, W. Zhang, M. Han, Z. H. Shen*, X. H. Fan, **R. M. Ho** "Co-Assembled Twisted Superstructures Formed by Disc-bent Core Amphiphiles" *Giant*, **9**, 100087 (2022) (SCI Impact Factor= 5.57)

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B. Patents

中華民國專利

1. 專利編號：I663198
專利名稱：奈米多孔性高分子薄膜製備方法及奈米多孔性薄膜製備方法
METHOD FOR FABRICATING NANOPOROUS POLYMER THIN FILM AND METHOD FOR FABRICATING NANOPOROUS THIN FILM
發明人：**何榮銘**;孟哈;希蘇翰;簡佑丞
公告/公開日： 2019/06/21

美國專利

1. 專利編號：11,827,751
專利名稱：Nanonetwork with controlled chirality and manufacturing method thereof
公告/公開日：2023/11/28

2. 專利編號：1,105,920,5
專利名稱：Method for fabricating nanoporous polymer thin film and corresponding method for fabricating nanoporous thin film
公告/公開日：2021/07/13

Publications of Chi-Chang Hu (胡啟章)

A. Journal Papers

2025

1. Hsiang-Sheng Wei, Hsu Tsou, Hao-Yu Ku, Yi-Hung Hsuan, Kai-Yu Tseng, **Chi-Chang Hu***, 2026, 01, "Influences of an electrodeposited copper seed layer on the microstructures and surface characteristics of the (111)-oriented nanotwinned copper foils" *J. Taiwan Inst. Chem. Eng.* (***vol. 183)***, 106653 (doi.org/ 10.1016/j.jtice.2026.106653).

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2021

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61. Shu-Ju Chao, Ming-Han Tsai, Rui-Pei Yu, Lap-Cuong Hua, **Chi-Chang Hu**, Chihpin Huang*, 2021, "Dezincification of brass water meters in a long term study: effects of anions, alkalinity, and residual chlorine", *Environ. Sci.: Water Res. Technol.*, (**vol. 7**) 1666-1676. (DOI: 10.1039/d1ew00351h)

62. Yi-Ting Lu, Alex R. Nealea, **Chi-Chang Hu***, Laurence J. Hardwick*, 2021, "Trapped interfacial redox introduces reversibility in the oxygen reduction reaction in a non-aqueous Ca^{2+} electrolyte", *Chemical Science*, (**vol. 12**) 8909-8919. (DOI: 10.1039/d0sc06991d).

63. Tien-Yu Yi, Cheng-Wei Dai, **Chi-Chang Hu***, 2021, 05, "A comparative study on binders for the expanded mesocarbon microbeads as the positive electrodes of lithium-ion capacitors", *J. Power Sources*, (**vol. 501**) 230029 (doi.org/10.1016/ j.jpowsour.2021.230029).

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66. Chih-Hung Lee, Yuan-Chang Huang, Uwe Kinzlinger, Daniel Esken, Yu-Han Lin, Ang-Ta Tsai, Hung-Chun Wu, Yen-Cheng Li, **Chi-Chang Hu***, 2021, 04, "A Novel Cavity-Enhanced Polyethylene/Nanostructured-Alumina Separator with Long Cycle Life and High Rate Capability for Advanced Lithium-Ion Batteries", *ACS Sustainable Chemistry & Engineering*, (**vol. 9**) 1590-1598 (dx.doi.org/ 10.1021/acssus chemeng.0c06628).

67. Tzu-Chien Chang, Yi-Ting Lu, Chih-Heng Lee, Jyoti Gupta, Laurence J. Hardwick, **Chi-Chang Hu,** Hsin-Yi Tiffany Chen*, 2021, 03, "The Effect of Degrees of Inversion on the Electronic Structure of Spinel $NiCo_2O_4$: A DFT Study", *ACS Omega*, (**vol. 6**) 9692-9699 (doi.org/10.1021/acsomega.1c00295).

68. Chi-Haw Chiang, Chun-Cheng Lin, **Chi-Chang Hu***, 2021, 03, "Effects of thiourea and allyl thioura on the electrodeposition and microstructures of copper from methanesulfonic acid baths", *J. Electrochem. Soc.*, (**vol. 168**) 032505.

69. Yi-Ting Lu, Alex Ryan Neale, **Chi-Chang Hu***, Laurence J. Hardwick*, 2021, 02, "Divalent non-aqueous metal-air batteries", *Frontiers in Energy Research*, (**vol. 8**) 602918 (doi.org/10.3389/fenrg.2020.602918).

70. Shi-Kung Chen, Kuo-Hsin Chang, Chun-Han Hsu, Zheng-Yi Lim, Fang-Yi Du, Kai-Wen Chang, Mong-Chen Chang, Hong-Ping Lin*, **Chi-Chang Hu**, Chih-Yuan Tang, Ching-Yen Lin, 2021, 01, 15, "Synthesis of Mesoporous Carbon Platelets of High Surface Area and Large Porosity from Polymer Blends-Calcium Phosphate Nanocomposites for High-Power Supercapacitor", *Journal of the Chinese Chemical Society*, (**vol. 68**) 462-468 (doi.org/10.1002/jccs.202000510).

71. Yi-Heng Tu, Yu-Hsang Yang, **Chi-Chang Hu***, 2021, 01, "A highly efficient faradaic desalination system utilizing MnO_2 and polypyrrole-coated titanium electrodes", *Desalination*, (**vol. 498**) 114807 (doi.org/10.1016/j.desal.2020. 114807).

72. Jui-Yu Pai, Cheng-Ta Hsieh, Chih-Hung Lee, Jeng-An Wang, Hao-Yu Ku, Chun-Lung Huang, Laurence J. Hardwick*, **Chi-Chang Hu***, 2021, 01, "Engineering of electrospun polyimide separators for electrical double-layer capacitors and lithium-ion cells", *J. Power Sources*, (**vol. 482**) 229054 (doi.org/10.1016/j.jpowsour.2020.229054).

B. Conference Presentations

2025

1. Yun Ku, **Chi-Chang Hu***, "Deciphering Self-Discharge Mechanisms in EDLCs: A Molecular-Level Perspective on Carbonate Additive Effects", The 2025 International Conference on Advanced Capacitors, New Taipei, Taiwan, Nov. 30-Dec. 3, 2025 (**Conference chair**).

2. **Chi-Chang Hu***, Liang-Chieh Tseng, Chen-Wei Tai, Yun Lin, "Hard Carbon Designs for Promoting the Lithium-ion Storage Capacity for Lithium-ion-based Energy Storage Devices", The 2025 International Conference on Green Electrochemical Technologies, Taichung, Taiwan, October 31-Nov. 2, 2025 (**Conference chair & keynote lecture**).

3. **Chi-Chang Hu***, Liang-Chieh Tseng, Wen-Yang Jao, Chen-Wei Tai, "Design of high-voltage supercapacitors in the hybrid configuration", The MRS Thailand 2025 Meeting, Bangkok, Thailand, May 14-16, 2025 (**Keynote lecture**).

4. **Chi-Chang Hu**, Yi-Heng Tu, Yu-Hsiang Yang, Hung-Yi Huang, "Designs of Pseudocapacitive Materials for Water Desalination and Ion Recovery", The 92th Meeting (Spring Meeting) of the Electrochemical Society of Japan, Tokyo, Japan, March 18-20, 2025 (**Keynote lecture**).

5. **Chi-Chang Hu**, Hao-Yu Ku, Chien-Wei Chiang, "Designs of Modified Layers for the Negative Electrode of "Zero-excess" Lithium-metal Batteries", 2025 Taiwan-Yonsei Battery Workshop, Taipei, Taiwan, January 9, 2025 (**Invited lecture**).

2024

6. **Chi-Chang Hu**, "Energy Storage Techniques in Laboratory of Electrochemistry & Advanced Materials at National Tsing Hua University in Taiwan", Tohoku University-CRCGP-MSSP2024 & the International Joint Graduate Program in Materials Science, Sendai, Japan, Nov. 18-21, 2024 (**Keynote lecture**).

7. **Chi-Chang Hu**, Yi-Heng Tu, Yu-Hsiang Yang, Hung-Yi Huang, "Designs of Energy Storage Electrode Materials and Engineering of Faradaic Deionization Devices for Water Desalination", TIChE Annual Meeting, Taoyuan, Taiwan, Nov. 9-10, 2024 (**Keynote lecture**).

8. **Chi-Chang Hu**, Hao-Yu Ku, Yun Ku, Chi-Yu Lai, Hsiang Sheng Wei, Hung-Hsin Shih, Kun-Ping Huang, "Vertically Grown Graphene Layers for Promoting Uniformity of Lithium Deposits on Copper Substrates for Lithium Metal Batteries", The 2024 International Conference on Green Electrochemical Technologies, Taichung, Taiwan, Nov. 7-9, 2023 (**Conference chair & invited lecture**).

9. **Chi-Chang Hu**, Yi-Heng Tu, Yu-Hsiang Yang, Hung-Yi Huang, "Constructing Membrane-Free Faradaic Deionization Systems with High Capacity and High Rate of SaltRemoval/Recovery", The PRiME 2024, Honolulu, Hawaii, USA, Oct. 6-11, 2024 (**Invited Lecture**).

10. **Chi-Chang Hu**, Liang-Chieh Tseng, Chen-Wei Tai, Chih-Yu Ku, Yan-Shi Chen, "Novel Electrochemical Pre-lithiation Methods for Amorphous Carbon Negative Electrodes of Lithium-ion Capacitors", ISEECAP2024, Vitoria-Gasteiz, Spain, July 8-12, 2024 (**Keynote lecture**).

11. **Chi-Chang Hu**, "A Journey in Developing/Designing Pseudocapacitive Materials", Asia Conference on Electrochemical Power Sources (ACEPS12), Osaka, Japan, May 19-22, 2024 (**Plenary lecture**).

2023

12. **Chi-Chang Hu**, Hao-Yu Ku, Jui-Yu Pai, Chien-Wei Chiang, "Designs of polymer fibrous functional layers for the negative electrode of "zero excess" lithium-metal batteries", The 64th Japan Batteries Symposium, Osaka, Japan, Nov. 28-30, 2023.

13. **Chi-Chang Hu**, Yi-Heng Tu, Yu-Hsiang Yang, Hung-Yi Huang, "Electrode Materials Designs from Energy Storage to Water Desalination", The 2023 Materials Research Society-Taiwan International Conference (2023 MRSTIC), Hsinchu, Taiwan, Nov. 17-20, 2023 (**Keynote lecture**).

14. **Chi-Chang Hu**, Chen-Wei Tai, Liang-Chieh Tseng, Yan-Shi Chen, "Amorphous Carbons for The High-Voltage Supercapacitor Application: Interactive Effects of Crystallinity and Electrochemical Activation", The 2023 International Conference on Green Electrochemical Technologies, Taipei, Taiwan, Oct. 26-28, 2023 (**Conference Chair & Keynote Lecture**).

15. **Chi-Chang Hu**, Yi-Ting Lu, Wen-Yang Jao, Chen-Wei Tai, "Electrochemical Activation for Non-aqueous Carbon-based Supercapacitors", The 7th International Conference on Advanced Capacitors, 7th International Conference on Advanced Capacitors. Kamakura, Japan, Sept. 26–29, 2023 (**Keynote lecture & International Advisory Board**).

16. **Chi-Chang Hu**, Hung-Yi Huang, Yi-Heng Tu, Yu-Hsiang Yang, Yi-Ting Lu, "A High Performance Low Energy Consumption Electrochemical Deionization System Using Polypyrrole on Both Electrodes", The 74th Annual ISE Meeting, Lyon, France, Sept. 3-8, 2023 (**Invited Lecture**).

17. **Chi-Chang Hu**, Yi-Heng Tu, Yu-Hsiang Yang, Hung-Yi Huang, Sook Ting Chung, Yi-Ting Lu, De-Hao Tsai, "How to construct electrochemical deionization systems with high capacity and high rate of salt removal but without membranes", the 6th Battery Deionization & Electrochemical Separation (BDI&E 2023), Taipei, Taiwan, July 2-6, 2023.

18. **Chi-Chang Hu**, Chi-Yu Lai, Zhi-Xiu Lin, Yi-Ting Lu, "Engineering the Water Content of Polyvinyl Alcohol-Based Gel Electrolytes for High-Rate, Flexible Zinc-Air Batteries", 35th Topical Meeting of the ISE, Gold Coast, Australia, May 7-10, 2023.

19. **Chi-Chang Hu**, Hao-Yu Ku, Chih-Han Yen, "Improvements in Li deposition/stripping induced by Cu (111) nanotwinned columnar grains & Al current collector corrosion suppression in Li-ion cells using 3-MPN co-solvent", 2023 Taiwan-Germany Joint Workshop on Advanced Lithium-Ion Battery Technologies, New Taipei, Taiwan, May 01-03, 2023.

20. **Chi-Chang Hu**, Cheng-Wei Dai, Tien-Yu Yi, Da-Je Hsu, Ching-Fang Liu, Yu-Chien Liu, Yan-Shi Chen, Ping-Chieh Wang, "Design of Carbon Materials for High-Voltage Supercapacitors", 1st International Symposium on Carbon Materials (2023 ISCM-1) for Energy, Environment, Sustainability, and Bio-applications, Tainan, Taiwan, Jan. 31-Feb. 3, 2023 (**Plenary Lecture & Organizing Committee**).

2022

21. **Chi-Chang Hu**, Hao-Yu Ku and Yui-Ju Pai, "Designs of Electrospun Polyimide-based Separators for Supercapacitors and Li-ion Batteries", Asia Conference on Electrochemical Power Sources (ACEPS11), Singapore, December 11-14, 2022 (**Keynote lecture**).

22. Zi-Fan He, Tzu-Chien Wei, **Chi-Chang Hu**, "Complementary Operando Electro- chemical Quartz Crystal Microbalance and Ultraviolet–visible Spectroscopic Studies: Mechanistic Transition of Zinc-Manganese Batteries", Asia Conference on Electro- chemical Power Sources (ACEPS11), Singapore, December 11-14, 2022.

23. **Chi-Chang Hu**, Chih-Han Yen, Chen-Wei Tai, Laurence Hardwick, "Novel electrode materials and electrolytes for the negative electrode of lithium batteries", 2022 Taiwan-Germany Joint Workshop on Advanced Lithium-Ion Battery Technologies, Munster, Germany, November 14-25, 2022.

24. Yi-Heng Tu, **Chi-Chang Hu**, "A highly efficient faradaic desalination system utilizing MnO_2 and polypyrrole-coated titanium electrodes", The 2022 International Conference on Green Electro- chemical Technologies, Hsin-Chu, Taiwan, November, 10-12, 2022. (**Conference Chair**)

25. Chih-Han Yen, Laurence Hardwick, **Chi-Chang Hu**, "Investigating dendrite suppression gel polymer layer for upgrading conventional electrolyte in lithium metal batteries", The 2022 International Conference on Green Electrochemical Technologies, Hsin-Chu, Taiwan, November, 10-12, 2022.

26. Zi-Fan He, Tzu-Chien Wei, **Chi-Chang Hu**, "Complementary operando electrochemical quartz crystal microbalance and ultraviolet–visible spectroscopic studies: acetate effects on zinc-manganese batteries", The 2022 International Conference on Green Electro- chemical Technologies, Hsin-Chu, Taiwan, November, 10-12, 2022.

27. **Chi-Chang Hu**, Chen-Wei Tai, Ping-Chieh Wang, An-Pang Tu, "Design of Hard Carbon Beads with a Large Plateau Capacity of Li-ion Storage for Li-ion Batteries and Li-ion Capacitors", The 73rd ISE Annual Meeting, Xiamen, China, Sept. 11-16, 2022.

28. **Chi-Chang Hu**, Hao-Yu Ku, Jui-Yu Pai, "Designs of Electrospun Polyimide-based Separators for Energy Storage Devices", 2022 International Conference on Hierarchical Green Energy Materials, Tainan, Taiwan, Jan. 17-18, 2022 (**Keynote lecture**).

2021

29. **Chi-Chang Hu**, "Designs of Electrospun Polyimide-based Separators for Energy Storage Devices ", The International Conference on Clean Technology 2021, Gyeongsan, South Korea, December 23, 2021 (**Keynote lecture**).

30. **Chi-Chang Hu**, Chih-Han Yen, Shang-Tzu Liu, Hao-Yu Ku, Chih-Heng Lee, Hsing-Yi Tiffany Chen, Laurence Hardwick, "Crystal facet control of copper foils for anode-free LBs", 2021 Taiwan-Germany Joint Workshop on Advanced Lithium-Ion Battery Technologies, Tainan, Taiwan, Dec. 14-15, 2021.

31. **Chi-Chang Hu**, Da-Je Hsu, Yu-Wen Chi, Kun-Ping Huang, "Hydrogen responses on graphene@platinum clusters electrodes with graphene prepared by plasma-enhanced chemical vapor deposition", The 12th Asia-Pacific International Symposium on the Basics and Applications of Plasma Technology (APSPT-12), Taipei, Taiwan, Dec. 9-11, 2021.

32. **Chi-Chang Hu**, "Separator designs for energy storage devices", 2021 International Seminar of Advanced Lithium-ion Battery and Hydrogen Fuel Cell Electrochemical Energy Storage, Tainan, Taiwan, Dec. 7-8, 2021 (**Invited Lecture**).

33. **Chi-Chang Hu**, "Development of bi-functional catalysts for rechargeable metal-air batteries", National Tsing Hua University & University of Liverpool 10th Bilateral Workshop, Hsin-Chu, Taiwan, Dec. 6, 2021 (**Invited Lecture**).

34. **Chi-Chang Hu**, Chun-Cheng Lin, Shang-Tzu Liu, Siang-Sheng Wei, "Electroplating of Copper with Microstructure Control and The Applications to Energy Storage Systems", The 30th Topical Meeting of the International Society of Electrochemistry, Taipei, Taiwan, Nov. 21-24, 2021.

35. **Chi-Chang Hu**, Shang-Tzu Liu, Chun-Cheng Lin, Siang-Sheng Wei, Jui-Yu Pai, "Crystalline Facet Control of Electroplated Copper Foils for Energy Storage Applications", INTERFINISH2020, Nagoya, Japan, Sept. 6-8, 2021 (**Invited Lecture**).

36. **Chi-Chang Hu**, Jui-Yu Pai, Cheng-Ta Hsieh, Hao-Yu Ku, Laurence J. Hardwick, "Electrospun Polyimide-copolymer Separators Designed for Electrical Double-Layer Capacitors and Lithium-ion Cells", The 72nd ISE Annual Meeting, Jeju Island, South Korea, Aug. 29th-Sept. 3rd, 2021 (**Coordinator of Symposium 25**).

C. Patents

1. Republic of China Patent: M 295143 (2006).

2. Republic of China Patent: I 274590 (2007).

3. Republic of China Patent: I 457473 (2014).

4. US Patent (2015), 第 14/029,084 號「SUPERCAPACITOR AND METHOD FOR MANUFACTURING ELECTRODE THEREOF／(超級電容器及其電極之製備方法)」

5. 手持式過氧化氫產生裝置, Republic of China Patent: M 509809 (2015).

6. 手持式過氧化氫產生裝置, PRC Patent: ZL201420820600.8 (2015).

7. US Patent, APPLICATION NUMBER: 62/172,673, FILING DATE: 2015/06/08, "Anion intercalation of micro-graphite for high-voltage organic asymmetric supercapacitors".

8. US Patent, APPLICATION NUMBER: 14/983,473, FILING DATE: 2015/12/29, "ASYMMETRIC ELECTRICAL DOUBLE-LAYER CAPACITOR USING ELECTROCHEMICAL ACTIVATED CARBON". **(本案已於 2017/09/25 通知通過專利申請)**

9. PRC Patent, APPLICATION NUMBER: 201510760248.2, FILING DATE: 2015.11.10, 複合淨水裝置及其方法.

10. Republic of China Patent, APPLICATION NUMBER: 105107457, FILING DATE: 2016.03.11; 利用電化學活化碳材之非對稱超級電容器/Asymmetric supercapacitors using carbons with electrochemical activation.

11. Republic of China Patent, I763592, 硬碳微珠、其製法及包含其之儲能裝置 (2022)。

12. Republic of China Patent, I703595, 用於高電壓超電容之軟碳材料的製備方法及非對稱式超級電容器 (2021).

13. US Patent, US10207940B2, "COMPOSITE WATER PURIFICATION APPARATUS AND METHOD THEREOF".

14. Republic of China Patent, I638375, 利用電化學活化碳材之非對稱超級電容器/Asymmetric supercapacitors using carbons with electrochemical activation (2018).

15. Republic of China Patent, I703595, 用於高電壓超電容之軟碳材料的製備方法及非對稱式超級電容器 (2021)。

16. Japan Patent, Application number: 2023-004524 (優先權日(申請號): 2022/11/11 (111143226) 特許出願の番号 特願 2023-004524), 軟碳材料之負極的預鋰化方法及其超級電容(2024/2/19 獲證)。

17. US Patent 11,830,673B2, METHOD OF PREPARING SOFT CARBON MATERIAL FOR HIGH-VOLTAGE SUPERCAPACITOR AND ASYMMETRICAL SUPERCAPACITOR (Nov. 28, 2023 獲證).

18. Republic of China Patent, I763592, 硬碳微珠、其製法及包含其之儲能裝置 (2022)。

19. US Patent, Application number, 17/522,151 (11/09/2021), HARD CARBON BEADS, THEIR PREPARATION, AND ENERGY STORAGE DEVICE COMPRISING THE SAME. (2023 獲證)

20. PRC Patent, 發明申請第 202111120064.1 號「硬碳微珠、其製法及包含其的儲能裝置」專利.

21. Republic of China Patent, Application No. 111101862 (January 17, 2022), 前驅溶液及包含其的改質膜與鋰系電池.

22. PRC Patent, 發明申請第 202210047582.3 號「前驅溶液及包含其的改質膜與鋰系電池」專利.

23. US Patent, Application No. 17/699,677, PRECURSOR SOLUTION, AND MODIFIED LAYER AND LITHIUM-BASED BATTERY PREPARED BY USING THE SAME. (2024 獲證)

24. Republic of China Patent, Application No. 111101862 (January 17, 2022), NON-MEMBRANE DEIONIZATION AND ION-CONCENTRATING APPARATUS AND NON-MEMBRANE DEIONIZATION AND ION-CONCENTRATING MODULE. (2023 獲證)

25. US Patent, Application number, 17/938,679; NON-MEMBRANE DEIONIZATION AND ION-CONCENTRATING APPARATUS AND NON-MEMBRANE DEIONIZATION AND ION-CONCENTRATING MODULE.

D. Other

1. 2021/12-present, President, The Electrochemical Society of Taiwan.

2. 2024 年獲侯金堆榮譽講座教授。

3. 2024 年獲國立清華大學「清華-信驊科技傑出人才講座教授」。

4. 2024 年獲「英國皇家化學會」(Royal Society of Chemistry)會士。

5. 2024 年獲「台灣化工學會」會士。

6. 2022-2024 年 Materials Science 領域 Taiwan Leader (Research.com)。

7. 2020-2024 名列全球 Top 2% Scientists (單年與整體研究生涯數據)。

8. 2023- Alumni Outstanding Achievement Award, Department of Chemical Engineering, National Cheng Kung University, Taiwan.

9. 2022 年獲台灣化工學會金開英先生獎。

10. 2022- Bronze medal Award, Wah Lee Innovative Materials Contest, Materials Research Society-Taiwan (MRS-T), Taiwan.

11. 2022 - Research.com Chemistry in Taiwan Leader Award (Research.com).

12. 2020 年獲中國工程師學會傑出工程教授。

13. 2020, Fellow, The International Association of Advanced Materials (IAAM).

14. 2015-2020, Tajima Prize Evaluation Committee Member, International Society of Electrochemistry.

15. 2006-present, Member of the Editorial Board, Journal of the Taiwanese Institute of Chemical Engineers (indexed by SCI).

16. 2015-present, Editorial Advisory Board Member, Journal of Power Sources (indexed by SCI).

17. 2021 年指導博士生涂易恆獲第 58 屆台灣化工年會學生英文論文競賽口頭報告組優勝 (2022/1 月)。

18. 2021 年指導博士生饒文揚、碩士生劉上慈、碩士生江健瑋獲第 58 屆台灣化工年會學生壁報論文競賽優勝 (2022/1 月)。

19. 2020 年指導博士生涂易恆獲第 57 屆台灣化工年會學生英文論文競賽口頭報告組佳作 (10 月)。

20. 2022 年指導博士生涂易恆獲科技部千里馬國際訪問研究補助 11 個月，預計 2023/02 前往荷蘭 Wageningen University 訪問研究。

21. 2022 年指導碩士生陳雯華獲得國立清華大學國際交換生補助 6 個月，前往德國 KIT。(2022/02-2022/08)

22. 2021 年指導博士生顏志翰獲科技部-德國科技部訪問研究補助 9 個月，前往德國 HIU。

23. 2023 年指導博士生黃弘逸獲 2023 綠色電化學研討會英文論文競賽口頭報告組第一名、博士生饒文揚獲第二名；博士生戴呈瑋、賴祈佑、碩士生吳亞璇、李偉琳獲學生壁報論文競賽優勝，博士生何子凡、碩士生陳詩樺獲佳作。

24. 2024 年指導博士生魏祥昇、王廷鈺獲 2024 綠色電化學研討會英文論文競賽口頭報告組佳作；博士生黃弘逸、古昀、鄒旭，碩士生林昀、吳孟霏獲學生壁報論文競賽優勝。

25. 2025 年指導碩士生林昀獲 2025 台灣碳材料研討會英文論文競賽口頭報告組第一名、博士生古昀獲第四名；指導碩士生梁景程獲學生壁報論文競賽第一名。

Publications of Yu-Chen Hu (胡育誠)

***: Corresponding author; IF: 2024 Impact factor**

A. Journal Papers (* Corresponding author)

Submitted and in press

1. Truong, V.A., Chien, M.-C., Truong, V.A., Dang, Q.T., Hwu, J.-R., Lin, M.-W., **Hu, Y.-C.***. Bicistronic self-amplifying RNA-driven OX40L and IL-12 co-expression reprograms the tumor microenvironment and enhances antitumor efficacy. Submitted.

2. Truong, V.A., Le Thi, X-M, Huang, S.-C., Dang, Q. T., Nguyen, M.T.T., **Hu, Y.-C.***. Coupling hfCas13d with circular gRNA array extends RNA knockdown and improves biocatalysis in the yeast. Submitted to **Nature Communications, revision under review. (IF 15.7)**

3. Tien, T.-L, Chen, Chen, P.-Y., Chen, P.-H., Nguyen, N.T.K., Dang, Q.T., Truong, V.A., **Hu, Y.-C.***. Engineering human PEG10-based nanoparticles for RNA self-packaging, delivery and cancer therapy. Submitted to **Nature Communications, revision under review. (IF 15.7)**

2025

4. Chang, C.-W., Tung, Y-T., Huang, S.-C., Chen, Y.-C., Shah, P., Le Thi, X-M., V. A. Truong, Nguyen, M.T.T., **Hu, Y.-C***. 2025, July. Green Synthesis of ω-hydroxydodecanoic acid by engineering *C. viswanathii* with Cas13d. Green Chemistry. 27, 8237-8250 **(IF 9.2)**.

5. Yang, S.-W., Liao, M.-F., Wang, T.-W., Hung, Y.-H., Lee, Y.-L., Dang, Q.-T., Chen, P.-Y., Ro, L.-S*, and **Y.-C. Hu***. 2025 Nov. RNA-guided activation of IL-10 in adipose-derived stem cells regulates inflammation and attenuates neuropathic pain. Journal of the Taiwan Institute of Chemical Engineers. 176: 106304. **(IF 6.3)**

6. Le, T. Q. N, Law, X. L. Vo, V.Q.G., Chen, S.-H. Chou, W.-Y., Sun, W.C., Lu, S.-Y., **Hu, Y.-C.**, Tsai, D.-H*. 2025, Oct. Aerosol-assisted synthesis of Ag-TiO2 and Cu-TiO2 hybrid nanoparticle clusters for photon-induced antibacterial applications. Advanced Powder Technology. 36: 105083. (IF 4.2)

7. Hwu, J.R., Landge, D.R., Huang, W.C., Horng, J.C., **Hu, Y.C.**, Hwang, K.C., Lin, C.C., Tsay, S.C. 2025. Mar. Biochemical nanotubes containing heterocycles as artificial strands for pseudo duplex and triplex DNA formation. Journal of Physical Chemistry B (IF 2.9).

8. Jayakumar, S., Panja, A., Gupta, NK, Huang, WC, Hwang, KC, Shanmugam, M, **Hu, Y.-C.**, Shieh, FK, Tsay, S, Hwu, J.R. 2025. Sep. Synthesis, photophysical characterization, and bioimaging with benzoquinolizine-based fluorescent dyes prepared through an aryne-induced domino reaction. ChemPhotoChem. 9: e202500212 (IF 3.0).

2024

9. Truong, V.A., Chang, Y.H., Dang, T.Q., Tu, Y., Tu, J., Chang, C.-W., Chang, Y.H., **Hu, Y.-C.***. 2024. Sep. Programmable editing of primary microRNA switches stem cell differentiation and improves tissue regeneration. Nature Communications. 15:8358 **(IF 15.7).**

10. Chang, C.-W., Truong, V.A., Pham, N.N, **Hu, Y.-C.***. 2024. Aug. RNA-guided genome engineering: paradigm shift towards transposons. Trends in Biotechnology. 42: 970-985 **(IF 14.9) Review paper**

11. Nguyen, NTK, Lee, H.-S., P.-H. Chen, Truong, V.A., Chang, Y.-H., Pham, N.N., Chang, C.-W., Pham, D.-H., Ngo, DKT, Truong, V.A., Dang, Q.T., Chang, Y.-H., **Hu, Y.-C.***. 2024 May. Enhanced calvarial bone repair using ASCs engineered with RNA-guided Split dCas12a system that co-activates Sox5, Sox6 and long non-coding RNA *H19*. Small. 20: 2306612 **(Invited paper, IF 12.1).**

12. Pham, N.N., Wu, Y.H., Dai, T.A. Tu, J., Liang, R.-M., Hsieh, H.-Y., Chang, C.-W., **Hu, Y.-C.*.** 2024 Sep. Auto-inducible synthetic pathway in *E. coli* enhanced sustainable indigo production from glucose. Metabolic Engineering. 85: 14-25 **(IF 6.8).**

2023

13. Nguyen, NTK, Tu, Y., Lee, H.-S., Truong, V.A., Chang, Y.-H., Pham, N.N., Chang, C.-W., Lin, Y-H., Lai, P.-L., Chen, P.-H., Parfyonova, Y.V., Menshikov, M., Chang, Y.-H., **Hu, Y.-C.***. 2023 June Split dCas12a activator for lncRNA H19 activation to enhance BMSC differentiation and promote calvarial bone healing. Biomaterials. 297:122106. **(IF 12.9).**

14. Pham, N. N., Chang, C.-W., Chang, Y.-H., Tu, Y., Chou, J.-J., Wang, H.Y. and **Hu, Y.-C.***. 2023 May. Rational genome and metabolic engineering of *Candida viswanathii* by split CRISPR to produce hundred grams of dodecanedioic acid. Metabolic Engineering. 77:76-88. **(IF 6.8)**.

15. Chang, C.-W., Huang, J.-W., Lu, Y.-H., Pham, N. N., Tu, J., Tung, Y.-T., Yen, C.-Y., Shen C.-C. Chien, M.-C. Tu, Y., Lin, Y.-H., Yang, S.-W., Nguyen, M.T.T. and **Hu, Y.-C.***. 2023 March. Metabolic engineering of difficult-to-edit *E. coli* to enhance protein production by coupling ShCAST-based optimized transposon system and CRISPR interference. Journal of the Taiwan Institute of Chemical Engineers. 144: 104746 **(IF 6.3)**.

16. Michurina, S., Stafeev, I., Boldyreva, M., Truong, V.A., Ratner, E., Menshikov, M., **Hu, Y.-C.**, Parfyonova, Y. 2023 Feb. Transplantation of adipose tissue-engineered constructs with CRISPR-mediated UCP1 activation. International Journal of Molecular Sciences. 24: 3844 **(IF 4.9)**

2022

17. Truong, A.V., Lin, Y.-H., Nguyen, TKN, Hsu, M.-N., Pham, N.N., Chang, Y.-H., Chang, C.-W., Shen, C.-C., Lai, P.-L., Parfyonova, Y.V., Menshikov, M., Wu, J.-C., Chang, Y.-H., **Hu, Y.-C.***. 2022 Jan. Bi-directional gene activation and repression promote ASC differentiation and enhance bone healing in osteoporotic rats. Molecular Therapy. 30: 92-104. **(IF 12.0)**.

18. Chang, C.-W., Wang, L.-S., Pham, N. N., Shen C.-C., Nguyen, TKN, Yen, C.-Y., Lin, M.-W., Hsu, M.N., Nguyen, M.T.T., Hwu, J.-R., Chang, Y.-H. and **Hu, Y.-C.***. 2022. Feb. Synthetic biology approach to developing all-in-one baculovirus vector using mammalian introns and miRNA binding sites. Journal of the Taiwan Institute of Chemical Engineers. 131: 104175. **(IF 6.3).**

19. Li, H., Pham, N.N., Shen, C.R., Chang, C.-W., Tu, Y., Chang, Y.-H., Tu, J., Nguyen, M.T.T., **Hu, Y.-C***. 2022 June. Combinatorial CRISPR interference library for enhancing 2,3-BDO production and elucidating key genes in cyanobacteria. Frontiers in Bioengineering and Biotechnology, 10: 913820 **(IF 4.8)**.

20. Makarevich, P.I* and **Hu, Y.-C.** 2022. Editorial: Regulation of adult stem cells fate and function in natural and artificial microenvironments. Frontiers in Cell and Developmental Biology,10:955568 **(IF 4.3)**.

21. Liu, Y.-C., **Hu, Y.-C.**, Chu, I.-M., Wei, Y.-H., Tsai, S.-L*. 2022 Feb. Biodegradation of tetramethylammonium chloride wastewater and inorganic nitrogen removal by a mixed culture. Journal of Environmental Chemical Engineering. 10: 106931. **(IF 7.2)**

22. Stafeev, I.S., Boldyreva, M.A., Michurina, S.S., Agareva, M.Y., Radnaeva, A.V., Menshikov, M.Y., **Hu, Y.-C.**, Makarevich, P.I., Parfyonova, Y. 2022 Nov. Impaired glucose tolerance and efficacy of HGF/VEGF gene therapy for limb ischemia: shift from angiogenesis to axonal growth and oxidative potential in skeletal muscle. Cells. 11: 3824 **(IF 5.2)**.

23. Hwu, J.-R., Kapoor, M., Gupta, N.K., Tsay, S.-C., Huang, W.-C., Tan, K.-T., **Hu, Y.-C.**, Lyssen, P., Neyts, J. 2022 Mar. Synthesis and antiviral activities of quinazolinamine–coumarin conjugates toward chikungunya and hepatitis C viruses. European Journal of Medicinal Chemistry. 232: 114164 **(IF 5.9)**

2021

24. Nguyen, TKN, Chang, Y.-H., Truong, A.V., Hsu, M.-N., Pham, NN, Chang, C.-W., Wu, Y.-H., Chang, Y.-H., Li, H., **Hu, Y.-C.***. 2021 Aug. CRISPR activation of long non-coding RNA DANCR promotes bone regeneration. Biomaterials. 275: 120965 **(IF 12.9).**

25. Klionsky, D., Abdel-Aziz, A.K., ..**Hu, Y.-C.**, et al. 2021 Feb. Guidelines for the use and interpretation of assays for monitoring autophagy (4th edition). Autophagy. 17:1-382. **(IF 14.3, High Cite Paper, WOS Hot paper)**. **Review paper.**

26. Chang, Y.-H., Lin, M.-W., Chien, M.-C., Ke, G.-M., Wu, I.-E., Lin, R.-L., Lin, C.-Y., **Hu, Y.-C***. 2021 Oct. Polyplex nanomicelle delivery of self-amplifying RNA vaccine. Journal of Controlled Release. 338: 694-704. **(IF 11.5, Invited paper.)**.

27. Lin, M.-W., Shen, C.-C., Lin, Y.-J., Chou, M.-Y., Pham, N.-N., Chang, Y.-H., Chang, C.-W., Hwu, J.-R., Nguyen, M.T.T., **Hu, Y.-C.***. 2021 April. Enhancing the yield and activity of defucosylated antibody produced by CHO-K1 cells using Cas13d-mediated multiplex gene targeting. Journal of the Taiwan Institute of Chemical Engineers.121: 38-47. **(IF 6.3, selected as Best paper)**.

28. Hwu, J.-R., Panja, A., Gupta, N.K., Huang, W.-C., **Hu, Y.-C.**, Lin, C.-C., Hwang, K.-C., Chan, W.-J., Tsay, S.-C. 2021 April. Asymmetric synthesis of 3-pyrrolines through an aryne-induced domino process. Asian Journal of Organic Chemistry. 10: 803-815 **(IF 2.7)**.

29. Hwu, J.-R., Panja, A., Gupta, N.K., **Hu, Y.-C.**, Tan, K-T., Lin, C.-C., Hwang, K.-C., Hsu, M.-H., Huang, W.-C., Tsay, S.-C. 2021 Jan. Domino Processes of Arynes Reacting with Three Classes of Nucleophiles for Organic Syntheses. European Journal of Organic Chemistry. 4: 683-693. **(IF 2.7)**.

B. Conference Presentations

1. Wang, T.-Y., Tseng, C.-H., **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan

2. Dang, Q.-T, **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan

3. Chen, P.-H., Huang, C.-C., **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan

4. Tseng, C.-H., Wang, T.-Y., **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan.

5. Chen, Y.-H., **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan

6. Chen, P.-Y., **Hu, Y.-C***. 2025 Jun. 2025 The 30th BEST Conference. Kaohsiung, Taiwan

7. Huang, P.-Y., **Hu, Y.-C***. 2025 Jun. BEST Conference & International Symposium on Biotechnology and Bioengineering, Kaohsiung, Taiwan

8. V.-A., Truong, X.-M.-T., Le, **Hu, Y.-C***. 2025 Jun. BEST Conference & International Symposium on Biotechnology and Bioengineering, Kaohsiung, Taiwan

9. Wang, W.-C., **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan.

10. Yang, R.-D., **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan

11. Tsai, H.-C., **Hu, Y.-C***. 2025 Jun. The 30th BEST Conference. Kaohsiung, Taiwan

12. Dang, Q.-T., Lin, Y.-H., **Hu, Y.-C***. 2025 Apr. The 2nd Biomedical Engineering (BME) Day Symposium, Hsinchu, Taiwan.

13. Yang, R.-D., **Hu, Y.-C***. 2025 Apr. The 2nd Biomedical Engineering (BME) Day Symposium, Hsinchu, Taiwan.

14. Chen, P.-Y, **Hu, Y.-C***. 2025 Apr. The 2nd Biomedical Engineering (BME) Day Symposium, Hsinchu, Taiwan.

15. Truong, V.-A., Chien, M.-C., Lin ,M.-W., **Hu, Y.-C***. 2024 Nov. Development of self-amplifying (saRNA) system for combination cancer therapy. The 71th TwIChE Annual Conference, Taoyuan, Taiwan.

16. Truong, V.-A., Chien, M.-C., Lin ,M.-W., **Hu, Y.-C***. 2024 Aug. Development of self-amplifying (saRNA) system for combination cancer therapy. 2024 BCRS&IADDS, Hsinchu, Taiwan.

17. Chen, P.-Y., **Hu, Y.-C***. 2024 Aug. Developing pseudovirus-like nanoparticles (PVNPs) to package RNA for bone regeneration. 2024 BCRS&IADDS, Hinchu, Taiwan.*

18. Chen, P.-H., Tein, T.-L., Nguyen, T. K. N., Huang, C.-C., **Hu, Y.-C***. 2024 Aug. Producing and Engineering Pseudovirus-like Nanoparticles for RNA Self-packaging and Delivery. 2024 BCRS&IADDS, Hsinchu, Taiwan.

19. Yang, R.-D., **Hu, Y.-C***. 2024 Aug. Development of mRNA Vaccine loaded on Microneedle for Influenza. 2024 BCRS&IADDS, Hinchu, Taiwan.*

20. Yang, S.-W., Liao, M.-F., Hung, Y.-H., Lee, Y.-L., Ro, L.-S., **Hu, Y.-C***. 2024 Jun. CRISPR Activation of IL-10 in ASC by Hybrid Baculovirus for Neuropathic Pain Attenuation. 2024 TERMIS-World Congress. Seattle, the USA.

21. Chen, P.-Y., **Hu, Y.-C***. 2024 Jun. Developing pseudovirus-like nanoparticles (PVNPs) to package RNA for bone regeneration. TERMIS-World Congress. Seattle, USA.

22. Dang,Q.T., Lin, Y.H. **Hu, Y.-C***. 2024 Jun. Development of an Efficient and Highly Specific Prime Editing System for Targeted Correction of GJB2-Related Hearing Loss Mutations. 7th TERMIS World Congress 2024, Seattle, Washington, United States.

23. Truong, V.-A., Chien, M.-C., Lin ,M.-W., **Hu, Y.-C***. 2024 Jun. Development of self-amplifying (saRNA) system for combination cancer therapy. 2024 BEST Conference & International Symposium on Biotechnology and Bioengineering, Penghu, Taiwan.

24. Huang Siang Cing., **Hu, Y.-C***. 2024 Jun. Development of an efficient gene knockdown tool for enhancing 10-Hydroxydecanoic Acid production. 2024 BEST Conference International Symposium on Biotechnology and Bioengineering, Penghu, Taiwan

25. Truong, V.-A., Chien, M.-C., Lin ,M.-W., **Hu, Y.-C***. 2023 Dec. Development of self-amplifying (saRNA) system for combination cancer therapy. The 70th TwIChE Annual Conference, Taipei, Taiwan.

26. Yang, S.-W., Hsu, M.-N., Truong, V.-A., Liao, M.-F., **Hu, Y.-C***. 2023 Dec. CRISPR Activation of IL-10 in ASC by Hybrid Baculovirus for Neuropathic Pain Attenuation. 2023 TwIChE. Taipei, Taiwan.

27. Chen, P.-Y., **Hu, Y.-C***. 2023 Dec. Developing pseudovirus-like nanoparticles (PVNPs) to package lncRNA for chondrogenic differentiation. 2023 TwIChE. Taipei, Taiwan.*

28. Tien, T.-L., **Hu, Y.-C***. 2023 Dec. Baculovirus-generated PEG10 PVNPs package mRNA for antitumor immunity. 2023 TwIChE Annual Conference. Taipei, Taiwan.

29. Truong, V.-A., Chien, M.-C., Lin ,M.-W., **Hu, Y.-C***. 2023 Oct. Development of self-amplifying (saRNA) system for combination cancer therapy. The 16th Asian Congress on Biotechnology, Ho Chi Minh, Vietnam.

30. Tien, T.-L., **Hu, Y.-C***. 2023 Oct. Baculovirus-generated PEG10 PVNPs package therapeutic mRNA for antitumor immunity. 2023 Asian Congress on Biotechnology. Ho Chi Minh City, Vietnam.

31. Chang, C.-W., **Hu, Y.-C***.2023 Oct. Construction of an all-in-one prime editing baculovirus by using a novel CRISPR-associated transposon for human genome editing. 2023 ACB. Ho Chi Minh City, Vietnam.

32. Nguyen, T. K. N., Lee, H-S, Chen, P-H., Truong, A-V., **Hu, Y-C***, 2023 Oct. Split dCas12a Activator for lncRNA H19 Activation to Induce BMSC Chondrogenesis and Promote Calvarial Bone Healing, Asian Congress of Biotechnology 2023, Vietnam.

33. Dang,Q.T., Lin, Y.H., **Hu, Y.-C***. 2023 Aug. Development of A New Prime Editing System for Efficient Genome Editing. The 6th International Symposium of Materials on Regenerative Medicine and Annual Meeting of Biomaterials and Control Released Society in Taiwan (2023 ISOMRM&BCRS Symposium), Taipei, Taiwan.

34. Chang, C.-W., **Hu, Y.-C***. 2023 Jul. Construction of all-in-one viruses by combining an optimized CRISPR-associate transposon and Bac-to-Bac system for human genome editing. 2023 BEST. Tainan, Taiwan.

35. Dang,Q.T., Lin, Y.H., **Hu, Y.-C***. 2023 Jul. Development of A New Prime Editing System for Efficient Genome Editing. 2023 BEST Joint YABEC International Symposium, Tainan, Taiwan.

36. Wu, Y.-H, **Hu, Y.-C***. 2023 Jul. De novo Conversion of Glucose to Indigo by Engineered E. coli. 2023 The 28th BEST Conference on Metabolic Engineering and Synthetic Biology, Tainan, Taiwan.

37. Chien, M.-C, Truong, Vu. A, Lin, M.-W., Truong, Vy. A, **Hu, Y.-C***. 2023 Jul. Development of a cancer therapy by combining chemotherapy and self-amplifying RNA system. 2023 the 28th BEST Conference & International Symposium on Biotechnology and Bioengineering. Tainan, Taiwan.

38. Chien, C.-H, **Hu, Y.-C***. 2023 Jul. Development of a Novel CRISPR Activation Tool for Metabolic Engineering in Non-Conventional Yeast. 2023 The 28th BEST Conference on Metabolic Engineering and Synthetic Biology, Tainan, Taiwan.

39. Pham, N. N., **Hu, Y-C***. 2023 May. Sustainable Conversion of 5-Hydroxymethyl Furfural to 2,5- Furandicarboxylic Acid By Stable CRISPR-Engineered Pseudomonas Putida. Poster. Metabolic Engineering 15, Singapore.

40. Wu, Y.-H, **Hu, Y.-C***. 2023 May. De novo Conversion of Glucose to Indigo by Engineered E. coli. Poster. Metabolic Engineering 15, Singapore.

41. Tien, T.-L., **Hu, Y.-C***. 2023 May. Baculovirus-generated PEG10 PVNPs package mRNA for antitumor immunity. 2023 BEST Conference International Symposium on Biotechnology and Bioengineering. Tainan, Taiwan.

42. Chien, M.-C, Truong, Vu. A, Lin, M.-W., Truong, Vy. A, **Hu, Y.-C***. 2023 Apr. Development of a cancer therapy by combining chemotherapy and self-amplifying RNA system. Dupont Taiwan-NTHU CHE graduate student thesis contest. Hsinchu, Taiwan.

43. Chien, M.-C. 2023 Apr. Prof. Chau-Jen Lee Scholarship. Hsinchu, Taiwan

44. Yang, S.-W., Hsu, M.-N., Truong, V.-A., Liao, M.-F., **Hu, Y.-C***. 2023 Mar. CRISPR Activation of ASC to Stimulate IL-10 Secretion and Macrophage Polarization for Pain Management. 2023 FARM. Taipei, Taiwan.

45. Yang, S.-W., Hsu, M.-N., Truong, V.-A., Liao, M.-F., **Hu, Y.-C***. 2022 Dec. CRISPR Activation of ASC to Stimulate IL-10 Secretion and Macrophage Polarization for Pain Management. 2022 TwIChE. Taipei, Taiwan.

46. **Hu, Y-C**. 2022 Oct. Keynote speaker and session chair, 2022 TERMIS-AP Meeting, Korea

47. **Hu, Y-C**. 2022 Oct. Invited speaker, 2022 Kyungpook National University Hospital (KNUH) International Conference. Daegu, Korea.

48. Chang, C.-W.; **Hu, Y.-C.** 2022 June. 27th BEST Conference & International Symposium on Biotechnology and Bioengineering. BEST oral presentation award. Taoyuan, Taiwan

49. **Hu, Y-C.** 2022 March. Invited speaker, Annual meeting of FARM. Taipei, Taiwan

50. **Hu, Y-C.** 2021 Nov. Keynote speaker and session chair, AFOB virtual conference, Korea

51. **Hu, Y-C.**, 2021 Oct. Keynote speaker. Annual Meeting of the Taiwan Neuroimmunology Medical Society and Society for Neurological Rare Disorders-Taiwan. Taipei, Taiwan.

52. **Hu, Y-C**. 2021 July. Keynote speaker. The 26th BEST conference and International Symposium on Biotechnology and Bioengineering. Taichung. Taiwan.

53. **Hu, Y-C**. 2021, June. Keynote speaker. 2021 Annual Meeting of Agricultural Chemical Society of Taiwan. Taipei, Taiwan.

C. Patents

1. **胡育誠**、陳品諺，田庭綸。自組裝奈米粒子、其製備方法及醫藥組合物 (Self-assembling Nanoparticle, Preparation method thereof and Pharmaceutical Composition)。中華民國發明專利. **已核准**。專利授證中。

2. **Yu-Chen Hu**, Ngoc-Nam Pham, Jun-Yen Chou, Hsing-Yun Wang, Jianan Liu. Transformant for producing dodecanedioic acid and method for producing dodecanedioic acid. **US 12286663B2. (專利權有效期間:2023/03/01-2043/03/24)**.

3. **胡育誠**、范玉南,周俊彥, 王興運, 劉珈男. 維斯假絲酵母的基因編輯系統、其基因編輯方法、生產十二烷二酸的轉型株及生產十二烷二酸的方法. **中華民國發明專利 I857355. (專利權有效期間:2024/10/1~ 2042/9/28).**

4. **Yu-Chen Hu**, Ngoc-Nam Pham, Cho-Yi Chen, June-Yen Chou. Transformant for producing 2,5-Furandicarboxylic acid and preparation method for 2,5-furandicarboxylic acid. **US 11578346B2. 2023/02/14-2040/12/01** (extendable to 2041/08/19).

5. **胡育誠**, 范玉南, 陳倬翊, 周俊彥. 戀臭假單胞菌 S12 基因編輯系統及其應用. **中華民國發明專利 I739247. (專利權有效期間:2021/09/11~ 2039/12/19)**

6. **胡育誠**, 范玉南, 陳倬翊, 周俊彥. 2,5-呋喃二甲酸之製備方法. **中華民國發明專利 I735113. (專利權有效期間:2021/08/01~ 2039/12/22)**

7. **胡育誠**, 陳彥霖, 張鴻銘. Microbial composition and processing method for wastewater. 微生物組合物及廢水處理方法. **中華民國發明專利. I710632 (專利權有效期間: 2020/11/21~ 2039/09/11)**.

8. **Yu-Chen Hu**, Mu-En Chung, I-Hsin Yeh, Hung, Li. Method for bacterial genome editing 細菌基因編輯方法. **中國發明專利. CN 106609279 B (專利有效期間: 2020/08/14 ~ 2036/10/21).**

榮譽榜

得獎人	獎項	得獎年度
胡育誠	中技社化工學術獎	2025 年
Vy Anh Truong	台灣化學工程學會 72 週年年會 學生英語口頭競賽優勝	2025 年
陳品諺	台灣化學工程學會 72 週年年會 學生英語口頭競賽優勝	2025 年
梁芮敏	台灣化學工程學會 72 週年年會 學生英語口頭競賽優勝	2025 年
陳品諺	中華民國生醫材料及藥物制放學會年會暨國際創新藥物制放研討會 學生口頭論文競賽佳作	2025 年
Vy Anh Truong	國立清華大學國際會議獲獎論文獎勵 佳作	2025 年
王威棧	2025 臺灣生化工程與生物技術學會年會 口頭競賽優勝佳作	2025 年
Dang Thuc Quyen	2025 臺灣生化工程與生物技術學會年會 口頭競賽優勝優等	2025 年
王亭予	2025 臺灣生化工程與生物技術學會年會 口頭競賽優勝特優	2025 年
胡育誠	2024 莫德納台灣 mRNA 前瞻新創獎	2024 年
田廷綸	2024 莫德納台灣 mRNA 前瞻新創獎	2024 年
陳品諺	2024 莫德納台灣 mRNA 前瞻新創獎	2024 年
陳蘋欣	2024 莫德納台灣 mRNA 前瞻新創獎	2024 年
Vy Anh Truong	台灣化學工程學會 71 週年年會 學生英語口頭競賽優等	2024 年
Vy Anh Truong	國立清華大學國際會議獲獎論文獎勵 佳作	2024 年
Vy Anh Truong	中華民國生醫材料及藥物制放學會年會暨國際創新藥物制放研討會 學生口頭論文競賽佳作	2024 年
陳蘋欣	中華民國生醫材料及藥物制放學會年會暨國際創新藥物制放研討會 學生壁報論文競賽佳作	2024 年
胡育誠	英國皇家化學會會士 (Fellow Royal Society of Chemistry)	2024 年
Vy Anh Truong	2024 臺灣生化工程與生物技術學會年會 口頭競賽優勝	2024 年
黃湘晴	2024 臺灣生化工程與生物技術學會年會 口頭競賽佳作	2024 年

得獎人	獎項	得獎年度
胡育誠	台灣化工學會 會士	2023 年
田庭綸	2023 台灣化學工程學會 70 週年年會學生英語口頭競賽優勝	2023 年
楊書維	2023 台灣化學工程學會 70 週年年會學生英語口頭競賽佳作	2023 年
田庭綸	Asian Congress of Biotechnology 2023. 英文論文口頭第一名	2023 年
張晉維	Asian Congress of Biotechnology 2023. 英文論文口頭第一名	2023 年
Thị Kieu Nuong Nguyen	Asian Congress of Biotechnology 2023. 英文論文口頭第一名	2023 年
胡育誠	International Association of Advanced Materials 會士	2023 年
吳亦修	28rd BEST Conference on Biotechnology and Bioengineering. Tainan, Taiwan. 英文論文口頭發表第一名	2023 年
田庭綸	28rd BEST Conference on Biotechnology and Bioengineering. Tainan, Taiwan. 英文論文口頭發表 佳作	2023 年
Dang Huu Pham	28rd BEST Conference on Biotechnology and Bioengineering. Tainan, Taiwan. 英文論文口頭發表 佳作	2023 年
Dang Thuc Quyen	28rd BEST Conference on Biotechnology and Bioengineering. Tainan, Taiwan. 英文論文口頭發表 佳作	2023 年
張晉維	28rd BEST Conference on Biotechnology and Bioengineering. Tainan, Taiwan. 英文論文口頭發表 佳作	2023 年
簡鳴辰	李昭仁教授基金會獎學金	2022 年
楊書維	2022 台灣化學工程學會 69 週年年會學生壁報發表競賽優勝	2022 年
張晉維	2022 台灣化學工程學會 69 週年年會學生英語口頭發表競賽 優勝	2022 年
胡育誠	中華民國生醫材料及藥物制放學會 研究學者獎	2022 年
林美薇、**胡育誠**	台灣化工學會 傑出論文獎	2022 年
張晉維	第 27 屆台灣生物技術暨生化工程國際研討會 英文論文口頭發表第一名	2022 年
胡育誠	李昭仁教授基金會研究學者獎	2021 年

HONORS AND AWARDS

2027	歐盟研究委員會 Consolidator Grant 計畫審查委員會 委員 Member, ERC Consolidator Grant review panel, European Research Council
2025	歐盟研究委員會 Synergy Grant 與 Advanced Grant 計畫審查委員 ERC Synergy Grant and Advanced Grant reviewer
2025	歐盟研究委員會 Consolidator Grant 計畫審查委員會 委員 Member, ERC Consolidator Grant review panel, European Research Council
2025/08	ISOMRM 國際會議暨 BCRS 年會共同主席 Co-Chair, 7th International Symposium of Materials in Regenerative Medicine (ISOMRM) 2025 & BCRS Annual Meeting
2025	Stanford/Elsvier World's top 2% Scientist (Career and single year from 2019-2025)
2025	中技社化工學術獎 CTCI Foundation Chemical Engineering Academic Award
2024	2024 莫德納台灣 mRNA 前瞻新創獎 2024 Moderna Taiwan mRNA Innovation Awards
2024	英國皇家化學會會士 Fellow Royal Society of Chemistry
2023	台灣化工學會 會士 Fellow, Taiwan Institute of Chemical Engineers (TwIChE)
2023	國際先進材料學會 會士 Fellow, International Association of Advanced Materials
2023	台灣生物技術與生化工程學會 會士 Fellow, Biotechnology and Biochemical Engineering Society of Taiwan (BEST)
2022	中華民國生醫材料及藥物制放學會 研究學者獎 Research Scholar Award, Society for Biomaterials and Controlled Release
2022	台灣化工學會 傑出論文獎 Outstanding paper award, Taiwan Institute of Chemical Engineers
2021	李昭仁教授基金會研究學者獎 Research Scholar Award, Professor Lee Foundation

ASSOCIATE EDITOR/EDITORIAL BOARD MEMBERS

2022 Guest Editor, Biomolecules (IF 6.064)

2022 Editorial board member, Synthetic Biology and Engineering

2021 Associate Editor, Frontiers in Bioengineering and Biotechnology (IF 6.064)

2021 Editorial board member, Biomolecules (IF 6.064)

INVITED SPEECHES (International Conference)

1. Keynote speaker, 2026 July. 20th International Biotechnology Symposium and Exhibition (IBS2026), Kobe, Japan.

2. Keynote speaker, 2025 Nov. Annual Meeting of Taiwan Institute of Chemical Engineers. Tainan, Taiwan.

3. Invited speaker. 2025 Nov. 2025 TSSCR Annual Meeting & Joint International Conference. Taipei, Taiwan.

4. Keynote speaker and session chair. 2025 Oct. 2025 TERMIS-AP Meeting, Wuhan, China.

5. Keynote speaker and session chair. 2025 Sep. 2025 KSBB-AFOB Meeting, Inchon, Korea.

6. Plenary speaker, 2025 July. International Conference on Precision Nanomedicine in Theranostics & the 2025 Annual Meeting of Taiwan Nanomedicine Society. Taichung, Taiwan.

7. Invited Speaker, 2025 July. Controlled Released Society Annual Meeting. Philadelphia, USA.

8. Invited speaker, 2024 Nov. 2nd International HCMUS–Chemistry Conference. Ho Chi Min City, Vietnam.

9. Invited speaker, 2024 Sep. 8th Biotechnology International Congress, Bangkok, Thailand.

10. Keynote speaker, 2024 Aug. International Symposium on Engineering and Technology for Regenerative Medicine. Kyoto, Japan.

11. Invited speaker, International Symposium for Genome Editing and Precision Medicine. BioAsia Taiwan, Taipei, Taiwan.

12. Keynote speaker, 2024 June. European Congress of Biotechnology. Rotterdam, Netherland.

13. Keynote speaker, 2024 June. 3rd International Forum on Chemical Engineering and Catalysis (CECFORUM2024), Porto, Portugal.

14. Invited speaker, 2024 May. World Biomaterials Congress 2024, Daegu, Korea.

15. Keynote speaker, 2024 May. The 24th International Annual Meeting of Korean Tissue Engineering and Regenerative Medicine Society. Jeju, Korea.

16. Keynote speaker, 2024 March. 38th Joint Annual Conference of Biomedical Science. Taipei, Taiwan.

17. Keynote speaker, 2024 March. EFB-AFOB joint meeting. Online meeting.

18. Keynote speaker, 2024 March. International Conference of Formosa Association of Regenerative Medicine. Taipei, Taiwan.

19. Keynote speaker, 2023 Nov. 2023 Annual Meeting of Taiwan Institute of Chemical Engineers. Taipei, Taiwan.

20. Keynote speaker, 2023 Oct. The World Conclave on Materials, Energy & Climate. Stockholm, Sweden.

21. Keynote speaker and session organizer, 2023 Oct. Asian Congress of Biotechnology. Ho Chi Min City, Vietnam.

22. Keynote speaker, 2023 July. 2023 eCM meeting on Bone and Fracture Repair. Davos, Switzerland.

23. Invited speaker, 2023 May, Controlled Release Society (CRS) Local Chapter Webinar.

24. Plenary speaker, 2022 Nov. The 13th Science Conference, VNUHCM-US. Ho Chi Min City, Vietnam.

25. Invited speaker, 2022 Nov. Australia-Taiwan Life Science Symposium. Virtual Conference.

26. Keynote speaker and session chair. 2022 Oct. 2022 TERMIS-AP Meeting, Korea

27. Plenary speaker, 2022 Oct. Kyungpook National University Hospital (KNUH) International Conference. Daegu, Korea.

28. Invited speaker, 2022, March. Annual Meeting of Formosa Association of Regenerative Medicine. Taipei. Taiwan.

29. Keynote speaker and session chair, 2021 Nov. AFOB virtual conference, Korea

30. Invited speaker, 2021 Oct. Korea-Taiwan-Japan Joint Symposium on Chemical Engineering, Korea.

31. Keynote speaker, 2021 Oct. Annual Meeting of the Taiwan Neuroimmunology Medical Society and Society for Neurological Rare Disorders. Taipei, Taiwan.

32. Keynote speaker, 2021 July. The 26th BEST conference and International Symposium on Biotechnology and Bioengineering. Taichung. Taiwan.

33. Keynote speaker, 2021 June. 2021 Annual Meeting of Agricultural Chemical Society of Taiwan. Taipei, Taiwan.

Publications of Jen-Huang (Tony) Huang (黃振煌)

A. Journal Papers (* Corresponding author)

2025

1. S.-N. Kuo, P.-X. Wu, S.-L. Huang*, Y.-C. Hsu, **J.-H. Huang***, Thermo-Responsive Methylcellulose/Hyaluronic Acid–Mesalamine Hydrogel in Targeted Drug Delivery for Ulcerative Colitis, *RSC Advances*, **2025**, 15, 14126-14135 (2024 Impact Factor 4.6).

2. Y.-H. Lin, C.-M. Lin, K.-M. Man, C.-C. Hung, H.-L. Hsu, Y. Chen, H.-Y. Mu*, T.-H. Hsiao*, **J.-H. Huang***, Real-time and Regional Analysis of Anticancer Drugs Efficacy in Patient-Derived Intratumoral Heterogenous Tumor Microenvironment, *Lab on a Chip*, **2025**, 25, 1728-1743 (2024 Impact Factor 5.4).

3. P.-Y. Lai, D. S. Raja, J.-W. Chang, **J.-H. Huang**, D.-H. Tsai*, Real-time Quantification of Microfluidic Hydrogel Crosslinking via Gas-phase Electrophoresis, *Journal of Colloid & Interface Science*, **2025**, 684, 201-212 (2024 Impact Factor 9.7).

4. Y.-L. Lu, C.-M. Lin, **J.-H. Huang***, Triplicate Dynamic Cell Culture Platform for Enhanced Reproducibility in Anti-Cancer Drug Testing, *ACS Biomaterials Science & Engineering*, **2025**, 11, 1222-1231 (2024 Impact Factor 5.5).

5. C.-Y. Liu, Y.-R. Chen, H.-Y. Mu, **J.-H. Huang***, A Dynamic Breathing Lung Chip for Precise Evaluation of Inhaled Drug Efficacy and Airway Epithelial Responses, *ACS Biomaterials Science & Engineering*, **2025**, 11, 682-691 (2024 Impact Factor 5.5).

2024

6. J.-G. Liang, W.-X. Gao, C.-W. Chung, L. A. Dayao, H.-H. Chou, Z.-H. Lin, D. Wan, **J.-H. Huang**, Y.-C. Chen*, T.-T Lu*, Structure-Dependent Magnetoelectric and Magnetothermal Effects of MOF-Derived Zero-Valence Cobalt and Iron Oxide Nanoparticles on a Carbonaceous Matrix. *Chemical Commun*ication, **2024**, 60, 10136 (2024 Impact Factor 4.2).

7. Y.-H. Yang, Y.-H. Tu, H.-Y. Huang, Y.-H. Peng, W-L. Lee, M.-F. Wu, **J.-H. Huang***, C.-C. Hu*. Cell Voltage Control on Ion Selectivity of Carbon Nanotube-Copper Hexacyanoferrate with Enhanced Electrochemical Deionization Performance. *Electrochimica Acta*. **2024**, 488, 144157 (2024 Impact Factor 5.6).

8. Y.-H. Sung, D. S. Raja, **J.-H. Huang**, D.-H. Tsai*, Microfluidic-Aerosol Hyphenated Synthesis of Metal–Organic Framework-Derived Hybrid Catalysts for CO_2 Utilization. *Small Methods*. **2024**, 2301435 (Cover Image) (2024 Impact Factor 9.1).

9. S.-H. Chen, H.-W. Wang, P.-C. Yang, S.-H. Chen, C.-H. Ho, P.-C. Yang, Y.-C. Kao, S.-W. Liu, H. Chiu, Y.-J. Lin, E.-Y. Chuang, **J.-H. Huang**, H.-K. Kao, C.-C. Huang*, Schwann Cells Acquire a Repair Phenotype After Assembling into Spheroids and Show Enhanced in vivo Therapeutic Potential for Promoting Peripheral Nerve Repair. *Bioengineering & Translational Medicine*. **2024**, e10635. (2024 Impact Factor 5.7).

10. H.-Y. Mu, C.-M. Lin, L.-A. Chu, Y.-H. Lin, J. Li, C.-Y. Liu, H.-C. Huang, S.-L. Cheng, T.-Y. Lee, H. M. Lee, H.-M. Chen, Y.-J. Tsai, Y. Chen*, **J.-H. Huang***, Ex Vivo Evaluation of Combination Immunotherapy Using Tumor-Microenvironment-on-Chip. *Advanced Healthcare Materials*. **2024**, 13(2), 2302268 (Cover Image) (2024 Impact Factor 9.6).

11. H.-Y. Mu, Y.-N. N. Ta, M. J. R. Tham, F.-F. Hsu, Y.-C. Lin, H.-C. Huang, Y.-C. Sung, C.-I. Huang, C.-L. Wu, C.-H. Chang, S. Yang, T.-Y. Lee, D. Wan, J. Wang, D. G. Duda, Y. Boucher, **J.-H. Huang***, W. H. Ang*, Y. Chen*. A Chemoimmunotherapy Nanogel Enables Efficient Delivery of Interleukin-2 and Induction of Immunogenic Cell Death for Effective Cancer Therapy. *Advanced Functional Materials*, **2024**, 34(1), 2303033 (2024 Impact Factor 19.0).

12. C.-M. Lin, **J.-H. Huang***. ”Exploring the Potential of Cancer Chips in Novel Drug Development and Clinical Drug Guidance, *Instruments Today*, Vol. 239, 42-53 issued by Taiwan Instrument Research Institute (TIRI), **2024**.

2023

13. H.-Y. Wu, C.-L. Wu, W. Liao, B.-M. Matsagar, K.-Y. Chang, **J.-H. Huang***, C.-W. Wu*. Continuous and Ultrafast MOF Synthesis Using Microfluidic Nanoarchitectonics. *Journal of Materials Chemistry A*, **2023**, 11, 9427-9435 (Cover Image) (2024 Impact Factor 9.5).

14. Y.-H. Sung, C.-L. Wu, **J.-H. Huang***, D.-H. Tsai*. Real-Time Quantifying Microdroplet Synthesis of Metal-Organic Framework Colloids Using Gas-Phase Electrophoresis. *Analytical Chemistry*, **2023**, 95: 4513–4520 (Cover Image) (2024 Impact Factor 6.7).

2022

15. Y.-H. Tu, Y.-C. Tai, J.-Y. Xu, Y.-H. Yang, H.-Y. Huang, **J.-H. Huang***, C.-C. Hu*. Highly efficient water purification devices utilizing the microfluidic electrochemical deionization technique. *Desalination*, 2022, 538: 115928 (2024 Impact Factor 9.8).

16. H.-Y. Mu, C.-Z. Liu, C.-K. Chuang, **J.-H. Huang**, Y.-S. Lin, Y.-T. Liu, Y.-T. Wang, C.-L. Lin*. Hyaluronic acid/Alginate Composite Dressing Powder for Reducing Tissue Fluid Leakage and Promoting Wound Healing after Spinal Surgery. *Journal of Wound Care*, **2022** (2024 Impact Factor 1.7).

17. W.-H. Lai, H.-Y. Mu, Y.-L Lu, H. Chen, J.-W. Wen, H.-J. Wu, C.-M. Cheng, **J.-H. Huang***. Dual-Cell Culture System with Identical Culture Environment for Comparison of Anti-Cancer Drug Toxicity. *Chemical Engineering Science*, 2022, 253: 117555 (2024 Impact Factor 4.3).

2021

18. C.-L. Wu, **J.-H. Huang***. ”Microfluidic Flow Chemistry Process”, Chemical Engineering, Vol. 68, No. 2 issued by Taiwan Institute of Chemical Engineers (TwIChE) in April, 2021.

B. Conference Presentations

2025

1. L.-S. Wu, **J.-H. Huang***. Improving the Condensation Reaction of Maleic Anhydride and Ethylene Glycol Using Microfluidic Technology. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan (Outstanding poster presentation award).

2. Y. Liang, **J.-H. Huang***. Sustainable Continuous Synthesis of Biomedical-Grade Metal-Organic Frameworks Using an Improved Droplet-Based Microfluidic Reactor. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan (Honorable mention poster award).

3. Y.-T. Huang, **J.-H. Huang***. Tumor-on-a-Chip Model of Breast Cancer Dormancy within the Bone Marrow Niche. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan (Honorable mention poster award).

4. W.-H. Hu, **J.-H. Huang***. A Chip Model study of Apoptosis and Ferroptosis in Bladder Cancer Cells Induced by Biomimetic Dinitrosoiron Complexes. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan.

5. Y.-H. Liu, **J.-H. Huang***. Development of a STAS-on-a-Chip for Investigation of Lung Cancer Metastasis. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan (Honorable mention poster award).

6. C.-Y. Huang, **J.-H. Huang***. Targeted Exosome-Engineered Magnetic Nanoparticles for an ImmunoInfiltrative Drug Screening Platform in Pancreatic Ductal Adenocarcinoma. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan (Outstanding poster presentation award).

7. W.-H. Kao, **J.-H. Huang***. Directed Evolution of Engineered E. coli Using a Microfluidic Platform for Enhanced Adipic Acid Tolerance and Production. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan.

8. P.-Y. Kung, **J.-H. Huang***. Development of a Microfluidic Device for Continuous Product Separation in Low-Carbon Adipic Acid Production. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan.

9. P.-Y. Lu, W.-H. Kao, **J.-H. Huang***. Development of an Integrated Device System for Accelerated HighThroughput Screening of Engineered E. coli Colonies. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan.

10. P.-T.-N. Nguyen, L.-H. Lee, **J.-H. Huang***. CaEDTA - Acetic Acid Mediated Gelation of Alginate for Rapid Spheroid Formation. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan (Honorable mention poster award).

11. S. Killedar, **J.-H. Huang***. Shape Dependent Endocytosis of Iron-Containing MOF's for Highly Efficient Pancreatic Cancer Therapy. *72th TwIChE Annual Meeting*, **2025**. Tainan, Taiwan (Outstanding poster presentation award).

12. C.-M. Lin, Y.-H. Lin, H.-Y. Mu, **J.-H. Huang***. A Microphysiological Tumor-on-Chip Platform for Assessing Microenvironment-Dependent Drug Sensitivity. *The 30th Symposium of Young Asian Biochemical Engineers' Community (YABEC)*, **2025**. Matsue, Japan (Invited).

13. C.-L. Wu, J.-Y. Xu, **J.-H. Huang***. Enabling Long-Term, Pulsation-Free Droplet Microfluidics via a Passive, Plug-and-Play Flow Stabilizer. *The 29th International Conference on Miniaturized Systems for Chemistry and Life Sciences, MicroTAS*, **2025**. Adelaide, Australia.

14. Y.-L. Lu, C.-M. Lin, **J.-H. Huang***. Modular Perfusion Microfluidic Platform for Cytotoxicity Testing in Organ-on-Chip-Compatible Formats. *The 29th International Conference on Miniaturized Systems for Chemistry and Life Sciences, MicroTAS*, **2025**. Adelaide, Australia.

15. H.-Y. Mu, Y.-H. Lin, C.-M. Lin, **J.-H. Huang***. Dynamic 3D Tumor-on-a-Chip for Spatial Drug Response Mapping and Predictive Testing. *The 17th Asian Congress on Biotechnology (ACB 2025)*, **2025**. Incheon, Korea.

16. S. Killedar, **J.-H. Huang***. Shape Dependent Endocytosis of Iron-Containing MOF's for Highly Efficient Pancreatic Cancer Therapy. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

17. T.-W. Liao, **J.-H. Huang***. Light-Responsive Actuation Membrane for Dynamic Flow Control in Microphysiological Systems. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

18. Y.-H. Liu, L.-S. Lu, **J.-H. Huang***. Development of a STAS-on-a-Chip for Investigation of Lung Cancer Dissemination. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

19. C.-Y. Huang, S.-H. Hu, **J.-H. Huang***. Stromal Ablation and Immune Activation in Pancreatic Ductal Adenocarcinoma Treatment Using Magnetic Hyperthermia Therapy Simulated on a Tumor Microenvironment-on-a-Chip. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

20. C.-Y. Lee, **J.-H. Huang***. The Dual Role of Hypoxia In Modulating Osteoblast Function and Breast Cancer Dormancy. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

21. Y.-H. Wang, **J.-H. Huang***. Bilirubin Diagnosis Chip: From Sampling, Detection, Analysis to Reading. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

22. Y.-J. Chen, **J.-H. Huang***. Investigation of Metal-Organic Framework Synthesis Using Continuous Droplet Microfluidics. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

23. P.-Y. Lu, **J.-H. Huang***. Development of an Integrated Device System for Accelerated High-Throughput Screening of Engineered E. coli Colonies. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

24. P.-T.-N. Nguyen, L.-H. Lee, **J.-H. Huang***. Continuous Formation of Highly Uniform Liquid-Core Microsphere Using Divalent Cation Substitution. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan (Outstanding poster presentation award).

25. Y.-C. Tang, Y.-J. Lin, **J.-H. Huang***. Life Cycle Assessment of Low-Carbon Bio-Based Adipic Acid Production. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

26. W.-X. Gao, **J.-H. Huang***. Directed Evolution of Engineered E. coli Using a Microfluidic Platform for Enhanced Adipic Acid Tolerance and Production. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

27. Y. Liang, W.-X. Gao, **J.-H. Huang***. Sustainable Continuous Synthesis of Biomedical-Grade Metal-Organic Frameworks Using an Improved Droplet-Based Microfluidic Reactor. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

28. W.-Y. Chang, Y.-J. Chen, **J.-H. Huang***. Low-Pressure Drop Packed-Bed Microreactor for Continuous, Heterogeneous Catalysis Reaction. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan (Outstanding oral presentation award).

29. J. Li, **J.-H. Huang***. Design of GEM/CQ@NH2-MIL-88B(Fe)-PEG Metal-Organic Framework Nanoparticles for Combined Chemotherapy and Chemodynamic Therapy in Pancreatic Cancer. *The 30th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2025**. Kaohsiung, Taiwan.

2024

30. **J.-H. Huang***. Continuous Metal−Organic Frameworks Manufacturing Using Microfluidic Technology. *The 2nd International HCMUS-Chemistry Conference on EMERGING TRENDS IN SUSTAINABLE CHEMISTRY (ESTC24)*, **2024**. Ho Chi Minh City, Vietnam (Invited).

31. J. Li, S.-H. Hu, **J.-H. Huang***. Design of GEM/CQ@NH2-MIL-88B(Fe)-PEG Metal-Organic Framework Nanoparticles for Combined Chemotherapy and Chemodynamic Therapy in Pancreatic Cancer. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

32. Y.-H. Wang, **J.-H. Huang***. Bilirubin Diagnosis Chip: From Sampling, Detection, Analysis to Reading. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan (Outstanding poster award).

33. Y.-J. Chen, **J.-H. Huang***. Investigation of Metal-Organic Framework Synthesis Using Step-Emulsification Continuous Droplet Microfluidics. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

34. Y. Liang, W.-X. Gao, **J.-H. Huang***. Sustainable Continuous Synthesis of Metal-Organic Frameworks Using an Improved Droplet-Based Microfluidic Reactor. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

35. S. Killedar, **J.-H. Huang***. Shape Dependent Endocytosis of Iron-Containing MOF's for Highly Efficient Pancreatic Cancer Therapy. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

36. P.-T.-N. Nguyen, **J.-H. Huang***. Continuous Production of Cell-containing, Tumor-mimicking Microspheres for Drug Screening. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

37. Y.-H. Liu, **J.-H. Huang***. Development of a Dynamic Breathing Airway Model for Evaluation of Pulmonary Drug Efficacy through Inhalation and Epithelial Responses. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan (Outstanding poster award).

38. W.-Y. Chang, **J.-H. Huang***. Low-Pressure Drop Packed-Bed Microreactor for Continuous, Heterogeneous Catalysis Reaction. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

39. P.-Y. Lu, **J.-H. Huang***. Optimizing microfluidic valve systems for multi-column protein purification. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

40. C.-Y. Lee, **J.-H. Huang***. Advancements in Tumor-Microenvironment-on-a-Chip (TMoC) Technology for Studying Breast Cancer Dormancy in Bone Marrow. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

41. C.-Y. Huang, J. Li, **J.-H. Huang***. Magnetic Field Responsive Nano MOF Platform Enables Efficient Delivery of Chloroquine and Induction of Immunogenic Cell Death in Pancreatic Ductal Adenocarcinoma Therapy. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan (Honorable mention poster award).

42. Y.-C. Tang, Y.-J. Lin, **J.-H. Huang***. Life Cycle Assessment of Low-Carbon Bio-Based Adipic Acid Production. *71th TwIChE Annual Meeting*, **2024**. Taoyuan, Taiwan.

43. H.-Y. Mu, Y.-H. Lin, C.-M. Lin, **J.-H. Huang***. Dynamic Evaluation of Anticancer Drug Efficacy in Complex Tumor Microenvironments. *The 29th Symposium of Young Asian Biochemical Engineers' Community (YABEC)*, **2024**. Busan, Korea.

44. **J.-H. Huang***. Generation of Physiological Oxygen Gradient in Tumor Microenvironment for Enhanced Drug Evaluation. *The 19th IEEE International Conference on Nao/Micro Engineered and Molecular Systems (IEEE-NEMS)*, **2024**. Kyoto, Japan (Invited).

45. C.-M. Lin, H.-Y. Mu, **J.-H. Huang***. Ex Vivo Tumor-Microenvironment-on-Chip for Drug Screening: Combining Epigenetic Modulation with Immunotherapy. *Annual Meeting of Biomaterials and Controlled Release Society in Taiwan & International Advanced Drug Delivery Symposium (BCRS&IADDS)*, **2024**. Hsinchu, Taiwan.

46. **J.-H. Huang***. The Future of Cancer Treatment: How Cancer Tumor Chips Can Speed Up New Drug Development. *Interdisciplinary Neuroscience Congress*, **2024**. Taipei, Taiwan (Invited).

47. C.-M. Lin, H.-Y. Mu, **J.-H. Huang***. Ex Vivo Metastatic Tumor-Microenvironment-on-Chip for Drug Screening: Combining Epigenetic Modulation with Immunotherapy. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan (Outstanding oral presentation award).

48. J. Li, **J.-H. Huang***. Development of GEM/CQ@NH2-MIL-88B(Fe)-PEG Nanoparticles for Synergistic Chemodynamic and Autophagy-Modulating Therapy in Pancreatic Cancer. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan (Outstanding poster award).

49. Y.-H. Peng, **J.-H. Huang***. Designing Continuous Activation Processes of Metal-Organic Frameworks for Biomedical Applications through Microfluidic Models. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan.

50. C. Lee, Y.-C. Tseng, H.-Y. Mu, C. Xue, I-S. Ng*, **J.-H. Huang***. Development of Microfluidic Technology for Validating Lactobacillus Metabolites in Enhancing Personalized Cancer Immunotherapy. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan (Outstanding poster award).

51. Y.-J. Chen, K.-Y. Chang, **J.-H. Huang***. Investigation of Metal-Organic Framework Synthesis Using Continuous Droplet Microfluidics. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan.

52. Y.-H. Wang, C.-X. Han, **J.-H. Huang***. Bilirubin Diagnosis Chip: From Sampling, Detection, Analysis to Reading. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan (Honorable mention poster award).

53. W.-Y. Chang, Y.-J. Chen, **J.-H. Huang***. Low-Pressure Drop Packed-Bed Microreactor for Continuous, Heterogeneous Catalysis Reaction with Bio-Membrane. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan (Outstanding poster award).

54. H.-H. Lin, **J.-H. Huang***. Using Transfer Learning for Prediction of Chemical Synthesis Reaction. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan (Honorable mention poster award).

55. C.-Y. Lee, **J.-H. Huang***. Advancements in Tumor-Microenvironment-on-a-Chip (TMoC) Technology for Studying Breast Cancer Dormancy in Bone Marrow. *The 29th BEST Conference & International Symposium on Biotechnology and Biochemical Engineering*, **2024**. Penghu, Taiwan (Honorable mention poster award).

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58. C.-M. Lin, H.-Y. Mu, **J.-H. Huang***. Ex Vivo Metastatic Tumor-Microenvironment-on-Chip for Immunotherapy Screening. *70th TwIChE Annual Meeting*, **2023**. Taipei, Taiwan (Best poster award).

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71. **J.-H. Huang***. Advancing Drug Development: Recapitulating Tumor Microenvironments using Microfluidics. *2023 KSBB Fall Meeting and International Symposium*, **2023**. Busan, Korea (Invited).

72. C. Lee, **J.-H. Huang***. Development of Gut Microbiome Modulation for Enhancing Personalized Cancer Immunotherap. *2023 BEST Joint YABEC International Symposium*, **2023**. Tainan, Taiwan (Honorable Mention).

73. C.-M. Lin, **J.-H. Huang***. Development of in Vitro Tumor Microenvironment on Chip for Breast Cancer Drug Selection. *2023 BEST Joint YABEC International Symposium*, **2023**. Tainan, Taiwan (Best poster award).

74. L.-H. Lee, **J.-H. Huang***. Continuous Cell Encapsulation in Alginate Microspheres for High-Throughput Drug Development. *2023 BEST Joint YABEC International Symposium*, **2023**. Tainan, Taiwan.

75. C.-H. Wu, **J.-H. Huang***. Development of Microfluidic Valve Control System for Multi-Column Continuous Protein Purification. *2023 BEST Joint YABEC International Symposium*, **2023**. Tainan, Taiwan.

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78. H.-H. Lin, **J.-H. Huang***. Establishment of Machine Learning Model for Prediction of Continuous MOF Synthesis in Drug Delivery Application. *2023 BEST Joint YABEC International Symposium*, **2023**. Tainan, Taiwan.

79. P.-R. Lin, C.-W. Wu, **J.-H. Huang***. Development of Continuous Isolation Platform toward Sustainable Metal−Organic Frameworks Production for Drug Delivery. *2023 BEST Joint YABEC International Symposium,* **2023**. Tainan, Taiwan.

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80. H.-H. Lin, **J.-H. Huang***. Establishment of Machine Learning Model for Prediction of Continuous MOF Synthesis. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan.

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83. C.-H. Wu, **J.-H. Huang***. Develop an Automated Platform and a Microfluidic-Based Valve Controlling System for Continuous Protein Purification on Multi-Columns. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan (Best poster award).

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85. J.-W. Lin, M.-H. Yen, **J.-H. Huang***. Multi-Antibiotic Susceptibility Testing Chip for Real-time Clinical Diagnosis. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan.

86. Y.-H. Peng, **J.-H. Huang***. Constructing a Continuous Activation Process for Metal-Organic Frameworks Using a Microfluidic Model. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan.

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88. K.-Y. Chang, C.-W. Wu, **J.-H. Huang***. Continuous Synthesis of Metal Organic Framework. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan (Best poster award).

89. H.-Y. Mu, **J.-H. Huang***, Discovery of synergistic effect for triple-negative breast cancer immunotherapy using tumor-microenvironment-on-chip. *ESMO Asia Congress*, **2022**. Singapore, Republic of Singapore.

90. Chao-Yu Liu, **J.-H. Huang***. Cyclic Breathing Lung Inflammation Model for Pulmonary Drug Screening. *2022 KSBB Fall Meeting and International Symposium*, **2022**. Seoul, Korea, Online (Invited).

91. H.-Y. Mu, **J.-H. Huang***. Discovery of Synergistic Effect for Triple-Negative Breast Cancer Immunotherapy Using Tumor-Microenvironment-on-Chip. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan (Best oral presentation award).

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96. L.-H. Lee, **J.-H. Huang***. Continuous Cell Encapsulation in Liquid-Core Microsphere for High-Throughput Drug Testing. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan.

97. K.-Y. Chang, **J.-H. Huang***. Investigation of Metal Organic Framework Synthesis Mechanism using Continuous Droplet Formation Platform for precision Drug Encapsulation. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan.

98. C.-Y. Liu, Y.-R. Chen, **J.-H. Huang***. Development of a Breathable Airway Inflammation Disease Model toward Inhaled Pulmonary Drug Screening. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan.

99. C.-L. Wu, J.-Y. Xu, **J.-H. Huang***. Continuous Production of Metal-Organic Frameworks For Drug Loading in a Microdroplet Reactor Integrated with a Water/Oil Separator. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan.

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100. P.-R. Lin, C.-W. Wu, **J.-H. Huang***. Development of Continuous Isolation Platform toward Sustainable Metal−Organic Frameworks Production. *68th TwIChE Annual Meeting*, **2021**. Kaohsiung, Taiwan.

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103. Y.-J. Chen, C.-H. Peng, **J.-H. Huang***. Development of Low-Pressure Drop Packed-Bed Microreactor for Continuous, Heterogeneous Catalysis. *68th TwIChE Annual Meeting*, **2021**. Kaohsiung, Taiwan.

104. H. Chen, Y.-L. Lu, **J.-H. Huang***. Hydraulically-Driven Microperfusion Platform for Cell Culture and Drug Screening. *68th TwIChE Annual Meeting*, **2021**. Kaohsiung, Taiwan.

105. X.-H. Cheong, Y.-C. Tai, Y.-J. Cheng, **J.-H. Huang***. Detection of neonatal hyperbilirubinemia using microfluidics-based rapid diagnosis chip. *68th TwIChE Annual Meeting*, **2021**. Kaohsiung, Taiwan (Honorable Mention).

106. T.-H. Chiang, C.-C. Huang, **J.-H. Huang***. Development of 3D Spheroid using Novel Hanging Drop Platform for High-Throughput Drug Testing. *68th TwIChE Annual Meeting*, **2021**. Hsinchu, Taiwan (Best Poster Award).

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108. C.-L. Wu, **J.-H. Huang***, C.-W. Wu. Continuous and Green Synthesis of Metal-Organic Frameworks with Tunable Size in an Aqueous System. *68th TwIChE Annual Meeting*, **2021**. Hsinchu, Taiwan.

109. Y.-H. Chi, I-W. Chen, **J.-H. Huang***. Automated, Continuous Protein Purification Using Microfluidic- Controlled and Real-Time Monitoring Systems. *The 26th Symposium of Young Asian Biochemical Engineers' Community (YABEC)*, **2021**. Kobe, Japan (Online, Invited).

C. Patents

1. W.-H. Lai, **J.-H. Huang**, Y.-L. Lu, Perfusion Cell Culture Device and Perfusion Cell Culture System. US patent 12,054,699, 2021/06/22-2041/06/22

2. C.-Y. Cho, **J.-H. Huang**, T.-H. Chiang. Hanging Drop Device, Formation Method of Hanging Drop and Cell Culture Method by Using Hanging Drop. US patent 11,759,748 B1, 2021/05/05-2041/05/05

3. J.-Y. Xu, **J.-H. Huang**, C.-W. Wu. Flow Stabilized Chip, Droplet Generating System and Droplet Preparing Method. US patent 11,779,924, 2021/06/18-2041/06/18

4. Y.-H. Chi, I-W. Chen, **J.-H. Huang**, C.-H. Wu. Automated Continuous Purification System. US patent 11,759,748, 2022/07/18-2042/07/18

5. 戴鉉靚、**黃振煌**、程俞竣、張善恆。按壓式流體傳輸暨檢測裝置及溶液比色分析檢測方法。發明專利證書號：I7813304。專利年限：2023/08/21-2042/05/22

6. 紀宇軒、陳奕瑋、**黃振煌**、吳政憲。自動化連續純化系統。發明專利證書號：I806478。專利年限：2023/06/21-2042/03/07

7. 穆宣佑、**黃振煌**。微環境模擬細胞培養系統。發明專利證書號：I802457。專利年限：2023/05/11-2042/06/29

8. 賴威翰、**黃振煌**、呂育綸。灌流式細胞培養裝置及灌流式細胞培養系統。發明專利證書號：I780616。專利年限：2022/10/11-2041/03/03

9. H.-L. Hsieh, **J.-H. Huang**. In Vitro Cell Culture Platform and Cell Culture Method. US patent 11,371,009, 2022/06/28-2040/09/09

10. 卓晉逸、**黃振煌**、江子庠。懸滴裝置、形成懸滴之方法以及利用懸滴培養細胞之方法。發明專利證書號：I760120。專利年限：2022/04/01-2041/02/24

11. B.-S. Ni, **J.-H. Huang**, "Cell Culture Device and Cell Culture System". U.S. Patent 11,248,200, 2022/02/15-2040/04/30

12. 許嘉芸、**黃振煌**、吳嘉文。擾流穩定晶片、液滴生成系統及液滴製備方法。發明專利證書號：I757167。專利年限：2022/03/01-2041/05/03

13. C.-K. Lin, **J.-H. Huang**, "Imitating Lung Device, System for Simulating Human Lung, Method for Simulating Human Breathing, System for Simulating Deposition". US patent 11,062,625, 2021/07/13-2039/09/09

14. P. Nath, **J.-H. Huang**. "Devices for Cell Culture and Methods of Making and Using the Same". U.S. Patent 10,982,181 B2 2021/04/20-2039/06/24.

15. R. Iyer, P. Nath, **J.-H. Huang**. "Devices for Fluid Management". U.S. Patent 10,908,149 B2 2021/02/02-2039/04/24.

16. 穆宣佑、**黃振煌**、蕭自宏。捕獲循環腫瘤癌細胞裝置、其方法以及循環腫瘤癌細胞捕獲暨藥物敏感性測試的方法。發明專利證書號：I719605。專利年限：2021/2/21-2039/8/22

D. Honors and Awards

- 2025 MOEA Technology Development Program for Academia 經濟部價值創造計畫, 2025
- 2024 NTHU-YEH,KUN-MING Distinguished Young Scholar Award 113 年度清華-葉昆明傑出年輕學者
- 2024 National Innovation Award 第 21 屆國家新創獎
- 2024 NTHU College of Engineering Outstanding Mentor Award 清華大學工學院傑出導師
- 2024 Boehringer Ingelheim Unicorn 2.0 - BioMedicine Innovation Program 百靈佳殷格翰獨角獸 2.0 生醫加乘行動計畫
- 2024 NSTC Taiwan Germination Program 國科會科研創業計畫
- 2023 NSTC Future Tech Award 國科會未來科技獎
- 2023 BEST Professor Shih-Yow Huang Memorial Award 台灣生物技術與生化工程學會黃世佑教授獎

- 2022 Outstanding Chemical Engineering Article of the Year 台灣化工學會化工傑作獎
- 2021 MOST Excellent Young Scholars Award 科技部優秀年輕學者研究計畫
- 2021 MOST College Student Research Creativity Award (Advisor) 科技部大專生研究創作獎 (指導教授)

E. Professional Experience

- 2025/12–present Associate Editor, Journal of the Taiwan Institute of Chemical Engineers (IF 6.3)
- 2025/8–Present 台灣生物技術與生化工程學會 理事
- 2022/08–present 國立清華大學化學工程學系 副系主任
- 2021/08–present 台灣化學工程學會 化工會刊 編輯委員

Publications of Shi-Shang Jang (鄭西顯)

A. Journal Papers

2024

1. Zhen-Feng Jiang, Xi-Zhan Wei, Jia-Lin Kang, David Shan-Hill Wong, Yuan Yao, Yao-Chen Chuang, **Shi-Shang Jang**, John Di-Yi Ou. "Deep learning model predictive control of a high-density polyethylene reactor with a physics-guided sequence-to-sequence model with memory", COMPUTERS & CHEMICAL ENGINEERING, v 189, 2024.

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2. Po-Hsun Chang, David Shan-Hill Wong, John Di-Yi Ou, Yung-Tin Pan, **Shi-Shang Jang***. "CO_2-Enhanced Production and Synthesis of 2,5- Furandicarboxylic Acid under CO_2 Flow through the Henkel Reaction", European Journal of Organic Chemistry, 26, 2023.

3. Jie-Ying Su, Jia-Lin Kang, and **Shi-Shang Jang***. "An Actor-Critic Algorithm for the Stochastic Cutting Stock Problem", Processes, 11 (4), 2023.

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4. Jiang, Z. F., Wei, X. Z., Wong, D. S. H., Yao, Y., Kang, J. L., Chuang, Y. C., **Jang, S. S.** & Ou, J. D. Y. "Model Predictive Control of Grade Transition with Attention Base Sequence-to-Sequence Model", Computer Aided Chemical Engineering Vol. 49, pp. 367-372, 2022.

5. Huang, SH; Kang, JL ; Wong, DSH ; **Jang, SS***, "Evaluation of Hydrodynamic Performance of New Random Packing Structure Using CFD", Process, 10, 7, 1276, 2022.

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6. Jia-Lin Kang*, Ching-Jung Chen, Chien-Hao Wu, David Shan-Hill Wong*, **Shi-Shang Jang***, Chung-Sung Tan "Dynamic modeling of the absorption of acetic acid in rotating packed bed", Journal of the Taiwan Institute of Chemical Engineers, 132, 104130, 2021.

7. Sun, K (Sun, Kai); Sui, L (Sui, Lin); Wang, HX; Yu, XD (Yu, Xiaodong); **Jang, SS**, "Design of an Adaptive Nonnegative Garrote Algorithm for Multi-Layer Perceptron- Based Soft Sensor", IEEE Sensors, 21, 19, 21808 – 21816, 2021.

8. Kang, JL ; Wang, CC; Wong, DSH]; **Jang, SS***, Wang, CH, "Digital twin model and dynamic operation for a plant-scale solid oxide fuel cell system" Journal of Taiwan Institute of Chemical Engineering, 118, 60-67, 2021

B. Conference Papers

2024

1. Su, J.Y., Hong, Y.F., Kang, J.L., **Jang, S.S.** (2024). A Reinforcement Learning Approach for the Exact Guillotine Cutting Stock Problem. 2024 Symposium on Thermodynamics and Process Systems Engineering.

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2. Su, J.Y., Hong, Y.F., Kang, J.L., **Jang, S.S.** (2023). A Reinforcement Learning Approach for the Exact Guillotine Cutting Stock Problem. 2023 AIChE Annual Meeting.

3. Su, J.Y., Liu, C.H., Syu, C.S., Kang, J.L., **Jang, S.S.** (2023). "A Reinforcement Learning Development for The Exact Guillotine with Flexibility on Cutting Stock Problem", Paper presented at the 33rd European Symposium on Computer Aided Process Engineering (Escape 33)

4. Su, J. Y., Kang, J. L., & **Jang, S. S.** (2023) "A Reinforcement Learning Development for The Exact Guillotine with Flexibility on Cutting Stock Problem" 2023 Symposium on Thermodynamics and Process Systems Engineering (PSE 2023)

5. Po-Hsun Chang, David Shan-Hill Wong, John Di-Yi Ou, Yung-Tin Pan, **Shi-Shang Jang*** (2023) "CO2 Enhanced Production and Synthesis Pathway of 2,5-Furandicarboxylic Acid under CO2 Flow via the Henkel Reaction" 2023 Symposium on Thermodynamics and Process Systems Engineering (PSE 2023)

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6. Su, J.Y., Kang, J.L., **Jang, S.S.** (2022). A Reinforcement Learning Approach for Stochastic Cutting Stock Problem. 2022 AIChE Annual Meeting.

7. Su, J.Y., Kang, J.L., **Jang, S.S.** (2022). A Reinforcement Learning Approach for Stochastic Cutting Stock Problem. 10th Asian Symposium on Process Systems Engineering.

C. Patents

(1) 以氯丙烯與雙氧水反應生產環氧氯丙烷的製造裝置及造方法,中華民國 I622584, 2018.

(2) 氣體中的目標成分的捕獲裝置與捕獲方法,中華民國,I614058, 2018.

D. Other

Associate Editors and Editorial Board

(1) Associate Editor, Journal of Process Control

(2) Associate Editor, Process

(3) Editorial Board of International Journal
1. Taiwan Institute of Chemical Engineering
2. International Journal of System Control and Information Processing

(4) PROGRAM COMMITTEE:
1. Steering Committee, PSE ASIA 2018.
2. International Program Committee, AdCONIP: 2020, Singarpore.
3. International Program Committee, AdCONIP: 2021, Taipei.

(5) 清華大學傑出產學貢獻獎2022
清華大學產學合作績優獎 2021、2023

Publications of U-Ser Jeng (鄭有舜)

A. Journal Papers (* Corresponding author)

2025

1. JJ Kang, ZC Huang, LW Tang, CJ Su, HD Gao, HM Lee,* **U. Jeng*,** Changes of the lipid membrane structures caused by chain-length-dependent doxorubicin embedment in PEGylated liposomes. J. Appl. Crystallo. 58, 897-1383 (2025). Cover story.

2. Y. J. Shiu, B. W. Mansel, K.-F. Liao, T.-W. Hsu, J.-W. Chang, O. Shih, Y.-Q. Yeh, J. Allwang, **U. Jeng,*** Revealing the Solution Conformation and Hydration Structure of Type I Tropocollagen using X-ray Scattering and Molecular Dynamics Simulation, *Biomacromolecules*, 2025, 26, 1, 449–458. Journal Cover Story.

3. W.-C. Lin, Y.-E. Sun, Y.-R. Zhuang, T.-F. Huang,...C.-W. Chen, C.-H. Yu, A.-C. Su, K.-H. Lin,* **U. Jeng,*** Shang-Da Yang, * Ho-Hsiu Chou*, Optimally Miscible Polymer Bulk-Heterojunction-Particles for Nonsurfactant Photocatalytic Hydrogen Evolution, *J. Am. Chem. Soc.*, 2025, 147, 3, 2537–2548. Cover story.

4. Orion Shih, Y-C Feng, Sashank Agrawal, K-F Liao, Y-Q Yeh, J-W Chang, T-Y Yu*, U-S **U. Jeng***, Differentiating the solution structures and stability of transthyretin tetramer complexed with tolcapone and tafamidis using SEC-SWAXS and NMR, J. Appl. Crystallo. 55, 58, 1373-1383 (2025).

5. Chi-Chun Tseng, Li-Lun Yeh, Chen-Yu Chang, Ching-Li Huang, Chia-Lin Tsai, Yung-Jing Xue, Fang-Chung Chen, Chain-Shu Hsu, Ta-Ya Chu, Jianping Lu, **U-Ser Jeng,*** Yen-Ju Cheng,* AC 6 F 5-functionalized benzimidazole acceptor enabling supramolecular fluorinated interactions for enhanced photovoltaic performance and thermal stability, J. Mater. Chem. A, 2025, 13, 20519-20530.

6. Yung-Jing Xue, Chen-Yu Chang, Chieh-Ming Hung, Chi-Chun Tseng, Je-Wei Chang, Chun-Jen Su, Chia-Lin Tsai, Han-Cheng Lu, Kuo-Hsiu Huang, Kuei-Yu Tai, Chien-Yi Ku, Chia-Shing Wu, Su-Ying Chien, Shang-Da Yang, Bing-Huang Jiang, Chih-Ping Chen, Pi-Tai Chou*, **U-Ser Jeng,*** Yen-Ju Cheng*, Side-Chains Engineered Self-Assembly of Ortho-Benzodipyrrole-Based Acceptors: Comprehensive Exploration of Structure-Interface-Photovoltaics Correlations, Advanced Functional Materials, e04705, 2025.

7. **U. Jeng,** J Ilavsky, EP Gilbert, WT Chuang, O Shih, Introduction to the special issue related to the 19th International Small Angle Scattering Conference (SAS2024), Applied Crystallography 58 (5), 1513-1515, 2025

8. Yi-Ting Yuan, Tzu-Ching Guo, Chu-Ya Wu, Yi-Qi Yeh, Ching-Tse Wu, Shu-Yao Hsu, Zi-Wen Weng, Meng-Ru Ho, Shang-Te Danny Hsu, Yi-Chen Chen, Chuang-Rung Chang, Kuen-Phon Wu*, **U-Ser Jeng***, and Shih-Che Sue*, Filamentous Chemokine CCL5 Structure and the Functional Aspects, Sci. Rep. 15, 13552, 2025.

9. Membrane disruption properties of poly-glycine arginine dipeptide repeats affected by peptide repeats continuity and membrane composition, CY Ho, YJ Chang, CW Yang, O Shih, **US Jeng,** S Hwang, WC Huang, Y.R. Chen, .Journal of Molecular Biology, 169296, 2025.

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B. Other

現任:

1. 國家同步輻射研究中心(NSRRC) 研究員(2010-)

2. TLS 23A 小角/廣角度 X 光散射光束線發言人(2009~)

3. TPS 13A 生物結構 小角/廣角度 X 光散射光束線發言人(2020~)。

4. 清華大學化工系 合聘教授 (2012-)

5. 國際結晶學聯合會 (IUCr) Small Angle Scattering Commission 諮詢委員 (2020-)

Awards 獎項:

2017: 有庠科技論文獎

2021: 高分子學會 貢獻獎

Publications of Ying-Ling Liu (劉英麟)

A. Journal Papers (* Corresponding author)

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29. C.Y. Tsai, **Y.L. Liu***, "Crosslinked polyimide asymmetric membranes as thermally-stable separators with self-protective layers and inhibition of lithium dendrite growth for lithium metal battery", *J. Membr. Sci.* **640**, 119816 (2021).

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39. R. P. Parreño Jr.*, **Y. L. Liu**, A. B. Beltran, Effect on thermal stability of microstructure and morphology of thermally-modified electrospun fibers of polybenzoxazines (PBz) blended with sulfur copolymers (SDIB), *RSC Adv.* **11**(17), 10002-10009 (2021).

40. C. H. Huang, **Y.L. Liu***, "Self-polymerization of Meldrum's acid-amine compounds: an effective route to polyamides", *Polym. Chem.* **12**(2), 291-298 (2021).

B. Conference Presentations

2025

1. **Y.L. Liu**, "Building up Mass-Transportation Channels in Polymeric Membranes with Surface-Functionalized Carbon Nanotubes", *15th Conference of Aseanian Membrane Society (AMS15), Aug. 19-21, 2025, Kuala Lumpur, Malaysia* (***Keynote Speaker***).

2. Y.S. Lai, S.Y. Tsai, **Y.L. Liu**, "Reaction Routes of Elemental Sulfur as A Feedstock for Preparation of Sulfur-Containing Polymers", *The 19th Pacific Polymer Conference (PPC19), Jul. 6-10, 2025, Kitakyushu, Japan (**Invited Speaker**).*

2024

3. **Y.L. Liu**, "Dynamic Ester Bonds based Vitrimers through Meldrum's Acid-Mediated Ketene Chemistry: Synthesis and Property Adjustments", *The 12th Singapore Chemistry Conference (SICC-12), Dec. 9-13, 2024, Singapore (**Invited Speaker**).*

4. **Y.L. Liu**, "Vitrimers possessing dynamic ester bonds through Meldrum's acid-mediated ketene chemistry", *The 2nd International Conference on Emerging Trends in Sustainable Chemistry (ETSC2024), Nov. 18-19, 2024, Hochiminh city, Vietnam (**Invited Speaker**).*

5. **Y.L. Liu**, "Crosslinked Polymers Possessing Chemically Dynamic Bonds", *Polymer Engineering and Science International 2024 (PESI-2024), Jul. 21-25, 2024, Tokyo, Japan (**Plenary Speaker**).*

6. **Y.L. Liu**, "Designs and Synthesis of Polymeric Vitrimers with High Glass Transition Temperatures", *The 5th International Symposium on Polybenzoxazines (ISPBZ 2024), Jan. 9-11, 2024, Bangkok, Thailand.*

2023

7. **Y.L. Liu**, "Designs and Synthesis of Polymeric Vitrimers with High Glass Transition Temperatures", *The 5th International Symposium on Polybenzoxazines (ISPBZ 2024), Jan. 9-11, 2024, Bangkok, Thailand.*

8. **Y.L. Liu**, "Designs and Synthesis of Polymeric Vitrimers with High Glass Transition Temperatures", *11th Asia Symposium on Functional Dyes and Advanced Materials (EAS11), Oct. 18-20, 2023, Taipei, Taiwan (**Keynote Speaker**)*

9. **Y.L. Liu**, "Preparation and properties of crosslinked polymers from precursors of Meldrum's acid derivatives", *8th International FAPS Polymer Congress, Sep. 11-14, 2023, Istanbul, Turkey (**Invited Speaker**)*

10. **Y.L. Liu,** C. Tseng, S. Zachariah, "Membranes with Enhanced Water Permeation Fluxes in Pervaporation", *13th International Congress on Membranes & Membrane Processes (ICOM2023)*, Jul. 9-14, 2023, Makuhari Messe, Chiba, Japan (***International scientific committee, Keynote speaker, Session chair, Poster award referee***).

11. **Y.L. Liu**, "Meldrum's acid in polymer synthesis and functional polymers thereof", *2023 Trilateral Conference on Modern Challenges in Polymer Science and Technology*, Jan. 17-18, 2023, Taoyuan, Taiwan (***Keynote Speaker***)

2022

12. **Y.L. Liu**, C.Y. Tsai, C.H. Chang (2022) "Functionalized Porous Membranes Based electrolytes for Lithium Ion Batteries", *The 13th Conference of the Aseanian Membrane Society*, Jul. 4-6, 2022, Singapore (***Keynote Speaker, Session Chair***)

13. C. H. Huang, **Y.L. Liu** (2022) "Polymer Synthesis and Materials Based on Meldrum's Acid-Mediated Chemistry", *The Japan-Taiwan Bilateral Polymer Symposium 2022 (JTBPS2022)*, Mar. 7-8, 2022, Online (**Invited Speaker**)

14. **Y.L. Liu** (2022), "Thermosetting resins based polymeric membranes: Preparation and application", *YONSEI International Workshop Series: Separation Technology 2022*, Feb. 15, 2022, Online (***Invited Speaker***).

C. Other

1. 院士/會士

Fellow of The Royal Society of Chemistry (UK)

2. 國際重要期刊編輯/學會職務

- Council Member, The Federation of Asian Polymer Societies, 2023-present
- Council Member, The Aseanian Membrane Society (AMS), 2020-present
- Elected President, The Aseanian Membrane Society (AMS), 2020-2021
- Advisory Board Member, *ACS Sustainable Chemistry & Engineering*, 2023-present

3. 獲獎

- 國科會傑出研究獎 (2025)
- 國立清華大學傑出產學研究獎 (2022)
- 國立清華大學產學合作績優獎 (2021)

Publications of Yu-Jeng Lin (林育正)

A. Journal Papers (* Corresponding author)

2025

1. P.Y. Liu, Y.F. Lu, Y.C. Kuo, **Y.J. Lin*** (2025). High-Purity CO2 Capture from Blast Furnace Top Gas: Optimal Design Trade-Offs between Hybrid VPSA–Cryogenic Distillation and Amine Scrubbing. Industrial & Engineering Chemistry Research. 64, 51, 24779–24796E.

2. C.H. Cheng, Y.F. Chen, **Y.J. Lin*** (2025). Enhanced Reaction Kinetics of Sterically Hindered Amines in Semi-Aqueous N-methyl-2-pyrrolidone for CO2 Capture. Chemical Engineering Journal, 507, 160544.

3. Y.M. Chen, Y.F. Chen, **Y.J. Lin*** (2025). Thermodynamic Modeling CO2 Absorption in Semi-Aqueous Monoethanolamine with N-methyl-2-pyrrolidone using Electrolyte NRTL Model. Fluid Phase Equilibria, 599, 114532

4. Y.C. Chen, J.C.S. Wu*, V.H. Nguyen, W.H. Cheng, **Y.J. Lin,** C.M. Lin, C.H. Wang, S.K. Lin. (2025) Enhancing three-way reforming in a blast furnace: insights into the effects of hexagonal boron nitride addition on Ni-Cu-based catalysts with different supports and their reaction mechanisms. Research on Chemical Intermediates. 51, 3701–3723.

5. Y.M. Chen, H.J. Hsu, **Y.J. Lin*** (2025). Improving CO2 Capture Efficiency for High-Capacity Solvents: Addressing Temperature-Induced Mass Transfer Limitations. Industrial Engineering & Chemistry Research, 64, 4, 2283–2293.

2024

6. E. C. Chang, C.A. Chou, **Y.J. Lin*** (2024). Hybrid Solvent Loop CO_2 Capture Process for Zero-Emission Hydrogen Production. *Separation and Purification Technology*, 357, 130120. (IF=8.2; ranked 9% in Chemical Engineering)

7. S.F. Chang, H.H. Chiu, H.S. Jao, J. Shang*, **Y.J. Lin***, B.Y. Yu* (2024). Comprehensive Evaluation of Various CO_2 Capture Technologies through Rigorous Simulation: Economic, Equipment Footprint, and Environmental Analysis. *Carbon Capture Science & Technology*, 14, 100342. (IF=10.4; ranked 6% in Chemical Engineering)

8. M.S. Hsieh, **Y.J. Lin*** (2024). Solvent Concentration Effect on Mass Transfer Pinch in CO_2 Absorber using Aqueous Monoethanolamine. *Journal of the Taiwan Institute of Chemical Engineers*, 105397. (IF=5.5; ranked 18% in Chemical Engineering)

2023

9. **Lin, Y.J.**; Chen, C.C. (2023), Modeling Salt Adsorption in Electrical Double Layer for Capacitive Deionization. *AIChE Journal*, e18018.

10. Hsieh, C.J.; Kirkes, T.E.; **Lin, Y.J.**; Chen, C.C. (2023), Thermodynamic modeling of aqueous lithium salt solutions with association electrolyte nonrandom two-liquid activity coefficient model. *Fluid Phase Equilibria*, 556, 113696.

2022

11. Yu, C.H.; **Lin, Y.J.**; Wong, D.S.H.; Chen, C.C. (2021), Process Modeling of CO2 Absorption with Monoethanolamine Aqueous Solutions Using Rotating Packed Beds. *Industrial & Engineering Chemistry Research*, 61, 33, 12142–12152.

2021

12. **Lin, Y.J.**; Hsieh, C.J.; Chen, C.C. (2021), Association-based Activity Coefficient Model for Electrolyte Solutions. *AIChE Journal*, e17422.

13. **Lin, Y.J.**; Hossain, N; Chen, C.C. (2021), Modeling Dissociation of Ionic Liquids with Electrolyte NRTL Model. *Journal of Molecular Liquids*, 329, 115924.

14. Yu, C.H., **Lin, Y.J.**; Chen, C.C. (2021), Modeling Fluid Phase Equilibria of Carbon Dioxide-Methanol Binary System. *Fluid Phase Equilibria*, 529, 112866.

B. Conference Presentations

2023

1. **Lin, Y.J.,** Hsieh, M.S., Chen, Y.M. *The Impact of non-aqueous solvent properties on temperature-induced mass transfer pinch in CO_2 absorber*, 2023 TWIChE Annual Meeting, Taipei, Taiwan, 9th-10th December 2023.

2. **Lin, Y.J.** and Liang C.W., *Predicting CO_2 absorption capacity with amine pKa using a generalized solvent Model*, 7th Post-Combustion Capture Conference (PCCC-7), Pittsburgh, PA, 25th-28th September 2023.

3. **Lin, Y.J.** and Hsieh, M.S., *The effect of non-aqueous solvent properties on temperature-induced mass transfer pinch in CO_2 absorber*, 7th Post-Combustion Capture Conference (PCCC-7), Pittsburgh, PA, 25th-28th September 2023.

4. **Lin, Y.J.;** Liang C.W.; Huang, X.K., *Integrated absorbent and process design framework for CO_2 capture*, 2023 Symposium on Thermodynamics and Process Systems Engineering, Taiwan, 19th-20th May 2023.

2022

5. **Lin, Y.J.,** Huang, X.K., Liang, C.W., *Integrated Design Framework for Simultaneous Solvent and Process Development*, 2022 TWIChE Annual Meeting, Taipei, Taiwan, 2nd-3rd December 2022.

2021

6. **Lin, Y.J.**; Chen, C.C., *A new activity coefficient model with ionic hydration for electrolyte solutions*, 21st Symposium on Thermophysical Properties, Boulder, CO, 20th-25th June 2021.

C. Patents

2018

1. **Lin, Y.J.**, Kamijo, T., Kishimoto, S., Inui, M., Noborisato, T., Acidic gas absorption device and acidic gas absorption method, JP2020093187A.
2. Rochelle, G.T.; Madan, T.; **Lin, Y.J.**, Apparatus for and method of removing acidic gas from a gaseous stream and regenerating an absorbent solution, US9956505.

Publications of Kun-Han Lin (林昆翰)

A. Journal Papers (* Corresponding author)

2025

1. Tzu-Hsiang Lin, Yu-Chieh Ting, Chiung-Wen Chang, Shao-I Chang, Kai-An Lee, Tsung-Wei Hsueh, **Kun-Han Lin***, Shih-Yuan Lu* (2025). "3-d Element Induced Charge Redistribution Within Bimetallic η-Phase Carbides Leads to High Performance Electrocatalysts for Highly Efficient Anion Exchange Membrane Water Electrolysis". *Small*, 21, e11280

2. Chao Zhu, Shigeru Kobayashi, Yuki Sugisawa, Franjo Weber, **Kun-Han Lin**, Miho Kitamura, Koji Horiba, Hiroshi Kumigashira, Kazunori Nishio, Ryota Shimizu, Daiichiro Sekiba, Taro Hitosugi*, Rudiger Berger* (2025). "Space Charge Layer Evolution in All-Solid-State Batteries Probed via Operando Kelvin Probe Force Microscopy and Nuclear Reaction Analysis". *ACS Nano*, 19, 39062

3. Chia-Fang Lu, Yu-Chi Huang, Li-You Lin, Yung-Jing Xue, Kuo-Hsiu Huang, Chia-Lin Tsai, Chia-Shing Wu, Su-Ying Chien, **Kun-Han Lin***, Yen-Ju Cheng* (2025). "Side-Chain-Modulated Charge Transport Polarity in Curved Ortho-Benzodipyrrole-Based Acceptors for High-Performance Organic Photovoltaics and Transistors". *Chem. Mater.*, 37, 8901

4. Yu-Mei Huang, Chun-Wei Chang, Jui-Tai Lin, Zong-Ying He, Yi Chen, Hsien-Shun Chang, Shang-Cheng Lin, Han-Yuan Liu, Yun-Shan Tsai, Shin-Chiao Lee, **Kun-Han Lin**, Chih-Wen Pao, Chung-Kai Chang, Yu-Chun Chuang, Ting-Shan Chan, Tung-Han Yang* (2025). "Toward the Sabatier Principle-Guided Design of Low-Platinum-Group-Metal Trimetallic Nanocatalysts for Efficient Hydrogen Evolution and Oxidation Reactions". *Adv. Funct. Mater.*, e14858

5. Xin-Xuan Lin, Jui-Tai Lin, Ching-Yuan Tseng, Shang-Cheng Lin, Zong-Ying He, Yi Chen, Cheng-Kuang Lin, Kuan-Fang Lee, Chueh-Cheng Yang, Chia-Hsin Wang, **Kun-Han Lin**, Tung-Han Yang* (2025). "Total Galvanic Replacement Strategy for Synthesizing Hollow Multimetallic Nanocrystals Toward Enhanced Catalysis". *Adv. Funct. Mater.*, e19243

6. Tse-Fu Huang, Kuei-Jhong Lin, Ying-Rang Zhuang, Yu-En Sun, Wei-Cheng Lin, Chun-Hao Li, Chien-Cheng Lin, En-Chi Chang, Chih-Li Chang, Yung-Ching Liu, Ling-Yu Hsu, Bing-Heng Li, Wan-Ling Chang, Pimjai Pimbaotham, Cheng-Yun Bai, Wei-Hsiang Huang, Dung Chau Kim Hoang, Khanh Do Gia Huynh, Yi-Chan Huang, Chao-Yan Chung, Mohamed M Elsenety, Chia-An Chang, Hsin-Ni Huang, Siriporn Jungsuttiwong, Chih-Wen Pao, Hsin-Lung Chen, Tien-Lin Wu, Chia-Chih Chang, Bo-Han Chen, Shang-Da Yang, **Kun-Han Lin***, Ho-Hsiu Chou* (2025). "Flexible, nonfused sulfone functionalized polymer with enhanced active site access for photocatalytic sacrificial hydrogen evolution". *Sci. Adv.*, 11, eadx1629

7. Jui-Tai Lin, Yueh-Chun Hsiao, Chao Li, Ching-Yuan Tseng, Zong-Ying He, Adrian M Gardner, Yi Chen, Chueh-Cheng Yang, Chia-Hsin Wang, Shang-Cheng Lin, Xin-Xuan Lin, Chih-Yi Lin, **Kun-Han Lin**, Alexander J Cowan*, Tung-Han Yang* (2025). "Spectroscopic and Theoretical Insights Into High-Entropy-Alloy Surfaces and Their Interfaces with Semiconductors for Enhanced Photocatalytic Hydrogen Production". *Small*, 21, 2503512

8. Chih-Yi Lin, Zong Ying He, Jui-Tai Lin, Chun-Wei Chang, Yueh-Chun Hsiao, Shang-Cheng Lin, Yi Chen, Yu-Mei Huang, Shin-Chiao Lee, Chih-Wen Pao, **Kun-Han Lin**, Alexander J Cowan, Tung-Han Yang* (2025). "Atomically Mixed High-Entropy-Alloy Nanoframes with 3D Subnanometer-Thick Electrocatalytic Surfaces". *Adv. Funct. Mater.*, 35, 2505927

9. Chien-Wei Wu, Zhi Xuan Law, Yu-Chun Zeng, **Kun-Han Lin**, De-Hao Tsai* (2025). "Chemical looping of catalytic methane decomposition with reverse Boudouard reaction using dual functional Ni-FeOx nanoparticle cluster for CO2-negative H2 production". *Chem. Eng. J.*, 511, 162067

10. Hong-Kai Chang, Chia-Chi Huang, Pin-Rong Wu, **Kun-Han Lin***, Masaki Horie* (2025). "Linear and cyclic multi-dithienylethene molecules: Synthesis, photochromism, photothermal conversion, and computational study". *Mater. Today Chem.*, 45, 102663

11. Chiung-Wen Chang, Yu-Chieh Ting, Fan-Yu Yen, Guan-Ru Li, **Kun-Han Lin***, Shih-Yuan Lu* (2025). "High performance anion exchange membrane water electrolysis driven by atomic scale synergy of non-precious high entropy catalysts". *Energy Mater.*, 5, 500117

12. Ting-Hsin Hu, Cheng-Yu Wu, Zong Ying He, Yi Chen, Liang-Ching Hsu, Chih-Wen Pao, Jui-Tai Lin, Chun-Wei Chang, Shang-Cheng Lin, Rachel Osmundsen, Lee Casalena, **Kun Han Lin**, Shan Zhou, Tung-Han Yang* (2025). "Unconventional Hexagonal Close-Packed High-Entropy Alloy Surfaces Synergistically Accelerate Alkaline Hydrogen Evolution". *Adv. Sci.*, 12, 2409023

2024

13. Wei-Cheng Lin, Yu-En Sun, Ying-Rang Zhuang, Tse-Fu Huang, Kuei-Jhong Lin, Mohamed M Elsenety, Jui-Chen Yen, Hung-Kai Hsu, Bo-Han Chen, Chen-Yu Chang, Je-Wei Chang, Hsin-Ni Huang, Bing-Heng Li, Siriporn Jungsuttiwong, Toton Haldar, Shin-Huei Wang, Wan-Chi Lin, Tien-Lin Wu, Chin-Wen Chen, Chi-Hua Yu, An-Chung Su, **Kun-Han Lin***, U-Ser Jeng*, Shang-Da Yang*, Ho-Hsiu Chou* (2024). "Optimally Miscible Polymer Bulk-Heterojunction-Particles for Nonsurfactant Photocatalytic Hydrogen Evolution". *J. Am. Chem. Soc.*, 147, 2537

14. Zhi Xuan Law, **Kun-Han Lin***, De-Hao Tsai* (2024). "Efficient integration of calcium looping with methane bi-reforming using Pd-enhanced Ni-CaO dual functional nanomaterials". *Chem. Eng. J.*, 500, 157302

15. Christoph Scherer, Naomi Kinaret, **Kun-Han Lin**, Muhammad Nawaz Qaisrani, Felix Post, Falk May, Denis Andrienko* (2024). "Predicting Molecular Ordering in Deposited Molecular Films". *Adv. Energy Mater.*, 14, 2403124

16. Wei-Cheng Lin, Yi-Hsiang Wu, Yu-En Sun, Mohamed M Elsenety, Wan-Chi Lin, Jui-Chen Yen, Hung-Kai Hsu, Bo-Han Chen, Hung-Yi Huang, Chia-An Chang, Tse-Fu Huang, Ying-Rang Zhuang, Yuan-Ting Tseng, **Kun-Han Lin**, Shang-Da Yang, Chi-Hua Yu, Ho-Hsiu Chou* (2024). "Symmetry-breaking of Dibenzo [b, d] thiophene Sulfone Enhancing Polaron Generation for Boosted Photocatalytic Hydrogen Evolution". *Angew. Chem.*, 136, e202407702

17. Cheng-Yu Wu, Yueh-Chun Hsiao, Yi Chen, **Kun-Han Lin**, Tsung-Ju Lee, Chong-Chi Chi, Jui-Tai Lin, Liang-Ching Hsu, Hsin-Jung Tsai, Jia-Qi Gao, Chun-Wei Chang, I-Ting Kao, Chia-Ying Wu, Ying-Rui Lu, Chih-Wen Pao, Sung-Fu Hung, Ming-Yen Lu, Shan Zhou, Tung-Han Yang* (2024). "A catalyst family of high-entropy alloy atomic layers with square atomic arrangements comprising iron-and platinum-group metals". *Sci. Adv.*, 10, eadl3693

18. Ding-Huei Tsai, Tung-Ta Wu, Hung-Chin Lin, Lu-Yu Chueh, **Kun-Han Lin**, Wen-Yueh Yu*, Yung-Tin Pan* (2024). "Cu/MgO Reverse Water Gas Shift Catalyst with Unique CO_2 Adsorption Behaviors". *Chem.: Asian J.*, 19, e202300955

19. Shang-Cheng Lin, Chun-Wei Chang, Meng-Hsuan Tsai, Chih-Hao Chen, Jui-Tai Lin, Chia-Ying Wu, I-Ting Kao, Wen-Yang Jao, Chia-Hsin Wang, Wen-Yueh Yu, Chi-Chang Hu, **Kun-Han Lin***, Tung-Han Yang* (2024). "Decreasing the O_2-to-H_2O_2 Kinetic Energy Barrier on Dilute Binary Alloy Surfaces with Controlled Configurations of Isolated Active Atoms". *Adv. Funct. Mater.*, 34, 2314281

20. Mohamed Hammad Elsayed, Mohamed Abdellah, Ahmed Zaki Alhakemy, Islam MA Mekhemer, Ahmed Esmail A Aboubakr, Bo-Han Chen, Amr Sabbah, **Kun-Han Lin**, Wen-Sheng Chiu, Sheng-Jie Lin, Che-Yi Chu, Chih-Hsuan Lu, Shang-Da Yang, Mohamed Gamal Mohamed, Shiao-Wei Kuo, Chen-Hsiung Hung, Li-Chyong Chen, Kuei-Hsien Chen, Ho-Hsiu Chou* (2024). "Overcoming small-bandgap charge recombination in visible and NIR-light-driven hydrogen evolution by engineering the polymer photocatalyst structure". *Nat. Commun.*, 15, 707

2023

21. XinBang Wu, Wei-Tse Lee, Roland C Turnell-Ritson, Pauline CL Delannoi, **Kun-Han Lin***, Paul J Dyson* (2023). Controlling the selectivity of the hydrogenolysis of polyamides catalysed by ceria-supported metal nanoparticles". *Nat. Commun.*, 14, 6524

22. Oskar Sachnik, Xiao Tan, Dehai Dou, Constantin Haese, Naomi Kinaret, **Kun-Han Lin**, Denis Andrienko, Martin Baumgarten, Robert Graf, Gert-Jan AH Wetzelaer, Jasper J Michels, Paul WM Blom* (2023). "Elimination of charge-carrier trapping by molecular design". *Nat. Mater.*, 22, 1114

23. Andriy Zhugayevych*, **Kun-Han Lin**, Denis Andrienko (2023). "Electronic coarse-graining of long conjugated molecules: Case study of non-fullerene acceptors". *J. Chem. Phys.*, 159, 024107

24. Wei-Cheng Lin, Chih-Li Chang, Chin-Hsuan Shih, Wan-Chi Lin, Ze- Yu Lai, Je-Wei Chang, Li-Yu Ting, Tse-Fu Huang, Yu-En Sun, Hung-Yi Huang, Yu-Tung Lin, Jia-Jen Liu, Yi-Hsiang Wu, Yuan-Ting Tseng, Ying-Rang Zhuang, Bing-Heng Li, An-Chung Su, Chi-Hua Yu, Chin-Wen Chen, **Kun-Han Lin**, U-Ser Jeng, Ho-Hsiu Chou* (2023). "Sulfide Oxidation on Ladder-Type Heteroarenes to Construct All-Acceptor Copolymers for Visible-Light-Driven Hydrogen Evolution". *Small*, 19, 2302682

25. Yi-Hong Liu, Chia-Jui Hsieh, Liang-Ching Hsu, **Kun-Han Lin**, Yueh-Chun Hsiao, Chong-Chi Chi, Jui-Tai Lin, Chun-Wei Chang, Shang-Cheng Lin, Cheng-Yu Wu, Jia-Qi Gao, Chih-Wen Pao, Yin-Mei Chang, Ming-Yen Lu, Shan Zhou, Tung-Han Yang* (2023). "Toward controllable and predictable synthesis of high-entropy alloy nanocrystals". *Sci. Adv.*, 9, eadf9931

26. Franziska H Hasenburg, **Kun-Han Lin**, Bas van der Zee, Paul WM Blom, Denis Andrienko, Gert-Jan AH Wetzelaer* (2023). "Ambipolar charge transport in a non-fullerene acceptor". *APL Mater.*, 11, 021105

2022

27. M. M. Samy, I. M. A. Mekhemer, M. G. Mohamed, M. H. Elsayed, **K.-H. Lin**, Y.-K. Chen, T.-L. Wu, H.-H. Chou, S.-W. Kuo* (2022). "Conjugated microporous polymers incorporating Thiazolo [5, 4-d] thiazole moieties for Sunlight-Driven hydrogen production from water". *J. Chem. Eng.*, 446, 137158

28. N. C. Forero-Martinez, **K.-H. Lin**, K. Kremer, D. Andrienko* (2022). "Virtual screening for organic solar cells and light emitting diodes". *Adv. Sci.*, 9, 2200825

2021

29. **K.-H. Lin***, L. Paterson, F. May, D. Andrienko* (2021). "Glass transition temperature prediction of disordered molecular solids". *npj Comput. Mater.*, 7, 179

30. A. Markina, **K.-H. Lin**, W. Liu, C. Poelking, Y. Firdaus, D. R. Villalva, J. I. Khan, S. H. K. Paleti, G. T. Harrison, J. Gorenflot, W. Zhang, S. D. Wolf, I. McCulloch, T. D. Anthopoulos, D. Baran, F. Laquai, D. Andrienko* (2021). "Chemical Design Rules for Non-Fullerene Acceptors in Organic Solar Cells". *Adv. Energy Mater.*, 11, 2102363

31. A. Mondal, A. Paterson, J. Cho, **K.-H. Lin**, B. Zee, G.-J. A. H. Wetzelaer, A. Stankevych, A. Vakhnin, J.-J. Kim, A. Kadashchuk, P. W. M. Blom, F. May, D. Andrienko* (2021). "Molecular library of OLED host materials—Evaluating the multiscale simulation workflow". *Chem. Phys. Rev.*, 2, 031304

32. J. T. Blaskovits, **K.-H. Lin**, R. Fabregat, I. Swiderska, H. Wu, C. Corminboeuf* (2021). "Is a single conformer sufficient to describe the reorganization energy of amorphous organic transport materials?". *J. Phys. Chem. C*, 125, 17355

33. W.-T. Lee, F. D. Bobbink, A. P. van Muyden, **K.-H. Lin**, C. Corminboeuf, R. R. Zamani, R. J. Dyson* (2021). "Catalytic hydrocracking of synthetic polymers into grid-compatible gas streams". *Cell Rep. Phys. Sci.*, 2, 100332

34. B. Ö zen, F. F. Tirani, K. Schenk, **K.-H. Lin**, R. Scopelliti, C. Corminboeuf, H. Frauenrath* (2021). "Structure–Property Relationships in Bithiophenes with Hydrogen-Bonded Substituents". *Chem. Eur. J.*, 27, 3348

35. **K.-H. Lin***, G. J. A. H. Wetzelaer, P. W. M. Blom, D. Andrienko* (2021). "Virtual Screening of TADF Emitters for Single-Layer OLEDs". *Front. Chem.*, 1080

B. Conference Presentations

2025

1. (Invited talk) The 15th Taiwan-Japan Bilateral Polymer Symposium (TJBPS). Title: Multiscale Simulations for Predicting Charge Carrier Mobility of Organic Semiconductors. 2025年8月29-31日於成功大學。

2. (Invited talk) 2025 T^2CoMSA & Taiwan-Japan-Korea Trilateral Symposium. Title: Multiscale Simulations for Predicting Charge Carrier Mobility of Organic Semiconductors. 2025年8月21-22日於中山大學。

3. (Contributed talk) The 19th Pacific Polymer Conference (PPC19). Title: Multiscale Simulation Protocol for Predicting Charge Carrier Mobility of Amorphous Polymers. 2025年7月6-10日於日本福岡。

4. (Invited talk) Taiwan International Conference on Catalysis 2025 (TICC 2025). Title: Computationally guided design of hydrogen evolution electrocatalysts leveraging high-entropy alloy platforms. 2025年6月18-20日於國立清華大學。

5. (Invited talk) The 1st NTHU-NU Joint Symposium. Title: Advancing high-efficiency and stable blue OLEDs through computational materials design. 2025年4月23-25日於日本名古屋大學。

6. (Invited talk) 2025中華民國高分子學會年會. Title: Advancing high-efficiency and stable blue OLEDs through computational materials design. 2025年1月15-16日於朝陽科技大學。

2024

7. (Invited lecture) 2024 Hybrid modeling of (bio-)molecular multiscale phenomena (HYMO-M2P). Title: Computational design of organic materials in optoelectronic applications. 2024年12月13日於克羅埃西亞札格瑞布。

8. (Invited talk) 2024台灣化學工程學會 71 週年年會. Title: Establishing a fast and reasonably accurate computational protocol for investigating organic semiconductors. 2024年11月10日於中原大學。

9. (Contributed talk) 2024熱力學暨程序系統工程研討會. Title: Investigating the structure-mobility relationship of pure hydrocarbon host materials in OLEDs. 2024年5月4日於日月潭。

10. (Contributed talk) 2024 APS March Conference. Title: Investigating the structure-mobility relationship of pure hydrocarbon host materials in OLEDs. 2024年3月4日於美國明尼阿波利斯。

11. (Invited talk) 2024 Trilateral Conference on Modern Challenges in Polymer Science and Technology. Title: Computational design of OLEDs via multiscale simulations and high-throughput screening. 2024年1月24日於成功大學。

2023

12. (Invited talk) The 16th Eurasia Conference on Chemical Sciences 2023 ($EuAsC_2S$-16). Title: Computational design of organic materials for optoelectronic applications. 2023年12月14日於泰國曼谷。

13. (Invited talk) The 1st annual meeting and conference of Association of Computational Mechanics Taiwan (ACMT 2023). Title: Computational design of organic materials for optoelectronic applications. 2023年10月29日於海洋大學。

14. (Invited talk) The 6th International Conference on Molecular Simulation (ICMS 2023). Title: Computational design of organic materials for optoelectronic applications. 2023年10月8日於台灣大學。

15. (Invited talk) 2023 MOF/COF-Taiwan Conference. Title: Computational design of organic materials for optoelectronic applications. 2023年4月9日於中山大學。

16. (Invited talk) 2023中華民國高分子學會年會. Title: Computational design of organic materials for optoelectronic applications. 2023年1月18日於長庚大學。

2022

17. (Invited talk) 2022 The 13th Science Conference: New Trends in Chemistry for Sustainable Development. Title: Computational design of organic materials for optoelectronic applications. 2022年11月21日於越南胡志明市理科大學。

C. Other

1. 2023-2027 | **Emerging Young Scholars (2030新秀學者計畫)**, NSTC, Taiwan

2. 2023-2028 | **Max Planck Partner Group**, MPG, Germany

3. 2020-2022 | **Early Postdoc.Mobility Fellowship**, Swiss National Science Foundation

Publications of Shih-Yuan Lu (呂世源)

A. Journal Papers (* Corresponding author)

2025

1. Jianxing Wang,[#] Jiazhi Geng,[#] Xiaolang Liu, Yuxi Yang, Shuhao Yao, Chang Hong, Huiying Li, Zhen Lu, Runming Tao, Jiyuan Liang,* **Shih-Yuan Lu,*** 2025, "All-purpose additive anchoring interface enables formation of stable uniform electrolyte-anode interphase for high performance aqueous Zn metal batteries," *Chemical Engineering J.*, **503**, 158342. (#: equal contribution)

2. Fan-Yu Yen, Shao-I Chang, Yu-Chieh Ting, Chiung-Wen Chang, Kai-An Lee, **Shih-Yuan Lu,*** 2025, "In-situ Selective Oxidation Created Cr_2O_3 Assisting CrMnFeCoNi for Ultrahigh Power Density Zinc−Air Batteries," *Energy Materials*, **5**, 500114.

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17. Duraisamy Senthil Raja, Chih-Chieh Cheng, Yu-Chieh Ting, **Shih-Yuan Lu**,* 2023, "NiMo-MOF-Derived Carbon-Armored Ni4Mo Alloy of Interwoven Nanosheet Structure as Outstanding pH-Universal Catalyst for Hydrogen Evolution Reaction at High Current Densities," *ACS Appl. Mater. & Interfaces*, **15** (16), 20130–20140. (supplementary journal cover)

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26. Chih-Chieh Cheng, Yong-Xian Yeh, Yu-Chieh Ting, Shin-Hong Lin, Kotaro Sasaki, Yongman Choi,* **Shih-Yuan Lu**,* 2022, "Modulation of coordination environment enhances electrocatalytic efficiency of Mo single atoms toward water splitting," *J. Mater. Chem. A*, **10**, 8784 - 8797. (inside back cover)

27. Jing-Ting Su, Shin-Hong Lin, Chih-Chieh Cheng, Po-Yin Cheng, and **Shih-Yuan Lu**,* 2022, "Porous Core-Shell B-doped Silicon-Carbon Composites as Electrode Materials for Lithium Ion Capacitors," J. of Power Sources, 531, 231345.

28. Chi Guo,[+] Yaqing Guo,[+] Runming Tao,[+] Xiaobin Liao, Kang Du, Huan Zou, Wang Zhang, Jiyuan Liang,* Deyu Wang, Xiao-Guang Sun, **Shih-Yuan Lu**,* 2022, "Uniform lithiophilic layers in 3D current collectors enable ultrastable solid electrolyte interface for high-performance lithium metal batteries," *Nano Energy*, **96**, 107121. (+: co-first authors)

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30. Shun-Qin Chang, Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, **Shih-Yuan Lu**,* 2022, "Pulse Electrodeposited FeCoNiMnW High Entropy Alloys as Efficient and Stable Bifunctional Electrocatalysts for Acidic Water Splitting," *Chemical Engineering J.*, **446**, 137452.

31. Pui San Ho, Kok Chung Chong,* Soon Onn Lai, Sze Shin Lee, Woei Jye Lau, **Shih-Yuan Lu**, Boon Seng Ooi, 2022, "Synthesis of Cu-BTC Metal-Organic Framework for CO2 Capture via Solvent-free Method: Effect of Metal Precursor and Molar Ratio," *Aerosol Air Qual. Res.*, **22**(12), 220235.

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B. Conference Presentations

2025

1. Tzu-Hsiang Lin, Yu-Chieh Ting, Chiung-Wen Chang, Shao-I Chang, Kai-An Lee, Tsung-Wei Hsueh, Kun-Han Lin,* **Shih-Yuan Lu**,* 2025, "Bimetallic η-phase carbides as high performance electrocatalysts for highly efficient anion exchange membrane water electrolysis," Taiwan International Conference on Catalysis 2025 (TICC 2025), Hsinchu, Taiwan. (6/18-20/2025) (Student Poster Competition 之 Excellent Poster Award)

2. Chiung-Wen Chang, Yu-Chieh Ting, Fan-Yu Yen, Guan-Ru Li, Kun-Han Lin, **Shih-Yuan Lu**,* 2025, "High Performance Anion Exchange Membrane Water Electrolysis Driven by Atomic Scale Synergy of Non-precious High Entropy Catalysts," Taiwan International Conference on Catalysis 2025 (TICC 2025), Hsinchu, Taiwan. (6/18-20/2025) (Student Poster Competition 之 Best Poster Award)

3. Yu-Chieh Ting, Chih-Chieh Cheng, Fan-Yu Yen, Guan-Ru Li, Shao-I Chang, Chih-Heng Lee, Hsin-Yi Tiffany Chen, **Shih-Yuan Lu**,* 2025, "Highly asymmetrically configured single atoms anchored on flame-roasting deposited carbon black as cathode catalysts for ultrahigh power density Zn-air batteries," Taiwan International Conference on Catalysis 2025 (TICC 2025), Hsinchu, Taiwan. (6/18-20/2025) (Student Oral Presentation Contest 之 Excellent Presenter Award)

4. Yu-Chieh Ting, Chih-Chieh Cheng, Fan-Yu Yen, Guan-Ru Li, Shao-I Chang, Chih-Heng Lee, Hsin-Yi Tiffany Chen,* **Shih-Yuan Lu**,* 2025, "Highly Asymmetrically Configured Single Atoms as Highly Efficient Electrocatalysts toward Oxygen Reactions for High Performance Rechargeable Zn-Air Batteries," 2025 ACS Fall Meeting, Wahington DC, USA. (8/17-21/2025)

5. Yu-Chieh Ting, Chih-Chieh Cheng, Fan-Yu Yen, Guan-Ru Li, Shao-I Chang, Chih-Heng Lee, Hsin-Yi Tiffany Chen, **Shih-Yuan Lu**,* 2025, "Highly Asymmetrically Configured Single Atoms Anchored on Flame-Roasting Deposited Carbon Black as Cathode Catalysts for Ultrahigh Power Density Zn-Air Batteries," 2025 ICGET-TW, Tainan, Taiwan. (10/31-11/2/2025)

6. Chun–Lung Huang, Chiung-Wen Chang, Yan-Ku Lin, Kun-Han Lin,* **Shih–Yuan Lu**,* 2025, "Catalysis of Water Electrolysis with High Entropy Alloys," 台灣化學工程學會 72 周年年會,台南. (11/29-30/2025) (keynote speech)

7. Chiung-Wen Chang, Yu-Chieh Ting, Fan-Yu Yen, Guan-Ru Li, Kun-Han Lin,* **Shih-Yuan Lu**,* 2025, "High Performance Anion Exchange Membrane Water Electrolysis Driven by Atomic Scale Synergy of Non-precious High Entropy Catalysts," 台灣化學工程學會 72 周年年會,台南. (11/29-30/2025) (學生壁報論文展覽競賽優勝)

8. Tzu-Hsiang Lin, Yu-Chieh Ting, Chiung-Wen Chang, Shao-I Chang, Kai-An Lee, Tsung-Wei Hsueh, Kun-Han Lin*, **Shih-Yuan Lu**,* 2025, "Bimetallic η-phase carbides as high performance electrocatalysts for highly efficient anion exchange membrane water electrolysis," 台灣化學工程學會 72 周年年會,台南. (11/29-30/2025)

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9. Chun–Lung Huang, Yan–Gu Lin, Chao–Lung Chiang, Chun–Kuo Peng, Duraisamy Senthil Raja, Cheng–Ting Hsieh, Yu–An Chen, Shun–Qin Chang, Yong–Xian Yeh, **Shih–Yuan Lu**,* 2024, "High Entropy Alloys as High Performance Catalysts for Electrolytic Water Splitting," ECS 245th Meeting, San Francisco, USA. (5/26-30/2024)

10. Chih-Chieh Cheng, Yu-Chieh Ting, **Shih-Yuan Lu**,* 2024, "Single Atom Catalysts for Electrochemical Energy Storage," Taiwan International Conference on Catalysis 2024 (TICC 2024), Taipei, Taiwan. (6/19-21/2024) (keynote speech)

11. Yu-Chieh Ting, Chih-Chieh Cheng, Shin-Hong Lin, Ting-Yu Lin, Po-Wei Chen, Fan-Yu Yen, Shao-I Chang, Chih-Heng Lee, Hsin-Yi Tiffany Chen,* **Shih-Yuan Lu**,* 2024, "Synergistic Fe and Co binary single atoms based air cathodes for high performance and ultra-stable Zn-air batteries," Taiwan International Conference on Catalysis 2024 (TICC 2024), Taipei, Taiwan. (6/19-21/2024)

12. Cheng-Han Lin, Yu-Chieh Ting, Guan-Ru Li, Fan-Yu Yen, **Shih-Yuan Lu**,* 2024, "Development of Porous Nickel Structures as Catalyst Supports for Air Cathodes of Zinc-Air Batteries," Taiwan International Conference on Catalysis 2024 (TICC 2024), Taipei, Taiwan. (6/19-21/2024)

13. Yu-Chieh Ting, Chih-Chieh Cheng, Shin-Hong Lin, Ting-Yu Lin, Po-Wei Chen, Fan-Yu Yen, Shao-I Chang, Chih-Heng Lee, Hsin-Yi Tiffany Chen,* **Shih-Yuan Lu**,* 2024, "Synergistic Fe and Co binary single atoms based air cathodes for high performance and ultra-stable Zn-air batteries," 台灣化學工程學會 71 周年年會,中壢. (11/9-10/2024) (學生壁報發表競賽優等獎)

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14. Chih-Chieh Cheng, Ting-Yu Lin, Yu-Chieh Ting, Shin-Hong Lin, YongMan Choi, and **Shih-Yuan Lu**,* 2023, "Mo and W Binary Single-Atoms Stabilized by NiFe-Based Metal-Organic Frameworks as Overall Water Splitting Electrocatalysts," 2023 ICGET-TW, Tainan, Taiwan. 6/28-30/2023) (outstanding poster award)

15. Chih-Chieh Cheng, Ting-Yu Lin, Yu-Chieh Ting, Shin-Hong Lin, YongMan Choi, and **Shih-Yuan Lu**,* 2023, "Mo and W Binary Single-Atoms Anchored NiFe-Based Metal-Organic Frameworks as Overall Water Splitting Electrocatalysts," 2023 ICGET-TW, Taipei, Taiwan. (10/26-28/2023) (silver medal award for student oral competition)

16. Chih-Chieh Cheng, Ting-Yu Lin, Yu-Chieh Ting, Shin-Hong Lin, YongMan Choi, and **Shih-Yuan Lu**,* 2023, "NiFe-Based Metal-Organic Frameworks Stabilized Synergistic Mo and W Binary Single Atoms for Overall Water Splitting," 台灣化學工程學會 70 周年年會,台北. (12/9-10/2023) (學生英語口頭論文競賽佳作)

17. Shan-Ni Lin, **Shih-Yuan Lu**,* 2023, "以簡易燃燒法製備二元金屬氧化物/泡沫鎳複合材料應用於高效穩定水分解電觸媒," 台灣化學工程學會 70 周年年會,台北. (12/9-10/2023)

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18. Chun-Lung Huang, Cheng-Ting Hsieh, and **Shih-Yuan Lu**,* 2022, "Nanostructured Multi-component Electrocatalysts for High Performance Electrolytic Water Splitting," 台灣化學工程學會 68 周年年會, 高雄. (1/6-7/2022) (keynote speech)

19. Duraisamy Senthil Raja and **Shih-Yuan Lu**,* 2022, "Exploring Synergistic Effects for High Performance Catalysts of Electrolytic Water Splitting," 台灣物理年會, Taipei, Taiwan. (1/24-26/2022) (invited talk)

20. Chun-Lung Huang, Kotaro Sasaki, Duraisamy Senthil Raja, Cheng-Ting Hsieh, Yen-Ju Wu, Jing-Ting Su, Chih-Chieh Cheng, Po-Yin Cheng, Shin-Hong Lin, YongMan Choi, **Shih-Yuan Lu**,* 2022, "Twinning Enhances Electrolytic Water Splitting," 2022 Taipei International Conference on Catalysis (TICC-2022), Taipei, Taiwan. (7/20-22/2022) (keynote speech)

21. Chih-Chieh Cheng, Yong-Xian Yeh, Yu-Chieh Ting, Shin-Hong Lin, Kotaro Sasaki, YongMan Choi,* **Shih-Yuan Lu**,* 2022, "Modulation of Coordination Environment Enhances Electrocatalytic Efficiency of Mo Single Atoms toward Hydrogen Evolution Reaction," 2022 Taipei International Conference on Catalysis (TICC-2022), Taipei, Taiwan. (7/20-22/2022) (Excellent Poster Presentation)

22. Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, Duraisamy Senthil Raja, Yen-Ju Wu, and **Shih-Yuan Lu**,* 2022, "Gold nanocrystal decorated trimetallic metal organic frameworks as high performance electrocatalysts for oxygen evolution reaction," 台灣觸媒學會年會, Taipei, Taiwan. (7/21/2022) (CST invited lecture)

23. Pui San Ho, Kok Chung Chong,* Soon Onn Lai, **Shih-Yuan Lu**, Woei Jye Lau, Boon Seng Ooi, 2022, "Preparation of Cerium-based UiO-66 Metal-Organic Framework (MOF) Without Addition of Solvent for Developing Its Sustainable Synthesis," International Conference On Civil and Environmental Engineering 2022 - Special Issue On Sustainable Environment & Communities, Penang, Malaysia. (8/29-30/2022)

24. Chih-Chieh Cheng, Yong-Xian Yeh, Yu-Chieh Ting, Shin-Hong Lin, Kotaro Sasaki, YongMan Choi,* **Shih-Yuan Lu**,* 2022, "Coordination Modulation of Mo Single-atoms for Enhanced Electrochemical Hydrogen Evolution Reaction Performance," 中國材料科學學會 111 年年會, Miaoli, Taiwan. (11/18-19/2022) (海報競賽優等)

25. **Shih-Yuan Lu**, 2022, "Developments of Electrocatalysts for High Performance Electrolytic Water Splitting," 中國材料科學學會 111 年年會, Miaoli, Taiwan. (11/18-19/2022) (invited talk)

26. Chih-Chieh Cheng, Yong-Xian Yeh, Yu-Chieh Ting, Shin-Hong Lin, Kotaro Sasaki, YongMan Choi,* **Shih-Yuan Lu**,* 2022, "Modulation of Coordination Environment Enhances Electrocatalytic Efficiency of Mo Single Atoms toward Hydrogen Evolution Reaction," 2022 ICGET-TW, Hsinchu, Taiwan. (11/10-12/2022) (Excellent Poster Presentation)

27. **Shih-Yuan Lu,*** Heng-Yi Chen, Yen-Ju Wu, Jia-Yu Tan, Jing-Ting Su, 2022, "Nanostructuring Anode Materials for High Performance Lithium Ion Capacitors," 2022 ICGET-TW, Hsinchu, Taiwan. (11/10-12/2022) (keynote speech)

28. Duraisamy Senthil Raja, **Shih-Yuan Lu**,* 2022, "Effect of Fe-doping on the Electrocatalytic Oxygen Evolution Performances of Cobalt MOF-derived Co_3O_4 Nanocomposites," 2022 ICGET-TW, Hsinchu, Taiwan. (11/10-12/2022)

29. Chih-Chieh Cheng, Yong-Xian Yeh, Yu-Chieh Ting, Shin-Hong Lin, Kotaro Sasaki, YongMan Choi,* **Shih-Yuan Lu**,* 2022, "Modulating Coordination Environment of Mo Single-Atoms Mo-OxNyCz for Enhanced Electrochemical Hydrogen Evolution Reaction Performance," 台灣化學工程學會 69 周年年會, 台北. (12/2-3/2022) (Student English Oral Presentation Content/Honorable Mention)

30. Chun–Lung Huang, Yan–Gu Lin, Chao–Lung Chiang, Chun–Kuo Peng, Duraisamy Senthil Raja, Cheng–Ting Hsieh, Yu–An Chen, Shun–Qin Chang, Yong–Xian Yeh, **Shih–Yuan Lu**,* 2022, "High Entropy Alloys as Breakthrough Catalysts for Electrolytic Water Splitting," 台灣化學工程學會 69 周年年會, 台北. (12/2-3/2022) (keynote speech)

31. Duraisamy Senthil Raja, **Shih-Yuan Lu**,* 2022, "Cobalt MOF-derived Carbon-armored Fe-doped Co3O4 Nanocomposite on FTO Glass as an Efficient Electrocatalyst for Oxygen Evolution Reaction in Acid," 台灣化學工程學會 69 周年年會，台北. (12/2-3/2022)

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32. Duraisamy Senthil Raja, Chih-Chieh Cheng, and **Shih-Yuan Lu**,* 2021,"Exploring Synergistic Effects for High Performance Catalysts of Electrolytic Water Splitting," 239th ECS Meeting with 18th International Meeting on Chemical Sensors, Digital Meeting, Chicago, USA. (5/30-6/26/2021) (invited talk)

33. Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, Duraisamy Senthil Raja, Yen-Ju Wu, and **Shih-Yuan Lu**,* 2021, "Gold nanocrystal decorated trimetallic MOFs as high performance electrocatalysts for oxygen evolution reaction," 2021 Materials Research Society-Taiwan International Conference (2021 MRSTIC), on-line, Taipei, Taiwan. (11/13-17/2021)

34. Duraisamy Senthil Raja and **Shih-Yuan Lu**,* 2021, "Cobalt-MOF-derived Carbon-coated Iron-doped Spinel Co_3O_4 Nanocomposite as an Efficient Oxygen Evolution Electrocatalyst in Acid," 2021 Materials Research Society-Taiwan International Conference (2021 MRSTIC), on-line, Taipei, Taiwan. (11/13-17/2021)

35. Duraisamy Senthil Raja, Chih-Chieh Cheng, and **Shih-Yuan Lu**,* 2021, "Development of High Performance Catalysts for Electrolytic Water Splitting through Engineering Synergistic Effects," 2021 Materials Research Society-Taiwan International Conference (2021 MRSTIC), on-line, Taipei, Taiwan. (11/13-17/2021) (keynote speech)

36. **Shih–Yuan Lu**,* Chun–Lung Huang, Xui–Fang Chuah, Cheng–Ting Hsieh, 2021, "NiFe Alloy Nanotube Arrays as Highly Efficient Bifunctional Electrocatalysts for Overall Water Splitting at High Current Densities," The 30th Topical Meeting of the International Society of Electrochemistry, on-line, Taipei, Taiwan. (11/22-24/2021) (invited talk)

37. Chun-Lung Huang, Kotaro Sasaki, Duraisamy Senthil Raja, Cheng-Ting Hsieh, Yen-Ju Wu, Jing-Ting Su, Chih-Chieh Cheng, Po-Yin Cheng, Shin-Hong Lin, YongMan Choi*, **Shih-Yuan Lu,*** 2021, "Efficiency of metallic catalysts toward electrolytic water splitting enhanced with twinning," 17th Taiwan-Japan Joint Symposium on Catalysis, Taipei, Taiwan. (12/3-4/2021) (invited talk)

C. Patents

1. Chun-Lung Huang, **Shih-Yuan Lu**, 2022, "Method for Electrolysis of Water and Method for Preparing Catalysts for Electrolysis of Water," 美國發明專利, US11,359,297B2, 06/14/2022-06/25/2040.

2. Chun-Lung Huang, **Shih-Yuan Lu**, 2022,"Method for Electrolysis of Water," 美國發明專利, US11,572,631B2, 02/07/2023-03/15/2040.

D. Other

1. **呂世源**, 2025, "高效穩定價廉電催化分解水高熵觸媒材料開發(1/3)",國科會專題研究計畫進度報告, NSTC 113－2221－E－007－032－MY3.

2. **呂世源**, 2025, "高效穩定價廉可充式鋅空氣電池雙功能空氣極單原子氧氣反應電觸媒開發(3/3)",國科會專題研究計畫期末報告, MOST 111-2221-E-007-008-MY3.

3. **呂世源**, 2025, "水慕氫華 - 電解水綠氫生產技術精進(2/2)",國科會一般策略專案計畫成果報告, NSTC 113-2218-E-007-013.

4. **呂世源**, 2024, "高效穩定價廉電催化分解水單原子觸媒開發(3/3)",國科會專題研究計畫期末報告, MOST 110-2221-E-007-012-MY3.

5. **呂世源**, 2024, "高效穩定價廉可充式鋅空氣電池雙功能空氣極單原子氧氣反應電觸媒開發(2/3)",國科會專題研究計畫進度報告, MOST 111-2221-E-007-008-MY3.

6. **呂世源**, 2024, "水慕氫華 - 電解水綠氫生產技術精進(1/2)",國科會一般策略專案計畫進度報告, NSTC 112-2218-E-007-021.

7. **呂世源**, 2023, "高效穩定價廉電催化分解水單原子觸媒開發(2/3)",國科會專題研究計畫進度報告, MOST 110-2221-E-007-012-MY3.

8. **呂世源**, 2023, "高效穩定價廉可充式鋅空氣電池雙功能空氣極單原子氧氣反應電觸媒開發(1/3)",國科會專題研究計畫進度報告, MOST 111-2221-E-007-008-MY3.

9. **呂世源**, 2022, "碳膠囊結構矽碳複材應用於以鋰離子為基礎之儲能",科技部專題研究計畫期末報告, MOST 109-2221-E-007-034.

10. **呂世源**, 2022, "發展用於質子交換膜與陰離子交換膜電解水之高效穩定以金屬有機架構材料為基礎的產氫產氧電觸媒(3/3)",科技部專題研究計畫期末報告, MOST 108-2221-E-007-073-MY3.

11. **呂世源**, 2022, "高效穩定價廉電催化分解水單原子觸媒開發(1/3)",科技部專題研究計畫期中報告, MOST 110-2221-E-007-012-MY3.

12. **呂世源**, 2021, "發展用於質子交換膜與陰離子交換膜電解水之高效穩定以金屬有機架構材料為基礎的產氫產氧電觸媒(2/3)",科技部專題研究計畫期中報告, MOST 108-2221-E-007-073-MY3.

國際重要期刊編輯

1. Editorial Board: J. Chin. Inst. Engr., 1/2015 – 12/2021

2. Editor: Advanced Powder Technology, 1/2013 – present

3. Consulting Editor: J. Taiwan Inst. Chem. Engr., 7/2018 - present

學術榮譽/競賽獲獎:

- 2017 起, Elsevier, World's Top 2% Scientists
- 2021, 中國工程師學會, 傑出工程教授獎
- 2022, 台灣觸媒學會, 傑出論文獎
- 2022, 徐有庠先生紀念基金會, 有庠科技講座(奈米科技)
- 2022, 台灣化學工程學會, 會士
- 2022, 教育部, 學術獎
- 2023, 中技社, 化工學術獎
- 2024, 112 年度清華-台達傑出人才講座
- 2025, 113 年度清華-信驊科技傑出人才講座
- 2025, 科林研發，科林研發論文指導獎
- 2025, 國科會, 114 年度傑出特約研究員獎
- 2026, 114 年度清華-清鏡傑出人才講座

Publications of Claire Roa-Pu Shen (沈若樸)

A. Journal Papers (* Corresponding author)

2024

1. Wang RS, Siao SW, Wang JC, Lin PY, **Shen CR***. "Engineering thioesterase as a driving force for novel itaconate production via its degradation scheme", Metabolic Engineering Communications 2024, 19: e00246.

2023

2. Yang Z, Wang RS, Cheng BY, Ruan V, Yang P, Liang CH, **Shen CR***. Key residues identified by random mutagenesis enhanced indole hydroxylation efficiency of the flavin-containing monooxygenase from Corynebacterium glutamicum. Biochemical Engineering Journal 2023, 199: 109064.

2022

3. Li H, Pham NN, **Shen CR**, Chang CW, Tu Y, Chang YH, Tu J, Nguyen MTT, and Hu YC. Combinatorial CRISPR Interference Library for Enhancing 2,3-BDO Production and Elucidating Key Genes in Cyanobacteria. Frontiers in Bioengineering and Biotechnology 2022, 10.

4. Ohtake T, Kawase N, Pontrelli S, Nitta K, Laviña WA, **Shen CR**, Putri SP, Liao JC, Fukusaki E. Metabolomics-Driven Identification of the Rate-Limiting Steps in 1-Propanol Production. Frontiers in microbiology 2022, 13.

2021

5. Lu KW, Wang CT, Chang H, Wang RS, **Shen CR***. Overcoming glutamate auxotrophy in Escherichia coli itaconate overproducer by the Weimberg pathway. Metabolic Engineering Communications 2021, 13: e00190.

6. Chang CT, Chen YT, Hsieh YK, Girsang SP, Wang RS, Chang YC, Shen SH, **Shen CR**, Lin TP, Wan DH, Wang, J. "Dual-functional antibiofilm polymer composite for biodegradable medical devices", Mat Sci Eng C-Mater 2021, 123.

B. Conference and Workshop Presentations

2025

1. Poster presentation: "Engineering thioesterase as a driving force for itaconate production via its degradation scheme", ACS annual conference, San Diego, USA (2025/3)

2. Invited Speaker: "Synthetic amino acid elongation via transaminase engineering", Taiwan International Catalysis Conference (TICC), Hsinchu, Taiwan (2025/7)

2024

3. Invited Speaker: "Engineering thioesterase as a driving force for itaconate production via its degradation scheme", Biotechnology and Biochemical Engineering Society of Taiwan (BEST) annual conference, Penghu, Taiwan (2024/06)

4. Poster presentation: "Random mutagenesis for enzyme and pathway optimization in the biosynthesis of tryptophan-derived dye", The 15th Globe Industrial Microbiology Congress & Metabolic Engineering Summit, Shanghai, China (2024/09)

5. Poster presentation: "Random mutagenesis for enzyme and pathway optimization in the biosynthesis of tryptophan-derived dye", Young Asian Biological Engineers' Community (YABEC), Busan, Korea (2024/10)

6. Invited Speaker: "Engineering thioesterase as a driving force for itaconate production via its degradation scheme"，台灣化學工程年會, Taoyuan, Taiwan (2024/11)

2023

7. Invited session chair: Session of cellular engineering, Asian Synthetic Biology Association Conference 2023, Awaji Island, Japan (2023/12)

8. Poster presentation: Random mutagenesis for enzyme and pathway optimization in the biosynthesis of tryptophan-derived dye (2023/12)

2022

9. Invited Speaker: "透過代謝與蛋白質工程優化靛藍及紫色桿菌素之微生物合成",永續淨零論壇, Hsinchu, Taiwan (2022/07)

10. Invited Speaker: "Random mutagenesis of the flavin-containing monooxygenase enhanced indigo and indirubin production", 12th Green Sustainable Biotechnology Symposium (2022/01)

2021

11. Invited Speaker: "Mutagenesis of the flavin-containing monooxygenase enhanced indigo and indirubin production", Biotechnology and Biochemical Engineering Society of Taiwan (BEST) 26th annual conference, Online virtual meeting (2021/10)

12. Invited Speaker: "Mutagenesis of the flavin-containing monooxygenase enhanced indigo and indirubin production", 2021 JAPAN-TAIWAN Symposium: Foresight Advanced Materials for Biotechnology and Precision Health and Medicine with AI, Online virtual meeting (2021/11)

C. Patents

1. **沈若樸**、楊子儀、阮匀、楊璧如、王尚軒、程奕璁. "用於提升靛類化合物的產量之方法及重組型多肽", 中華民國專利發明第 I889960 號 (專利權期間: 2025/07 to 2042/03)

2. **沈若樸**、呂維、王東煜. "生產衣康酸的大腸桿菌轉殖株及其用途", 中華民國專利發明第 I732205 號 (專利權期間: 2021/07/01 - 2039/04/10).

3. **Roa-Pu Shen**, Wei Lu, Tung-Yu Wang. "Escherichia coli transformant for producing itaconate and uses thereof", United States Patent No. US 10,982,238 (Date of Patent: 2021/4/20).

4. **沈若樸**、溫爵宇."正丁醇表現匣、重組質體及正丁醇生產相關基因的表現方法", 中華民國專利發明第 I622648 號 (專利權期間: 2018/5/1 - 2036/12/26).

5. **Roa-Pu Shen**, Rex C. Wen. "Butanol expression cassette, recombinant plasmid and butanol production related gene expression method", United States Patent No. US 10,633,677 B2 (Date of Patent: 2020/4/28).

6. **沈若樸**、呂維. "生產醋酸的基因轉殖藍綠菌及其應用", 中華民國專利發明第 I664286 號 (專利權期間: 2019/7/1 - 2037/8/1).

7. **Roa-Pu Shen**, Wei Lu. "Engineered cyanobacterium and its application for producing acetate", United States Patent No. US 10,570,425 B2 (Date of Patent: 2020/2/25).

8. 黃瓊芳, 馬天陽, 梁克明, **沈若樸**, 郭家倫. "生產高產量 2,3-丁二醇之方法", 中華民國專利發明第 I690593 號 (專利權期間: 2020/4/11 - 2038/3/21).

Publications of Yung-Tin Pan (潘詠庭)

A. 期刊論文

2025

1. L-Y. Chueh, Y-C. Chien, Y-W. Hsu, Z-W. Wang, D-H. Tsai, C-M. Wu, S-C. Huang, H-J. Chen, H-Y. Chen, M-H. Tsai,C-H. Wang, C-C. Yang*, **Y-T. (Frank) Pan***, Suppressing iridium over-oxidation via catalyst-support interactions on tungsten oxide nanowires revealed by *in-situ* XPS for durable, low-loaded PEM water electrolysis, *Appl. Catal. B*, **2026**, *382*, 125919.

2. W-T. Tu, T-H. Tsai, Y-T. Xie, D-H. Tsai, H-Y. Liu, M-K. Tsai*, T-C. Chou*, **Y-T. (Frank) Pan***, Cation- and CO_2-assisted electrochemical synthesis of clean, shaped Cu nanocrystals for selective CO_2 reduction to C_{2+} products, *J. Mater. Chem. A*, **2025**,*13*, 34827-34835.

3. Y-W. Hsu, H-I. Chang, **Y-T. (Frank) Pan***, Active and durable proton exchange membrane water electrolyzer anode with spatially positioned catalytic components, *J. Power Sources*, **2025**, *656*, 238107.

4. Y-W. Hsu, H-I. Chang, **Y-T. (Frank) Pan***, Active and durable proton exchange membrane water electrolyzer anode with spatially positioned catalytic components, *J. Power Sources*, **2025**, *656*, 238107.

5. X. Wang, D. Lee, **Y-T. Pan**, K. Chen, K. Burns, Y. S. Kim, G. Wu, H. Watt, J. Spendelow*, Effect of the catalyst metal content and the carbon support on proton-exchange membrane fuel cells performance and durability, *Electrochim. Acta*, **2025**, *512*, 145490.

6. C-C. Hsu, S-T. Hu, H-Y. Liu, C-S. Ni, A-Y. Wang, H-J. Chen, T-Y. Chen, Y-L. Chen, L-Y. Chueh, **Y-T. (Frank) Pan**, T-Y. Liu,H-Y. Chen*, Iron-and nitrogen-modified Trapa natans husk-derived activated carbon as cathode materials for microbial fuel cells, *J. Power Sources*, **2025**, *632*, 236269.

7. D-Z. Liao, Y-T. Lee, L-Y. Chueh, Y-T. Tsai, C-F. Huang, D-H. Tsai* **Y-T. (Frank) Pan***, Transition Metal Promoted Palladium-catalyzed Oxidative Carbonylation of Phenol to Diphenyl Carbonate, *J. Taiwan Inst. Chem.*, **2025**, *168*, 105942.

8. Y-T. Lee, Y-T. Tsai, C-F. Huang, **Y-T. Pan**, D-H. Tsai*, Aerosol-assisted synhtesis of Cu/AC hybrid catalysts for dimethyl carbonates synthesis, *J. Taiwan Inst. Chem.*, **2025**, *168*,105899.

2024

9. C-H. Yeh, J-W. Kang, Y-L. Chen, H-J. Chen, H-H. Chang, W-H. Lu, S-Y. Chen, H-L. Chen, C-W. Hu, L-Y. Chueh, **Y-T. (Frank) Pan**, H-Y. Chen*, Electrochemical Improvement of $Na_{0.62}K_{0.05}Mg_2$*$9Cu_{1/9}Mn_{2/3}O_2$ P2-Type Layer-Oxide Anionic Redox Cathodes of Sodium-Ion Batteries via Incorporating K-Doping, *ACS Sustain. Chem. Eng.*, **2024**, *12*, 12795-12807.

10. L-Y. Chueh, W-Y. Hsu, Z-Y. Wang, H-C. Lin, S-Y. Hung, Y-L. Chen, H-Y. Chen, **Y-T. (Frank) Pan***, Transition Metal (Sn, Sb, and Mn) Modification Effects on Co3O4 Spinel Structures: Enhancing Activity and Stability for Platinum Group Metal-Free Acidic Oxygen Evolution Reaction Catalyst, *Electrochim. Acta.*, **2024**, 497, 144575.

11. D-H. Tsai, T-T. Wu, H-C. Lin, L-Y. Chueh, K-H. Lin, W-Y. Yu*, **Y-T. Pan***, Cu/MgO Revese Water Gas Shift Catalyst with Unique CO2 Adsorption Behaviors, *Chem. Asian J.*, **2024**, *19*, e202300955.

2023

12. R-H. Yang, L-Y. Chueh, S-L. Liao, **Y-T. Pan***, Synthesis of Plasmonic $W_{18}O_{49}$ Interconnected Nanowire Frameworks with Strong Photo Enhanced Hydrogen Evolution Reaction Activity, *Mater. Today Sustain.*, **2023**, 100485.

13. P-C. Yang, Y-T. Lee, Y-T. Tsai, C-F. Huang, **Y-T. Pan***, D-H. Tsai*, Oxidative carbonylation of propylene glycol to propylene carbonate by copper-based catalysts, *J. Taiwan Inst. Chem. Eng.*, **2023**, 105005.

14. **Y-T. Pan**, W. Zhu, H. Yang, Reaction-Driven Formation of Ag-Cu Alloy Nanostructures from Cu@Ag Core-Shell Nanoparticles Analyzed by Moirè Patterns Using Environmental TEM Images, *Surf. Sci.*, **2023**, *736*, 122349. (Front Cover)

15. L-Y. Chueh, C-H. Kuo, R-H. Yang, D-H. Tsai, M-H. Tsai, C-C. Yang, H-Y. Chen, C-H. Wang, **Y-T. Pan***, WO_x Nanowire Supported Ultra-Fine Ir-IrO_x Nanocatalyst with Compelling OER Activity and Durability, *Chem. Eng. J.*, **2023**, *464*, 142613.

16. P-H. Chang, David S-H. Wong, John D-Y. Ou, **Y-T. Pan***, S-S. Jang*, CO2-Enhanced Production and Synthesis of 2,5- Furandicarboxylic Acid under CO2 Flow through Henkel Reaction, *Eur. J. Org. Chem.*, **2023**, e202300396.

17. S. Yamamoto, R. Yamashita, C. Kubota, K. Okano, M. Kitamura, M. Funahashi, S.-C. Ye, **Y.-T. Pan**, M. Horie, T. Shintani, H. Murata, H. Matsuyama, A. Mori* Orthogonal Electric and Ionic Conductivities in the Thin Film of a Tiophiene-Tiohpene Block Copolymer, *J. Mater. Chem. C*, **2023**, *11*, 2484-2493.

2022

18. **Y.-T. Pan**, D. Li, S. Sharma, C. Wang, M. J. Zachman, E. C. Wegener, A. J. Kropf, Y. S. Kim, D. J. Myers, A. A. Peterson, D. A. Cullen, J. S. Spendelow, Ordered CoPt Oxygen Reduction Catalyst with High Performance and Durability, *Chem Catalysis*, **2022**, *2*, 3559-3572.

19. L-C. Lin, C-H. Kuo, Y-H. Hsu, L-C. Hsu, H-Y. Chen, J-L. Chen, **Y-T. Pan***, High-Performance Intermetallic PtCo Oxygen Reduction Catalyst Promoted by Molybdenum, *Appl. Catal. B.* **2022**, *317*, 121767

20. W-Z. Hung, Z. X. Law, D-H. Tsai, B-H. Chen, C-H. Chen, H-Y. Hsu, **Y-T. Pan***, Selective CO_2 Deoxygenation to CO in Chemically Looped Reverse Water Gas Shift Using Iron Based Oxygen Carrier, *MRS Energy and Sus.* **2022**

21. Z. X. Law, **Y-T. Pan***, D-H. Tsai*, Calcium Looping of CO_2 Capture Coupled to Syngas Production Using Ni-CaO-Based Hybrid Nanostructure, *Fuel,* **2022** , *328,* 125202

22. C-Y. Chang, Y-F. Chen, Y-T. Tsai, C-F. Huang, **Y-T. Pan***, D-H. Tsai*, Sustainable Synthesis of Epoxides from Halohydrin Cyclization by Composite Solid-Base Catalysts, *Ind. Eng. Chem. Res.*, **2022**, *61*, 9970-9980.

23. W-C. Liao, D-H. Tsai, W-Z. Hong, Y-H. Huang, L-C. Lin, **Y-T. Pan***, Enabling Direct CO_2 Electrolysis by Alkali Metal Cation Substituted Membranes in a Gas Diffusion Electrode Reactor, *Chem. Eng. J*. **2022**, 134765

24. Y-H. Huang, Y-H. Hsu, **Y-T. Pan***, Fabrication of Catalyst Layers with Preferred Mass and Charge Transport Properties through Texture Engineering, *ACS Appl. Energy Mater.*, **2022,** *5*, 2890-2897.

2021

25. Y.-S. Cheng, L.-C. Lin, C.-H. Kuo, Y.-C. Chen, W.-C. Liao, L.-Y. Chueh, H.-Y. Chen, H.-Y. Chen, and **Y.-T. Pan***, Armoring the Pt/C Catalyst with Fine Atomic-Scale Tungsten Species to Increase Tolerance against Thermal and Fuel Cell Stresses, *ACS Appl. Energy Mater.*, **2021**, *4*, 11448-11457.

26. L.-C. Lin, Y.-S. Cheng, W.-C. Liao, Y.-H. Huang, and **Y.-T. Pan*** Transient Loss and Recovery of Platinum Fuel Cell Cathode Catalyst at High Voltage Efficiency Regimes, *J. Electrochem. Soc.* **2021**, *168*, 054053.

27. A. N. Kuhn, H. Zhao, U. O. Nwabara, X. Liu, M. Liu, **Y-T. Pan**, W. Zhu, P. J. A. Kenis, H. Yang, Engineering Silver-Enriched Copper Core-Shell Electrocatalysts to Enhance the Production of Ethylene and C_{2+} Chemicals from Carbon Dioxide at Low Cell Potentials. *Adv. Funct. Mater.* **2021**, 2101668.

28. C-C. Hsu, Y-C. Lin (co-first author), Y-Y. Lin, H-T. Li, C-S. Ni, C-I. Liu, C-C. Chang, L-C. Lin, **Y-T. Pan**, S-F. Liu, T-Y. Liu,* Han-Yi Chen*, Trapa Natans Husks-derived Nanoporous Carbons as Electrode Materials for Sustainable High-Power Microbial Fuel Cell-Supercapacitor Systems, *Adv. Energy Sus. Res.*, **2021**, 2100163.

B. 專利

2023

1. **潘詠庭**、蔡德豪、廖惇正、李晏德、黃健富、蔡易達，*固體鈀觸媒、碳酸二苯酯的製備方法以及聚碳酸酯的製備方法*，中華民國，202543732，**2025**。

2. D-H. Tsai, **Y-T. Pan,** C-M. Yang, C-Y. Chang, D-H. Tsai, C-F. Huang, Y-D. Tsai, Composite solid base catalyst, manufacturing method thereof and manufacturing method of glycidol, US Patent, **2024**,11998894.

3. 蔡德豪、**潘詠庭**、楊哲銘、張晴淵、蔡定暉、黃健富、蔡易達，*製備縮水甘油之方法*，中華民國專利 第 I806375 號，**2023**。

4. 蔡德豪、**潘詠庭**、李晏德、廖惇正、黃健富、蔡易達，*固體銅碳觸媒的製備方法*，中華民國，I885616，**2023**。

5. 蔡德豪、**潘詠庭**、楊堡齊、佘品濂、廖惇正、李晏德、黃健富、蔡易達，*銅系固體觸媒催化合成碳酸酯類的方法*，中華民國，202442304，**2023**。

C. 會議論文

2025

1. L-Y. Chueh, Y-C. Chien, C-C. Yang, C-H. Wang, **Y-T. (Frank) Pan***, Developing Ir- and Ru-based OER catalysts for practical PEMWE, *NSRRC User Meeting*, **2025**, Hsinchu, Taiwan.

2. **Y-T. (Frank) Pan**, Utilizing cations and CO_2: Electrosynthesis and Electrocatalysis, *Annual Meeting of TwIChE*, **2025**, Tainan, Taiwan.

2024

3. L-Y. Chueh, Y-W. Hsu, C-M. Wu, M-H. Tsai, C-C. Yang, C-H. Wang, **Y.-T. Pan***, Operando XPS Study of Tungsten Oxide-Supported Iridium Nanoparticles: High-Efficiency Water Splitting Catalysts in Acidic Environments and PEM Electrolysis, *246th ECS Meeting PRiME*, **2024**, Hawaii.

4. Y-W. Hsu, L-Y. Chueh, **Y.-T. Pan***, Innovative Anode Design Incorporating Sub-Catalyst Layer for Proton Exchange Membrane Water Electrolysis with Ultra-Low Iridium Loading, *246th ECS Meeting PRiME*, **2024**, Hawaii.

5. D-H. Tsai, W-T. Tu, W-C. Liao, L-Y. Chueh, **Y.-T. Pan***, A Strategical Break-in of Accessible and High Surface Area Copper Cathode by Magnesium Oxide/Hydroxide Incorporation Applied in Zero-Gap CO_2RR, *246th ECS Meeting PRiME*, **2024**, Hawaii.

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6. **Y.-T. Pan***, L-Y. Chueh, Y-W. Hsu, Tungsten Oxide-Based Materials as Catalyst Support for Oxygen Evolution Reaction, *244th ECS Meeting*, **2023**, Gothenburg.

7. D-H. Tsai, T-T. Wu, L-Y. Chueh, W-C. Liao, W-Y. Yu, **Y-T. Pan***, Selective CO_2 Electrolysis of Cu-on-MgO/$Mg(OH)_2$ Catalyst through Enhanced CO_2 Adsorption, *244th ECS Meeting*, **2023**, Gothenburg.

8. L-Y. Chueh, C-H. Kuo, R-H. Yang, D-H. Tsai, M-H. Tsai, C-C. Yang, H-Y. Chen, C-H. Wang, **Y-T. Pan***, Strong Catalyst-Support Interaction in WO_x Nanowires Supported Iridium Nanocatalysts: A Pathway to Efficient Water Electrolysis, *244th ECS Meeting*, **2023**, Gothenburg.

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9. **Y.-T. Pan**, *(Digital Presentation)* Molybdenum-Promoted Intermetallic PtCo ORR Catalyst, #I01D-1555, Symposium: I01D: Polymer Electrolyte Fuel Cells & Electrolyzers 22(PEFC&E 22) - Catalyst Activity/Durability for Hydrogen(-Reformate) Acidic Fuel Cells. 242nd ECS Meeting, **2022**, Atlanta.

10. W.T. Tu, **Y.-T. Pan**, The Influence of Dynamic Valence State of Copper and Silver to CO_2RR by using Pulsed Potential Electrolysis, *69th Annual Meeting of TWIChE,* **2022**. New Taipei City.

11. D.-H. Tsai, **Y.-T. Pan**, Enhance CO_2 Adsorption by MgO Support Boosting Copper Catalyst Electrocatalytic Performance for CO2RR at MEA Reactor, 69th Annual Meeting of *TWIChE*, **2022**. New Taipei City

12. L.-Y. Chueh, **Y.-T. Pan**, WO_x Support Direct Synthesis of Ultra-Fine Core@Shell Ir@IrO_x Nanocatalyst with Compelling OER Activity and Durability, *TICC 2022*, **2022**, Taipei.

13. L.-Y. Chueh, **Y.-T. Pan**, The influence of Alkaline Catalyst Supports on the Carbon Dioxide Reduction Reaction Catalyzed by Copper, *TICC 2022*, **2022**, Taipei.

14. S.-C. Ye, M. Horie, **Y.-T. Pan**, Investigating the Charge Transfer Effect between the Interface of -Conjugated Polymers and Polycrystalline Platinum Metal for Electrocatalytic Reaction, *68th Annual Meeting of TWIChE*, **2022**

15. D.-H. Tsai, W.-C. Liao, **Y.-T. Pan**, The Influence of Alkaline Catalyst Supports on the Carbon Dioxide Reduction Reaction Catalyzed by Copper, *68th Annual Meeting of TWIChE*, **2022**

16. L.-Y. Chueh, R.-H. Yang, **Y.-T. Pan**, Highly Dispersed Iridium Nanoparticles Supported by One-Dimensional WO_x and Mo-Doped WO_x Nanowires as Superior OER Catalysts in Acidic Environments, *68th Annual Meeting of TWIChE,* **2022**

17. W.-Z. Hung, L.-Y. Chueh, **Y.-T. Pan**, CO_2 Deoxygenation via Chemical Looping Utilizing Redox and Oxygen Vacancies in Transition Metal Oxides, *68th Annual Meeting of TWIChE*, **2022**

18. R.-H. Yang, L.-Y- Chueh, S.-L. Liao, H.-Y. Tiffany Chen, T.-C. Wei, C.-Y. Wang, **Y.-T. Pan**, Synthesis of $W_{18}O_{49}$ Interconnected Nanowire Frameworks Populated with Plasmon Hotspots, *68th Annual Meeting of TWIChE,* **2022**

19. Y.-H. Hsu, Y.-H. Huang, **Y.-T. Pan**, Textured Coatings on Polymer Membrane with Enhanced Mass Transport Properties Fabricated by Ultrasonic Spraying, *68th Annual Meeting of TWIChE*, **2022**

D. 重要成就及榮譽

1. 2024 年 國科會 吳大猷先生紀念獎

2. 2024 年 化工學會 李長榮學術研究傑出青年教授獎

3. 2023 年 信驊科技公司 信驊青年學者

4. 2023 年 國立清華大學 新進人員傑出研究獎

5. 2023 年 台灣觸媒學會 傑出論文獎章

6. 2022 年 國立清華大學工學院 新進人員傑出研究獎

7. 2022 年 台灣氫能與燃料電池學會 第一屆優秀年輕學者獎

8. 2021 年 清華工學院第 109 學年度傑出教學獎

E. 學生得獎紀錄

學生	學位	研討會/機構名稱	年	獎項
簡佑蓁	碩士	TICC 2025	2025	Excellent Poster Award
許育瑋	博士	TICC2025	2025	Best Oral Presentation Award
杜威廷	碩士	OKCAT	2024	Outstanding Research Award
吳昶明	碩士	OKCAT	2024	Outstanding Research Award
杜威廷	碩士	2024 ICGET-Tw	2024	英語口頭報告優勝
吳昶明	碩士	2024 ICGET-Tw	2024	壁報競賽佳作
杜威廷	碩士	70 屆化工年會	2023	壁報競賽優勝
闕呂祐	博士	2023 ICGET-Tw	2023	英語口頭報告銀牌
許育瑋	碩士	TICC 2023	2023	英語口頭報告佳作
吳宣佑	碩士	TICC 2023	2023	壁報競賽優勝
廖惇正	碩士	TICC 2023	2023	壁報競賽佳作
杜威廷	專題生	69 屆化工年會	2022	壁報競賽佳作
蔡定暉	博士	69 屆化工年會	2022	英語口頭報告佳作
許又瑄	碩士	2022 ICGET-Tw	2022	壁報競賽佳作
闕呂祐	博士	TICC2022	2022	英語口頭報告優勝
蔡定暉	博士	TICC2022	2022	壁報競賽佳作
蔡定暉	博士	財團法人慶恩教育基金會	2022	2022 綠色科技論文獎
蔡定暉	博士	國立清華大學	2022	校長獎學金
闕呂祐	博士	68 屆化工年會	2021	壁報競賽佳作

Hsing-Wen Sung (宋信文)

February 2026

Publication

A. Refereed Journal Papers (*Corresponding Author)

2025

1. Cam-Hoa Mac, Pei-Ju Chang, Li-An Chu, Ya-Hui Lin, Jui-To Wang, Cheng-Yueh Lin, Yu-Chen Yuan, Yuan Yao, Dien Thi My Nguyen, Yen Chang, Yin-Hsu Chen, Mai Thanh Thi Nguyen, Yu-Jung Lin*, **Hsing-Wen Sung***, "Noninvasive Oral Magnetoelectric Neuromodulation for Parkinson's Disease Therapy," *Nature Biomedical Engineering* (IF 26.7) (Revision under Review).

2. Cam-Hoa Mac[+], Yu-Wei Chiang[+], Hong-Nhung Nguyen[+], Jui-To Wang[+], Li-An Chu, Ya-Hui Lin, Van Khanh Nguyen, Shih-Kai Lo, Yen Chang, Mai Thanh Thi Nguyen, Qian Yao Zhang, Yu-Jung Lin*, **Hsing-Wen Sung***, "Chemically Programmed Prodrug Nanoparticles for Precise Oral Dopamine Delivery to Deep Brain Regions in Parkinson's Disease," *Advanced Materials* (IF 26.8) (Revision under Review)

3. Cam-Hoa Mac[+], Chen-Hsuan Kuo[+], I-Wei Wang[+], Yu-Jung Lin, Cheng-Yueh Lin, Hong-Nhung Nguyen, Ninh-Son Pham, Shih-Kai Lo, Wen-Wei Wu, Hua-Jing Huang, Yen Chang, Hsiao-Huang Chang, Hao-Ji Wei*, **Hsing-Wen Sung***, "Oral Magnetoelectric Neuroimmunomodulation via the Gut–Brain–Spleen–Heart Axis for Noninvasive Atrial Fibrillation Therapy," *Advanced Materials,* e16956 (IF 26.8)

4. Lam-Duc-Huy Nguyen[+], Sheng-Yao Peng[+], Cam-Hoa Mac[+], Nhien Nguyen, Shih-Kai Lo, Po-Hsi Lin, Ninh-Son Pham, Hsiao-Huang Chang, Yu-Jung Lin*, **Hsing-Wen Sung***, "Advances in hydrogen delivery strategies for therapeutic applications" *Advanced Drug Delivery Reviews*, 115734. (2025). (IF 17.6)

5. Po-Kai Luo[+], Wan-An Chang[+], Sheng-Yao Peng[+], Li-An Chu, Ya-Han Chuang, Lam-Duc-Huy Nguyen, Jhih-Syuan Guo, Hao-Chi Wei, Po-Liang Lai, Hsiao-Huang Chang, Kuan-Lin Wang, Yin-Hsu Chen, **Hsing-Wen Sung***, "Endogenous Macrophages as" Trojan Horses" for Targeted Oral Delivery of mRNA-Encoded Cytokines in Tumor Microenvironment Immunotherapy" *Biomaterials*, 325 (2026), 123620. (IF 12.9)

6. Putry Yosefa Siboro, Nhien Nguyen, Shih-Kai Lo, Fwu-Long Mi, Wen-Wei Wu, Che-Hung Wang, Yun-Ching Chen, Wei-Lun Pan, Sheng-Yao Peng, Lam-Duc-Huy Nguyen, Kun-Ju Lin*, **Hsing-Wen Sung***, "Innate Immunity-Guided Macrophage-Homing Nanoplatform for Oral Tumor Immunotherapy and Real-Time Deep-Tissue Imaging in Pre-Clinical Models," *Advanced Materials*, 2025, e07607. (IF 26.8)

7. Nhien Nguyen[+], Tuyet-Mai Hoang[+], Tun-Yu Huang[+], Lam-Duc-Huy Nguyena, Hsiao-Huang Chang, Yen Chang, Mai Thanh Thi Nguyend, Kun-Ju Line, Chun-Chieh Chen*, **Hsing-Wen Sung***, "Macrophage-hitchhiked, effervescence-induced nanoemulsions for enhanced oral chemotherapy and immunotherapy: Impact on absorption route," *Biomaterials*, 316, 123019, 2025. (IF 12.9)

8. Adrian Tabora Dychiao[+], Ting-Hsuan Lu[+], Sheng-Yao Peng, Cheng Fan, Siyang Song, Chongyu Zhang, Minyao Wang, Sophia Shi, Jun Wu, Shu-Hong Li, Yen Chang, **Hsing-Wen Sung***, Ren-Ke Li*, "Noninvasive assessment of a bioconductive patch for treating atrial fibrillation with magnetic resonance imaging" *Journal of Controlled Release*, 380, 317-329. (IF 11.5)

9. Chong-Yu Zhang[+], Cheng Fan[+], Shu-hong Li, Jun Wu, Yvonne Ziyi Peng, **Hsing-Wen Sung**, Shiming Liu*, Ren-Ke Li*, "A conductive polymer restores connexin43 expression through the suppression of mitogen-activated protein kinases to improve intercellular communication and alleviate atrial fibrillation," *Acta Biomaterialia*, 196, 123-135. (IF 9.6)

10. Cam-Hoa Mac[+], Giang Le Thi Nguyen[+], Dien Thi My Nguyen[+], Sheng-Min Huang, Hsu-Hsia Peng, Yen Chang, Shih-Kai Lo, Hui-Hua Kenny Chiang, Yuan-Zhen Yang, Hsiang-Lin Song, Wei-Tso Chia*, Yu-Jung Lin*, **Hsing-Wen Sung***, "Noninvasive Vagus Nerve Electrical Stimulation for Immune Modulation in Sepsis Therapy" *Journal of the American Chemical Society*, 147 (10), 8406-8421, 2025. (IF 15.6)

2024

11. Po-Kai Luo, Hui-Min Ho, Min-Chun Chiang, Li-An Chu, Ya-Han Chuang, Ping-Chiang Lyu, I-Chen Hu, Wan-An Chang, Sheng-Yao Peng, Jayachandran Jayakumar, Hsin-Lung Chen, Ming-Hsi Huang*, **Hsing-Wen Sung***, "pH-Responsive β-Glucans-Complexed mRNA in LNPs as an Oral Vaccine for Enhancing Cancer Immunotherapy", *Advanced Materials*, 36 (33), 2404830, 2024. (IF 26.8)

12. Van Khanh Nguyen, Nhien Nguyen, Zhe-Cheng Li, Chao-Min Cheng, Jui-To Wang, Yu-Wei Chiang, Hsiang-Lin Song, Shih-Kai Lo, Cam Hoa Mac, Yen Chang, Wei-Tso Chia*, and **Hsing-Wen Sung***, "Inflammation-Activated Endogenous Macrophage-Mediated Prodrug Delivery System Overcoming Biological Barriers for Enhanced Oral Meningitis Therapy", *Advanced Functional Materials*, 34 (32), 2401570, 2024. (IF 19.0)

13. Yichong Zhang, Alina Yao, Jun Wu, Shuhong Li, Minyao Wang, Zexu Peng, **Hsing-Wen Sung**, Baoguo Jiang*, Ren-Ke Li*, "Conductive Hydrogel Restores Electrical Conduction to Promote Neurological Recovery in a Rat Model", *Tissue Engineering*, *Part A*, 30 (17-18), 577-587, 2024. (IF 2.9)

14. Cam-Hoa Mac, Hsien-Meng Tai, Sheng-Min Huang, Hsu-Hsia Peng, Amit Kumar Sharma, Giang Le Thi Nguyen, Pei-Ju Chang, Jui-To Wang, Yen Chang, Yu-Jung Lin*, **Hsing-Wen Sung***, "Orally Ingested Self-Powered Stimulators for Targeted Gut–Brain Axis Electrostimulation to Treat Obesity and Metabolic Disorders", *Advanced Materials*, 36 (21), 2310351, 2024. (IF 26.8)

15. Putry Yosefa Siboro[+], Amit Kumar Sharma[+], Pei-Jhun Lai, Jayachandran Jayakumar, Fwu-Long Mi, Hsin-Lung Chen, Yen Chang*, **Hsing-Wen Sung***, "Harnessing HfO_2 Nanoparticles for Wearable Tumor Monitoring and Sonodynamic Therapy in Advancing Cancer Care" *ACS Nano*, 18 (3), 2485-2499, 2024. (IF 16.0)

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16. Cheng-Yu Wu[+], Cam-Hoa Mac[+], Tung-Han Yang[+], Khanh Nguyen, Shih-Kai Lo, Yen Chang, Po-Liang Lai, **Hsing-Wen Sung***, Yu-Jung Lin*," Nanoscale Photocatalytic Hydrogen Production System Mitigates Inflammation by Harnessing Glycolysis Waste", *Chemical Engineering Journal*, Volume 476,146614, 2023. (SCI IF 15.1)

17. Yu-Jung Lin, Po-Kai Luo, Huei-Rou Su, Hung-Yun Lu, Wan-An Chang, Min-Chun Chiang, Hsin-Lung Chen, Kai Chen, Hao-Ji Wei*, Kun-Ju Lin*, **Sung, H. W.***, "A Low-Energy Emulsification Platform Based on a Diet Coke–Mentos Reaction-Derived Bubbly Flow for Formulating Various Emulsions as Drug Carriers", *Biomaterials*, 122264, 2023 (SCI IF 14.0)

18. Kuan-Hung Chen, Tun-Yu Huang, Nhien Nguyen, Yu-Tzu Yu, Yu-Jung Lin, Hsiang-Lin Song, Jui-To Wang, Hsin-Lung Chen, **Sung, H. W.*** "Macrophage-Hitchhiked Orally Administered β-Glucans-Functionalized Nanoparticles as "Precision-Guided Stealth Missiles" for Targeted Pancreatic Cancer Therapy" *Advanced Materials*, 2304735. (2023 June) (SCI IF 29.4)

19. Chih-Wei Chou, Wei-Tso Chia, Cam-Hoa Mac, Cheng-Yu Wu, Chun-Chieh Chen, Hsiang-Lin Song, Yi-Hsuan Lin, Yu-Jung Lin*, and **Sung, H. W.***, "Selective Accumulation of Ionic Nanocrystal H2 Storage System as an In Situ H2/Boric Acid Nanogenerator Fights against Ethanol-Induced Gastric Ulcers" ,*Chemical Engineering Journal*, Volume 463, 142373. (2023 May) (SCI IF 15.1)

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20. Zhang, Y. C., Wang, M. Y., Zhang, C. Y., Fan, Y. F., Wu, J., Li, S. H., Fu,A., Yu,S., Terrance M.Yau, Lu,T.H., **Sung, H. W.***& Li, R. K. (2022 Nov.) , "Epicardial delivery of a conductive membrane synchronizes conduction to reduce atrial fibrillation", *Journal of Controlled Release*, 351, 847-859. (IF 10.8)

21. Siboro, P. Y., Nguyen, V. K. T., Miao, Y. B., Sharma, A. K., Mi, F. L., Chen, H. L., Chen, K.H., Yu, Y.T., Chang,Y.*****& **Sung, H. W.*** (2022 Aug) , "Ultrasound-Activated, Tumor-Specific In Situ Synthesis of a Chemotherapeutic Agent Using ZIF-8 Nanoreactors for Precision Cancer Therapy", *ACS Nano*, 16(8), 12403-12414. (IF 17.1)

22. Mac, C. H., Chan, H. Y., Lin, Y. H., Sharma, A. K., Song, H. L., Chan, Y. S., Lin,K.J., Lin,Y.J., **Sung, H. W.*** (2022 May.) "Engineering a biomimetic bone scaffold that can regulate redox homeostasis and promote osteogenesis to repair large bone defects" *Biomaterials*, 286, 121574. (SCI IF 14.0)

23. Nguyen, N., Lin, Z. H., Barman, S. R., Korupalli, C., Cheng, J. Y., Song, N. X., Chang,Y., Mi,F.-L., Song,H.-L., **Sung, H. W.***., Lin,Y. J*. (2022) "Engineering an Integrated Electroactive Dressing to Accelerate Wound Healing and Monitor Noninvasively Progress of Healing. "*Nano Energy*, 107393. (IF 17.6)

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24. Miao, Y. B., Lin, Y. J., Chen, K. H., Luo, P. K., Chuang, S. H., Yu, Y. T., Tai, H. M., Chen, C. T., Lin, K. J., **Sung, H. W.***, "Engineering Nano- and Microparticles as Oral Delivery Vehicles to Promote Intestinal Lymphatic Drug Transport" *Advanced Materials*, 2104139, 2021. (SCI IF 29.4)

25. Korupalli, C., Li, H., Nguyen, N., Mi, F. L., Chang, Y., Lin, Y. J.*, **Sung, H. W.***, "Conductive Materials for Healing Wounds: Their Incorporation in Electroactive Wound Dressings, Characterization, and Perspectives" *Advanced Healthcare Materials*, 10(6), 2001384, 2021. (SCI 10.0)

26. Miao, Y. B., Chen, K. H., Chen, C. T., Mi, F. L., Lin, Y. J., Chang, Y., Chiang, C.S., Wang, J.T., Lin,K.J., **Sung, H. W.*** ," A noninvasive gut-to-brain oral drug delivery system for Treating Brain Tumors" *Advanced Materials*, 2100701, 2021(July). (SCI IF 29.4)

27. Chen, P.-M., Pan, W.-Y.,Luo, P.-K.,Phung, H.-N., Liu, Y.-M., Chiang, M.-C., Chang, W.-A., Tien, T.-L., Huang, C.-Y., Wu, W.-W., Chia, W.-T.*, **Sung, H.W.***,"Pollen-Mimetic Metal–Organic Frameworks with Tunable Spike-Like Nanostructures That Promote Cell Interactions to Improve Antigen-Specific Humoral Immunity" *ACS Nano*, vol.15, pp.5775-7836, 2021. (IF 17.1)

28. Hsieh,M.H., Wei,H.J., Chen,K.H., Wang,H.C., Yu,C.H., Lu,T.H., Chang,Y.*, **Sung, H.W.***,"A fast and facile platform for fabricating phase-change materials-based drug carriers powered by chemical Marangoni effect" *Biomaterials*, vol.271, pp. 120748, 2021. (SCI IF 14.0)

29. An, Z., Wu, J., Li, S.H., Chen, S., Lu, F.L., Xu, Z.Y., **Sung, H.W.**, Li, R.K.,"Injectable Conductive Hydrogel Can Reduce Pacing Threshold and Enhance Efficacy of Cardiac Pacemaker" *Theranostics*, vol.11(8), pp3948-3960, 2021. (SCI 12.4)

B. Conference Papers

1. Lu, T.-H., Yu, C.-H., Wang M.-Y., Chang Y. , Li R.-K., **Sung, H.-W.*** " Electrically Coupling of Cardiomyocytes Using a MRI-Traceable Conductive Hydrogel for Treating Atrial Fibrillation" 此篇論文榮獲 2022 第 23 屆工學院研究生論文發表競賽壁報展示組第三名

2. Yu, Y.-T.(余祐慈)榮獲中華民國斐陶斐榮譽會員 (2022)

3. Luo, P.-K., Chiang, M.-C., Chang, W.-A., **Sung, H.-W.** "A metal organic framework nanosystem loaded with methotrexate for combinational cancer therapy" 此篇論文榮獲 110 年度科技部大專學生研究創作獎、111 年中國工程師學會學生分會工程論文競賽特優獎

4. Yu, Y.-T., Chen, K.-H., Lin P.-Y., **Sung, H.-W.***, " Phase-Changeable Nanoemulsions for Oral Delivery of Exenatide via Lymphatic Absorption for Glycemic Control in Treating Diabetes Mellitus"此篇論文榮獲 2021 中華民國生醫材料及藥物制放學會年會學生口頭論文競賽特優

5. Yu, Y.-T., Su, H.-R., **Sung, H.-W.***, "A Low-Energy Emulsification Platform Using Diet Coke—Mentos Reaction Derived Bubbly Flows That Can Produce O/W or W/O Droplets as Drug Carriers" 此篇論文榮獲 2021 國立清華大學工學院研究生論文發表競賽壁報展示組佳作

6. Yu, Y.-T., Chen, K.-H., **Sung, H.-W.***, "Effervescence-Based Oral Capsules That Enable Concurrent Delivery of Lipophilic and Hydrophilic Chemotherapeutics to Treat Pancreatic Cancers" 此篇論文榮獲 2021 年生物醫學工程科技研討會-科技部醫工學門成果發表會暨第三屆國際工程與科技研討會最佳壁報論文獎

7. Chen, K.-H., Miao, Y.-B., Shang, C.-Y., Yu, Y.-T., Lin, K.-J., **Sung, H.-W.***, "An Effervescence-Enabled Oral Drug Delivery System That Concurrently Delivers Lipophilic and Hydrophilic Chemotherapeutics to Treat Pancreatic Cancer" 此篇論文榮獲 2020 台灣化學工程學會年會口頭報告競賽第一名

8. Chen, K.-H., Miao, Y.-B., Shang, C.-Y., Yu, Y.-T., Lin, K.-J., **Sung, H.-W.***, "A Bubble Bursting-Mediated Oral Drug Delivery System That Enables Concurrent Delivery of Lipophilic and Hydrophilic Chemotherapeutics for Treating Pancreatic Cancer" 此篇論文榮獲 2020 中華民國生醫材料及藥物制放學會年會口頭報告競賽第一名

9. Chen, K.-H., Miao, Y.-B., Shang, C.-Y., Yu, Y.-T., Lin, K.-J., **Sung, H.-W.***, "A Bubble Bursting-Mediated Oral Drug Delivery System That Enables Concurrent Delivery of Lipophilic and Hydrophilic Chemotherapeutics for Treating Pancreatic Cancer" 此篇論文榮獲 2020 清大工學院研究生論文發表競賽口頭報告第二名和化工系初賽第一名

10. Yu, Y.-T., **Sung, H.-W.***, " Self-emulsified Lipid Oil Drops as a Nanocarrier for Oral Delivery of Hydrophilic and Hydrophobic Anti-Cancer Drugs"此篇論文榮獲 中國工程師學會學生分會 109 年度工程論文競賽化工組優等獎

11. Yu, Y.-T., Chen, K.-H., Lin P.-Y., **Sung, H.-W.***, " Phase-Changeable Nanoemulsions for Oral Delivery of a Therapeutic Peptide Directly Targeting Pancreas via Lymphatic Transport for Glycemic Control in Diabetes"此篇論文榮獲 2020 第 67 屆化工年會學生海報論文競賽佳作

C. Patents

Taiwan

1. **宋信文**, 羅柏凱, 張萬安, "用以增強癌症免疫治療的口服疫苗, ORAL VACCINE FOR ENHANCING CANCER IMMUNOTHERAPY," 申請日期:2024/09/10序號:J2P112080-TW (已核准)

2. **宋信文**, 陳冠宏, 黃敦域, 黃素然阮, 林鈺容, 余祐慈,“口服醫藥組合物、其製備方法及治療癌症之套組, ORAL PHARMACEUTICAL COMPOSITION, METHOD FOR FABRICATING THE SAME AND KIT FOR TREATING CANCER,” 公開號: TW202423396A

3. **宋信文**, 陳柏銘, 潘玟伃, 繆養寶, 羅柏凱,“尖刺狀金屬有機框架、其製備方法以及治療癌症之套組, SPIKY METAL ORGANIC FRAMEWORK, METHOD FOR FABRICATING THEREOF, AND TEST KIT FOR CANCER TREATMENT,” 公開號: TW202200116A

4. **宋信文**, 繆養寶, 陳冠宏, “口服藥物組成物及其用途, ORAL DRUG COMPOSITION AND USES THEREOF,” 2022年中華民國專利發明I783175 (專利權起訖日: 2022/11/11 ~ 2039/09/09).

5. **宋信文**, 林柏諺, 陳冠宏, “可同時口服傳遞疏水性小分子藥物和親水性小分子藥物的醫藥組合物, PHARMACEUTICAL COMPOSITION FOR ORAL DELIVERY OF HYDROPHOBIC SMALL MOLECULE DRUG AND HYDROPHILIC SMALL MOLECULE DRUG CONCURRENTLY,” 2021年中華民國專利發明I739450 (專利權起訖日: 2021/09/11 ~ 2040/05/27)

6. **宋信文**, 繆養寶, 陳冠宏,“口服藥物傳遞系統及其製備方法, ORAL DRUG DELIVERY SYSTEM AND METHOD FOR FABRICATING THEREOF,” 2021年中華民國專利發明I727411(專利權起訖日: 2021/05/11~ 2039/08/28)

United States

7. **Sung, H.-W.**, Chen, K.-H., Huang, T.-Y., Nguyen, N. H. T., Lin, Y.-J., Yu, Y.-T., “Oral Pharmaceutical Composition, Method for Fabricating Thereof, and Kit for Treating Cancer,” (USPTO 18/124,129, filed on 03/21/2023. U.S. Patent No. US20240197911A1, 06/20/2024)

8. **Sung, H.-W.**, Chen, P.-M., Pan, W.-Y., Miao, Y.-B., Luo, P.-K, “Spiky metal organic framework, method for fabricating thereof, and kit for treating cancer,” (USPTO 17/205,732, filed on 03/18/2021. U.S. Patent No. US20210393781A1, 10/17/2023)

9. **Sung, H.-W.**, Miao, Y.-B., Chen, K.-H., “Oral Drug Delivery System and Method for Fabricating Thereof,” (USPTO 18/093,931, filed on 01/06/2023. U.S. Patent No. US20230157956A1, 05/25/2023) (Abandoned)

10. **Sung, H.-W.**, Miao, Y.-B., Chen, K.-H., “Oral Drug Composition and Use Thereof,” (USPTO 16/810,983, filed on 03/06/2020. U.S. Patent No. US11278630B2, 03/22/2022)

D. Other

1. 目前是清華大學化學工程學系『特聘講座教授』以及『終身國家講座教授』。

2. 曾多次榮獲國內外學術獎項包括有:美國醫學與生物工程學會會士、國際生醫材料科學與工程聯合學會會士、亞太材料科學院院士、侯金堆傑出研究獎、東元獎、徐有庠講座教授、國家科學委員會傑出研究獎(3 次)、教育部國家獎座獎(2 次)、教育部學術獎、化工學會賴再德教授獎、李昭仁教授傑出學者獎、Elsevier 2015 Biomaterials 最佳論文獎、以及亞太地區組織工程暨再生醫學(TERMIS-AP)傑出科學家獎等。

3. 曾/目前擔任 Journal of Controlled Release, Tissue Engineering, Advanced Healthcare Materials, Advanced Materials 等期刊編輯委員, Biomaterials 期刊(IF 12.9)副主編。

Publications of De-Hao Tsai (蔡德豪)

A. Journal Papers (* Corresponding author)

2025

1. K-P Chang, Z. X. Law, C-B Du, C-W Pao, T-Y Chen, **D-H Tsai*** (2025). Methane-steam reforming for low-carbon hydrogen production using Ni-Pd bimetallic nanoparticle cluster. *Fuel*, 399, 135683.

2. Y-J Wang, D. Senthil Raja, K. N. Nguyen, **D-H Tsai*** (2025). Tailored functional coatings on metal surface using silane-nanoparticle composite colloid. In press. *Int. J. Adhes. Adhes.*

3. T. Q. N. Le, Z. X. Law, V. Q. G. Vo, T. K. Le, S-H Chen, W-Y Chou, W-C Sun, S-Y Lu, Y-C Hu, **D-H Tsai*** (2025). Aerosol-assisted synthesis of Ag-TiO_2 and Cu-TiO_2 hybrid nanoparticle clusters for Photon-induced antibacterial applications. *Adv. Powder Technol.* 36, 11, 105083.

4. Z. X. Law, N. Watcharasawat,V. Pavarajarn*, **D-H Tsai*** (2025). CO_2 Capture-Mineralization for Calcium-Looping Integrated with Methane Dry Reforming. *Langmuir*, 41, 24398-24407.

5. D. Senthil Raja, **D-H Tsai*** (2025). Aerosol-assisted synthesis of hybrid/composite porous nanostructures for CO_2 utilization. *Chem. Commun.*, 2025, 61, 16717- 16737.

6. D. Senthil Raja, C-H Lee, P-Y Lai, Y-H Wang, **D-H Tsai*** (2025). Rapid detection of impurity particles in etching solutions using electrospray-differential mobility analysis. *Talanta*, 294, 128254.

7. C-W Wu+, Z. X. Law+, Y.-C. Zeng, K-H Lin, **D-H Tsai*** (2025). Chemical looping of catalytic methane decomposition with reverse Boudouard reaction using dual functional Ni-FeO_x nanoparticle cluster for CO_2-negative H_2 production. *Chemical Engineering Journal*, 511, 162067.

8. P-Y Lai, D. Senthil Raja, J-W Chang, J-H Huang, **De-Hao Tsai*** (2025). Real-time Quantification of Microfluidic Hydrogel Crosslinking via Gas-phase Electrophoresis. *J. Colloid Interface Sci.*, 684, 201.

9. D-Z Liao, Y-T Lee, L-Y Chueh, Y-T Tsai, C-F Huang, **D-H Tsai***, Yung-Tin Pan* (2025). Transition metal promoted palladium-catalyzed oxidative carbonylation of phenol to diphenyl carbonate. *J. Taiwan Inst. Chem. Eng.*, 168, 105942.

10. Y-T Lee, Y-T Tsai, C-F Huang, Y-T Pan, **D-H Tsai*** (2025). Aerosol-assisted Synthesis of Cu/AC Hybrid Catalysts for Dimethyl Carbonates Synthesis. *J. Taiwan Inst. Chem. Eng. 168, 105899.*

2024

11. Zhi Xuan Law, Kun-Han Lin*, **De-Hao Tsai*** (2024). Efficient Integration of Calcium Looping with Methane Bi-Reforming using Pd-Enhanced Ni-CaO Dual Functional Nanomaterials. *Chemical Engineering Journal*, 2024, Volume 500, 157302.

12. Yi Ching Chuah, Wen-Yueh Yu, Zhi Xuan Law, **De-Hao Tsai*** (2024). Combined (CO_2+CO) Hydrogenation with Methanolysis Using Aerosol Metal-Organic Framework-Derived Hybrid Catalysts. *Advanced Powder Technology*, 35, 12, 104696.

13. Yu-Chun Zeng, Zhi Xuan Law, **De-Hao Tsai*** (2024). Combined Methane Cracking for H_2 Production with CO_2 Utilization for Catalyst Regeneration Using Dual Functional Nanostructured Particles. *ACS Sustainable Chem. Eng.* 12, 32, 12200–12215. 獲選為期刊封面

14. D. Senthil Raja, **D-H Tsai*** (2024). Recent Advances in Continuous Flow Synthesis of Metal-Organic Frameworks and Their Composites. *Chem. Commun.*, 60, 8497-8515. 獲選為期刊封面

15. Y. C. Chuah, R. Y. Huang, **D-H Tsai*** (2024). Gas-Phase Continuous Synthesis of Metal-Organic Framework-Derived Hybrid Catalysts for Combined CO_2 and CO Hydrogenation to Methanol. *Advanced Powder Technology*. Volume 35, Issue 4, 104407.

16. Y.-H. Sung, D. Senthil Raja, J.-H. Huang, **D-H Tsai*** (2024). Microfluidic-Aerosol Hyphenated Synthesis of Metal-Organic Framework-derived Hybrid Catalysts for CO_2 Utilization. *Small Methods*. 8(5) 2301435. 獲選為期刊 **Frontier piece**

17. Y.-H. Wang, D. Senthil Raja, **D-H Tsai*** (2024). Quantifying Thiolated Chemical Additives for Copper Electroplating Process. *Analytica Chimica Acta*, Volume 1307, 8, 342608.

18. C. B. Du, J. Y. Tu, Z. X. Law, **D-H Tsai*** (2024). Aerosol metal-organic framework-derived Ni–Zn–Al hybrid catalyst for efficient methane Bi-reforming. *International Journal of Hydrogen Energy*. Volume 57, Pages 1152-1163.

19. P. C. Yang, Y. T. Lee, Y. T. Tsai, C. F. Huang, Y.-T. Pan*, **D-H Tsai*** (2024). Oxidative carbonylation of propylene glycol to propylene carbonate by copper-based catalysts. *Journal of the Taiwan Institute of Chemical Engineers*, Volume 158, 105005.

20. Quynh, N. L. T., Thi Quynh, T. L., Anh Tien, N., Quoc Thiet, N., **D-H Tsai**, & T. K. Le*. (2024). Simple synthesis of floating Fe_2O_3/Luffa catalysts for the photo-Fenton degradation of methyl orange at near neutral pH. *Condensed Matter and Interphases*, 26(1), 68-77.

2023

21. Z. X. Law, **D.H. Tsai*** (2023). Exploring the Challenges of Calcium Looping Integrated with Methane Bireforming for Enhanced Carbon Capture and Utilization. *Langmuir*, 39, 41, 14782–14790.

22. J. Y. Tu, C. H. Shen, **D-H Tsai***, C. W. Kung* (2023). Carbonized Nickel-Incorporated Metal–Organic Frameworks for Methane Reforming: Post-Synthetic Modification vs. Impregnation. *ACS Applied Nano Materials*, 6, 12, 10269–10279.

23. R. Y. Huang, T. T. Nguyen Hoang, Y. A. Hsueh, **D-H Tsai*** (2023). Combined Hydrogenation of CO2 and CO to Methanol using Aerosol-Assisted Metal-Organic Framework-Derived Hybrid Catalysts. *Fuel*, 349, 128647.

24. Yi-Hsuan Sung, Ching-Ling Wu, Jen-Huang Huang*, **De-Hao Tsai*** (2023). Real-time quantifying microdroplet synthesis of metal-organic framework colloids using gas-phase electrophoresis. *Analytical Chemistry*, 95, 9, 4513–4520. **獲選為期刊封面**

25. Zhi Xuan Law, **De-Hao Tsai*** (2023). Efficient Calcium Looping-integrated Methane Dry Reforming by Dual Functional Aerosol Ca-Ni-Ce Nanoparticle Cluster. *ACS Sustainable Chemistry & Engineering*, 11, 6, 2574–2585. **獲選為期刊封面**

26. 杜傳彬、**蔡德豪***（2023 年10 月）。運用甲烷重組反應概念進行二氧化碳再利用。化工會刊，70, 5, 66-74。

27. 劉紫璇、**蔡德豪***（2023 年04 月）。運用氣相蒸發誘導自組裝技術生成功能性奈米粒子團簇作爲非匀相界面催化之應用。化工會刊，70, 2, 56-72。

2022

28. S. T. Chung, Y.-H. Tu, H.-Y. Huang, C.-C. Hu*, **D-H Tsai*** (2022). Aerosol synthesis of vanadium oxide-carbon hybrid nanoparticle cluster for high performance lithium extraction via electrochemical deionization. *ACS Sustainable Chemistry & Engineering*, 10(48), 15777-15790. **獲選為期刊封面**

29. T. T. T. Pham, V. D. Nguyen, N. L. Nguyen, T. H. Pham, D. K. Nguyen Anh, T. Q. N. Le, **D-H Tsai**, T. K. Le* (2022). Immobilization of Fe_2O_3 on perlite for photo-Fenton degradation of methylene blue. *Toxicological & Environmental Chemistry*, 104(2), 232-245.

30. Z. X. Law, Y.-T. Pan*, **D-H Tsai*** (2022). Calcium looping of CO_2 Capture coupled to Syngas Production using Ni-CaO-based Dual Functional Material. *Fuel*, 328.

31. T. T. Nguyen Hoang, **D-H Tsai*** (2022). Low-temperature methanol synthesis via (CO_2 + CO) combined hydrogenation using Cu-ZnO/Al_2O_3 hybrid nanoparticle cluster. *Applied Catalysis A, General*, 645, 118844. 1-10.

32. C. Y. Chang, Y. F. Chen, Y. T. Tsai, C. F. Huang, Y.-T. Pan*, **D-H Tsai*** (2022). Sustainable Synthesis of Epoxides from Halohydrin Cyclization by Composite Solid Base Catalysts. *Ind. Eng. Chem. Res.*, 61, 28, 9970–9980. **獲選為期刊封面**

33. W. Z. Hung, Z. X. Law, **D-H Tsai**, B. H. Chen, C. H. Chen, H. Y. Hsu, Y.-T. Pan* (2022). Selective CO_2 Deoxygenation to CO in Chemically Looped Reverse Water Gas Shift Using Iron Based Oxygen Carrier. *MRS Energy & Sustainability*, 9, 342-349.

34. Z. X. Law, **D-H Tsai*** (2022, Jul). Design of Aerosol Nanoparticles for Interfacial Catalysis. *Langmuir*, 38(30), 9037-9042.

35. C. B. Du, Z. X. Law, R. Y. Huang, **D-H Tsai*** (2022, Jun). Aerosol-phase Synthesis of Bimetallic NiCu oxide-decorated CeO_2 Nanoparticle Cluster for Catalytic Methane Combustion. *Advanced Powder Technology*, 33, 8, 103649.

36. Y. A. Hsueh, Y. C. Chuah, C.-H. Lin, **D-H Tsai*** (2022, May). Aerosol-Assisted Synthesis of Metal-Organic Framework-Derived Hybrid Nanomaterials for Reverse Water-gas Shift Reaction. *ACS Applied Nano Materials*, 5, 7, 8883-8893. **獲選為期刊封面**

37. P. F. Hsieh, Z. X. Law, C.-H. Lin, **D-H Tsai*** (2022). Understanding Solvothermal Growth of Metal–Organic Framework Colloids for CO2 Capture Applications. *Langmuir*, 38, 14, 4415-4424. **獲選為期刊封面**

38. C. M. Yang, M. V. Huynh, T. Y. Liang, T. K. Le, T. K. X. Huynh, **D-H Tsai*** (2022, Jan). Metal-Organic Framework-derived Mg-Zn Hybrid Nanocatalyst for Biodiesel Production. *Advanced Powder Technology*, Volume 33, Issue 1, 103365.

39. 涂家耘、**蔡德豪***（2022年06月）。工業材料雜誌 6月號/2022 第426期。工業材料雜誌，6月號/2022 第426期 p45-52。

2021

40. Y. S. Chen, C. M. Yang, T. T. Nguyen Hoang, **D-H Tsai*** (2021). "Porous magnesia-alumina composite nanoparticle for biodiesel production". *Fuel*. 285, 119203. (2019 IF: 5.6. Ranking 18/143)

41. T. T. Nguyen Hoang, Y. S. Lin, T. N. H. Nguyen, T. K. Le, T. K. X. Huynh, **D-H Tsai*** (2021). "Cu-ZnO@Al_2O_3 Hybrid Nanoparticle with Enhanced Activity for Catalytic CO2 Conversion to Methanol". *Advanced Powder Technology*, 32, 5, 1785-1792.

42. Y. S. Lin, J. Y. Tu, **D-H Tsai*** (2021). "Steam-promoted Methane-CO_2 Reforming by NiPdCeO_x@SiO_2 Nanoparticle Clusters for Syngas Production". *International Journal of Hydrogen Energy*, 46, 49, 25103-25113.

43. T. K. T. Vu, T. K. Le, M. S. Hoang, H. A. Dang, D. K. A. Nguyen, T. T. Nguyen Hoang, **D-H Tsai**, H. K. H. Nguyen; T. K. X. Huynh* (2021). "Effects of Au and F co-modification by thermal shock method on the photocatalytic activity of ZnO". *Materials Chemistry and Physics*. 260:124092.

44. M. T. Chiang, Y. H. Tu, H. L. Chiang, C. C. Hu*, **D-H Tsai*** (2021). "Raspberry-structured Silver-Carbon Hybrid Nanoparticle Clusters for High-Performance Capacitive Deionization". *Desalination*, 520, 115343.

45. S. T. Chung, M. T. Chiang, Y. X. Chin, C. C. Hu*, **D-H Tsai*** (2021). Controlled Aerosol-based Synthesis of Vanadium Oxides Nanoparticle for Supercapacitor Applications". *Journal of the Taiwan Institute of Chemical Engineers*, 128, 220-226.

B. Conference Presentations

2025

1. (Keynote) 2025台灣化工學會69週年慶祝大會邀請演講。題目：Aerosol Technology: Material Synthesis to Chemical Reaction Engineering at Material Interface。2025年11月30日於國立成功大學。

2. (Invited) 2025 ACCIS亞洲膠體與界面學會年會。發表論文題目: Real-time Quantification of Microfluidic Synthesis of Nanostructured Materials via Gas-phase Electrophoresis。2025年8月21日於韓國首爾延世大學會議中心。

3. (Invited) PACIFICHEM 2025環太平洋2025化學會議。發表論文題目1: Aerosol Technology integrated to Interfacial Catalysis for CO_2 Capture and Utilization。2025年12月17日。地點：美國夏威夷希爾頓國際會議中心

4. (Invited) PACIFICHEM 2025環太平洋2025化學會議。發表論文題目2: Microfluidic-aerosol hyphenated synthesis of biofunctional nanoparticles。2025年12月19日。地點：美國夏威夷喜來登國際會議中心

2024

5. (Invited) 2024亞洲粉粒體技術會議(APT2024)。題目：Microfluidic-Aerosol Hyphenated Synthesis of Metal-Organic Framework-derived Hybrid Catalysts for CO2 Utilization"。2024年12月2日於澳大利亞雪梨市Amora Hotel Jamison會議中心。

6. (Keynote) 2024台灣化工學會69週年慶祝大會暨新世紀化工國際研討會邀請演講。題目：Microfluidic-Aerosol Hyphenated Synthesis and Characterization of Metal-Organic Framework Colloids and Derived Materials for Energy and Environmental Applications。2024年11月9日於中原大學。

7. (Invited) 12th Vietnam National Conference on Catalysis and Adsorption and the 4th Vietnam – Taiwan Bilateral Symposium第四屆台越觸媒雙邊會議。題目：Carbon Reduction-based Hydrogen Generation and Utilization: A Combination of Chemical Reforming Reactions。2024年5月24日於越南頭頓市。

8. (Invited) 國立清華大學化工系-越南胡志明市理科大學化學院聯合雙邊會議。題目：Combined Methane Cracking for H_2 Production with CO_2 Utilization for Catalyst Regeneration using Dual Functional Nanostructured Particle。2024年11月18日於越南胡志明市理科大學。

2023

9. (Invited) 2023 ACCIS亞洲膠體與界面學會年會。發表論文題目: Aerosol Nanoparticles in Interfacial Catalysis: Applications in CO_2 Conversions。2023年12月14日於香港中文大學。

10. (Invited) 2023台灣國際催化研討會。發表論文題目: Aerosol Synthesis of Nanostructured Catalysts for CO_2 Capture & Utilization。2023年6月29日於成大化工系。

11. 2023美國化學學會秋季年會。發表論文題目: Aerosol Ca-Ni-Ce nanoparticle cluster for efficient CO_2 utilization via calcium looping-integrated methane dry reforming。August 13, 2023於美國加州舊金山國際會議中心。

12. 2023日本化工學會年會。發表論文題目: Design of Aerosol Nanoparticles for Interfacial Catalysis in green energy and environmental applications。March 16, 2023於日本東京農工大學。

2022

13. (Invited) 2022台灣化工學會69週年慶祝大會邀請演講。題目：Aerosol synthesis of nanostructured catalyst material for CO2 capture & utilization。2022年12月3日於淡江大學。

14. (Invited) 2022 CHISA. Title: Design of high-performance catalyst materials using metal-organic framework-derived hybrid nanostructures. 布拉格科技大學，Prague, Czech Republic, August 22, 2022.

15. (Invited) 國立清華大學化工系-越南胡志明市理科大學化學院聯合雙邊會議。題目：Nanostructured catalyst material for CO_2 capture & utilization。2022年11月22日於越南胡志明市理科大學。

16. (Invited) 2022年度能源與環境領域技術顧問會議 (TAC-EET)。題目：CO2再利用：從化學重組反應的思維與方向。December 7, 2022。綠能所，工業技術研究院。

17. (Invited) 2022 CCUS專題演講。題目：以氣溶膠合成技術製備奈米觸媒材料用於碳捕捉再利用。September 29, 2022。材化所，工業技術研究院。

2021

18. (Invited) The 8th Asian Particle Technology Symposium (APT2021). Title: Aerosol-based ion-mobility coupling techniques for metal-organic frameworks. October 12, 2021.(hybrid mode in Osaka Convention Center, Japan)

19. (Invited) 4th International Symposium on Green & Sustainable Technology 2021 (ISGST 2021). Title: Metal-organic framework-derived hybrid nanostructures as high-performance catalysts. October 6, 2021. (online presentation)

20. Pacifichem 2021 Congress. Title: Development of biofunctional nanomaterial colloid using gas-phase electrophoresis method. December 18, 2021. (online presentation)

21. 2021台灣化工學會68週年慶祝大會邀請演講。題目：Aerosol-based ion-mobility coupling techniques for metal-organic frameworks。2022年1月7日於高雄展覽館。

C. Patents

項次	專利名稱	專利國別	專利證號	專利起訖日
1	固體銅碳觸媒的製備方法	中華民國	I885616	2025/6/1 - 2043/11/29
2	製備縮水甘油之方法	中華民國	I806375	2023/06/21 - 2042/01/20
3	COMPOSITE SOLID BASE CATALYST, MANUFACTURING METHOD THEREOF AND MANUFACTURING METHOD OF GLYCIDOL	美國	11,998,894	2024/06/04 – 2042/06/14
4	丙二醇甲醚的合成方法	中華民國	I755128	2022/02/11- 2040/10/28
5	複合式鎳-氧化鈰-氧化鋁奈米粒子簇觸媒的製備方法、其製備之複合式鎳-氧化鈰-氧化鋁奈米粒子簇觸媒及聚醚胺的合成方法。	中華民國	I768264	2022/06/21- 2039/11/24

項次	專利名稱	專利國別	專利證號	專利起訖日
6	METHOD FOR FABRICATING NICKEL-CERIUM DIOXIDE-ALUMINUM OXIDE HYBRID NANOPARTICLE CLUSTER CATALYST NICKEL-CERIUM DIOXIDE-ALUMINUM OXIDE HYBRID NANOPARTICLE CLUSTER CATALYST AND METHOD FOR SYNTHESIZING POLYETHERAMINE	美國	11,944,960	2024/04/02-2043/02/02
7	非勻相鎳系氧化鋁載體觸媒的製備方法、其製備之非勻相鎳系氧化鋁載體觸媒及合成聚醚胺的方法	中華民國	I677374	2019/11/21-2038/11/05
8	METHOD FOR FABRICATING HETEROGENEOUS NICKEL-BASED CATALYST ON ALUMINUM OXIDE SUPPORT, HETEROGENEOUS NICKEL-BASED CATALYST ON ALUMINUM OXIDE SUPPORT AND METHOD FOR SYNTHESIZING POLYETHERAMINE。	美國	11,141,715	2021/10/12-2039/06/05
9	QUANTITATIVE METHOD OF NUMBER SURFACE AREA OF GRAPHENE MATERIAL	美國	10,670,505	2020/06/02-2038/8/3
10	石墨烯材料的數量表面積的定量方法	中華民國	I666441	2019/07/21-2037/12/06
11	還原態觸媒的製備方法、其製備之還原態觸媒、其用途以及合成氣的製造方法	中華民國	I655967	2019/04/11-2037/11/21

D. Other

1. 中華民國界面科學學會，114 年度界面技術獎

2. 科技部107年度吳大猷先生紀念獎

3. 日本粉粒體學會2018 Advanced Powder Technology Outstanding International Contribution Award。2019年10月於日本大阪國際會議中心獲獎。

4. 台灣化工學會107年度化工傑作獎

5. 科技部優秀年輕學者計畫。2018-2023。

6. 經理編輯，台灣化工會誌。2018-2019。

7. 獲選國立成功大學優秀青年校友(2021年11月)

8. 國立清華大學工學院傑出教學獎 (2022 年)與優良教師（2022 年）

9. 九度獲選期刊封面故事：”Combined Methane Cracking for H_2 Production with CO_2 Utilization for Catalyst Regeneration Using Dual Functional Nanostructured Particles” (*ACS Sustainable Chem. Eng.* 2024)、” Recent Advances in Continuous Flow Synthesis of Metal-Organic Frameworks and Their Composites” (*Chem. Commun.* 2024)、” Microfluidic-Aerosol Hyphenated Synthesis of Metal-Organic Framework-derived Hybrid Catalysts for CO_2 Utilization” (*Small Methods 2024*)、”Real-time quantifying microdroplet synthesis of metal-organic framework colloids using gas-phase electrophoresis”(*Analytical Chemistry* 2023)、” Efficient Calcium Looping-integrated Methane Dry Reforming by Dual Functional Aerosol Ca-Ni-Ce Nanoparticle Cluster” (*ACS Sustainable Chemistry & Engineering* 2023) “Understanding Solvothermal Growth of Metal–Organic Framework Colloids for CO_2 Capture Applications”(*Langmu*ir，2022 年 4 月）、“Aerosol-Assisted Synthesis of Metal–Organic Framework-Derived Hybrid Nanomaterials for Reverse Water–Gas Shift Reaction”(*ACS Appl. Nano Mat.* 2022年7月）、“Sustainable Synthesis of Epoxides from Halohydrin Cyclization by Composite Solid-Based Catalysts”（*Ind. Eng. Chem. Res.*，2022年7月）、“Aerosol synthesis of vanadium oxide-carbon hybrid nanoparticle cluster for high-performance lithium extraction via electrochemical deionization”（*ACS Sustainable Chemistry & Engineering*，2022年12月）

F. 學術服務工作：

1. 期刊執行編輯/編輯，*Advanced Powder Technology* (Elsevier; IF 4.2)。2018至今。

2. 期刊編輯， *Journal of the Taiwan Institute of Chemical Engineers* (Elsevier; IF 6.3)。2024至今。

3. 總編輯，台灣化工會刊。2025至今

4. 經理編輯，台灣化工會刊。2018-2019。

5. 理事，Asian Society for Colloid and Surface Science (ASCASS)。2019至今

6. 理事，台灣化工學會。2022 年12月至今

7. 理事長/常務理事，中華民國界面科學學會。2020年至今

Publications of Hsing-Yu Tuan (段興宇)

A. 期刊論文

2025

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Publications of Jane Wang (王潔)

A. Journal Papers (* Corresponding author)

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1. Huang, H.-C., Chen, Y.-J., Lin, M.-W., Huang, C.-I, Hsiung, C.-Y., Yang, S., Ke, Y.-Y., Yen, Y.-T., Hsieh, H.-T., Lu, Y.-F., Sung, Y.-C., Hsu, F.-F., Wu, A. Y.-T., Lai, C. P.-K., **Wang, J.**, Chou, M-Y., Li, C.-P., Lin, S.-Y., Chen, Y.," Stroma-targeted gene delivery for efficient immunogene therapy against pancreatic cancer," *Molecular Therapy*, 2025, 34, 232-248

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11. Chang, P.-Y., **Wang, J**., Li, S.-Y., Suen, S.-Y.*, "Biodegradable Polymeric Membranes for Organic Solvent/Water Pervaporation Applications", *Membranes*, 2021, 11, 970.

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B. Patents

1. **王潔**、周更生、徐松年"生物可分解的聚酯型彈性體之製備方法", 中華民國發明專利**I 568768.** (專利有效期間: 2017/02~2035/12)

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3. 鄭逸琳、陳怡文、謝明佑、**王潔**、陳定閒、許家寧“光固化裝置使用之可調波長曝光模組”, 中華民國新型專利**M 565120.** (專利有效期間: 2018/08~ 2028/05)

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5. **王潔**、謝明佑、鄭逸琳、陳怡文“可積層製造的生物可降解光聚合高分子複合材料及其應用”, 中華人民共和國發明專利**4686097.** (專利有效期間: 2021/09~2037/08)

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C. Other

Awards:

1. 109學年度國立清華大學工學院傑出導師獎, 2021/08-2022/06

Publications of Tzu-Chien Wei (衛子健)

A. Journal Papers

2025

1. Duc-Anh Le, **Tzu-Chien Wei** . In-depth investigation of methylamine gas post-treatment for MAPbI3 films and its potential for upscaling perovskite solar cells. EES Solar.2025

2. Zi-Fan He, Chi-Yu Lai, Hung-Yi Huang, Yu-Hsiang Yang, Duc-Anh Le, Yi-Heng Tu, **Tzu-Chien Wei**, Chi-Chang Hu . Empowering remote communities: A portable, self-powered integrated desalination system. Desalination.2025

3. Abhishek Kumar, Zeeshan Alam Ansari, Chintam Hanmandlu, Soumallya Banerjee, Yu-Te Chen, Po-Yu Yang, Ahmed Fouad Musa, Yun-Wen You, ChunWei Pao, **Tzu-Chien Wei**, Jing-Jong Shyue, Yu-Jung Lu, Chih-Wei Chu . Cementing the grain boundary defects in the strain relaxed mixed Sn-Pb perovskite solar cells. Chemical Engineering Journal.2025

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9. Faraghally A. Faraghally, Yu-Hsuan Chen, Tsung-Zu Lee, Yan-Da Chen, **Tzu-Chien Wei***, Chen-Yu Yeh, "Rational molecular engineering of porphyrins for enhanced performance in dye-sensitized solar cells", *Sustainable Energy & Fuels*, 2025.

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11. Ahmed Fouad Musa, Mohamed M. Elsenety, Faraghally A. Faraghally, Abhishek Kumar, Chih Wei Chu, **Tzu-Chien Wei***, "Chemical modulation of α-$FAPbI_3$ perovskite solar cells: The dual substitution role of CsSCN for enhanced stability and efficiency", *Materials Today Energy*, 50, 101865, 2025.

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12. Faraghally A. Faraghally, Ahmed Fouad Musa, Ching-Chin Chen, Yu-Hsuan Chen, Yan-Da Chen, Chen-Yu Yeh, **Tzu-Chien Wei***, "Double Anthracene-Based Sensitizers for High-Efficiency Dye-Sensitized Solar Cells under Both Sunlight and Indoor Light", *Small Structure*, 5, 2400236, 2024.

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C. Conference Presentations

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E. Other

1. Associate Editor of *Quantitative InfraRed Thermography Journal*

2. Associate Editor of *Frontiers in Chemical Engineering*

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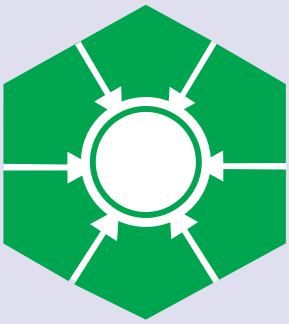

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