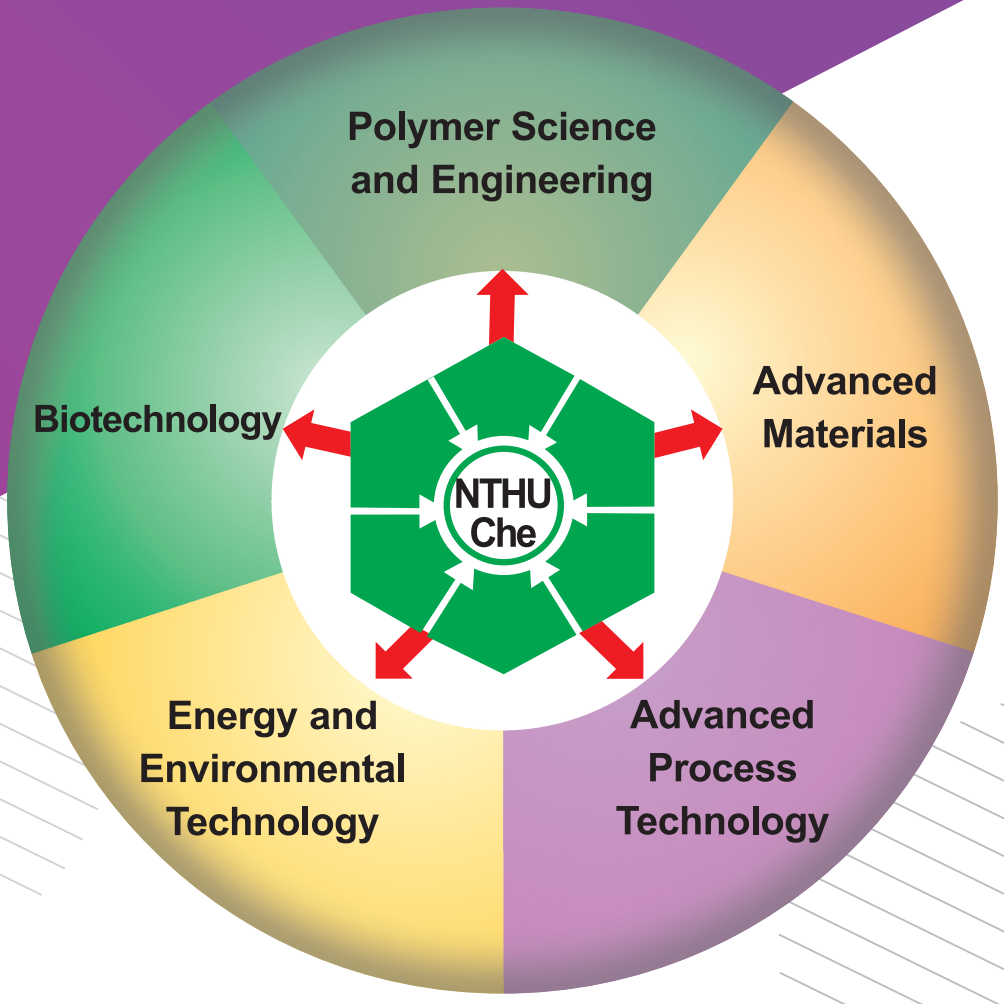
National Tsing Hua University

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 (2018～2022)

Publication List of Faculty Members

April, 2023

Faculty Members

Publications of Hsin-Lung Chen (陳信龍)

A. Journal Papers (* Corresponding author)

2022

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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 .

2021

10. 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.

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

12. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

2020

20. Hsu, N.-W.; Nouri, B.; Chen, L.-T.; **Chen, H.-L.*** Hexagonal Close-Packed Sphere Phase of Conformationally Symmetric Block Copolymer. *Macromolecules*, 2020, 52, 9665.

21. Mansel, B.W.*; Ryan, T.M.; **Chen, H.-L**; Williams, M.A.K. Polysaccharide conformations measured by solution state x-ray scattering. *Chemical Physics Letters*, 2020, 739, 136951.

22. Mansel, B.W.; **Chen, H.-L***; Structure of DNA-PAMAM Dendrimer Complexes Studied Using Small-angle Scattering Techniques. *Current Medicinal Chemistry*, 2020, 28, 7529.

23. 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*, 2020, 17, 397.

24. Lin, Y.-J.; Chen, C.-C.; Nguyen, D.; Su, H.-R.; Lin, J.-J.; **Chen, H.-L**.; Hu, Y.-J.; Lai, P.-L.; Sung, H.-W.* Biomimetic Engineering of a Scavenger-Free Nitric Oxide-Generating/Delivering System to Enhance Radiation Therapy. *Small*, 2020, 16, 2000655.

25. Nhien, P.Q.; Cuc, T.T.K.; Khang, T.M.; Wu, C.H.; Hue, B.T.B.; Wu, J.I.; Mansel, B.W.; **Chen, H.-L**.; Lin, C.-H.* Highly Efficient Förster Resonance Energy Transfer Modulations of Dual-AIEgens between a Tetraphenylethylene Donor and a Merocyanine Acceptor in Photo-Switchable [2]Rotaxanes and Reversible Photo-Patterning Applications. *ACS Applied Materials & Interfaces*, 2020, 12, 47921.

2019

26. Mansel, B.W.; Ryan, T.M.; **Chen, H.-L.**; Williams, M.A.K. Polysaccharide conformations measured by solution state x-ray scattering. *Chemical Physics Letters*, 2019, 792, 136951.

27. Mansel, B.W.; Chen, C.-Y.; Lin, J.-M.; Huang, Y.-S.; Lin, Y.-C.; **Chen, H.-L.*** Hierarchical Structure and Dynamics of a Polymer/Nanoparticle Hybrid Displaying Attractive Polymer–Particle Interaction. *Macromolecules*, 2019, 52, 8741.

28. Chen, M.-H.; Lai, C.-C.; **Chen, H.-L.**; Lin, C.-H.; Hsiao, H.-T.; Liu, L.-C.; Chen, C.-M. Preparation of long-chain branched polyethylene terephthalates (PETs), and crystallization behaviors, thermal characteristics, and hydrolysis resistance of their biaxially stretching films. *Journal of Physics and Chemistry of Solids*, 2019, 129, 354.

29. Chen, L.-T.; Chen, C.-Y.; **Chen, H.-L.*** FCC or HCP: The stable close-packed lattice of crystallographically equivalent spherical micelles in block copolymer/homopolymer blend. *Polymer*, 2019, 169, 131.

30. Lin, P.-Y.; Chen, K.-H.; Miao, Y.-B.; **Chen, H.-L.**; Lin, K.-J.; Chen, C.-T.; Yeh, C.-N.; Chang, Y.; Sung, H.-W. Phase-Changeable Nanoemulsions for Oral Delivery of a Therapeutic Peptide: Toward Targeting the Pancreas for Antidiabetic Treatments Using Lymphatic Transport. *Advanced Functional Materials*, 2019, 29, 1809015

31. Mansel, B.W.; Irani, A.H.; Ryan,T.M.; McGillivray, D.J.; **Chen, H.-L**.; Williams, M.A.K. Resolving solution conformations of the model semi-flexible polyelectrolyte homogalacturonan using molecular dynamics simulations and small-angle x-ray scattering. *The European Physical Journal E*, 2019, 42, 19.

32. Lai, C.-C.; Chen, S.-Y.; Chen, M.-H.; **Chen, H.-L**.; Hsiao, H.-T.; Liu, L.-C.; Chen, C.-M. Preparation and characterization of heterocyclic polyamide 6 (PA 6) with high transparencies and low hygroscopicities. *Journal of Molecular Structure*, 2019, 1175, 836.

33. Young, C.-M.; Chang, Y.-F.; Chen, Y.-H.; Chen, C.-Y.; **Chen, H.-L.*** Ribbon Phase of Dendrimer−Surfactant Complexes. *Macromolecules*, 2019, 52, 9177.

2018

34. Lai, C.-C.; Yu, C.-T.; Chen, M.-H.; **Chen, H.-L.**; Wang, F.-M.; Lin, C.-H.; Liu, L.-C.; Chen, C.-M. Design of long-chain branched copolyesters and manufacture as well as physical properties of their extrusion films. *React. Funct. Polym.*, 2018, 122, 98.

35. Jeng, H.-Y.; Yang, T.-C.; Yang, L.; Grote, J. G.; **Chen, H.-L.**; Hung, Y.-C. Non-volatile resistive memory devices based on solution-processed natural DNA biomaterial. *Org. Electron*., 2018, 54, 216.

36. Zhang, Y.; Mansel, B. W.; Naffa, R.; Cheong, S.; Yao, Y.; Holmes, G.; **Chen, H.-L.**; Prabakar, S. Revealing Molecular Level Indicators of Collagen Stability: Minimizing Chrome Usage in Leather Processing. *ACS Sustainable Chemistry & Engineering*, 2018, 6, 7096.

37. Jeng, K. S.; Chu, C. W.; Liu, C. L.; Jean, W. M.; **Chen, H. L.***; Chen, J. T.* Orientation Preferences of Interchain Stackings for Poly(3‐hexylthiophene) Nanowires Prepared Using Template-Based Wetting Methods. *Macromol. Chem. Phys.*, 2018, 219, 1800078.

38. Lin, C.-H.; Higuchi, T.; **Chen, H.-L.***; Tsai, J.-C.; Jinnai, H.*; Hashimoto, T.* Stabilizing the Ordered Bicontinuous Double Diamond Structure of Diblock Copolymer by Configurational Regularity. *Macromolecules*, 2018, 51, 4049.

39. Chuang, E.-Y.; Lin, K.-J.; Huang, T.-Y.; **Chen, H.-L.**; Miao, Y.-B.; Lin, P.-Y.; Chen, C.-T.; Juang, J.-H.; Sung, H.-W. An Intestinal "Transformers"-Like Nanocarrier System for Enhancing the Oral Bioavailability of Poorly Water-Soluble Drugs. *ACS Nano.*, 2018, 12, 6389.

40. Liu, C.-L.; **Chen, H.-L.*** Crystal Orientation of Poly(ethylene oxide) Confined Within the Nanorod Templated by Anodic Aluminum Oxide Nanochannels. *Soft Matter*, 2018, 14, 5461.

41. Chen, M.-H.; Lai, C.-C.; **Chen, H.-L.***.; Lin, Y.-H.; Huang, K.-Y.; Lin, C.-H.; Hsiao, H.-T.; Liu, L.-C.; Chen, C.-M. Preparation of photosensitive polyimides (PSPIs) and their feasible evaluation for lithographic insulation patterns (LIPs) of integrated circuits (ICs) without negative photoresists. *Materials Science in Semiconductor Processing*, 2018, 88, 132.

42. Zhu, B.*; Zhang, J.; Lin, C.-H.; **Chen, H.-L.***.; Wang, J. Nonisothermal Crystallization Kinetics of Ethylene Vinyl Alcohol Copolymer with Poly (oxypropylene) diamine Intercalated Montmorrilonite. *J. Macromol. Sci. Part B. Physics*, 2018, 57, 333.

43. Huang, Y.-C.; Su, C.-J.; Korolev, N.; Berezhnoy, N.V.; Wang, S.; Soman, A.; Chen, C.-Y.; **Chen, H.-L**.; Jeng, U-S.; Nordenskiöld, L. The effect of linker DNA on the structure and interaction of nucleosome core particles. *Soft Matter*, 2018, 14. 9096.

44. Chu, C.-Y.*; Pei, R.-Y.; **Chen, H.-L.*** Order-Order Transition from Ordered Bicontinuous Double Diamond to Hexagonally Packed Cylinders in Stereoregular Diblock Copolymer/Homopolymer Blends. *Macromolecules*, 2018, 51, 8493.

Publications of Show-An Chen (陳壽安)

A. Journal Papers (* Corresponding author)

2022

1. 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, under revision, Nov. 15, 2022.

2. 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.

3. 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

4. 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*.

2020

5. Pavel V. Komarov,* Pavel O. Baburkin, Viktor A. Ivanov, Yi-Lun Li, **Show-An Chen**, and Alexei R. Khokhlov, "Mesoscale Simulations on Morphology Design in Conjugated Polymers and Inorganic Nanoparticles Composite for Bulk Heterojunction Solar Cells", *Solar Rapid Research Letter, 2020, 2000352*

2019

6. Phu Si Ngo, Miao-Ken Hung, Kuen-Wei Tsai, Sunil Sharma, and **Show-An Chen***, Highly Efficient Solution-Processed TADF Sky-Blue and Hybrid White Organic Light-Emitting Diodes Using Novel Bipolar Host Materials, *ACS Appl. Mater. Interfaces, 11, 49, 45939-45948 (2019)*

7. Miao-Ken Hung, Kuen-Wei Tsai, Sunil Sharma, Jun-Yi Wu, and **Show-An Chen***, Optoelectronic Properties of High Triplet σ–π Conjugated Poly[(biphenyl Group-IVA-atom (C, Si, Ge, Sn)] Backbones, *ACS Appl. Mater. Interfaces,* 11, 40, 36895-36904 (2019).

8. Miao-Ken Hung, Kuen-Wei Tsai, Sunil Sharma, Jun-Yi Wu, and **Show-An Chen***, Acridan Grafted Poly(biphenyl germanium) with High Triplet Energy, Low Polarizability and External Heavy-Atom Effect for Highly Efficient Sky-Blue TADF Electroluminescence, *Angew. Chem. Int. Ed.*, 58,11317-11323 (2019).

9. Pavel V. Komarov*, Pave O. Baburkin, Viktor Ivanov, **Show-An Chen** and Alexei R. Khokhlov, Controlling Morphology of the Polymer Photoactive Layer in Photovoltaic Elements: Mesoscopic Simulation, *Doklady Physical Chemistry*, 2019, Vol. 485, Part 1, pp. 39–42 (2019).

10. Pavel V. Komarov*, Pave O. Baburkin, Viktor Ivanov, **Show-An Chen** and Alexei R. Khokhlov, Controlling the morphology of hybrid polymer/nanoparticles active layer of solar cell: mesoscopic simulation, *Mol. Syst. Des. Eng.***,** 4**,** 390-395 (2019)

11. Kuen-Wei Tsai, Miao-Ken Hung, and **Show-An Chen***, "Solution Processed Thermally Activated Delayed Fluorescent OLED with High EQE as 31% Using High Triplet Energy Crosslinkable Hole Transport Materials", *Adv. Funct. Mater. 1901025 (2019)*

2018

12. Kuen-Wei Tsai, Yun-Chung Wu, Tzu-Hao Jen and **Show-An Chen***, "Electric-Field-Induced Excimer Formation at Interface of Deep-Blue Emission Poly(9,9-dioctyl-2,7-fluorene) with Polyelectrolyte or Its Precursor as Electron Injection Layer in Polymer Light Emitting Diode and Its Prevention for Stable Emission and Higher Performance", *ACS Appl. Mater. Interfaces*, 10, 26422−26433 (2018)

13. Hong-Jyun Jhuo, Sunil Sharma, Hsin-Lung Chen, and **Show-An Chen***, Nonvolatile Morphology Regulator for Enhancing Molecular Order in Active Layer and therefore Power Conversion Efficiency of Polymer Solar Cells, *Journal of Materials Chemistry A*, 6, 8874–8879 (2018)

14. Kai Lin Woon*, Azhar Ariffin,* Kar Wei Ho and **Show-An Chen**, "Effect of conjugation and aromaticity of 3,6 disubstituted carbazoles on triplet energy and the implication of triplet energy in multiple-cyclic aromatic compounds, *RSC Adv.*, 8, 9850 (2018).

15. Jiuan-Yih Wu and **Show-An Chen***, "Highly Efficient Thermally Activated Delay Fluorescent White Organic Light-Emitting Diodes with Single Emission Layer by Solution-Process", *ACS Appl. Mater. Interfaces, **10**, 4851−4859 (2018)*

16. Jiuan-Yih Wu and **Show-An Chen***, "Highly Efficient Thermally Activated Delay Fluorescent White Organic Light-Emitting Diodes with Single Emission Layer by Solution-Process", *ACS Applied Materials & Interfaces, **10**, 4851−4859 (2018)*

B. Conference Presentations

2020

1. **Show-An Chen***, "Conjugated polymer/nanoparticle hybrid systems for opto-electronic interconversion: experiment, theory and computer simulation", 2020 MOST Science and Technology International Cooperation Research Symposium, North America - Asia Pacific – Europe, 2020-10-20~21, Taipei **(Invited Speaker)**

2019

2. **Show-An Chen***, "Semiconductive Polymers for Opto-Electronic Interconversion", Tsing Hua University, Chemical Engineerign Department, Beijing, China, March 27, 2019 and Fudan University, Department of Macromolecular Science, Shanghai, March 29, 2019 **(Invited Speaker)**

3. **Show-An Chen***, "Semiconductive Polymers for Opto-Electronics", the 3rd BILATERAL WORKSHOP between Chemical Engineering Dept., National Tsing Hua University – Taiwan and Faculty of Chemistry, University of Science – Vietnam National University HCMC, March 13, 2019 at VNU, HCMC **(Invited Speaker)**

4. **Show-An Chen***, "Semiconductive Polymers for Electroluminescence: Progress and Perspective", Nano Science & Technology 2019, Suzhou, China, Oct. 20~22, 2019 **(Invited Speaker)**

5. **Show-An Chen***, "高分子半導体之光電互換: 進展與展望 (Semiconductive Polymers for Opto-Electronic Interconversion: Progress and Perspective)", 成功大學化工系「百瀨五十教授紀念講座演講」, 2019-11-13, Tainan, Taiwan **(Plenary Speaker)**

6. **Show-An Chen***, "對高分子半導體及水溶性導體之貢獻 Contributions on Semiconductive Polymers and water soluble conductive polymers", 台湾石化合成公司學術貢獻獎, 於台大積學館松柏講堂, 2019-12-21 **(Plenary Speaker)**

2018

7. **Show-An Chen***, "Synthesis of Electrically Conductive Polymers", 2018 Kingdom of Saudi Arabia's "First International Collaboration Conference" hosted by the Ministry of Education, Kingdom of Saudi Arabi, the Ministry of Education, RIYADH, Kingdom of Saudi Arabia, April 23~24 (2018) **(Invited 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. life-time National Chair in engineering and applied science offered by Educational Ministry, Republic of China (2005.8-date)

2. Editor-in-Chief, Journal of Polymer Research (Official Journal of the Polymer Society, Taipei; published by Springer Publisher), 1994-date

3. Advisory Board Members: Scientific Report (Nature Publishing), 2015-2017; Macromolecules (Amer. Chem. Soc.), 2011-2013; Asia Materials (Nature publishing), 2007-date; Polymer Review (Taylor & Francis), January 2005-date; Journal of Macromolecular Science (Taylor & Francis): Physics (1996-date).

4. Member (full) of Asian-Pacific Academy of Advanced Materials (1998-date).

5. Member of EU Academy of Sciences, January 2018-date.

6. 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)

2022

1. ***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-).

2. 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.

3. *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).

4. 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).

5. **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).

6. ***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-).

7. 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).

8. 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-).

2021

9. 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).

10. 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.

11. 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).

12. ***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)

13. 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).

14. *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.

15. ***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)

16. ***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).

2020

17. J.-Y. Du, A. Zemanová, Y. Hutabalian, A. Kroupa and ***S.-W. Chen**, 2020, "Phase diagram of Ag-Pb-Sn system", Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, Calphad, Vol. 71, 101997. (MOST 107-2923-E-007-005-MY3).

18. A. Ramakrishnan, K. K. Kesavan, S. Chavhan, M. R. Nagar, J.-H. Jou*, **S.-W Chen***, H.-Wen Hsiao, J.-M. Zuo and L.Y. Hung, 2020, "Liquid Exfoliation of Decagonal Quasicrystal and Its Light Out Coupling Performance in Organic Light Emitting Devices", Advanced Photonics Research, pp. 2000042 (1-7). (MOST 106-2221-E-007-094-MY3 and MOST-109-2811-E-007-052).

19. A. F. Musa and ***S.-W. Chen**, 2020, "Interfacial reactions in Ni/PbSe", Journal of Electronic Materials, Vol. 49(10), pp. 6068-6072. (MOST-107-2923-E-007 -005 -MY3).

20. ***S.-W. Chen**, Y. Hutabalian, Z.-K. Hu, H.-H. Chen, H.-W. Shih and W. Wang, 2020, "Liquation phenomena in Sn/Bi_2Te_3, In/Bi_2Te_3 and Cu/Bi_2Te_3 couples", Acta Materialia, Vol. 196, pp. 418-429. (MOST 104-2221-E-007-090-MY3)

21. ***S.-W. Chen**, T.-Y. Huang, Y.-H. Hsu and A. Kroupa, 2020, "Phase diagram of Pb-Se-Sn system", Journal of Electronic Materials, Vol. 49(8), pp. 4714-4729. (MOST 107-2923-E-007 -005 -MY3)

22. A. Ramakrishnan, ***S.-W. Chen**, and Y. Hutabalian, 2020, "Ag-Se-Sn phase diagrams and Sn/Ag_2Se interfacial reactions", Journal of Alloys and Compounds, Vol. 816, 152670. (MOST 106-2221-E-007-094-MY3).

23. ***S.-W. Chen**, Y. Hutabalian, W. Gierlotka, C.-H. Wang and S.-T. Lu, 2020, "Phase diagram of Bi-In-Se ternary system", Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, Vol. 68, 101744 (1-16). (MOST104-2221-E-007-090-MY3 and MOST107-2221-E-259 -011).

2019

24. ***S.-W. Chen**, Y.-S. Peng and L.-C. Chen, 2019, "Co/$(Ag\text{-}41.0at\%Sb)_{1-x}Co_x$ and Ni/$(Ag\text{-}41.0at\%Sb)_{1-x}Ni_x$ interfacial reactions", Journal of Electronic Materials, Vol. 48 (9), pp. 5743-5756 (MOST 103-2221-E-007-021-MY3).

25. W. Gierlotka*, **S.-W. Chen**, S.-M. Tseng and P.-H Lin, 2019, "Co-In-Sb ternary system (II): Isoplethal section and thermodynamic modeling", Metallurgical and Materials Trasaction A, Vol. 50A(8), pp. 3891-3902, (MOST103-3113-P-008-001 and MOST105-2221-E-259 -004).

26. ***S.-W. Chen**, J.-M. Lin, T.-C. Yang and Y.-H. Du, 2019, "Interfacial reactions in the Cu/Ga/Co and Cu/Ga/Ni samples", Journal of Electronic Materials, Vol. 48(6), pp. 3643–3654, (MOST-104-2221-E-007-090-MY3).

27. ***S.-W. Chen**, T.-C. Yang, J.-M. Lin and T.-Y. Huang, 2019, "Interfacial reactions in the Co/In/Cu and Ni/In/Cu samples", Journal of Taiwan Institute of Chemical Engineers, Vol. 97, pp. 356-369, (MOST 104-2221-E-007 -090 -MY3).

28. ***S.-W. Chen**, Y. Hutabalian, S.-T. Lu, Y.-S. Peng and Y.-C. Lin, 2019, "Interfacial reactions in In/Bi_2Se_3, In/Bi_2Te_3 and $In/Bi_2(Se_{0.2}Te_{0.8})_3$ couples", Journal of Alloys and Compounds, Vol. 779, pp. 347-359, (MOST-104-2221-E-007-090 -MY3).

2018

29. V. B. Rajkumar and ***S.-W. Chen**, 2018, "Ag-Se phase diagram calculation associating ab-initio molecular dynamics simulation", Calphad, Vol. 63, pp. 51-60, (MOST 104–2811–E–007–054).

30. V. B. Rajkumar and ***S.-W. Chen**, 2018, "Phase equilibria and thermodynamic descriptions of Ag-Ge and Ag-Ge-Ni systems", Journal of Electronic Materials, Vol. 47(7), pp. 3666-3677, (MOST 104-281-E-007-054).

31. *L. Zhang, Z.-Q. Liu, **S.-W. Chen**, Y.-D. Wang, W.-M. Long, Y.-H. Guo, S.-Q. Wang, G. Ye and W.-Y. Liu, 2018, "Materials, processing and reliability of low temperature bonding in 3D chip stacking", Journal of Alloys and Compounds, Vol. 750, pp. 980-995.

32. *H.-J. Wu, A. T. Wu, P.-C. Wei and **S.-W. Chen**, 2018, "Interfacial reactions in thermoelectric modules", Materials Research Letters, Vol. 6(4), pp. 244–248. (MOST 106-2221-E-110-025-MY3).

33. ***S.-W. Chen**, Z.-W. Liu, H.-S. Chu and Z.-Y. Huang, 2018, "Interfacial reactions between Ni and $Bi_2(Se_{0.1}Te_{0.9})_3$ and its constituent material systems", Journal of Alloys and Compounds, Vol. 731, pp. 111-117. (NSC99-2221-E-007-093-MY3)

B. Conference Presentations

2022

1. 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.

2. 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.

3. 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.

4. 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.

5. **S.-W. Chen**, 2022, “Expected and unexpected whisker formation”, 60 KIChE annual meeting, Korea.

6. 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.

7. 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.

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

2021

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

10. **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).

11. 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).

12. 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).

13. 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).

14. 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.

15. 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.

16. 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。

17. 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。

18. 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。

2020

19. **S.-W. Chen**, H.-W. Shih, W. Wang, Y. Hutabalian, Z.-K. Hu and H.-H. Chen, 2020, "Interfacial reactions between Bi2Te3 substrate with Cu, In, Sn and Ni", presented at the 149th TMS annual meeting, San Diego, CA, USA.

20. Y. Hutabalian and **S.-W. Chen**, 2020, "Phase Diagrams of Ag-Cu-Te Ternary System and Ag2Te/Cu Interfacial Reaction", presented at the 149th TMS annual meeting, San Diego, CA, USA.

21. **S.-W. Chen**, J.-Y. Du, Y. Hutabalian, and A. Kroupa, 2020, "Phase diagrams of Ag-Pb-Sn-Te system", presented at the 149th TMS annual meeting, San Diego, CA, USA.

22. Y. Hutabalian, **S.-W. Chen**, 2020, "Interfacial reactions in Ag/Se, Ag/Se-30at%Te and Ag2Te/Se couples and Ag-Se-Te phase equilibria", presented at the 9th TaPhaD conference, Hsinchu, Taiwan.

23. 胡智凱、**陳信文**、2020、"(Cu-Ni)/Pb-Te-Se 界面反應與其相關系統相圖" 2020 第 9 屆台灣相圖會議、新竹。

24. 陳栩輝、**陳信文**、2020、"Ni 阻障層與 SnSe2 熱電材料之界面反應"，2020 第 9 屆台灣相圖會議、新竹。

25. 劉君翔、**陳信文**、2020、"錫-銀-銅-銦-鉍五元合金相平衡探討"，2020 第 9 屆台灣相圖會議、新竹。

26. 郭燿德、**陳信文**、2020、"含具觸媒應用潛力之 Co-Fe-Ge 材料系統相圖" 2020 中國工程師學會、台北。

27. A. Ramakrishnan, K. Thanigai Arul, C.L. Dong, **S.-W. Chen**, 2020, "Enhanced electrochemical performance of dealloyed decagonal Al-Co-Ni quasicrystals", presented at the 67th TwIChE annual meeting, Hsinchu, Taiwan.

28. Y.-D. Guo, Y. Hutabalian, **S.-W. Chen**, 2020, "Phase diagram of Co-Fe-Ge system" presented at the 67th TwIChE annual meeting, Hsinchu, Taiwan.

29. H.-H. Chen, **S.-W. Chen**, 2020, "Ni/SnSe2 interfacial reaction", presented at the 67th TwIChE annual meeting, Hsinchu, Taiwan.

30. 胡智凱、**陳信文**、2020、"(Cu-Ni)/Pb-Te-Se 界面反應與其相關系統相圖" ，2020 台灣化學工程學會 67 周年年會、新竹。

31. Y. Hutabalian, **S.-W. Chen**, 2020, "Study the Ag-Se-Te phase diagram and its reaction couples", presented at the MRS-Taiwan annual meeting, Taipei, Taiwan.

32. 劉君翔、**陳信文**、2020、"錫-銀-銅-銦-鉍五元合金相平衡探討" 、109 中國材料科學學會、台北。

2019

33. 陳家峻、**陳信文**，2019，" Sb-Se-Te 三元系統相圖"，2019 中國材料科學學會，台南。

34. A. Ramakrishnan, **S.-W. Chen,** 2019, "Interfacial reaction in Sn/Cu_2Se couples", presented at MRS-T conference, Tainan, Taiwan.

35. 石皓瑋、王暐、**陳信文**，2019，"熱電模組接點之 Cu/Bi2Te3 與 Ni/Bi2Te3 界面反應探討"，2019 台灣化學工程學會 66 周年年會，台中。

36. 郭子寧、**陳信文**，2019，"準晶材料與 Ag-Cu 共晶及 Sn-Cu 共晶合金間的界面反應"，2019 台灣化學工程學會 66 週年年會，台中。

37. S.-W. Chen, J.-Y. Du, Y. Hutabalian, A. Kroupa, 2019, "Phase diagrams of Ag-Pb-Sn-Te system", presented at the 66th TwIChE annual meeting, Taichung, Taiwan.

38. Y. Hutabalian, **S.-W. Chen**, 2019, "Phase diagrams of Ag-Cu-Te ternary system", presented at the 66th TwIChE annual meeting, Taichung, Taiwan.

39. S.-W. Chen, Y.-H. Du and A. Kroupa, 2019, "Phase diagram determination of thermoelectric Ag-Pb-Sn-Te quaternary system", presented at the 2019 AIChE Annual Meeting, Orlando, Florida.

40. **S.-W. Chen**, 2019, "Interfacial reactions in Ag-Cu/Ni, Ag-Cu/Co, Ag-Sb/Ni and Ag-Sb/Co couples", (Invited speech), presented at the Materials Science and Technology 2019(MS&T19), Portland, Oregon.

41. **S.-W. Chen**, 2019, "Interesting and unexpected phenomena observed at the joints of electronic products", presented at the 18th Asian Pacific Confederation of Chemical Engineers (APCChE2019), Sapporo, Hokkaido and Hokkaido University (invited speech).

42. A. Ramakrishnan, **S.-W. Chen**, 2019, "Al-Co-Ni Based Decagonal Quasicrystal: a Study of Phase Transformation and Phase Stability by Synchrotron X-ray Diffraction", NSRRC 25th Users' Meeting & Workshops, Hsinchu, Taiwan.

43. **S.-W. Chen**, 2019, "Unexpected liquation phenomena at joints", (Invited speech), presented at the 148th TMS annual meeting, San Antonio, Texas, USA.

44. **S.-W. Chen** and Y.-C. Lin, 2019, "Phase diagrams of the Bi-In-Se-Te quaternary system", (Invited speech), presented at the 148th TMS annual meeting, San Antonio, Texas, USA.

45. A. Ramakrishnan, Z.-Y. Huang, and **S.-W. Chen**, 2019, "Interfacial reactions in Sn/Ag_2Se Couples", presented at the 148th TMS annual meeting, San Antonio, Texas, USA.

46. T.-Y. Huang and **S.-W. Chen**, 2019, "Phase diagrams of thermoelectric Pb-Se-Sn-Te quaternary system", presented at the 148th TMS annual meeting, San Antonio, Texas, USA.

47. P.-C. Lo, T.-Y. Huang, T.-N. Kuo,and **S.-W. Chen**, 2019, "Phase diagrams of material systems with quasicrystalline phases", presented at the 148th TMS annual meeting, San Antonio, Texas, USA.

2018

48. **S.-W. Chen*** and Y. Hurabalian , 2018, "Phase diagrams of Bi-Sb-Se-Te and Pb-Se-Sn-Te quaternary alloys of thermoelectric interests", presented at ICHEM 2018 (The 2nd International Conference on High-Entropy Materials), Jeju, Korea.

49. 黃澤洋、**陳信文***，2018，"具熱電應用重要性的 Pb-Se-Sn-Te 四元材料系統相圖"，2018 年中國材料科學學會年會，台中。

50. 杜怡慧、**陳信文***，2018，"Ag-Pb-Sn-Te 四元熱電材料系統的相圖實驗與計算"，2018 台灣化學工程學會 65 週年年會，雲林。

51. 羅珮嘉、郭子寧、Anbalagan Ramakrishnan、**陳信文***，2018，"含準晶材料的 Al-Co-Cu 與 Al-Co-Ni 三元系統相圖"，2018 台灣化學工程學會 65 週年年會，雲林。

52. **S.-W. Chen*** and Y. Hurabalian , 2018, " In/Bi2(Se,Te)3 interfacial reactions and Bi-In-Se-Te phase diagram", presented at MS&T 18 (Materials Science &Technology) conference, Columbus, Ohio, U.S.A.

53. **陳信文***, 2018, "熱電元件中接點的界面反應", 第十一屆海峽兩岸化學工程學術研討會, 山西太原, 中國.

54. **S.-W. Chen***, W. Wang and K.-C. Hsieh, 2018, "Ag-Se phase diagram calculation associating ab-initio molecular dynamics simulation", presented at the CALPHAD XLVII. Juriquilla, Querétaro, México.

55. V. B. Rajkumar and **S.-W. Chen***, 2018, " Cu/Bi2Te3 interfacial reactions and Bi-Cu-Te phase diagram ", presented at the CALPHAD XLVII. Juriquilla, Querétaro, México.

56. **S.-W. Chen*** and Y.-S.Peng, 2018, "Ni/(Ag-41.0at%Sb)1-xNix and Co/(Ag-41.0at%Sb)1-xCox Interfacial Reactions and Their Related Ag-Ni-Sb and Ag-Co-Sb Phase Diagrams ", presented at the International Congress on Chemical, Biological and Environmental Sciences, Hokkaido, Japan.

57. **S.-W. Chen***, Z.-Y. Huang, P.-C. Wei and Y.-Y. Chen, 2018, "Phase Diagram of Ag-In-Se System and Thermoelectric Properties of In-containing Ag2Se" (Invited speech), presented at the 147th TMS annual meeting, Phoenix, USA.

58. **S.-W. Chen***, T.-.C. Yang and J.-M. Lin, 2018, "Interfacial reaction studies in SLID bonding processes using Ga and In" (Invited speech), presented at the 147th TMS annual meeting, Phoenix, USA.

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. 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).

2. 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)

3. 108 年度科技部傑出研究獎，科技部 (Outstanding Research Award, Ministry of Science and Technology) (2020)

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

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

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

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

8. 台灣化工學會理事長 2019/1/1~2020/12/31

9. 中國材料學會副理事長 2017/1/1~2018/12/31

10. (理)監事: 中國工程師學會新竹分會, 2010~迄今

11. 理事：中國材料學會, 2009~迄今

12. 理事: 台灣化工學會, 2017~迄今

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

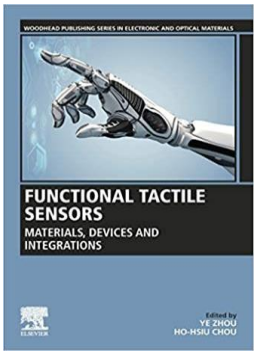
14. Education committee member, TMS, 2017/2~2020/12

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

16. Associate editor: Journal of Electronic Materials, 2006/8 ~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**
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B. Journal Papers (* Corresponding author)

2022

1. 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, https://doi.org/10.1021/acs.macromol.2c02130 (IF=6.057)

2. 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 (IF=17.690)

3. 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*** ,2022.1-12(IF=4.234)

4. 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 H2 production" ***Microporous and Mesoporous Materials*** **,**2022, 345, 112258(IF=5.455)

5. 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**"** ***The Journal of Physical Chemistry C*** **,** 2022, 44,18596-18604(IF＝4.126)

6. Ahmed E Hassan, Mai SA Hussien, Mohamed Hammad Elsayed, Mohamed Gamal Mohamed, Shiao-Wei Kuo, **Ho-Hsiu Chou**, Ibrahim S Yahia, Genxinag Wang, Zhenhai Wen*"One-step construction of Y, C, and O tridoped gC 3 N 4 as a bifunctional photocatalyst for H 2 evolution and organic pollutant degradation under visible light irradiation" ***Sustainable Energy & Fuels,*** 2022, 16, 3858-3871(IF= 6.367)

7. 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 H2 and O2 evolution from water splitting "***Applied Catalysis B: Environmental***, 2022 , 316, 121624 (IF=19.503)

8. 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 (IF=6.024)

9. 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 (IF=13.273)

10. Ahmed Elewa, Ahmed FM EL-Mahdy, Ahmed Eid, Zhenhai Wen, Jayachandran Jayakumar, Tsung-Lin Lee, Li-Yu Ting, Islam 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 (IF=12.732)

11. 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 (IF= 19.503)

12. 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(IF= 6.024)

13. 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(IF=12.732)

14. 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,(IF=5.876)

15. Mahmoud Kamal Hussien, Amr Sabbah, Mohammad Qorbani, Mohamed Hammad Elsayed, Putikam Raghunath, Tsai-Yu Lin, Shaham Quadir, Hong-Yi Wang, Heng-Liang Wu, Der-Lii M Tzou, Ming-Chang Lin, Po-Wen Chung, **Ho-Hsiu Chou**, Li-Chyong Chen, Kuei-Hsien Chen” Metal-free four-in-one modification of g-C3N4 for superior photocatalytic CO2 reduction and H2 evolution” ***Chemical Engineering Journal*** ,2022, 132853(IF=13.273)

16. 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(IF=13.273)

2021

17. 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*** , November 2021 , 56554–56565 (IF=9.229)

18. 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*** , October 2021 , 13140–13151 (IF=6.024)

19. 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*** u, Yu-Jung Lu "Plasmon-Enhanced Solar-Driven Hydrogen Evolution Using Titanium Nitride Metasurface Broadband Absorbers"***ACS Photonics***, October 2021 , 3125–3132 (IF=7.529)

20. 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 Lua , **Ho-Hsiu Chou*** "Effect of energy bandgap and sacrificial agents of cyclopentadithiophene-based polymers for enhanced photocatalytic hydrogen evolution" ***Applied Catalysis B: Environmental***, Volume 298, 5 December 2021, 120577(IF=16.683)

21. 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***, Volume 421, October 2021, 12982 (IF=10.652)

22. Mohamed Hammad Elsayed, Bing-Huang Jiang, Yi-Peng Wang, Po-Yen Chang, Yu-Cheng Chiu, Ru-Jong Jeng, **Ho-Hsiu Chou*** and Chih-Ping Chen "Indacenodithiophene-based N-type conjugated polymers provide highly thermally stable ternary organic photovoltaics displaying a performance of 17.5%" ***J. Mater. Chem. A***, 2021,9, 9780-9790 (IF=11.301)

23. 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 Appl. Electron. Mater***. 2021, 3, 4, 1708–1718

24. 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 (IF=16.683, Rank = 3/137,)

25. Mohamed Hammad Elsayed, Jayachandran Jayakumar, Mohamed Abdellah, Tharwat Hassan Mansoure, Kaibo Zheng, Ahmed M.Elewa, Chih-Li Chang, Li-YuTing, 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 (IF=16.683, Rank = 3/137, Time Cited: 4)

26. 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, DOI: 10.1039/D0CY02482A (IF=5.820)

27. 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, DOI: 10.1039/D0TA10135D (IF= 11.301)

28. 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.(IF=3.310)

2020

29. Mohamed Hammad Elsayed, Taha M. Elmorsi,* Ahmed M. Abuelela, Ahmed E. Hassan, Ahmed Zaki Alhakemy, Mostafa F.Bakr, **Ho-Hsiu Chou*** "Direct sunlight-active Na-doped ZnO photocatalyst for the mineralization of organic pollutants at different pH mediums" ***Journal of Taiwan Institute of Chemical Engineers***, 2020, 115, 187-197 (IF=4.794, Time Cited: 1)

30. Yi Ren, Wei-Cheng Lin, Li-Yu Ting, Guanglong Ding , Baidong Yang, Jia-Qin Yang, **Ho-Hsiu Chou***, Su-Ting Han* and Ye Zhou* "Iridium-based Polymer for Memristive Device with Integrated Logic and Arithmetic Applications" ***Journal of Materials Chemistry C***, 2020, 8, 16845-16857 (IF=7.059)

31. Wei-Cheng Lin, Mohamed Hammad Elsayed, Jayachandran Jayakumar, Li-Yu Ting, Chih-Li Chang, Ahmed M. Elewa, Wen-Shin Wang, Chih-Chia Chung, Chia-Yeh Lu, **Ho-Hsiu Chou*** "Design and synthesis of cyclometalated iridium-based polymer dots as photocatalysts for visible light-driven hydrogen evolution" ***International Journal of Hydrogen Energy***, 2020, 45, 32072-32081 (IF=4.939, Time Cited: 6)

32. Wen-Hsin Wang,‡ , Li-Yu Ting, ‡ Jayachandran Jayakumar, Chih-Li Chang, Wei-Cheng Lin, Chih-Chia Chung, Mohamed Hammad Elsayed, Chia-Yeh Lu, Ahmed M. Elewa, and **Ho-Hsiu Chou*** "Design and synthesis of phenylphosphine oxide-based polymer photocatalysts for highly efficient visible-light-driven hydrogen evolution" ***Sustainable Energy*** **Fuels**, 2020, 4, 5264 (IF=5.503, Time Cited: 7)

33. Ahmed F. M. EL-Mahdy , Ahmed M. Elewa , Sheng-Wen Huang , **Ho-Hsiu Chou***, Shiao-Wei Kuo*"Dual-Function Fluorescent Covalent Organic Frameworks: HCl Sensing and Photocatalytic H2 Evolution from Water" ***Advanced Optical Materials***, 2020, 8, 2000642 (IF=8.286, Time Cited: 20)

34. Jia-Qin Yang, Li-Yu Ting, Ruopeng Wang, Jing-Yu Mao, Yi Ren, Chih-Li Chang, Chun-Ming Yeh, **Ho-Hsiu Chou***, Ye Zhou*, Su-Ting Han* "Fluorenone/carbazole based bipolar small molecules for non-volatile memory devices" ***Organic Electronics***, 2020, 78, 105584 (IF=3.500)

35. Chih-Li Chang#, Wei-Cheng Lin#, Chuan-Yu Jia, Li-Yu Ting, Jayachandran Jayakumar, Mohamed Hammad Elsayed, Yong-Quan Yang, Yang-Hsiang Chan, Wen-Shin Wang, Chia-Yeh Lu, Pei-Yu Chen, and **Ho-Hsiu Chou*** "Low-Toxic Cycloplatinated Polymer Dots with Rational Design of Acceptor Co-monomers for Enhanced Photocatalytic Efficiency and Stability" ***Applied Catalysis B: Environmental***, 2020, 268, 118436 (IF=16.683, Rank = 3/137, Time Cited: 21)

36. Jayachandran Jayakumar, and **Ho-Hsiu Chou*** "Recent Advances in Visible-Light-Driven Hydrogen Evolution from Water using Polymer Photocatalysts" ***ChemCatChem***, 2020, 12, 689-704 (IF=4.495, Rank = 34/147, Time Cited: 30) (Invited review article)

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37. Li-Yu Ting,+Jayachandran Jayakumar,+Chih-Li Chang, Wei-Cheng Lin, Mohamed Hammad Elsayed, and **Ho-Hsiu Chou*****, "Effect of Controlling the Number of Fused Rings on Polymer Photocatalysts for Visible-Light-Driven Hydrogen Evolution" ***Journal of Materials Chemistry A***, 2019, 7, 22924-22929 (IF=10.733, Rank = 20/285, *Time Cited: 21*)

38. Ying-Chih Lai*, Hsing-Mei Wu, Heng-Chuan Lin, Chih-Li Chang, **Ho-Hsiu Chou*****, Yung-Chi Hsiao, Yen-Cheng Wu, "Entirely, Intrinsically, and Autonomously Self-healable, Highly Transparent, and Super-Stretchable Triboelectric Nanogenerator for Personal Power Sources and Self-Powered Electronic Skins" ***Advanced Functional Materials***, 2019, 29, 197027 (IF=15.621, Rank = 13/285, Time Cited: 32)

39. Yi Ren, Chih-Li Chang, Li-Yu Ting, Dr. Li Zhou, Jing-Yu Mao, Shi-Rui Zhang, **Ho-Hsiu Chou*****, Jia-Qin Yang, Ye Zhou*, Su-Ting Han*, "Flexible Pyrene/Phenanthro[9,10-d]imidazole-based Memristive Devices for Mimicking Synaptic Plasticity", ***Advanced Intelligent Systems***, 2019, *1, 1900008* (New Journal in spring 2019, Time Cited: 15)

40. Jing-Yu Mao, Li Zhou, Yi Ren, Jia-Qin Yang, Chih-Li Chang, Heng-Chuan Lin, **Ho-Hsiu Chou***, Shi-Rui Zhang, Ye Zhou*, and Su-Ting Han*, "A bio-inspired electronic synapse using solution processable organic small molecule", ***Journal of Materials Chemistry C***, 2019, 7, 1491-1501 (IF = 6.641, Rank = 42/285, Time Cited: 31)

2018

41. Po-Jung Tseng, Chih-Li Chang, Yang-Hsiang Chan, Li-Yu Ting, Pei-Yu Chen, Chia-Hsien Liao, Ming-Li Tsai, and **Ho-Hsiu Chou*** "Design and Synthesis of Cycloplatinated Polymer Dots as Photocatalysts for Visible-Light-Driven Hydrogen Evolution" ***ACS* Catalysis** 2018, 8, 7766-7772 (IF=12.221, Rank = 3/58, Times cited: 49)

C. Patents

類別	專利名稱	國別	專利號碼	發明人	專利權人
	Semiconductor Compound, Use Thereof and Hydrogen Production System	US	US Patent App. 16/510,008	**Ho-Hsiu Chou**, Chih-Li Chang, Wei-Cheng Lin	NTHU
	Methods and Apparatus Concerning Sensitive (E-Skin) Pressure Sensors, US Provisional	WO	2017/019887 A1	Zhenan Bao, **Ho-Hsiu Chou**, Alex Chortos	Stanford
	Methods and Apparatus Concerning Sensitive (E-Skin) Pressure Sensors, US Provisional Application	US	2017/0031491 A1	Zhenan Bao, **Ho-Hsiu Chou**, Alex Chortos	Stanford
A	Conjugated Compounds Containing Heteroatom-Center-Arylsilane Derivatives And Their Application	US	7,820,844	Cheng-Hong Cheng, Hung-Hsin Shih, **Ho-Hsiu Chou**	NTHU
A	Light-Emitting Material and Organic Light-Emitting Diode Including the Same	US	7,981,527	Cheng-Hong Cheng, **Ho-Hsiu Chou**	NTHU
	Imidazole Derivatives Having Vinyl Group and Its Use in Electroluminescent Element	US	8,471,037	Chien-Hong Cheng, He-Pei Hsu, **Ho-Hsiu Chou**, Yu-Han Chen, Yi-Hsiang Chen	NTHU
	Application of Triphenylene Derivatives in Organic Electroluminescent Devices	US	8,974,920	Chien-Hong Cheng, Yu-Han Chen, **Ho-Hsiu** Chou	NTHU
	Triptycene Derivatives and their Application	US	11/876,454	Chien-Hong Cheng, Hung-Hsin Shih, **Ho-Hsiu Chou**, Yu-Chen Jao	NTHU
	Blue Light-Emitting Iridium Complex and Application for Organic Light Emitting Diode	US	13/729,877	Chien-Hong Cheng, **Ho-Hsiu Chou**, LI Yi-Kai	NTHU
	Triptycene Derivatives Having Symmetric or Asymmetric Substitutes and Orgainc Light Emetting Diode Using the Same	US	9,590,181	Chien-Hong Cheng, **Ho-Hsiu Chou,** Cheng-Chang Lai	NTHU

類別	專利名稱	國別	專利號碼	發明人	專利權人
	發光材料以及包括此發光材料之有機發光二極體	TW	I388648	鄭建鴻, **周鶴修**	NTHU
	三蝶烯衍生物及其在有機電子元件的應用	TW	I390007	鄭建鴻, **周鶴修**, 施宏欣, 饒育禎	NTHU
	以矽主體具有異原子中心之芳香環衍生物及其在有機電子元件的應用	TW	096128503	鄭建鴻, **周鶴修**, 施宏欣	NTHU
	聯三伸苯基衍生物在有機電致發光元件上之應用	TW	I461387	鄭建鴻, 陳昱翰, **周鶴修**	NTHU
A	含乙烯官能基之咔唑衍生物及其用於電致發光元件之用途	TW	100128992	鄭建鴻, 許郤珮, **周鶴修**, 陳裕翰, 陳奕翔	ITRI
A	對稱或不對稱雙取代三蝶烯衍生物及其有機發光二極體	TW	102141604	鄭建鴻, **周鶴修**, 賴振昌	NTHU

D. Other

- **Guest editor of Polymer (MDPI)**
  Special issue: Stretchable and Smart Polymers II
  Polymer (MDPI): *Polymers* received an updated Journal Impact Factor of **3.46** in the June 2019 release of the Journal Citation Reports® . *Polymers* now ranks **19/87 (Q1)** in the category 'Polymer Science.'
- **2022 李長榮學術研究傑出青年教授獎**
- **中華民國高分子學會 109 年度傑出高分子青年科技獎**
- **2021 吳大猷先生紀念獎**
- **2021 華立創新材料競賽 特選獎**

Publications of Rong-Ming Ho (何榮銘)

A. Book Chapters (* Corresponding author)

2018

1. 書名：World Scientific Reference of Hybrid Materials- Volume 1 Block Copolymers

章節：Well-Ordered Inorganic Nanonetworks from Block Copolymer Templates: Syntheses and Applications

編輯：Mato Knez

出版商：World Scientific

ISBN：978-981-3270-48-0

B. Journal Papers (* Corresponding author)

2022

1. 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)

2. 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)

3. 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)

4. 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)

5. C. Y. Chang, G. M. Manesi, A. Avgeropoulos*, **R. M. Ho*** "Superlattice Structure from Self-Assembly of High-χ Block Copolymers via Chain Interdigitation" *Macromolecules*, **55**, 3449-3457 (2022). (SCI Impact Factor= 6.057; SCI Rank Factor:10/90)

6. K. C. Yang, A. Reddy, H. W. Tsai, W. Zhao, G. M. Grason*, **R. M. Ho*** "Breaking mirror symmetry of double gyroids via self-assembly of chiral block copolymers" *ACS Macro Lett*, **11**, 930-934 (2022). (SCI Impact Factor= 7.015; SCI Rank Factor:7/90)

7. P. Puneet, S. W. Shao, **R. M. Ho*** "Induced Circular Dichroism and Circularly Polarized Luminescence for Block Copolymers with Chiral Communications" *Macromolecular Rapid Communication*, 2200369 (2022). (SCI Impact Factor= 5.006; SCI Rank Factor:15/90)

8. K. C. Yang, P. Puneet, P. T. Chiu, **R. M. Ho*** "Well-Ordered Nanonetwork Metamaterials from Block Copolymer Templated Syntheses" *Acc. Chem. Res*, **55**, 2033-2042 (2022). (SCI Impact Factor= 24.466; SCI Rank Factor:7/179)

9. A. S. Panda, Y. C. Lee, C. J. Hung, K. P. Liu, C. Y. Chang, G. M. Manesi, A. Avgeropoulos, F. G. Tseng, F. R. Chen, **R. M. Ho*** "Vacuum-Driven Orientation of Nanostructured Diblock Copolymer Thin Films" *ACS Nano*, **16**, 12686-12694 (2022) (SCI Impact Factor= 18.027; SCI Rank Factor:11/109)

10. H. Sadek, S. K. Siddique, C. W. Wang, C. C. Lee, S. Y. Chang, **R. M. Ho*** "Bioinspired Nanonetwork Hydroxyapatite from Block Copolymer Templated Synthesis for Mechanical Metamaterials" *ACS Nano*, **16**, 18298-18306 (SCI Impact Factor= 18.027; SCI Rank Factor:11/109)

11. M.-C. Li*, M. Sato, F. C. Chen, W. T. Chuang, T. Hirai*, A. Takahara*, **R. M. Ho*** "Circular Polarization Luminescence of Groove Anchor Driving Optically Active Poly(Methyl Methacrylate) Stereocomplexes", *ACS Macro Letters*, **11**, 1306-1311

12. P. Puneet, P. T. Chiu, K. C. Yang, T. L. Lee, **R. M. Ho*** "Topological Nanostructures with Preferred Helicity from SelfAssembly of Block Copolymers via Homochiral Evolution" *Macromolecules*, **55**, 10356-10365 (2022).

13. T. L. Lee, J. W. Lin, **R. M. Ho*** "Controlled Self-Assembly of Polystyrene-block-Polydimethylsiloxane for Fabrication of Nanonetwork Silica Monoliths" *ACS Appl. Mater. Inter.*, **14**, 54194–54202 (2022). (SCI Impact Factor= 10.383; SCI Rank Factor: 49/345)

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14. K. C. Yang, P. T. Chiu, H. W. Tsai, **R. M. Ho***, "Self-Assembly of Semiflexible-Coil Chiral Block Copolymers under Various Segregation Strengths with Multiple Secondary Interactions" *Macromolecules*, **54**, 9850 (2021). (SCI Impact Factor= 60156; SCI Rank Factor: 8/90)

15. C. C. Yang, P. Puneet, I. M. Lin, Y. W. Chiang, **R. M. Ho*,** "Self-assembled helical superstructures of polystyrene-b-poly(2-vinyl pyridine) with inversed helicity from induced chirality" *Giant*, **7**, 100059 (2021).

16. C. Y. Chang, G. M. Manesi, C.Y. Yang, Y. C. Hung, K. C. Yang, P. T. Chiu, A. Avgeropoulos*****, **R. M. Ho***, "Mesoscale networks and corresponding transitions from self-assembly of block copolymers" *Proceedings of the National Academy of Sciences*, **118**, 11 (2021). (SCI Impact Factor= 12.291; SCI Rank Factor: 8/72)

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25. G. M. Manesi, C. Y. Chang, A. Avgeropoulos*, **R. M. Ho*** "Inter-domain Spacing Control via an Interdigitating Structure to Bilayers in Lamellae-Forming Star-Block Copolymers" *ACS Applied Polym. Mater.*, **2**, 3685-3695 (2020) (SCI Impact Factor=4.089 ; SCI Rank Factor: 22/90)

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29. T. Wen*, H. F. Wang, P. Georgopanos, A. Avgeropoulos, **R. M. Ho*** "Three-dimensional visualization of phase transition in polystyrene-block-polydimethylsiloxane thin film", *Polymer*, **167**, 209-214 (2019). (SCI Impact Factor= 4.43; SCI Rank Factor: 16/90)

30. H. F. Wang, K. C. Yang, W. C. Hsu, J. Y. Lee, J. T. Hsu, G. M. Grason, Edwin L Thomas, J.C. Tsai*, **R. M. Ho*** "Generalizing the effects of chirality on block copolymer assembly", *PNAS*, **116**, 4080-4089 (2019). (SCI Impact Factor= 12.291; SCI Rank Factor: 8/72)

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32. K. C. Yang, C. T. Yao, L. Y. Huang, J. C. Tsai, W. S. Hung, H. Y. Hsueh, **R. M. Ho*** "Single gyroid-structured metallic nanoporous spheres fabricated from double gyroid-forming block copolymers via templated electroless plating" *NPG Asia Mater.*, **11**, 9 (2019). Front Cover Story (SCI Impact Factor= 10.481; SCI Rank Factor: 37/334)

33. C. F. Cheng, Y. M. Chen, F. Zou, K. Liu, Y. Xia, Y. F. Huang, W.Y. Tung, M. R. Krishnan, B. D. Vogt, C. L. Wang, **R. M. Ho***, Y. Zhu* " Li-Ion Capacitor Integrated with Nanonetwork-Structured Ni/NiO/C Anode and Nitrogen Doped Carbonized Metal-Organic Framework Cathode with High Power and Long Cyclability" *ACS Appl. Mater. Inter.*, **11**, 30694-30702 (2019). (SCI Impact Factor= 9.57; SCI Rank Factor: 44/334)

34. X. Feng, C. J. Burke, M. Zhuo, H. Guo1, K. Yang, A. Reddy, I. Prasad, **R. M. Ho**, A. Avgeropoulos, G. M. Grason*, E. L. Thomas* "Seeing the Mesoatomic Distortions in Soft Matter Crystals" *Nature*, **575**, 175–179 (2019). (SCI Impact Factor= 54.637; SCI Rank Factor: 1/72)

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36. M. R. Krishnan, I. C. Chen, K. Y. Lu, M. C. Lee*, **R. M. Ho*** "Directed Self-Assembly of Star-Block PS-PDMS by Topographic Nanopatterns", *Small*, **14**, 1704005, (2018). (SCI Impact Factor=13.281; SCI Rank Factor: 18/178)

37. C. F. Cheng, Y. M. Chen, F. Zou, K. C. Yang, T. Y. Lin, K Liu, C. H. Lai, Y. Zhu*, **R. M. Ho*** "Nanoporous gyroid Ni/ NiO/ C nanocomposites from block copolymer templates with high capacity and stability for lithium storage" *J. Mater. Chem. A*, **6**, 13676-13684 (2018) (SCI Impact Factor=12.732; SCI Rank Factor: 18/162)

38. K. Y. Lu, H. F. Wang, J. W. Lin, W. T. Chuang, P. Georgopanos, A. Avgeropoulos, A. C. Shi, **R. M. Ho*** "Self-Alignment of Cylinder-Forming Silicon-Containing Block Copolymer Films" *Macromolecules*, **51**, 7656-7665 (2018) (SCI Impact Factor= 6.156; SCI Rank Factor: 8/90)

39. H. L. Wang, H. Yeh, Y. C. Chen, Y. C. Lai, C. Y. Lin, K. Y. Lu, **R. M. Ho***, B. H. Li, C. H. Lin, D. H. Tsai* "Thermal Stability of Metal–Organic Frameworks and Encapsulation of CuO Nanocrystals for Highly Active Catalysis" *ACS applied materials & interfaces,* **10**,11,93329341 (2018) (SCI Impact Factor=9.57; SCI Rank Factor: 44/334)

40. T. Y. Tang, H. Wang, C. T. Yao, K. C. Yang, **R. M. Ho***, D. H. Tsai* "A facile method to functionalize gold nano-tripods with high suspension stability in an aqueous environment" *Nanoscale*, **10**,16, 7352-7356 (2018) (SCI Impact Factor=7.79; SCI Rank Factor: 32/178)

41. I. Prasad, H. Jinnai, **R. M. Ho***, E. L. Thomas, G. M. Grason* "Anatomy of triply-periodic network assemblies: characterizing skeletal and inter-domain surface geometry of block copolymer gyroids" *Soft matter*, **14**, 18, 3612-3623 (2018) (SCI Impact Factor=3.705; SCI Rank Factor: 76/162)

42. H. L. Wang, H. Yeh, Y. C. Chen, Y. C. Lai, C. Y. Lin, K. Y. Lu, **R. M. Ho**, B. H. Li, C. H. Lin, D. H. Tsai*"Thermal Stability of Metal–Organic Frameworks and Encapsulation of CuO Nanocrystals for Highly Active Catalysis" *Acs Applied Materials & Interfaces* , **10**, 9332 (2018) (SCI Impact Factor=9.57; SCI Rank Factor: 44/334)

43. S. W. Dai, B. W. Hsu, C. Y. Chen, C. A. Lee, H. Y. Liu, H. F. Wang, Y. C. Huang, T. L. Wu, A. Manikandan, **R. M. Ho**, C. S. Tsao, C. H. Cheng, Y. L. Chueh, H. W. Lin*"Perovskite quantum dots with near unity solution and neat-film photoluminescent quantum yield by novel spray synthesis" *Advanced Materials* , **30**, 1705532 (2018) (SCI Impact Factor=30.849; SCI Rank Factor: 5/178)

C. 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: 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

2. 專利編號: 9,896,562
專利名稱: Networks and method for producing the same
公告/公開日: 2018/2/20

Publications of Masaki Horie (堀江正樹)

A. Book Chapters

1. 高校化学宣言 Part 13, 高校化学グランドコンテストドキュメンタリー, 監修 中沢浩, 小嵜正敏, 笹森貴裕, 遊タイム出版, 2020 年 4 月 30 日 第 1 刷発行, Chapter 11: **堀江正樹**, 海外へ飛び出して 12 年、英国と台湾での研究生活を通して見えてきたもの, (ISBN: 78-4-86010-360-6).

B. Journal Papers (* Corresponding author)

2023

1. Sonoka Yamamoto, Ryutaro Yamashita, Chihiro Kubota, Kentaro Okano, Masatoshi Kitamura, Masahiro Funahashi, Syu-Cheng Ye, Yung-Tin Pan, **Masaki Horie**, Takuji Shintani, Hironori Murata, Hideto Matsuyama, Atsunori Mori*, "Orthogonal electric and ionic conductivities in the thin film of a thiophene–thiophene block copolymer", *J. Mater. Chem. C* **2023**, *11*, 2484-2493.

2022

2. Yuta Ihara, Hiroshi Yamagishi, Chen Lin, Cang-He Jhu, Meng-Che Tsai, **Masaki Horie**,* Yohei Yamamoto*, "Hydrothermal cross-linking of poly(fluorenylamine) with styryl side chains toward insoluble fluorescent micro-particles", *Polym. J.* **2022**, doi.org/10.1038/s41428-022-00679-z.

3. Atsunori Mori*, Tomoki Inoue, Aika Kuwayama, Kentaro Okano, **Masaki Horie**, "Generation of sodium–thiophene species with metal amide-free approach toward polythiophene synthesis by cross-coupling polymerization", *Asian J. Org. Chem.* **2022**, doi.org/10.1002/ajoc.202200253.

4. Chihiro Kubota, Masaki Kashimoto, Ryutaro Yamashita, Kentaro Okano, **Masaki Horie**, Masahiro Funahashi, Takuya Matsumoto, Takashi Nishino, Atsunori Mori*, "Studies on the properties of poly(3-alkylthiophene) copolymerized by a small amount of thiophene derivative bearing a cyclic siloxane moiety at the side chain", *Bull. Chem. Soc. Jpn.* **2022**, 95, 882-888.

5. Pin-Rong Wu, Chi-Hsien Wang, Yi-Wen Chen, Yen-Jen Lin, Tomohito Ide, Yoshitaka Tsuchido, Yoshihisa Sei, **Masaki Horie***, "Cyclic and Linear Dithienyl-Anthryl Vinylenes: Synthesis, X-ray Crystallography, Spectroscopic Properties, and Photoinduced Mechanical Motions", *J. Mater. Chem. C* **2022**, *10*, 4306-4316.

6. Chi-Hsien Wang, **Masaki Horie***, "Photo and thermal responsive pseudorotaxane crystals comprising ferrocene-containing ammonium salts and crown ethers", A special issue dedicated to Sir Fraser Stoddart on the occasion of his 80th birthday, *Mater. Today Chem.* **2022**, 24, 100852.

7. Yuji Suzaki, Tomoko Abe, Asami Takei, Yugo Fukuchi, Take-aki Koizumi, Kohtaro Osakada*, **Masaki Horie**, "Ferrocene-containing Pseudorotaxanes in Crystals: Aromatic Interactions with Hammett Correlation", *Molecules* **2022**, *27*, 1745.

2021

8. Chi-Hsien Wang, Kai-Jen Chen, Tsung-Huan Wu, Hung-Kai Chang, Yoshitaka Tsuchido, Yoshihisa Sei, Pei-Lin Chen, **Masaki Horie***, "Ring rotation of ferrocene in interlocked molecules in single crystals", *Chem. Sci.* **2021**, *12*, 3871-3875 (Selected as a front cover article).

9. Mohamed Elsayed, Mohamed Abdellah, Jayachandran Jayakumar, Yi-Hao Hung, 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 Appl. Mater. Interfaces* **2021**, *13*, 56554-56565.

10. Tomoki Inoue, Sonoka Yamamoto, Yuma Sakagami, **Masaki Horie**, Kentaro Okano, Atsunori Mori*, "Cross-coupling polymerization of organosodium for polythiophene synthesis", *Organometallics* **2021**, *40*, 3506-3510.

11. Yen-Jen Lin, **Masaki Horie***, "Dithienylethene-containing cyclic and linear conjugated molecules: synthesis, photochromism, and photoluminescence", *Dyes Pigment.* **2021**, *195*, 109700.

12. Yuji Suzaki, Yugo Fukuchi, Hiroko Tadami, Take-aki Koizumi, Kohtaro Osakada,* Tomohito Ide, **Masaki Horie**, Norihisa Hoshino, Tomoyuki Akutagawa, "Further Investigations of Crystal-to-Crystal Phase Transition of a [2]Pseudorotaxane Composed of Ferrocene-terminated Dialkylammonium and Dibenzo[24]crown-8-ether", *CrystEngComm* **2021**, *23*, 5944-5952.

13. Masayasu Hayashi, Jiaqiang Cheng, Kohei Hosokawa, Takumi Hatta, Chi-Hsien Wang, **Masaki Horie**, Kentaro Okano, Atsunori Mori*, "Synthesis and racemization studies of winding vine-shaped biphenyl derivatives", *Eur. J.Org. Chem.* **2021**, 3465-3471.

14. Sonoka Yamamoto, Yushin Shibuya, Toyoko Suzuki, Kentaro Okano, **Masaki Horie**, Atsunori Mori*, "One-shot Deprotonative Metalation/Transmetalation/Polymerization of Halothiophenes Catalyzed by Nickel Complex for Polythiophene Synthesis", *Synthesis* **2021**, *53*, 3081-3084.

15. Chihiro Kubota, Daisuke Morita, Keisuke Fujita, Sonoka Yamamoto, Toyoko Suzuki, Kentaro Okano, Masahiro Funahashi, **Masaki Horie**, Atsunori Mori*, "Thermally-Induced Doping of The Regioregular Polythiophene Bearing Alkylene Spacered Benzene Sulfonate Group at The Side Chain", *Heterocycles* **2021**, *103*, 249-257.

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16. Kuo-Lung Wang, Jia-Cheng Jiang, Cang-He Jhu, Satoshi Wada, Takafumi Sassa*, **Masaki Horie***, "High-performance organic photorefractive materials containing 2-ethylhexyl plasticized poly(triarylamine)", *J. Mater. Chem. C* **2020**, *8*, 13357-13367.

17. Shao-Chi Cheng, Chi-Hsien Wang, Yi-Chia Lin, Yoshitaka Tsuchido, Yuji Suzaki, Ting-Shen Kuo, Yoshihisa Sei, **Masaki Horie***, "Photoinduced Mechanical Motions of Pseudorotaxane Crystals Composed of Azobenzene and Ferrocenyl Groups on an Axle and a Crown Ether Ring", *ACS Appl. Mater. Interfaces* **2020**, *12*, 50002-50010.

18. Kuo-Lung Wang, Kuan-Ting Chen, Yuan-Hsing Yi, Yi-Hao Hung, Hsing-Yu Tuan*, **Masaki Horie***, "High-Performance Lithium Ion Batteries Combining Submicron Silicon and Thiophene−Terephthalic Acid-Conjugated Polymer Binders", *ACS Sustainable Chem. Eng.* **2020**, 8, 1043-1049.

19. Atsunori Mori,* Chihiro Kubota, Keisuke Fujita, Masayasu Hayashi, Tadayuki Ogura, Toyoko Suzuki, Kentaro Okano, Masahiro Funahashi, **Masaki Horie**, "Thermally Induced Self-Doping of π-Conjugated Polymers Bearing a Pendant Neopentyl Sulfonate Group", *Macromolecules* **2020**, *53*, 1171-1179.

20. Atsunori Mori,* Keisuke Fujita, Chihiro Kubota, Toyoko Suzuki, Kentaro Okano, Takuya Matsumoto, Takashi Nishino, **Masaki Horie**, "Formal preparation of regioregular and alternating thiophene–thiophene copolymers bearing different substituents", *Beilstein J. Org. Chem.* **2020**, *16*, 317-324.

21. Atsunori Mori,* Masayasu Hayashi, Mitsuru Matsuoka, Shiomi Ashida, Yukiko Ito, Kohei Hosokawa, Toyoko Suzuki, Kentaro Okano, Chi-Hsien Wang, **Masaki Horie**, "Formation of Seven-membered-ring Fused Bithiophene Derivatives by Nosyl Annulation", *Heterocycles* **2020**, 101, 461-470.

2019

22. **Masaki Horie***, Chi-Hsien Wang, "Stimuli-Responsive Dynamic Pseudorotaxane Crystals", Review article in Mechanical Bond and Dynamic Covalent Bond themed collection, *Mater. Chem. Front.* **2019**, *3*, 2258-2269.

23. Yen-Jen Lin, Hsin-Yu Chiang, Osamu Oki, Soh Kushida, Shu-Wei Chang, Shih-Ting Chiu, Yohei Yamamoto,* Takuya Hosokai, **Masaki Horie***, "Conjugated Copolymers of Poly(arylenevinylene)s: Synthesis by Ring-Opening Metathesis Polymerization, Film Morphology, and Resonant Luminescence from Microspheres", *ACS Appl. Polym. Mater.* **2019**, *1*, 2240-2248.

24. Kai-Jen Chen, Ann Chen Tan, Chi-Hsien Wang, Ting-Shen Kuo, Pei-Lin Chen, **Masaki Horie***, "Photoinduced Mechanical Motions of Biferrocene-Containing Pseudorotaxane Crystals", *Cryst. Growth Des.* **2019**, *19*, 17-22.

25. Ryohei Nemoto, Peter Krüger, Ayu Novita Putri Hartini, Takuya Hosokai, **Masaki Horie**, Satoshi Kera, Toyo Kazu Yamada*, "Well-Ordered Monolayer Growth of Crown-Ether Ring Molecules on Cu(111) in Ultra-High Vacuum: A STM, UPS, and DFT Study", *J. Phys. Chem. C* **2019**, *123*, 18939-18950.

2018

26. Shao-Chi Cheng, Kai-Jen Chen, Yuji Suzaki, Yoshitaka Tsuchido, Ting-Shen Kuo, Kohtaro Osakada, **Masaki Horie***, "Reversible Laser-Induced Bending of Pseudorotaxane Crystals", *J. Am. Chem. Soc.* **2018**, *140*, 90–93.

27. Shih-Ting Chiu, Hsin-Yu Chiang, Yen-Jen Lin, Yun-Yung Lu, Hirofumi Tanaka,* Takuya Hosokai, **Masaki Horie***, "Self-Assembly and Ring-Opening Metathesis Polymerization of Cyclic Conjugated Molecules on Highly Ordered Pyrolytic Graphite", *Chem. Commun.* **2018**, *54*, 5546-5549.

28. Priyanka Tyagi, Sun-Chen Hua, Daniel Roger Amorim, R.M. Faria, Jeff Kettle*, **Masaki Horie***, "All-conjugated block copolymers for efficient and stable organic solar cells with low temperature processing", *Org. Electron.* **2018**, *55*, 146-156.

C. Conference Presentations

2023

1. **Invited speech:** 結晶中で動く分子機械, 第 20 回六甲有機合成研究会, 神戸大学, Kobe, Japan, Jan 7, 2023.

2022

2. Chi-Hsien Wang (王祺嫻), J. Fraser Stoddart, **Masaki Horie,** Stimuli-induced reversible rotation of ferrocene complexes in crystals, the poster prize award from Dalton Transactions, 16th International Symposium of Macrocyclic and Supramolecular Chemistry (2022 ISMSC), Eugene, Oregon, USA, June 19-24, 2022.

2021

3. **Invited speech:** Stimuli-responsive dynamic rotaxanes in crystal state, The 4th NYCU Conference on Advanced Organic Synthesis (CAOS-4), National Yang Ming Chiao Tung University (陽明交通大學), Hsinchu, Taiwan, Dec 3, 2021.

4. **Invited speech:** Synthesis of Conjugated Polymers and Molecular Machines for Optoelectronic Applications, the 2021 International Conference on Modern Challenges in Polymer Science and Technology (MCPST) and 2021 Annual Meeting of the Polymer Society (AMPS), Taipei, (2021 中華民國高分子學會年會), Online-National Sun Yat-Sen University (Online-國立中山大學), Kaohsiung, Taiwan, Jul 9, 2021.

5. 王祺嫻, Tsung-Huan Wu, **Masaki Horie**, Reversible rotational motion of ferrocenyl group in interlocked molecules in crystal state, 2021 年中國化學會年會, 2021 Chemistry National Meeting, National Central University (國立東華大學), March 12-14, 2021.

6. 花君瑜, **Masaki Horie**, Multi-Stimuli Responsive Pseudorotaxanes Comprising Diarylethene and Azobenzene Groups, 2021 年中國化學會年會, 2021 Chemistry National Meeting, National Central University (國立東華大學), March 12-14, 2021.

7. 吳品蓉, Yi-Wen Chen, **Masaki Horie**, Synthesis and characterization of photo-responsive cyclic conjugated molecules, 2021 年中國化學會年會, 2021 Chemistry National Meeting, National Central University (國立東華大學), March 12-14, 2021.

2020

8. **Invited speech:** Conjugated molecules and molecular machines for use in organic optoelectronics, 2020 The Taiwan Institute of Chemical Engineers (TwIChE), 台灣化學工程學會 67 週年年會 and Taiwan-Japan-Kore Joint Symposium, National Tsing Hua University (清華大學), Hsinchu, Taiwan, Oct 23-24, 2020.

2019

9. **Invited speech:** Conjugated molecules and molecular machines for use in organic optoelectronics, *2019 Japan/Taiwan/Korea Chemical Engineering Conference*, Beppu, Japan, Nov 13-15, 2019.

10. **Invited speech:** My enjoyable academic life in the UK and Taiwan (海外へ飛び出して 12 年 英国と台湾での研究生活を通して見えてきたもの), 2019 Grand Contest on Chemistry for High School Students in Japan (高校化学グランドコンテスト), Osaka City University (大阪市立大学), Osaka, Japan, Oct 27, 2019.

11. **Invited speech:** Photoinduced Mechanical Motions of Pseudorotaxane Crystals, *The 8th International Summer Course on "Nano Material Discovery"*, National Chiao Tung University (交通大學), Hsinchu, Taiwan, June 24, 2019.

12. **Invited speech:** 結晶中で動くロタキサン分子機械, Mechanical motions of rotaxane crystals, *The Japan Society of Applied Physics, 2019 Annual meeting (2019 日本応用物理學會年會)*, Tokyo, Japan, Mar 9-12, 2019.

13. **Invited speech:** 發展應用於有機光電的全共軛共嵌段高分子, *2019 Annual Meeting of the Polymer Society (中華民國高分子學會年會)*, Southern Taiwan University of Science and Technology (南臺科技大學), Taiwan, Jan 18, 2019.

14. **The Silver Poster Award**, Mechanical Motions of Azobenzene-Containing Supramolecular Materials (S3-044), Yi-Chia Lin (林儀嘉), **Masaki Horie**, *Federation of Asian Polymer Societies Polymer Congress (FAPS) 2019*, Taipei, Oct 27-30, 2019.

15. Synthesis of conjugated poly(arylene vinylene) polymers via ring-opening metathesis polymerization and their morphology study (S4-024), Yen-Jen Lin, Yun-Yung Lu, Shih-Ting Chiu, Hsin-Yu Chiang, **Horie Masaki**, *Federation of Asian Polymer Societies Polymer Congress (FAPS) 2019*, Taipei, Oct 27-30, 2019.

16. Complex Materials Consist of a Soft-Polymer and Chromophores with Photoinduced Properties (S1-008), Chi-Hsien Wang, Dao-Hong Huang, **Masaki Horie**, *Federation of Asian Polymer Societies Polymer Congress (FAPS) 2019*, Taipei, Oct 27-30, 2019.

2018

17. All-conjugated block copolymers comprising of P3HT and PTB7-Th, **Masaki Horie**, Sune-Chen Hua, 16F13, *The 12th SPSJ International Polymer Conference (IPC2018)*, Hiroshima, Japan, Dec 4-7, 2018.

18. Photo-responsive actuators comprising of a soft-polymer and chromophores, Chi-Hsien Wang, **Masaki Horie**, Kai-Jen Chen, Dao-Hong Huang, U-Ser Jeng, Chung-Ju Chang, 6P-T8-077c, *The 12th SPSJ International Polymer Conference (IPC2018)*, Hiroshima, Japan, Dec 4-7, 2018.

19. Synthesis of photoresponsive pseudorotaxane crystals composed of dibenzo-30-crown-10-ether and ferrocene-containing axle molecules, Masaki Horie, Tsung-Huan Wu, Kai-Jen Chen, **Masaki Horie**, 6P-T8-089c, *The 12th SPSJ International Polymer Conference (IPC2018)*, Hiroshima, Japan, Dec 4-7, 2018.

20. Synthesis of poly(arylene vinylene) conjugated polymers by ringopening metathesis polymerization and their morphology study, Yenjen Lin, Yunyung Lu, Shihting Chiu, Hsinyu Chiang, **Masaki Horie**, 7P-T4-092b, *The 12th SPSJ International Polymer Conference (IPC2018)*, Hiroshima, Japan, Dec 4-7, 2018.

21. Synthesis and Purification of Poly[triphenylamine] for OFET measurement and XPS Analysis, Kuo-Lung Wang, Ming-Jhih Liao, **Masaki Horie**, 7P-T4-099a, *The 12th SPSJ International Polymer Conference (IPC2018)*, Hiroshima, Japan, Dec 4-7, 2018.

22. **The oral presentation award in young researchers session**, Photoinduced bending of azobenzene-based [2]pseudorotaxane crystals, Shao-Chi Cheng (程紹奇), *The Annual Spring Conference and Expo on Chemical Engineering: From Materials Engineering to Nanotechnology (ChEMEN 2018)*, Maiami, USA, April 4-5, 2018.

23. Synthesis of polymer binders for conductive additive free Silicon based anode Lithium ion batteries, Kuo-Lung Wang (王國隆), **Masaki Horie,** *2018 International Day of Light*, Hsinchu, National Tsing Hua University, May 13-14, 2018.

24. Synthesis of conjugated polymers for use Si based lithium ion batteries Polymer Binders, Kuo-Lung Wang (王國隆), **Masaki Horie,** *2018 Annual Meeting of the polymer society*, Taipei, National Taipei University of Technology, Taiwan, Jan 12-13, 2018.

25. **Invited speech:** 發展應用於有機光電的全共軛共嵌段高分子, **Masaki Horie**, *2018 Annual Meeting of the Polymer Society (中華民國高分子學會年會)*, National Taipei University of Technology (臺北科技大學), Taichung, Taiwan, Jan 13, 2018.

D. Other

1. **堀江正樹**「結晶中で動く、結晶を動かす、ロタキサン分子」日本応用物理学会, 有機分子・バイオエレクトロニクス分科会会誌, 特集: 分子のダイナミクスを活かした有機材料科学の新展開, The Japan Society of Applied Physics (JSAP), Molecular Electronics and Bioelectronics, **2021**, Vol. 32, No. 4, Pages 211(34)-211(39). (https://annex.jsap.or.jp/support/division/MandBE/journal/1192/)

2. **堀江正樹**、王祺嫻， ”Ring rotation of ferrocene in interlocked molecules in single crystals (*Chem. Sci.* **2021**, *12*, 3871)”, Highlighted by Chemistry Newsletter by MOST, 科技部圖書服務計畫化學中心總圖書室, 七月號化學電子報, Jul. 2021. (https://archive.benchmarkemail.com/beer_beer)

3. 媒體報導: 於 2019 年 11 月 25 日，Japan Yomiuri newspaper (日本 読売新聞), My enjoyable academic life in the UK and Taiwan (海外へ飛び出して 12 年 英国と台湾での研究生活を通して見えてきたもの), 2019 Grand Contest on Chemistry for High School Students in Japan (高校化学グランドコンテスト) (http://www.gracon.jp/gc/gracon2019/2019/11/29/yomiuritokushu/).

4. 2018 年 1 月 中華民國高分子學會傑出青年高分子科技獎

Publications of Chi-Chang Hu（胡啟章）

A. Journal Papers

2022

1. Chun-Cheng Lin, Zhen Chen, Holger Euchner, Tobias Eisenmann, Katrin Geng, Thomas Diemant, Shan Fang, Chih-Han Yen, Stefano Passerini*, **Chi-Chang Hu***, Dominic Bresser*, 2022, "Nanotwinned copper foil for "zero excess" lithium-metal batteries", *ACS Applied Energy Materials*, in press.

2. Shao-Chi Lo, Tzu-Ming Cheng, **Chi-Chang Hu**, Chih-Huang Lai*, 2022, "Separation of tungsten and cobalt from cemented tungsten carbide by rapid breakdown anodization", *Separation and Purification Technology*, in press.

3. Hung-Yi Huang, Yi-Heng Tu, Yu-Hsiang Yang, Yi-Ting Lu, **Chi-Chang Hu***, 2022, "Dopant-designed conducting polymers for constructing a high-performance, electrochemical deionization system achieving low energy consumption and long cycle life", *Chemical Engineering Journal*, in press.

4. Yu-Hsiang Yang, Yi-Heng Tu, Hung-Yi Huang, **Chi-Chang Hu***, 2022, "A high-capacity hybrid desalination system using battery type and pseudocapacitive type electrodes" *Desalination*, (**vol. 545**) 116160.

5. Sook Ting Chung, Yi-Heng Tu, Hung-Yi Huang, **Chi-Chang Hu***, and De-Hao Tsai*, 2022, "Aerosol Synthesis of Vanadium Oxide-Carbon Hybrid Nanoparticle Clusters for High-Performance Lithium Extraction via Electrochemical Deionization", *ACS Sustainable Chem. Eng.* (**vol. 10, 48**) 15777-15790.

6. Chih-Han Yen, Alex R. Neale, Jungwoo Lim, Dominic Bresser, Laurence J. Hardwick*, **Chi-Chang Hu***, 2022, 11, "Corrosion suppression of aluminum current collectors within Li-ion cells using 3-methoxypropionitrile-based electrolytes", *Electrochim. Acta*, (**vol. 431**) 141105.

7. Shang-Tzu Liu, Hao-Yu Ku, Chun-Lung Huang, **Chi-Chang Hu***, 2022, 10, "Improvements in Li deposition and stripping induced by Cu (111) nanotwinned columnar grains", *Electrochim. Acta*, (**vol. 430**) 141011.

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11. Chi-Yu Lai, Yi-Ting Lu, Wen-Yang Jao, Han-Yi Chen*, **Chi-Chang Hu***, 2022, "Near-neutral flexible zinc-air batteries with high power densities and long cycle life using chloride-based gel polymer electrolytes", *Electrochem. Commun.*, (**vol. 136**) 107240.

12. Wen-Yang Jao, Yi-Ting Lu, Chi-Yu Lai, **Chi-Chang Hu***, 2022, "Improved Oxygen Evolution and Oxygen Reduction Behavior of $NiCo_2O_4$: Revisiting the Use of Mesocarbon Microbeads", *J. Electrochem. Soc.*, (**vol. 169**) 026515.

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21. Ren-Hao Guo, **Chi-Chang Hu***, 2021, 05, 03, "The relationships among hydrogen adsorption, CO stripping, and selectivity of CO_2 reduction on Pd nanoparticles", *J. Electrochem. Soc.*, (**vol. 168**) 054507.

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23. 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 (https://dx.doi.org/10.1021/acssus chemeng.0c06628).

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38. Yi-Ting Lu, Jianyuan Wu, Zhi-Xiu Lin, Ting-Hsuan You, Sheng-Chi Lin, Hsin-Yi Tiffany Chen, Laurence J. Hardwick*, **Chi-Chang Hu***, 2019, "Enhanced Oxygen Evolution Performance of Spinel $Fe_{0.1}Ni_{0.9}Co_2O_4$/Activated Carbon Composites with Excellent Stability", *Electrochimica Acta*, (DOI: *10.1016/j.electacta.2019.134986*).

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B. Conference Presentations

2022

1. **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**).

2. 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.

3. **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.

4. 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**)

5. 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.

6. 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.

7. **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.

8. **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

9. **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**).

10. **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.

11. **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.

12. **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**).

13. **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**).

14. **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.

15. **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**).

16. **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**).

2020

17. **Chi-Chang Hu**, "Design of a Novel Polymer as the Electrolyte and Binder for Flexible Supercapacitors", Advanced Materials Lecture Series 2020, Stockholm, Sweden, December 11, 2020 (**International Association of Advanced Materials (IAAM) Fellow Lecture**).

18. **Chi-Chang Hu**, Tien-Yu Yi, Jeng-An Wang, Chen-Chi M. Ma, "Electrochemical Activation of Expanded Mesocarbon Microbeads Using Polyurethane-Crosslinked Polyacrylic Acid as a Binder for High-Voltage Symmetric Supercapacitors", The 2020 International Conference on Green Electrochemical Technologies, Taichung, Taiwan, November, 26-28, 2020 (**Keynote lecture**).

19. **Chi-Chang Hu**, Chi-Feng Hsieh, Yi-Jing Chen, Chun-Chia Hsu, Ching-Fang Liu, "Porous carbon materials for electrochemical capacitive deionization", Materials Engineering and Nanotechnology Conference, Singapore, November 26, 2020 (**Keynote lecture**).

20. **Chi-Chang Hu**, "Separator designs for energy storage devices", 2020 Taiwan-Germany Joint Workshop, Taipei, November 10-12, 2020.

2019

21. **Chi-Chang Hu**, Cheng-Ta Hsieh, Sheng-Chi Lin, Chih-Hung Lee, Ching-Fang Liu, "Electrospun-Derived Polymer Composite Separators with Multifunctions for Rechargeable Lithium-Ion Batteries", The 60th Japan Batteries Symposium, Kyoto, Japan, November 13-15, 2019 **(Invited lecture)**.

22. **Chi-Chang Hu**, Po-Chieh Li, Yu-Ju Chien, "Synthesis and Characterization of Bifunctional Air Electrodes for Rechargeable Zn-Air Batteries", 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019), Sapporo, Japan September 23-27, 2019 **(Keynote lecture and symposium organizer)**.

23. **Chi-Chang Hu**, Jeng-An Wang, Sheng-Chi Lin, and Chen-Chi M. Ma, "Materials Design for Flexible Supercapacitors", 6th International Conference on Advanced Capacitors (ICAC2019), Ueda, Japan, September 8-12, 2019 **(Plenary Lecture, Poster Contest Evaluator, & International Advisory Board Member)**.

24. **Chi-Chang Hu**, Yu-Wen Chi, Hsiao-Hsuan Shen, Kun-Ping Huang, "High-voltage electrical double-layer capacitors using vertical graphene nanowalls with and without nitrogen doping", ISPlasma2019/IC-PLANT2019, Nagoya, Japan, March 17-21, 2019 **(Program committee member)**.

2018

25. **Chi-Chang Hu**, Yi-Ting Lu, Yu-Ju Chien, Ting-Hsuan You, "Active Site-Engineered Bifunctional Electrocatalysts of Ternary Spinel Oxides, $M_{0.1}Ni_{0.9}Co_2O_4$ (M: Mn, Fe, Cu, Zn), for the Air Electrode of Rechargeable Zinc-Air Batteries", The 59th Japan Battery Symposium, Osaka, Japan, November 27-29, 2018.

26. Da-Je Hsu, Yu-Wen Chi, Kun-Ping Huang, and **Chi-Chang Hu**, "Electrochemical activation of vertically grown graphene nanowalls synthesized by plasma-enhanced chemical vapor deposition for high-voltage supercapacitors", The 2018 International Conference on Green Electrochemical Technologies, Tainan, Taiwan, November, 22-24, 2018

27. Jeng-An Wang, Chen-Chi M. Ma, **Chi-Chang Hu**, "High performance asymmetric supercapacitor: NaxMnO2@CNT /WPU-PAAK/AC-CNT", The 2018 International Conference on Green Electrochemical Technologies, Tainan, Taiwan, November, 22-24, 2018

28. Ren Hau Guo, **Chi-Chang Hu**, "Surface adsorption status on Pd nanoparticles and its effects on the electrochemical reduction of CO_2", The 2018 International Conference on Green Electrochemical Technologies, Tainan, Taiwan, November, 22-24, 2018

29. Cheng Ta Hsieh, **Chi-Chang Hu**, "Preparation of Polyethylene-coated Electrospun Polyimide Composite Films for the Separator of Lithium-ion Batteries", The 2018 International Conference on Green Electrochemical Technologies, Tainan, Taiwan, November, 22-24, 2018.

30. Chun-Chia Hsu, **Chi-Chang Hu**, "Optimization of Activated Carbon-based Capacitive Deionization Systems and Effects of Nitrogen Doping on its Performance", The 2018 International Conference on Green Electrochemical Technologies, Tainan, Taiwan, November, 22-24, 2018

31. Yun Wei, **Chi-Chang Hu**, "Tuning Tin Oxide Catalysts for Enhanced Selectivity of CO_2 Electrochemical Reduction to CO", The 2018 International Conference on Green Electrochemical Technologies, Tainan, Taiwan, November, 22-24, 2018

32. **Chi-Chang Hu**, Sheng-Chi Lin, Chen-Chi M. Ma, "Synthesis and Characterization of Electrospun Carbon Nanofibers/Manganese Dioxide Nanocomposites for Supercapacitors", The 2018 International Conference on Green Electrochemical Technologies, Tainan, Taiwan, November, 22-24, 2018 (**Keynote Lecture**).

33. **Chi-Chang Hu**, Po-Yu Chen, Arturas Adomkevicius, "Pseudocapacitive Characteristics of Cation-Preintercalated Manganese Oxides for High Performance Asymmetric Supercapacitors", The 69th ISE Annual Meeting, Bologna, Italy, September 02-07, 2018.

34. **Chi-Chang Hu**, Jeng-An Wang, Chen-Chi M. Ma, "Engineering Novel Alkaline Bifunctional Polymer Electrolytes for Flexible Supercapacitors", APEnergy2018, Singapore, July 18-20, 2018 (**Invited Lecture**).

35. **Chi-Chang Hu**, Yi-Ting Lu, Yu-Ju Chien, Ting-Hsuan You, Po-Chieh Li, "Engineering the Active Sites of Bifunctional Electrocatalysts of Ternary Spinel Nickel-Cobalt Oxides, $M_xNi_{1-x}Co_2O_4$, for the Air Electrode of Rechargeable Zinc-Air Batteries", IMLB 2018, Kyoto, Japan, June 17-22, 2018.

36. Tien-Yu Yi, **Chi-Chang Hu**, "Capacitance Enhancement by Substituting PUPAK for PVdF as Binders for Carbon Electrodes in Organic Supercapacitor", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

37. Yi-Ting Lu, **Chi-Chang Hu**, "Enhanced Catalytic Performance of Ternary Spinel FexNi1-xCo2O4 / Activated Carbon Composite for the Air Cathode of Rechargeable Zinc-Air Batteries", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

38. Ren Hau Guo, **Chi-Chang Hu**, "Dependence of surface adsorption status on electrode potentials for electrocatalytic reduction of CO2 on Pd nanoparticles", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

39. Jeng-An Wang, Chen-Chi M. Ma, **Chi-Chang Hu**, "Establishing ionic tunnels with WPU-PAAK GPE in electrode materials for supercapacitor", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

40. Da-Je Hsu, Yu-Wen Chi, Kun-Ping Huang, and **Chi-Chang Hu**, "Electrochemical activation of graphene nanowalls synthesized by plasma-enhanced chemical vapor deposition for high-voltage organic EDLCs", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

41. Ting-Hsuan You, **Chi-Chang Hu**, "Designing Binary Ru-Sn Oxides with Optimized Performances for the Air Electrode of Rechargeable Zinc-Air Batteries", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

42. Po-Yu Chen, **Chi-Chang Hu**, "Optimization of Alkali Ion-intercalated Manganese Oxides for Asymmetric Supercapacitors", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

43. Sheng-Chi Lin, Chen-Chi M. Ma, **Chi-Chang Hu**, "Asymmetric supercapacitors based on electrospun carbon nanofiber/sodium-pre-intercalated manganese oxide electrodes with high power and energy densities", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018.

44. **Chi-Chang Hu** and Chun-Cheng Lin, "Surface morphology and microstructure control of electrodeposited copper foils for high-frequency wireless devices and Li-ion batteries", The 22nd Topical Meeting of the International Society of Electrochemistry, Tokyo, Japan, April 15-18, 2018 (**Conference Co-organizer**).

45. **Chi-Chang Hu**, Y.-W. Chi, H.-H. Shen, M.-K. Huang, and K-P Huang, "Synthesis and Characterization of Bifunctional Air Electrodes for Rechargeable Zn-Air Batteries", Energy Future 2018, Sydney, Australia, February 5-7, 2018 (**Invited Lecture**).

C. Patents

1. US Patent, APPLICATION NUMBER: 15207701, FILING DATE: 07/12/2016, "COMPOSITE WATER PURIFICATION APPARATUS AND METHOD THEREOF". **(本案已於 2018/09/10 通知通過專利申請)**

2. 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).

3. 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).

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

5. US Patent, APPLICATION NUMBER: 17/522,151, FILING DATE: 11/09/2021, "HARD CARBON BEADS, THEIR PREPARATION, AND ENERGY STORAGE DEVICE COMPRISING THE SAME".

6. PRC Patent, APPLICATION NUMBER: 202111120064.1, FILING DATE: 2021.11.12; 硬碳微珠、其製法及包含其之儲能裝置/HARD CARBON BEADS, THEIR PREPARATION, AND ENERGY STORAGE DEVICE COMPRISING THE SAME.

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

8. 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.

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

10. Taiwan Patent Application No. 111101862 (January 17, 2022), NON-MEMBRANE DEIONIZATION AND ION-CONCENTRATING APPARATUS AND NON-MEMBRANE DEIONIZATION AND ION-CONCENTRATING MODULE.

11. 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. 2022 年獲台灣化工學會金開英先生獎.

3. World's Top 2% Scientists 2021.

4. 2022 - Research.com Materials Science in Taiwan Leader Award (名列 Materials Science 領域全球前 1000 頂尖學者)

5. 2022 - Research.com Chemistry in Taiwan Leader Award (名列 Chemistry 領域全球前 1500 頂尖學者)

6. World's Top 2% Scientists 2020.

7. 2020 年獲中國工程師學會傑出工程教授

8. 2020, Fellow, The International Association of Advanced Materials (IAAM).

9. 2015-2020, Tajima Prize Evaluation Committee Member, International Society of Electrochemistry.

10. 2006-present, Member of the Editorial Board, Journal of the Taiwanese Institute of Chemical Engineers (indexed by SCI).

11. 2015-present, Editorial Advisory Board Member, Journal of Power Sources (indexed by SCI).

12. 2017-present, Editorial Advisory Board Member, Batteries & Supercaps. (A new journal in ChemPubSocEurope published by Wiley-VCH).

13. 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)。

14. 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)。

15. 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)。

16. 2019 年指導博士生涂易恆獲 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019) Best Poster Award (11 月)。

17. 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。

18. 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)

19. 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。

20. 2019 年指導博士生游庭瑄獲科技部千里馬國際訪問研究補助 12 個月，前往美國凱西西儲大學。

21. 2019 年指導博士生林浚丞獲科技部-德國科技部暑期訪問研究補助 2 個月，前往德國 HIU。

22. 2018 年指導碩士生劉宇謙獲得國立清華大學國際交換生補助 6 個月，前往波蘭波茲南理工大學。(2018/09-2019/03)

Publications of Yu-Chen Hu (胡育誠)

***: Corresponding author; IF: 2020 Impact factor**

A. Journal Papers (* Corresponding author)

Submitted and in press

1. Michurina, S., Stafeev, I., Boldyreva, M., Truong, V.A., Ratner, E., Menshikov, M., **Hu, Y.-C.**, Parfyonova, Y. 2023. Transplantation of adipose tissue-engineered constructs with CRISPR-mediated UCP1 activation. Accepted by International Journal of Molecular Sciences **(IF 6.009)**

2. 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.***. Split dCas12a activator for lncRNA H19 activation to enhance BMSC differentiation and promote calvarial bone healing. Submitted to Biomaterials. **(IF 15.304).**

3. Pham, N. N., Chang, C.-W., Chang, Y.-H., Tu, Y., Chou, J.-J., Wang, H.Y. and **Hu, Y.-C.***. 2022. Rational genome and metabolic engineering of *Candida viswanathii* by split CRISPR to produce hundred grams of dodecanedioic acid. Metabolic Engineering. Revision under review. **(IF 8.829)**.

4. 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.***. 2022. Metabolic engineering of difficult-to-edit *E. coli* to enhance protein production by coupling ShCAST-based optimized transposon system and CRISPR interference. Metabolic Engineering. Revision under review. **(IF 8.829)**.

2022

5. 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 12.910).

6. 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 5.477).

7. 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 6.064).

8. 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 6.081).

9. 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 7.968)

10. 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 7.666).

11. 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 7.088)

2021

12. 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 15.304).**

13. 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 13.391, High Cite Paper, WOS Hot paper)**.

14. 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. Invited paper. Journal of Controlled Release. 338: 694-704. **(IF 11.467)**.

15. 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 5.477, selected as Best paper)**.

16. 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 3.116)**.

17. 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 3.261)**.

2020

18. Hsu, M.-N., Yu, F.-J., Chang, Y.-H., Huang, K-L., Pham, N. N., Troung, A.V., Lin, M.-W., Nguyen, N.T.K., Hwang, S.-M., **Hu, Y.-C.*** 2020 Sep. CRISPR interference-mediated Noggin knockdown promotes BMP2-induced osteogenesis and calvarial bone healing. Biomaterials. 252: 120094. **(IF 15.304).**

19. Hsu, M.-N, Huang, K-L., Yu, F.-J., Lai, P.-L., Troung, A.V., Lin, M.-W., Nguyen, N.T.K., Shen, C.-C., Hwang, S.-M., Chang, Y.-H., **Hu, Y.-C.*** 2020 Feb. Co-Activation of endogenous Wnt10b and Foxc2 by CRISPR activation enhances BMSCs osteogenesis and promotes calvarial bone regeneration. Molecular Therapy 28: 441-451 **(IF 12.910)**.

20. Pham, N. N., Chen, C.-Y., Li, H., Nguyen, M.T.T., Nguyen, K.P.P., Tsai, S.-L., Chou, J.-Y., Ramli, T.C., **Hu, Y.-C*.** 2020 April. Engineering stable *Pseudomonas Putida* S12 by CRISPR for 2,5-furandicarboxylic acid (FDCA) production. ACS Synthetic Biology. 9: 1138-1149 **(IF 5.249).**

21. Shen, C.-C., Lin, M.-W., Nguyen, B.K.T., Chang, C.-W., Shih, J.-R., Nguyen, M.T.T., Chang, Y.-H., **Hu, Y.-C.***. 2020 Sep. CRISPR-Cas13d for gene knockdown and engineering of CHO cells. ACS Synthetic Biology. 9, 2808–2818 **(IF 5.249).**

22. Srinivaas, M., Wu, C.-Y., Duh, J.-G., **Hu, Y.-C.**, Wu, J.-M. 2020 Jan. Multi-walled carbon nanotubes decorated tungsten ditelluride nanostars as anode material for lithium-ion batteries. Nanotechnology 31: 035406 **(IF 3.953).**

23. Hwu, J.-R., Panja, A. Jayakumar, S., Tsay, S-C., Tan, K.-T., Huang, W.-C., **Hu, Y.-C.**, Leyssen, P., Neyts, J. 2020 Aug. Enterovirus inhibition by hinged aromatic compounds with polynuclei. Molecules. 25: 3821. **(IF 4.927)**

24. Oh, M-K, Sakai, Y., **Hu, Y.-C.** 2020 June. Asian Congress on Biotechnology 2019. Biotechnology Journal. 2020, 15: 2000214. **(IF 5.726)**

25. Hwu, J.-R., Roy, A, Panja, A., Huang, W.-C., **Hu, Y.-C.**, Tan, K.-T., Lin, C.-C., Hwang, K.-C., Hsu, M.-H., Tsay, S.-C. 2020 Aug. Domino reaction for the synthesis of polysubstituted pyrroles and Lamellarin R. Journal of Organic Chemistry. 85: 9835-9843. **(IF 4.198)**.

2019

26. Hsu, M-N., Chang, Y.-H., Truong, V. A., Nguyen, N.T.K., **Hu, Y.-C.*** 2019 Dec. CRISPR technology for stem cell engineering and regenerative medicine. Biotechnology Advances 37:107447. **(IF 17.681)**. (review)

27. Hsu, M.-N., **Hu, Y.-C.***. Local magnetic activation of CRISPR. 2019 Feb. Nature Biomedical Engineering. 3: 83-84. **(IF 29.234).**

28. Truong, V. A., Hsu, M-N., Nguyen, N.T.K., Lin, M-W., Shen, C.-C., Lin, C.-Y., **Hu, Y.-C.*** 2019. July. CRISPRai for simultaneous gene activation and inhibition to promote stem cell chondrogenesis and calvarial bone regeneration. Nucleic Acids Research. 47: e74 **(IF 19.190).**

29. Shen, C.-C., Hsu, M.-N., Chang, C.-W., Lin, M.-W., **Hu, Y.-C***. 2019 Feb. Synthetic switch to minimize CRISPR off-target effects by self-restricting Cas9 transcription and translation. Nucleic Acids Research. 47: e13 **(IF 19.190).**

30. Hsu, M-N., Liao, H.-T., Truong, V. A., Huang, K.-L., Yu, F.-J., Chen, H.-H., Nguyen, N.T.K., Makarevich P., Parfyonova, Y., **Hu, Y.-C.*** 2019 Aug. CRISPR-based activation of endogenous neurotrophic genes in adipose stem cell sheets to stimulate peripheral nerve regeneration. Theranostics 9: 6099-6111 **(IF 11.600)**.

31. Wang, S.-Y., Chen, C.-L., **Hu, Y.-C.**, Chi, Y., Huang, Y.-H., Su, C.-W., Jeng, W.-J., Liang, Y.-J., Wu, J.-C*. 2019 Oct. High expression of microRNA-196a is associated with progression of hepatocellular carcinoma in younger patients. Cancers. 11: 1549 **(IF 6.575).**

32. Sung, L.-Y., Wu, M.-Y., Lin, M.-W., Hsu, M.-N., Troung, V. A., Shen, C.-C., Tu, Y., Hwang, K.-Y., Tu, A. P., Chang, Y.-H., **Hu, Y.-C.***. 2019 May. Combining orthogonal CRISPR and CRISPRi systems for genome engineering and metabolic pathway modulation in *E. coli*. Biotechnology and Bioengineering. 116: 1066-1079 **(IF 4.395).**

33. Hwu, J.-R., Huang, W.-C., Lin, S.-Y., Tan, K.-T., **Hu, Y.C.**, Shieh, F.-K., Bachurin, S.O., Ustyugov A, Tsay, S.-C. 2019 March. Chikungunya virus inhibition by synthetic coumarin-guanosine conjugates. Eur J Med Chem 166: 136-143. **(IF 7.088).**

34. Shevchenko M. B. E., Molokotina, Y. M., Makarevich, P., Beloglazova, I., Zubkova, E., Dergilev, K., Tsokolaeva, Z., Penkov, D., Hsu, M.-N., **Hu, Y.-C.**, Parfyonova, Y. 2019 June. Transplantation of adipose stromal cell sheet producing hepatocyte growth factor induces pleiotropic effect in ischemic skeletal muscle. International Journal of Molecular Sciences. 20: 3088. **(IF 6.208)**

2018

35. Lin, M.-W., Tseng, Y.-W., Shen, C.-C., Hsu, M.-N., Hwu, J.-R., Chang, C.-W., Yeh, C.-J., Chou, M.-Y., Wu, J.-C., **Hu, Y.-C.***. 2018, Sep. Synthetic switch-based baculovirus for transgene expression control and selective killing of hepatocellular carcinoma cells. Nucleic Acids Research. 46: e93 **(IF 19.190).**

36. Lin, K.-C., Lin, M.-W., Chen, G.-Y., Chao, Y.-C., Tuan, H.-Y., Chiang, C.-S., **Hu, Y.-C.***. 2018 March. Graphene oxide chemosensitizes cancer cells to cisplatin by inducing early autophagy events, promoting nuclear trafficking and necrosis. Theranostics 8: 2477-2487 **(IF 11.600)**.

37. Masimukku, S., **Hu, Y.-C.**, Lin, Z.-H., Chan, S.-W., Chou, T.-M., Wu, J.-M. 2018 April. High efficient degradation of dye molecules by PDMS embedded abundant single-layer tungsten disulfide and their antibacterial performance. Nano Energy. 46: 338-346. **(IF 19.069).**

38. Lin, C.-W., Cheng, M.-C., Lin, S.-Y., Hung, S.-H., Jhang, S.-Y., Chang, C.-W., Cheng, P.-C., **Hu, Y.-C.*.** 2018 Oct. Hybrid baculovirus–mediated prolonged hemagglutinin expression and secretion *in vivo* enhances the vaccine efficacy. Journal of the Taiwan Institute of Chemical Engineers. 91: 47-56 **(IF 5.876)**.

39. Lin, S.-Y., Sung, L.-Y., Yeh, C.-T., Yu, C.-P., Yang, J.-Y., **Hu, Y.-C***. 2018 Jan. Production and purification of virus-like particles of different enterovirus subtypes as vaccines. Journal of the Taiwan Institute of Chemical Engineers. 82:1-9 **(IF 5.477).**

B. Conference Presentations

1. **Hu, Y-C**. 2022 Oct. Keynote speaker and session chair, 2022 TERMIS-AP Meeting, Korea
2. **Hu, Y-C**. 2022 Oct. Invited speaker, 2022 Kyungpook National University Hospital (KNUH) International Conference. Daegu, Korea.
3. Chang, C.-W.; **Hu, Y.-C**. 2022 June. 27th BEST Conference & International Symposium on Biotechnology and Bioengineering. BEST oral presentation award. Taoyuan, Taiwan
4. **Hu, Y-C.** 2022 March. Invited speaker, Annual meeting of FARM. Taipei, Taiwan
5. **Hu, Y-C.** 2021 Nov. Keynote speaker and session chair, AFOB virtual conference, Korea
6. **Hu, Y-C.**, 2021 Oct. Keynote speaker. Annual Meeting of the Taiwan Neuroimmunology Medical Society and Society for Neurological Rare Disorders-Taiwan. Taipei, Taiwan.
7. **Hu, Y-C**. 2021 July. Keynote speaker. The 26th BEST conference and International Symposium on Biotechnology and Bioengineering. Taichung. Taiwan.
8. **Hu, Y-C**. 2021, June. Keynote speaker. 2021 Annual Meeting of Agricultural Chemical Society of Taiwan. Taipei, Taiwan.
9. **Hu, Y-C**. 2020 Dec. Invited Speaker. Nanomicelle Delivery of Self-Amplifying mRNA as a Porcine Vaccine. International Conference on Emergent Functional Matter Science 2020. Suao, Taiwan.
10. **Hu, Y-C.**, 2020 Aug. Gene Therapy for Tissue Regeneration. Keynote speaker. Annual Meeting of Biomaterials and Controlled Release Society in Taiwan. Taipei, Taiwan.
11. **Hu, Y-C.**, 2019 Dec. CRISPR Technology for Tissue Regeneration. Keynote speaker. International Symposium of Gene Therapy for Hereditary Diseases. Taipei, Taiwan.
12. **Hu, Y-C**., 2019 Oct. CRISPR Technology for Tissue Regeneration. Keynote speaker. TERMIS-AP meeting. Brisbane, Australia.

13. **Hu, Y-C.**, 2019 July. CRISPR Technology for Tissue Regeneration. NTHU-SNU Bilateral Symposium. Seoul. Korea.

14. **Hu, Y-C.**, 2019 July. CRISPR Technology for Metabolic Engineering and Tissue Regeneration NTHU-VNU Bilateral Symposium. Ho Chi Minh City, Vietnam.

15. **Hu, Y.-C*.** 2018 Sep. Delivery of anabolic genes, miRNA and CRISPR systems for stem cell fate modulation and tissue regeneration. **Plenary speaker**. TERMIS-World Congress. Kyoto, Japan.

16. K.-L., Huang, M.-N., Hsu, Truong, Vu A., **Hu, Y.-C*.** 2018 Sep. CRISPR activation for stem cell engineering and enhanced calvarial bone healing. TERMIS-World Congress. Kyoto, Japan.

17. M.-N., Hsu, K.-L., Huang, Truong, Vu A., **Hu, Y.-C*.** 2018 Sep. Adipose-derived stem cell sheets functionalized by hybrid baculovirus for prolonged GDNF expression and improved nerve regeneration. TERMIS-World Congress. Kyoto, Japan.

18. Truong, Vu A., K.-L., Huang, M.-N., Hsu, **Hu, Y.-C*.** 2018 Sep. CRISPR-mediated dual programming of bone marrow-derived mesenchymal stem cell for calvarial bone defect regeneration. TERMIS-World Congress. Kyoto, Japan.

19. C.-W., Chang, L.-S., Wang, C.-C., Shen, **Hu, Y.-C*.** 2018 Aug. Development and application of a new Cre/loxP-based long-term gene expression system in single recombinant baculovirus. Asian Federation of Biotechnology Malaysia Chapter International Symposiums 2018 (AFOBMCIS 2018), Sarawak, Malaysia.

20. **Hu, Y.-C*.** 2018 Aug. Bacterial engineering and production of chemicals using CRISPR technology. **Plenary speaker**. Cross-strait Chemical Engineering Forum. Taiyun, China.

21. **Hu, Y.-C*.** 2018 July. Delivery of RNA therapeutics and CRISPR systems for stem cell engineering and tissue regeneration. **Keynote speaker**. European Congress of Biotechnology. Geneva, Switzerland.

22. M.-N., Hsu, **Hu, Y.-C*.** 2018 Jun. Adipose-derived stem cell sheets functionalized by hybrid baculovirus for prolonged GDNF expression and improved nerve regeneration. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, Taipei, Taiwan.

23. K.-L., Huang, **Hu, Y.-C*.** 2018 Jun. CRISPR activation for BMSC and ASC engineering and enhanced calvarial bone healing. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, Taipei, Taiwan.

24. C.-W., Chang, **Hu, Y.-C*.** 2018 Aug. Development and Application of A New Cre/loxP-based Long-Term Gene Expression System In Single Recombinant Baculovirus. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, Taipei, Taiwan.

25. M-W., Lin, **Hu, Y.-C*.** 2018 Jun. Synthetic Circuit-based Baculovirus for Transgene Expression Control and Selective Killing of Hepatocellular Carcinoma Cells. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, Taipei, Taiwan

26. C.-C., Shen, **Hu, Y.-C*.** 2018 Jun. Reduce CRISPR Off-target Effects by Synthetic Switch and Self-Restricting Cas9. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, Taipei, Taiwan.

27. **Hu, Y.-C*.** 2018 May. Roles of RNA therapeutics and CRISPR systems for stem cell engineering and tissue regeneration. Invited speaker. 19th International Meeting of the Korean Tissue Engineering and Regenerative Medicine Society (KTERMS). Seoul, Korea.

28. **Hu, Y.-C*.** 2018 Jan. Roles of chemical engineers in metabolic and tissue engineering. Invited speaker. Bowie Science Conference. Hsinchu, Taiwan.

C. Patents

1. **胡育誠**,張晉維, 黃靖雯, 周俊彥. 大腸桿菌基因編輯系統及其基因編輯方法. 中華民國發明專利申請中. 申請日: 2022 年 01 月 26 日

2. **胡育誠**,張晉維, 黃靖雯, 周俊彥. 大腸桿菌基因編輯系統及其基因編輯方法. 中國發明專利申請中. 申請日: 2022 年 01 月 26 日

3. **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 patent filed on 2020/12/01. (US-2021-0189443-A1)

4. **Yu-Chen Hu**, Nam Ngoc Pham, Cho-Yi Chen. Gene editing system of *pseudomonas putida* and gene editing method thereof. **US patent filed on 10/22/2020.** (US-2021-0189387-A1)

5. **Yu-Chen Hu**, Yenlin Chen, Hung-Ming Chang. Microbial composition and processing method for wastewater. US patent application filed.

6. **Yu-Chen Hu**, Yenlin Chen, An-Banh Du. Black yeast *Aureobasidium melanogenum* strain and method of producing succinic acid using the same. US patent application filed.

7. **Yu-Chen Hu**, Chih-Che Shen. System for over-expressing target protein and method for over-expressing target protein. US patent application published (US-2018-0282759-A1).

8. **Yu-Chen Hu**, Hung Li, Jun-Hung Huang, Li-Yu Sung, Chih-Che Shen. Gene expression regulation system of *Synechococcus elongates* PCC 7942 and application thereof. China patent application filed.

9. **Yu-Chen Hu**, Hung Li, Jun-Hung Huang, Li-Yu Sung, Chih-Che Shen. Gene expression regulation system of *Synechococcus elongates* PCC 7942 and application thereof. US patent application filed.

10. **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. **中華民國發明專利核准. 中華民國發明專利 I739247. (專利權有效期間:2021/09/11~ 2039/12/19)**

11. **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)**

12. **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)**.

13. **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).**

14. **Yu-Chen Hu**, Hung Li, Jun-Hung Huang, Li-Yu Sung, Chih-Che Shen. 細長聚球藻 PCC7942 之基因編輯系統及其應用. **中華民國發明專利. I643951 (專利有效期間: 2018/12/11~2036/08/01)**

15. **Yu-Chen Hu**, Hung Li, Jun-Hung Huang, Li-Yu Sung, Chih-Che Shen. Gene expression regulation system of *Synechococcus elongates* PCC 7942 and application thereof. 細長聚球藻 PCC 7942 之基因表現干擾系統以及抑制細長聚球藻 PCC 7942 基因表現之方法. **中華民國發明專利 I629358. (專利有效期間: 2018/07/11-2036/08/01)**

16. **Yu-Chen Hu**, Yenlin Chen, An-Banh Du. 黑酵母菌出芽短梗黴 Aureobasidium melanogenum 菌株及利用其生產琥珀酸的方法 (Black yeast *Aureobasidium melanogenum* strain and method of producing succinic acid using the same). **中華民國發明專利. I592482. (專利有效期間: 2017/07/21-2036/12/25).**

17. **Yu-Chen Hu**, Chih-Che Shen. 大量表現目標蛋白系統及其方法 System for over-expressing target protein and method thereof. **中華民國發明專利. I626309. (專利有效期間: 2018/06/11-2037/03/30)**.

18. **Yu-Chen Hu**, Mu-En Chung, I-Hsin Yeh, Hung, Li, Li-Yu Sung. Cas9 plasmid, genome editing system and method of *Escherichia coli*. **US patent. US 9988637B2. 2018/06/05-2036/03/10**.

19. **Yu-Chen Hu**, Mu-En Chung, I-Hsin Yeh, Hung, Li, Li-Yu Sung. Cas9 expression plasmid, gene editing system of *Escherichia coli* and application thereof. **中華民國發明專利 I608100. (專利有效期間: 2017/12/11-2037/02/02)**.

20. **Yu-Chen Hu**, Guan-Yu Chen, Hsing-Yu Tuan. Method for inducing autophagy and activating toll-like receptor. **US Patent. US 9421224B2. 2016/08/23-2035/04/17**.

21. **Yu-Chen Hu**, Shih-Yeh Lin. Method for preparing virus-like particle and recombinant baculovirus used therein. **US Patent. US 9388390B2. 2016/07/12-2035/03/24.**

22. **胡育誠**, 林事曄. 類病毒顆粒的製備方法及其使用的重組桿狀病毒.**中華民國發明專利 I558812. (專利有效期間: 2016/11/21-2032/03/19**).

23. **胡育誠**, 陳繼元. "桿狀病毒表現載體與其應用". 中**華民國發明專利. I411681. (專利有效期間: 20131011-20290817)**.

24. 劉宏仁, 林岳宏, **胡育誠**. "泛用型桿狀病毒表面呈現系統及其應用於次單位疫苗之製備"(A universal baculovirus surface display system and application in production of subunit vaccine) **中華民國發明專利. I368656.**

25. **胡育誠**. "腸病毒類病毒顆粒的製備方法及其應用". 中華人民共和國發明專利 **CN101928728A. 2013/03/27-2033/03/26.**

26. **Yu-Chen Hu**, Chi-Yuan Chen. "Baculovirus expression vector and method therewith for generating immunogenicity in a host". **US patent, US 8399246B2. 2013/03/19-2031/03/04.**

27. **Yu-Chen Hu**, Wen-Hsin Lo. "Method for sustained expression of an exogenous gene". **US patent, US 8110183B2. 2012/02/07-2028/12/11.**

28. **胡育誠**, 羅文鑫. "長期表現外源基因之方法". **中華民國發明專利 I349037.** (專利有效期間: 2011/09/21-2028/08/03).

29. **胡育誠**, 陳皇綺, 廖俊仁 "組織細胞培養生物反應器", **中華民國發明專利 I294912.** (專利有效期間: 2008/03/21-2025/04/03)

30. 廖俊仁, 李筱萍, **胡育誠**, 江淑芳 "生物反應器",**中華民國發明專利I238851.** (專利有效期間: 2005/09/01-2023/12/30)

D. Other

榮譽榜

得獎人	獎項	得獎年度
胡育誠	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 年
胡育誠	台灣化工學會 傑出論文獎 Outstanding paper award, Taiwan Institute of Chemical Engineers	2022 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
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 Research Scholar Award, Professor Lee Foundation	2021 年
胡育誠	國際生醫材料科學與工程學會聯盟 會士	2020 年
胡育誠	科技部工程司產學合作計畫成果發表優良獎	2020 年
胡育誠	台灣化學工程學會 毛高文教授獎	2020 年
張佾豪	2020 台灣化學工程學會 67 週年年會學生壁報發表競賽 優勝(excellent)	2020 年
Thị Kieu Nuong Nguyen	2020 台灣化學工程學會 67 週年年會學生壁報發表競賽 佳作 (outstanding)	2020 年
林雅慧	2020 台灣化學工程學會 67 週年年會學生英語口頭發表競賽 佳作(outstanding)	2020 年
張晉維	2020 台灣化學工程學會 67 週年年會學生英語口頭發表競賽 佳作(outstanding)	2020 年
Nam Ngoc Pham	2020 台灣化學工程學會 67 週年年會學生英語口頭發表競賽 優勝(excellent)	2020 年
林美薇	2019 Young Asian Biological Engineer's Community 最佳壁報論文獎	2019 年

得獎人	獎項	得獎年度
胡育誠、沈志哲	第 16 屆國家新創獎 學研新創獎	2019 年
林雅慧	清華大學化工系壁報論文獎 第二名	2019 年
林美薇	清華大學優秀論文獎 優等獎	2019 年
Truong, Vu Anh	清華大學優秀論文獎 優等獎	2019 年
林美薇	14th Asian Congress of Biotechnology. 英文論文口頭發表第一名	2019 年
Truong, Vu Anh	14th Asian Congress of Biotechnology. 英文論文口頭發表第一名	2019 年
許慕農	14th Asian Congress of Biotechnology. 英文論文口頭發表第二名	2019 年
沈志哲	14th Asian Congress of Biotechnology. 英文論文口頭發表 優秀(outstanding)獎	2019 年
Thị Kieu Nuong Nguyen	14th Asian Congress of Biotechnology. 英文論文口頭發表 優秀(outstanding)獎	2019 年
林仁豐	14th Asian Congress of Biotechnology. 英文論文口頭發表 優秀(outstanding)獎	2019 年
王亮忻	科技部 107 年度大專學生研究計畫研究創作獎	2019 年
林美薇、**胡育誠**	榮台聯大優良論文獎	2019 年
張晉維	23rd BEST Conference on Biotechnology and Bioengineering. Taipei, Taiwan. 英文論文口頭發表第一名	2018 年
林美薇	23rd BEST Conference on Biotechnology and Bioengineering. Taipei, Taiwan. 英文論文口頭發表第一名	2018 年
沈志哲	23rd BEST Conference on Biotechnology and Bioengineering. Taipei, Taiwan. 英文論文口頭發表第一名	2018 年
許慕農	23rd BEST Conference on Biotechnology and Bioengineering. Taipei, Taiwan. 英文論文口頭發表第一名	2018 年

HONORS AND AWARDS

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
2020	科技部工程司產學合作計畫成果發表優良獎 Outstanding Academic-Industry Collaboration Award, Ministry of Science and Technology (MOST)
2020	台灣化工學會 毛高文教授獎 Professor Mao Gao-Wen Award, Taiwan Institute of Chemical Engineers
2020	國際生醫材料科學與工程學會聯盟 會士 Fellow Biomaterials Science and Engineering (FBSE), International Union of Societies for Biomaterials Science and Engineering
2019	第 16 屆國家新創獎 學研新創獎 National Innovation Award
2019	台灣化工學會 金開英獎 Jin Kai-Yin Award, Taiwan Institute of Chemical Engineers
2018	科技部 特約研究計畫
2018	科技部 未來科技突破獎 Future Technology Award, MOST

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)
2020	Guest Editor, Frontiers in Cell and Developmental Biology (IF 6.081)
2019	Guest Editor, Biotechnology Journal (5.726)
2018	Editorial board member, Biotechnology and Bioprocess Engineering
2018	Editor, Scientific Report (IF 4.996)
2018	Editorial board member, Tissue Engineering and Regenerative Medicine

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

A. Journal Papers (* Corresponding author)

2022

1. 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 (2021 Impact Factor 11.211).

2. 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 (2021 Impact Factor 4.889).

2021

3. 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.

2020

4. **J.-H. Huang***. ”Manipulation of Fluids for Medical and Biotechnological Applications”, issued by Biotechnology and Biochemical Engineering Society of Taiwan (BEST) Quarterly in June, 2020.

5. H.-Y. Mu, T.-L. Lu, T.-H. Hsiao, **J.-H. Huang***. Microfluidic-based approaches for COVID-19 diagnosis. *Biomicrofluidics*, 2020, 14: 061504 (2021 Impact Factor 3.258).

6. C.-Y. Cho, T.-H. Chiang, L.-H. Hsieh, W.-Y. Yang, H.-H. Hsu, C.-K. Yeh, C.-C. Huang*, **J.-H. Huang***. Development of a Novel Hanging Drop Platform for Engineering Controllable 3D Microenvironments. *Frontiers in Cell and Developmental Biology*, 2020, 8:327. (2021 Impact Factor 6.081).

7. H.-Y. Mu, Y.-C. Ou, H.-N. Chuang, T.-J. Lu, P.-P. Jhan, T.-H. Hsiao*, **J.-H. Huang***. Triple Selection Strategy for in Situ Labeling of Circulating Tumor Cells with High Purity and Viability toward Preclinical Personalized Drug Sensitivity Analysis. *Advanced Biosystems*, 2020, 4, 2000013 (Cover Image) (2021 Impact Factor 4.053).

8. P.-H. Chen, Y.-T. Cheng, B.-S. Ni, **J.-H. Huang***. Continuous Cell Separation Using Microfluidic-Based Cell Retention Device with Alternative Boosted Flow. *Applied Biochemistry and Biotechnology*, 2020, 191:151-163 (2021 Impact Factor 3.094).

2019

9. M.-H. Chen, H.-L. Hsieh, **J.-H. Huang***. ”Development of Ogran-on-a-Chip Model for Drug Discovery”, Chemical Engineering, Vol. 66, No. 3 issued by Taiwan Institute of Chemical Engineers (TwIChE) in June, 2019.

10. B.-S. Ni, C. Tzao, **J.-H. Huang***. Plug-and-Play In Vitro Metastasis System toward Recapitulating the Metastatic Cascade. *Scientific Reports*, 2019, 9: 18110 (2021 Impact Factor 4.996).

11. C.-K. Lin, Y.-Y. Hsiao, P. Nath, **J.-H. Huang***. Aerosol Delivery into Small Anatomical Airway Model Through Spontaneous Engineered Breathing. *Biomicrofluidics*, 2019, 13: 044109 (2021 Impact Factor 3.258).

12. H.-L. Hsieh, P. Nath, **J.-H. Huang***. Multistep Fluidic Control Network toward the Automated Generation of Organ-on-a-Chip. *ACS Biomaterials Science & Engineering*, 2019, 5, 4852-4860 (2021 Impact Factor 5.395).

13. J. Ohan, B. Pelle, P. Nath, **J.-H. Huang**, B. Hovde, M. Vuyisich, A. E. Dichosa, S. R. Starkenburg. High-Throughput Phenotyping of Cell-to-Cell Interactions in Gel Microdroplet Pico-Cultures. *BioTechniques*, 2019, 66, 218-224 (2021 Impact Factor 2.746).

2018

14. A. Arefin, Q. Mcculloch, R. Martinez, S. A. Martin, R. Singh, O. M. Ishak, E. M. Higgins, K. E, Haffey, **J.-H. Huang**, S. Iyer, P. Nath, R. Iyer, K. F. Harris. Micromachining of Polyurethane Membranes for Tissue Engineering Applications. *ACS Biomaterials Science & Engineering*, 2018, 4 (10), 3522–3533 (2021 Impact Factor 5.395).

15. **J.-H. Huang**, K. Haffey, A. Arefin, L. E. Akhadov, J. F. Harris, R. Iyer, P. Nath. A Microfluidic Method to Measure Bulging Heights for Bulge testing of Polydimethylsiloxane (PDMS) and Polyurethane (PU) Elastomeric Membranes. *RSC Advances*, 2018, 8, 21133-21138 (2021 Impact Factor 4.036).

16. X. Qiu, **J.-H. Huang**, T. M. Westerhof, J. A. Lombardo, K. M. Henrikson, M. Pennell, P. P. Pourfard, E. L. Nelson, P. Nath, J. B. Haun. Microfluidic Channel Optimization to Improve Hydrodynamic Dissociation of Cell Aggregates and Tissue. *Scientific Reports*, 2018, 8:2774 (2021 Impact Factor 4.996).

B. Conference Presentations

2022

1. 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.

2. C. Lee, **J.-H. Huang***. Development of Gut Microbiome Modulation for Enhancing Personalized Cancer Immunotherapy. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan.

3. C.-M. Lin, **J.-H. Huang***. Development of In Vitro Tumor Microenvironment on Chip for Esophageal Cancer Drug Selection. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan.

4. 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).

5. J. Li, **J.-H. Huang***. Application of in Vitro Tumor Microenvironment on Chip for PDAC Autophagy and MP Inhibition Drug Selection. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan (Honorable Mention).

6. 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.

7. 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.

8. P.-R. Lin, C.-W. Wu, **J.-H. Huang***. Development of Continuous Isolation Platform toward Sustainable Metal−Organic Frameworks Production. *69th TwIChE Annual Meeting*, **2022**. New Taipei, Taiwan (Honorable Mention).

9. 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).

10. 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.

11. 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).

12. 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).

13. C.-H. Wu, **J.-H. Huang***. Develop an Automated Platform and a Microfluidic-Based Valve Controlling System for Continuous Protein Purification on MultiColumns. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan (Best poster award).

14. P.-R. Lin, C.-W. Wu, **J.-H. Huang***. Development of Continuous Isolation Platform toward Sustainable Metal−Organic Frameworks Production for Drug Delivery. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan.

15. X. H. Cheong, Y.-C. Tai, Y.-H. Cheng, **J.-H. Huang***. Detection of Neonatal Hyperbilirubinemia Using Microfluidics-Based Rapid Diagnosis Chip. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan.

16. Y.-J. Chen, C.-H. Peng, **J.-H. Huang***. Development of Low-Pressure Drop Packed-Bed Microreactor for Continuous, Heterogeneous Biocatalysis. *2022 BEST Conference & International Symposium on Biotechnology and Bioengineering*, **2022**. Taoyuan, Taiwan.

17. 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.

18. 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.

19. 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.

20. 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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21. 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.

22. C.-H. Wu, Y.-H. Chi, **J.-H. Huang***. Develop an Automated Platform and a Microfluidic-Based Valve Controlling System for Continuous Protein Purification on Multi-Columns. *68th TwIChE Annual Meeting*, **2021**. Kaohsiung, Taiwan.

23. G.-Y. Chang, **J.-H. Huang***, C.-W. Wu. Continuous Synthesis of Metal Organic Framework. *68th TwIChE Annual Meeting*, **2021**. Kaohsiung, Taiwan.

24. 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.

25. 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.

26. 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).

27. 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).

28. L.-H. Lee, **J.-H. Huang***. Continuous Cell Encapsulation in Liquid-Core Microsphere for Cell-Material Interaction Analysis. *68th TwIChE Annual Meeting*, **2021**. Hsinchu, Taiwan (Honorable Mention).

29. 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.

30. 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).

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31. **J.-H. Huang***. Experience Sharing of English Teaching and Interactive Response System. 67th TwIChE Annual Meeting, 2020. Hsinchu, Taiwan (Invited).

32. C.-L. Wu, J.-Y. Xu, **J.-H. Huang***. Continuous Droplet-Based Microfluidic Synthesis of Metal-Organic Frameworks. 67th TwIChE Annual Meeting, 2020. Hsinchu, Taiwan.

33. S.-W. Fan, **J.-H. Huang***. Analysis of Flow Field in a Rapid Diagnosis Device. 67th TwIChE Annual Meeting, 2020. Hsinchu, Taiwan.

34. Y.-H. Chi, I-W. Chen, **J.-H. Huang***. Development of Microfluidic-Based Valve Controlling Platform For Continuous Protein Purification. 67th TwIChE Annual Meeting, 2020. Hsinchu, Taiwan.

35. T.-H. Chiang, **J.-H. Huang***. Rapid Formation of Hanging Drop Arrays for Culturing 3D Spheroids. 67th TwIChE Annual Meeting, 2020. Hsinchu, Taiwan (Honorable Mention).

36. L.-H. Lee, **J.-H. Huang***. Continuous Cell Encapsulation in Liquid Core Hydrogel Droplet for Drug Development and Cell Therapy. 67th TwIChE Annual Meeting, 2020. Hsinchu, Taiwan (Honorable Mention).

37. M.-H. Yen, C.-Y. Lin, **J.-H. Huang***. Development of Multi-Antibiotic Susceptibility Testing Chip for Real-time Clinical Diagnosis. Annual Meeting of the Taiwan Filtration and Separations Society, 2020. Taipei, Taiwan (3rd place).

38. T.-H. Chiang, C.-Y. Cho, L.-H. Hsieh, W.-Y. Yang, C.-K. Yeh, C.-C. Huang, and **J.-H. Huang***. A Novel Hanging Drop Platform for High Throughput 3D Spheroid Formation for Drug Testing. Annual meeting of Biomaterials and Controlled Release Society in Taiwan, 2020. Taipei, Taiwan.

39. M.-H. Yen, C.-Y. Lin, **J.-H. Huang***. Antibiotic Susceptibility Testing Chip for Real Time Multi-Drug Diagnosis. Annual meeting of Biomaterials and Controlled Release Society in Taiwan, 2020. Taipei, Taiwan.

40. Y.-H. Chi, I.-W. Chen, **J.-H. Huang***. Automated Microfluidic-Based Vavle Controlling System for Continuous Protein Purification. Annual meeting of Biomaterials and Controlled Release Society in Taiwan, 2020. Taipei, Taiwan.

41. C.-L. Wu, **J.-H. Huang***. Continuous Acid-Base Extraction for Small Molecule Separation in a Slug-Based System. Annual meeting of Biomaterials and Controlled Release Society in Taiwan, 2020. Taipei, Taiwan.

42. Y.-L. Lu, W.-H. Lai **J.-H. Huang***. Dual-Microperfusion Platform for Cell Culture and Drug Screening. Annual meeting of Biomaterials and Controlled Release Society in Taiwan, 2020. Taipei, Taiwan (Excellent Poster Award).

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43. Y.-H. Chi, I-W. Chen, **J.-H. Huang***. Development of Microfluidic-Based Vavle Controlling Purification System for Continuous Protein Purification. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan (Honorable Mention).

44. J.-Y. Xu, J.-H. Chiu, **J.-H. Huang***. Continuous Production of Monodisperse Water-in-Oil Droplets under Pulsatile-Free Flow. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan (Honorable Mention).

45. H.-C. Chen, C.-L. Chang, H.-H. Chou*, **J.-H. Huang***. Smart Flexible Pressure Sensors for Biomedical Applications. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan (Best Poster Award).

46. Y.-L. Lu, W.-H. Lai, **J.-H. Huang***. Hydraulically-Driven Microperfusion Cell Culture Platform for Drug Screening. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan (Best Poster Award).

47. Y.-R. Chen, **J.-H. Huang***. Fabrication of a Breathing Bronchial-like Platform for Pulmonary Drug Application. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan (Best Poster Award).

48. M.-H. Chen, **J.-H. Huang***. Fabrication of Plug-and-Play Culture Platform toward Automatically Personalized Tissue Culture. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan.

49. Y.-C. Tai, **J.-H. Huang***. Rapid Diagnosis Chip for Neonatal Hyperbilirubinemia. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan.

50. H.-Y. Mu, Y.-L. Lu, Y.-C. Ou, T.-H. Hsiao*, **J.-H. Huang***. In Situ Retrieval and Labelling of Viable Circulating Tumor Cells on the Chip toward Personalized Drug Sensitivity Analysis. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan.

51. M.-H. Yen, C.-Y. Lin, **J.-H. Huang***. Development of Power-Free Antibiotic Susceptibility Testing Chip for Drug Screening. 66th TwIChE Annual Meeting, 2019. Taichung, Taiwan.

52. **J.-H. Huang***. Aerosol Delivery into Spontaneous Breathing Lung-on-a-Chip Model. The 1st International Symposium on Aerosol Characterization and Therapies, 2019. Kaohsiung, Taiwan (Invited).

53. J.-Y. Xu, J.-H. Chiu, **J.-H. Huang***. Continuous Production of Monodisperse Water-in-Oil Droplets under Pulsatile-Free Flow. Asian Pacific Confederation of Chemical Engineering (APCChE) congress, 2019. Sapporo, Japan (Excellent Poster Award).

54. H.-C. Chen, C.-L. Chang, H.-H. Chou*, **J.-H. Huang***. Fabrication of a Flexible Capacitive Pressure Sensor for Implantable Medical Applications. Asian Pacific Confederation of Chemical Engineering (APCChE) congress, 2019. Sapporo, Japan (Excellent Poster Award).

55. Y.-C. Tai, **J.-H. Huang***. Fabrication of bilirubin chip for neonatal hyperbilirubinemia diagnosis. Asian Pacific Confederation of Chemical Engineering (APCChE) congress, 2019. Sapporo, Japan.

56. M.-H. Chen, **J.-H. Huang***. Fabrication of Plug-and-Play Culture Platform toward Automatically Personalized Tissue Culture. Asian Pacific Confederation of Chemical Engineering (APCChE) congress, 2019. Sapporo, Japan.

57. Y.-R. Chen, **J.-H. Huang***. Fabrication of a breathing bronchial-like platform for pulmonary drug application. Asian Pacific Confederation of Chemical Engineering (APCChE) congress, 2019. Sapporo, Japan.

58. **J.-H. Huang***. Manipulation of Fluidic towards the High-Throughput Organ-on-a-Chip System. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan (Invited).

59. J.-Y. Xu, **J.-H. Huang***. Continuous Formation of Oil-in-water Droplets for Spheroid Cell Culture. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan.

60. P.-H. Chen, **J.-H. Huang***. Development of Microfluidic-based System for Continuous Cell Separation. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan (Best Poster Award).

61. Y.-C. Tai, **J.-H. Huang***. Rapid and Simple Bilirubin Chip for Neonatal Hyperbilirubinemia Diagnosis. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan (Best Poster Award).

62. C.-Y. Cho, **J.-H. Huang***. A Formation of Spheroids by Using Pressure-assisted Network Droplet Accumulation System (PANDAS) for High Throughput Drug Screening. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan (Best Poster Award).

63. M.-H. Chen, **J.-H. Huang***. Automatically Plug-and-play Culture Platform for Long-term Tissue Culture. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan (Best Poster Award).

64. Y.-R. Chen, **J.-H. Huang***. Construction of A Live Bronchial-like Monitor for Pulmonary Drug Screening. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan (First place Poster Award).

65. H.-C. Chen, C.-L. Chang, H.-H. Chou, **J.-H. Huang***. Fabrication of a Flexible Capacitive Pressure Sensor for Implantable Medical Applications. The 14th Asian Congress on Biotechnology, 2019. New Taipei, Taiwan.

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66. C.-Y. Cho, **J.-H. Huang***. Using Pressure-Assisted Network Droplet Accumulation System (PANDAS) for Formation of Spheroids. The 24th Symposium of Young Asian Biological Engineers' Community, 2018. Taipei, Taiwan (Best Poster Award).

67. I.-W. Chen, **J.-H. Huang***. Continuous Protein Purification Using Microfluidic-Based Valve Controlling Platform. The 24th Symposium of Young Asian Biological Engineers' Community, 2018. Taipei, Taiwan.

68. W.-H. Lai, **J.-H. Huang***. Multi-Unit Cell Culture Platform for High-Throughput Drug Toxicity Study. The 24th Symposium of Young Asian Biological Engineers' Community, 2018. Taipei, Taiwan.

69. **J.-H. Huang***. Nature Grows in Its Own Way. The 24th Symposium of Young Asian Biological Engineers' Community, 2018. Taipei, Taiwan (Invited).

70. C.-K. Lin, B.-S. Ni, H.-L. Hsieh, **J.-H. Huang***. Human Breathing Lung-on-a Chip for Inhalation Drug Delivery. American Institute of Chemical Engineers Annual Meeting, 2018. Pittsburgh, PA, USA.

71. C.-Y. Cho, **J.-H. Huang***. Formation of Hanging Drop Arrays Using Pressure-Assisted Network for Droplet Accumulation System (PANDAS). 65th TwIChE Annual Meeting, 2018. Yunlin, Taiwan (Best Poster Award).

72. I.-W. Chen, **J.-H. Huang***. Development of Microfluidic-Based Valve Controlling Platform for Continuous Protein Purification. 65th TwIChE Annual Meeting, 2018. Yunlin, Taiwan (Best Poster Award).

73. W.-H. Lai, **J.-H. Huang***. Development of Hydraulically-driven micro Perfusion Cell Culture Platform for High-Throughput Drug Screening. 65th TwIChE Annual Meeting, 2018. Yunlin, Taiwan.

74. **J.-H. Huang***. Manipulation of Fluid for Biomedical Applications. The 2018 International Symposium on Transport Phenomena and Applications, 2018. Yunlin, Taiwan (Invited).

75. **J.-H. Huang***. Reconstruction of Lung Function Using Liquid Logic Technology. 2018 KSBB Fall Meeting and International Symposium, 2018. Seoul, Korea (Invited).

76. H.-L. Hsieh, **J.-H. Huang***. Fabrication of Human Bronchial Epithelium Culture Platform as a Model System for Studying Lung Diseases. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, 2018. Taipei, Taiwan.

77. C.-Y. Cho, **J.-H. Huang***. Formation of Hanging Drop Arrays Using Pressure-Assisted Network for Droplet Accumulation System (PANDAS). 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, 2018. Taipei, Taiwan.

78. I.-W. Chen, **J.-H. Huang***. Development of Microfluidic-Based Valve Controlling Platform for Continuous Protein Purification. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, 2018. Taipei, Taiwan.

79. W.-H. Lai, **J.-H. Huang***. Multi-Unit Cell Culture Platform for High-Throughput Screening. 2018 BEST Conference & International Symposium on Biotechnology and Bioengineering, 2018. Taipei, Taiwan.

C. Patents

1. H.-Y Mu, **J.-H. Huang**, T.-H. Hsiao. Circulating Tumor Cell Capture Device, Method Thereof and Method for Circulating Tumor Cell Capture and Drug Sensitivity Analysis. US patent 11,524,296, 2020/01/30-2040/01/30

2. 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

3. 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

4. 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

5. 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

6. 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

7. 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

8. 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.

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

10. 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

11. P. Nath, **J.-H. Huang**. "Reversibly Bonded Devices and Methods of Making and Using the Same". US Patent 10,737,261 B1, 2020/08/11-2037/11/28.

12. R. Iyer, **J.-H. Huang**, P. Nath, J. F. Harris, "Bio-Assessment Device and Method of Making the Device". WIPO patent. WO2016049363A1.

13. R. Iyer, **J.-H. Huang**, P. Nath, J. F. Harris, J. P. Wikswo, "Bio-Assessment Device and Method of Making the Device". US patent 10,634,665 B2 2020/04/28-2035/09/24.

14. R. Iyer, J. F. Harris, **J.-H. Huang**, P. Nath, A. Przekwas "Multi-Organ Media compositions and Methods of Their Use". US Patent 10,564,148 B2, 2020/02/18-2035/09/24.

15. P. Nath, **J.-H. Huang**. "Microfluidic Aspirator and Methods of Making and Using the Same". US Patent 10,408,821 B2, 2019/09/10-2037/04/14.

16. A. Przekwas, R. Iyer, J. F. Harris, **J.-H. Huang**, P. Nath, "Multi-Organ Media compositions and Methods of Their Use". WIPO patent. WO2016049367A1.

17. 倪秉瑄、**黃振煌**。細胞培養裝置及細胞培養系統。發明專利證書號：I671399。專利年限：2019/09/11-2038/10/21

18. 林雋凱、**黃振煌**。仿肺部裝置、人體肺部模擬系統、模擬人體肺部呼吸的方法與模擬物質在人體肺部沉積的系統及方法。發明專利證書號：I661844。專利年限：2019/06/11-2038/11/18

19. R. Iyer, P. Nath, **J.-H. Huang**. "Devices for Fluid Management". WIPO patent. WO2016049365A1.

20. 謝欣霖、**黃振煌**。自動化體外細胞培養平台及細胞培養方法。發明專利證書號：I657139。專利年限：2019/04/21-2038/10/29

21. P. Nath, **J.-H. Huang**. "Magnetically Controlled Valves and Pumps". US Patent 10,400,915 B2, 2019/09/03-2037/07/07.

D. Other

- 2022 台灣化工學會化工傑作獎
- 2021 科技部優秀青年學者獎
- 2021 指導大專生研究創作獎
- 2019 年全球百大科技研發獎

Publications of Shi-Shang Jang (鄭西顯)

A. Journal Papers

2022

1. 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. (2022). Model Predictive Control of Grade Transition with Attention Base Sequence-to-Sequence Model. In Computer Aided Chemical Engineering (Vol. 49, pp. 367-372). Elsevier.

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

3. 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 (2022): 104130.

2021

4. Sun, K., Sui, L., Wangm HX, Yu XD, **Jang, SS**, "Design of an Adaptive Nonnegative Garrote Algorithm for Multi-Layer Perceptron- Based Soft Sensor" IEEE Sensors, 21, 19, 21808 – 21816, 2021.

5. 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

2020

6. Cheng-Hung Chou, Haibin Wu, Jia-Lin Kang, David Shan-Hill Wong, Yuan Yao, Yao-Chen Chuang, **Shi-Shang Jang**, and John Di-Yi Ou, "Physically Consistent Soft-sensor Development Using Sequence-to-Sequence Neural Networks", DOI 10.1109/TII.2019.2952429, IEEE Transactions on Industrial Informatics, 2020.

7. Huang, SH; Kang, JL ; Wong, DSH ; **Shi-Shang Jang*** ; Lin, CA, " Particle-Scavenging prediction in sieve plate scrubber via dimension reduction in computational fluid dynamics", Chemical Engineering Research and Design, 160; 540-550, 2020.

8. Fan, YJ ; Tao, B; Zheng, Y **Shi-Shang Jang**," A Data-Driven Soft Sensor Based on Multilayer Perceptron Neural Network With a Double LASSO Approach", IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT; 69; 7; pp3972-3979, 2020.

2019

9. Yajun Fan, Bo Tao, Ying Zheng, **Shi-Shang Jang** (2019, Oct). A Data-Driven Soft Sensor Based on Multilayer Perceptron Neural Network with a Double LASSO Approach.. IEEE Transactions on Instrumentation and Measurement.

10. Abhay Suresh Zambare, John Ou, David Shan Hill Wong, Ching-Wen Yao, **Shi-Shang Jang*** (2019, Jul). Controlling the product selectivity in the conversion of methanol to the feedstock for phenol production.. RSC Advances.

11. Jia-Lin Kang, Hsu-Hung Chang, Shyan-Shu Shieh, **Shi-Shang Jang***, Jing-wei Ko, Hsiang-Yao Sun (2019, Apr). Development of guidelines for optimal operation of a cogeneration system.. Journal of the Taiwan Institute of Chemical Engineers.

12. Jia-Lin Kang, Ya-Cih Ciou, Dong-Yang Lin, David Shan-Hill Wong, **Shi-Shang Jang*** (2019, Apr). Investigation of hydrodynamic behavior in random packing using CFD simulation.. Chemical Engineering Research and Design.

2018

13. Kai Sun, Shao-hsuan Huang, David Shan-Hill Wong, **Shi-Shang Jang*** (2018, Jan). Design and Application of a Variable Selection Method for Multi-layer Perceptron Neural Network with LASSO. IEEE Transactions on Neural Networks and Learning Systems, DOI: 10.1109/TNNLS.2

B. Conference Papers

2022

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. (2022, June) "Development of a Data-driven Nonlinear Dynamic Model for A High Density Polyethylene Reactor Using a Sequence-to-Sequence Model with Attention and Application in Model Predictive Control of Grade Transition" The 14th International Symposium on Process Systems Engineering (PSE 2021)

2020

2. Jia-Lin Kang, Yao-Chen Lee, Yao-Cheng Chuang, Marvin Frias, Cheng-Huang Chou, San-Jang Wang, David Shan Hill Wong, **Shi-Shang Jang**. (2020, Nov) "Data-Driven Digital Twin Development for Chemical Plants Using Sequence-to-Sequence Approach and Rolling Training" 2020 Asian Symposium on Process Systems Engineering

3. Jia-Lin Kang, **Shi-Shang Jang**, Fan-Kai Sun, and Po-Hsun Chang. (2020, Aug.)"Physically Consistent Machine Learning Models Using Artificial Data for MISO Systems and Model Predictive Control." European Symposium on Computer Aided Process Engineering 30 (Escape 30)

4. Jia-Lin Kang, Chien-Chien Wang, Po-Hsun Chang, David Shan-Hill Wong, **Shi-Shang Jang**, and Chun-HsiuWang. (2020, Aug.) "Modeling of The Solid Oxide Fuel Cell Considering H2 and CO Electrochemical Reactions." European Symposium on Computer Aided Process Engineering 30 (Escape 30)

2019

5. Jia-Lin Kang, Hsu-Hung Chang, Shyan-Shu Shieh*, **Shi-Shang Jang***, Jing-wei Ko, Hsiang-Yao Sun (2019, Jan). Development of Guidelines for Optimal Operation of A Cogeneration System. . 29 European Symposium on Computer Aided Process Engineering.

2018

6. Abhay Suresh Zambare, John Ou, David Shan Hill Wong, Ching-Wen Yao, **Shi-Shang Jang*** (2018, Nov). Increasing Btp-X and C2-C3 Olefins in Methanol to Aromatics over Shape-Selective Zn-Si-HZSM-5.. 18 AIchE Annual Meeting, Pittsburgh, PA.

7. Siao-Han Huang, Jia-Lin Kang, Abhay S Zambare, David Shan-Hill Wong, **Shi-Shang Jang*** (2018, Nov). Modeling a Water Wash Sieve Tray for Aerosols Scavenging Using Computational Fluid Dynamics.. 18 AIchE Annual Meeting, Pittsburgh, PA.

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

- Taiwan Institute of Chemical Engineering
- International Journal of System Control and Information Processing

4. PROGRAM COMMITTEE:

- Steering Committee, PSE ASIA 2018.
- International Program Committee, AdCONIP: 2020, Singarpore.
- International Program Committee, AdCONIP: 2021, Taipei.

5. 清華大學傑出產學貢獻獎 2022

Publications of U-Ser Jeng (鄭有舜)

A. Journal Papers (* Corresponding author)

2022

1. Tung-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, Chem. Engine. J. 438 (2022) 135592. (IF=16.744; Time Cited 2).

2. Kai-En Hung, Yu-Sheng Lin, Yung-Jing Xue, Hau-Ren Yang, Yu-Ying Lai, Je-Wei Chang, Chun-Jen Su, An-Chung Su, Chain-Shu Hsu, **U-Ser Jeng**,* Yen-Ju Cheng,* Non-Volatile Perfluorophenyl-Based Additive for Enhanced Efficiency and Thermal Stability of Nonfullerene Organic Solar Cells via Supramolecular Fluorinated Interactions, Adv. Energy Mater., 12 (2022) 2270047. (IF=29.698; Time Cited 7); Inner Cover story paper

3. O Shih, KF Liao, YQ Yeh, CJ Su, CA Wang, JW Chang, WR Wu, CC Liang, **U-Ser Jeng**,* "Performance of the new biological small-and wide-angle X-ray scattering beamline 13A at the Taiwan Photon Source", J. Appl. Cryst. (2022). 55, 340-352. (IF=3.304; Time Cited 2)

4. CA Wang, Y-Q Yeh,* CY Mou, CJ Su, WR Wu, **U-Ser Jeng**,* Small-angle-scattering resolved catanionic unilamellar vesicles as molecule carriers, Materials Chemistry and Physics 277 (2022) 125435.

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10. Yi-Qi Yeh, Chun-Jen Su, Chen-An Wang, Ying-Chu Lai, Chih-Yuan Tang, Zhenyu Di,Henrich Frielinghaus, An-Chung Su, **U-Ser Jeng***, Chung-Yuan Mou*. "Diatom-inspired self-assembly of silica thin sheets of perpendicular" Nanochannels. J. Colloid Interface Sci. 2021/02, 584, 647–659 (IF=8.128, Times Cited=2)

11. Cheng-Ming Hsieh, Min-Ru Chuang, Yuto Yamada, Chun-Jen Su, Yuan Jay Chang,* Michihisa Murata,* **U-Ser Jeng**,* and Shih-Ching Chuang* " p Tetrafluorophenylene Divinylene-Bridged Nonfullerene Acceptors as Binary Components or Additives for High-Efficiency Organic Solar Cells", ACS Applied Materials & Interfaces. (2021/12), https://doi.org/10.1021/acsami.1c19943. (IF=9.229, Times Cited=0)

12. D. G. Liu, C.-H. Chang, LC Chiang, MH Lee, CF Chang, CY Lin, CC Liang, **U. Jeng**,* ...Optical design and performance of the biological small-angle X-ray scattering beamline at the Taiwan Photon Source. J. Syn. Rad. 2021, 28, 1954-1965. (IF=2.616, Times Cited=0)

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14. Chen-An Wang, Yi-Qi Yeh,* Chung-Yuan Mou, Chun-Jen Su, Wei-Ru Wu, **U-Ser Jeng*** "Small-angle-scattering resolved catanionic unilamellar vesicles as molecule carriers" Mater. Chem. Phys. 2022, 277, 125435. (IF=4.094, Times Cited=0)

15. Jing Guo, Beibei Qiu, Dengchen Yang, Can Zhu,Liuyang Zhou, Chunjen Su, **U-Ser Jeng**, Xinxin Xia, Xinhui Lu, Lei Meng, Zhanjun Zhang, Yongfang Li, "15.71% Efficiency All-Small-Molecule Organic Solar Cells Based on Low-Cost Synthesized Donor Molecules"Advanced Functional Materials (2021/12)(IF: 18.808), https://doi.org/10.1002/adfm.202110159 (IF=18.808, Times Cited=0)

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20. Hanlin Hu, Minchao Qin, Patrick W. K. Fong, Zhiwei Ren, Xuejuan Wan,* Mriganka Singh, Chun-Jen Su, **U-Ser Jeng**, Liang Li, Jiajie Zhu, Mingjian Yuan, Xinhui Lu, Chih-Wei Chu, Gang Li,* "Perovskite Quantum Wells Formation Mechanism for Stable Efficient Perovskite Photovoltaics—A Real-Time Phase-Transition Study" Advanced Materials, 2006238. (IF=30.849, Times Cited=6)

21. Yee-Song Law, Sainan Wang, Yaw Bia Tan, Orion Shih, Age Utt, Wei Yang Goh, Bing-Jun Lian, Ming Wei Chen, **U-Ser Jeng**, Andres Merits, Dahai Luo,* "Interdomain Flexibility of Chikungunya Virus nsP2 Helicase-Protease Differentially Influences Viral RNA Replication and Infectivity" Am. Soc. Microbiologe, J. Virol. 2021; 95: e01470-20. (IF=5.103, Times Cited=4)

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29. S.-M. Lin, S.-C. Lin, J.-N. Hsu, C.-K. Chang, C.-M. Chien, Y.-S. Wang, H.-Y. Wu, **U.-S. Jeng**, K. Kehn-Hall, and M.-H. Hou*, "Structure-Based Stabilization of Non-native Protein-protein Interactions of Coronavirus Nucleocapsid Proteins in Antiviral Drug Design" J. Med. Chem. 63, 3131 (2020). (IF=7.446, Times Cited=42)

30. P.-H. Chen*, S.-J. Lin, J.-C. Tsai, **U.-S. Jeng**, and A.-C. Su*"Equilibrium Melting Temperature Depression in Syndiotactic Poly(styrene-stat-3-methylstyrene) and Poly(styrene-stat-4-methylstyrene)" Macromolecules, 53, 3059 (2020). (IF=5.985, Times Cited=0)

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35. CH Yang, TL Lin, **U. Jeng**, "Small-angle X-ray scattering studies on the structure of disc-shaped bicelles incorporated with neutral PEGylated lipids", Langmuir 2019, 35, 9483-9492(IF=3.882, Times Cited=2)

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49. M.-H Li, H.-H Yeh, Y.-H. Chiang, **U. Jeng**, C.-J. Jen Su, H.-W. Shiu, Y.-J. Hsu, N. Kosugi, T. Ohigashi, Y.-A. Chen, P.-S. Shen, P. Chen, T.-F. Guo, "Highly efficient 2D/3D hybrid perovskite solar cells via low-pressure vapor-assisted solution process", Adv. Mater., 2018, 30, 1801401. (IF=30.849, Times Cited=337)

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53. Y.-J. Wang, **U-Ser Jeng**, and S.-h. Hsu* "Biodegradable Water-Based Polyurethane Shape Memory Elastomers for Bone Tissue Engineering", ACS Biomater. Sci. Eng,2018, 4, 4, 1397–1406, (IF=4.749, Times Cited=51)

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-)

6. J. Synchrotron Radiation 共編輯委員 (since 2019 –)

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)

2022

1. C. Tseng, **Y.L. Liu***, "Creation of water-permeation pathways with matrix-polymer functionalized carbon nanotubes in polymeric membranes for pervaporation desalination", *J. Membr. Sci Lett.* **2**(2), 100027 (2022).

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5. 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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8. C.H. Huang, **Y.L. Liu***, "A self-protection effect of monomers on preventing gelation in synthesis of main-chain polybenzoxazines with high molecular weights", *Macromolecules* **54**(16) 7434-7440 (2021).

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10. T.W. Chuo, J.T. Hou, **Y.L. Liu***, "Preparation of polymers possessing dynamic N-hindered amide bonds through ketene-based chemistry for repairable anticorrosion coatings", *Mater. Adv.* **2**(12), 3993-3999 (2021).

11. C.H. Huang, **Y.L. Liu***, "Preparation of Meldrum's acid-functionalized polyimides exhibiting organo-soluble, reactive, self-crosslinkable, and colorless features", *J. Polym. Sci.* **59**(10), 893-903 (2021).

12. Y.T. Chen, Y.M. Sun, C. C. Hu, J. Y. Lai, **Y.L. Liu***, "Employing lignin in formation of the selective layer of thin-film composite membranes for pervaporation desalination", *Mater. Adv.* **2**(9), 3099-3106 (2021).

13. T.C. Wang, C.Y. Tsai, **Y.L. Liu***, "Solid polymer electrolytes based on crosslinked polybenzoxazine possessing poly(ethylene oxide) segments enhancing cycling performance of lithium metal batteries", *ACS Sustainable Chem. Eng.* **9**(18), 6274-6283 (2021).

14. C.Y. Tsai, **Y.L. Liu***, "2,2-Dimethyl-1,3-dioxane-4,6-dione functionalized poly(ethylene oxide)-based polyurethanes as multi-functional binders for silicon anodes of lithium ion batteries", *Electrochim. Acta* **379C**, 138180 (11 pages) (2021).

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19. Y.L. Chang, T.C. Wei, **Y.L. Liu***, "Electrochemical activation of polymer chains mediated with radical transfer reactions", *Chem. Commun.* **56**(17), 2626-2629 (2020).

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24. B.K. Su, C.H. Chang, Y.M. Sun, C.C. Hu, J.Y. Lai, **Y.L. Liu***, "Porous membranes of thermosetting polybenzoxazine resins with interconnected-pores for organic solvent microfiltration", *J. Membr. Sci.* **586**, 267-273 (2019).

25. Y.C. Chen. **Y.L. Liu***, "Polymerization of Meldrum's acid and diisocyanate: an effective approach for preparation of reactive polyamides and polyurethanes", *ACS Omega* **4**(4), 7884-7890 (2019). (***Invited Paper by Editor***)

26. C.H. Huang, **Y.L. Liu***, "The Michael addition reaction of Meldrum's acid (MA): an effective route for the preparation of reactive precursors for MA-based thermosetting resins", *Polym. Chem.* **10**(15), 1873-1881 (2019). (***Featured as Issue Cover***)

27. Y.T. Chen, Y.L. Liao, Y.M. Sun, C.C. Hu, J.Y. Lai, **Y.L. Liu***, Lignin as an effective agent for increasing the separation performance of crosslinked polybenzoxazine based membranes in pervaporation dehydration application", *J. Membr. Sci.* **578**, 156-162 (2019).

28. H.K. Lin, Y.S. Lai, **Y.L. Liu***, "Crosslinkable and self-foaming polysulfide materials for self-repairable and mercury capture applications", *ACS Sustainable Chem. Eng.* **7**(4), 4515-4522 (2019).

29. S. Sudsandee, C.C. Hu*, **Y.L. Liu**, S. Worakhunpiset, S. Loahaprapanon, W.S. Hung, K.R. Lee, J.Y. Lai, "Improving barrier performance of transparent polymeric film using silk nanofibril combine graphene oxide", *J. Taiwan Inst. Chem. Engineers* **95**, 332-340 (2019).

2018

30. S. Zachariah, T. W. Chuo, **Y. L. Liu** (2018) "Crosslinked polybenzoxazine coatings with hierarchical surface structures from a biomimicking process exhibiting high robustness and anticorrosion performance", *Polymer* **155**, 168-176.

31. W.L. Su, **Y.L. Liu*** (2018) Self-crosslinkable and modifiable polysiloxanes possessing Meldrum's acid groups", *Polym. Chem.* **9**(38), 4781-4788 (2018).

32. C.Y. Lin, C.C. Hu, Y. T. Chiu, J.Y. Lai, **Y.L. Liu*** (2018) "In situ crosslinking and micro-cavity generation in fabrication of polymeric membranes for pervaporation dehydration on methanol aqueous solution", *J. Membr. Sci.* **563**, 371-379.

33. W.T. Ma, S.R. Kumar, H.C. Ting, C. M. Shih, S.W. Tsai, C.C. Yang, **Y.L. Liu**, S.J. Lue* (2018) "Magnetic field-assisted alignment of graphene oxide nanosheets in a polymer matrix to enhance ionic conduction", *J. Membr. Sci.* **563**, 259-269.

34. L.K. Lin, J. Wang, **Y.L. Liu*** (2018) "Effective synthesis route for linear and cross-linked biodegradable polyesters using aliphatic Meldrum's acid derivatives as monomers", *ACS Omega* **3**(4), 4641-4646.

35. H.K. Lin, **Y.L. Liu*** (2018) "Sulfur radical transfer and coupling reaction to benzoxazine groups: a new reaction route for preparation of polymeric materials using elemental sulfur as a feedstock", *Macromol. Rapid Commun.* **39**(8), 1700832 (6 pages).

36. M. Zhong, B.K. Su, J.Y. Lai, **Y.L. Liu*** (2018) "Organic solvent-resistant and thermally stable polymeric microfiltration membranes based on crosslinked polybenzoxazine for size-selective particle separation and gravity-driven separation on oil-water emulsions", *J. Membr. Sci.* **550**, 18-25.

37. C.Y. Lin, C.H. Huang, C.C. Hu, **Y.L. Liu*** (2018) "Self-crosslinkable nitroxide-functionalized poly(2,6-dimethyl-1,4-phenylene oxide) through atom transfer radical coupling reaction", *Polymer* **135**, 154-161.

38. C.T. Liu, P.K. Su, C.C. Hu, J.Y. Lai, **Y.L. Liu*** (2018) "Surface modification of porous substrates for oil/water separation using crosslinkable polybenzoxazine as an agent", *J. Membr. Sci.* **546**, 100-109.

B. Conference Presentations

2022

1. **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***)

2. 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**)

3. **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***).

2020

4. **Y.L. Liu** (2020) "Update on the researches and activities of Aseanian Membrane Society", *International Congress on Membranes & Membrane Processes 2020*, Dec. 7-11, 2020, Online Conference (**Invited Speaker**).

2019

5. **Y.L. Liu** (2019) "Crosslinked Polymers/thermosetting Resins Based Membranes: Preparation and Application", *The 12th International conference of the Aseanian Membrane Society (AMS12)*, Jul. 2-5, 2019, Jeju, Korea (***Plenary Speaker***).

2018

6. **Y.L. Liu** (2018) "Recent studies on polybenzoxazines: from chemical reaction to applications", *PSK-FAPS 2018 Congress on Functional Polymers and Their Applications*, Oct. 12, 2018, Gyeongju, Korea (***Invited Speaker***).

7. **Y.L. Liu** (2018) "Polymer Modification through Radical Transfer and Coupling Reaction", *The 10th International Conference of Modification, Degradation and Stabilization of Polymers (MoDeSt 2018)*, Sep. 02 – 06, Tokyo, Japan. (***Keynote Speaker***)

8. **Y.L. Liu** (2018) "Molecular and surface engineering for materials preparation and potential bio-related application", *Biomaterials International 2018*, Jul. 22 – 26, Tokyo, Japan. (***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 Aseanian Membrane Society (AMS), 2020-present

Elected President, The Aseanian Membrane Society (AMS), 2020-2021

Associate Editor: RSC Advances (SCIE), 2005-2021

3. 獲獎

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)

科技部傑出研究獎 (2019)

Publications of Yu-Jeng Lin (林育正)

A. Journal Papers (* Corresponding author)

2023

1. **Lin, Y.J.**; Chen, C.C. (2023), Modeling Salt Adsorption in Electrical Double Layer for Capacitive Deionization. *AIChE Journal*, e18018.
2. 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

3. 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

4. **Lin, Y.J.**; Hsieh, C.J.; Chen, C.C. (2021), Association-based Activity Coefficient Model for Electrolyte Solutions. *AIChE Journal*, e17422.
5. **Lin, Y.J.**; Hossain, N; Chen, C.C. (2021), Modeling Dissociation of Ionic Liquids with Electrolyte NRTL Model. *Journal of Molecular Liquids*, 329, 115924.
6. 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.

2020

7. Hirata, T.; Tsujiuchi, T.; Kamijo, T.; Kishimoto, S.; Inui, M. Kawasaki S.; **Lin, Y.J.**; Nakagami, Y.; Nojo, T.; (2020), Near-zero Emission Coal-fired Power Plant Using Advanced KM CDR Process. *International Journal of Greenhouse Gas Control*, 92.

B. Conference Presentations

2021

1. **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.

2020

2. **Lin, Y.J.**; Chen, C.C., *Challenges of Modeling Electrochemical Processes: Double Layer Structure on Charged Electrode*, Virtual AIChE Annual Meeting, San Francisco, CA, 16th-20th November 2020.

2018

3. Tanaka, H.; Tsujiuchi, T.; Kamijo, T.; Kishimoto, S.; **Lin, Y.J.**; Kawasaki S.; Nakagami, Y.; Nojo, T., *Reducing CO_2 Capture Cost by 30% using Advanced KM CDR Process*®, 14th Greenhouse Gas Control Technologies Conference (GHGT-14), Melbourne, Australia, 21st-25th October 2018.

4. Hirata, T.; Tsujiuchi, T.; Kamijo, T.; Kishimoto, S.; Inui, M. Kawasaki S.; **Lin, Y.J.**; Nakagami, Y.; Nojo, T.; (2020), Near-zero Emission Coal-fired Power Plant Using Advanced KM CDR Process., 14th Greenhouse Gas Control Technologies Conference (GHGT-14), Melbourne, Australia, 21st-25th October 2018.

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)

2022

1. 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

2. 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

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

4. 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

5. 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

6. 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

7. 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

8. 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

9. **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

2020

10. **K.-H. Lin**, C. Corminboeuf* (2020). "FB-ECDA: Fragment-based Electronic Coupling Decomposition Analysis for Organic Amorphous Semiconductors". *J. Phys. Chem. A*, 124, 10624

11. S. Paek, C. Roldán-Carmona, K. T. Cho, M. Franckevičius, H. Kim, H. Kanda N. Drigo, **K.-H. Lin**, M. Pei, R. Gegevičius, H. J. Yun, H. Yang, P. A. Schouwink, C. Corminboeuf, A. M. Asiri, M. K. Nazeeruddin* (2020). "Molecular design and operational stability: toward stable 3D/2D perovskite interlayers". *Adv. Sci.*, 7, 2001014

12. J. Guan, R. Wei, A. Prlj, J. Peng, **K.-H. Lin**, J. Liu, H. Han, C. Corminboeuf*, D. Zhao*, Z. Yu, J. Zheng* (2020). "Direct Observation of Aggregation-Induced Emission Mechanism". *Angew. Chem. Int. Ed.*, 59, 14903

13. **K.-H. Lin**, C. Corminboeuf* (2020). "FB-REDA: fragment-based decomposition analysis of the reorganization energy for organic semiconductors". *Phys. Chem. Chem. Phys.*, 22, 11881

2019

14. N. Drigo, C. Roldan-Carmona, M. Franckevicius, **K.-H. Lin**, R. Gegevicius, H. Kim, P. A. Schouwink, A. A. Sutanto, S. Olthof, M. Sohail, K. Meerholz, V. Gulbinas, C. Corminboeuf, S. Paek, M. K. Nazeeruddin* (2019). "Doped but stable: spirobisacridine hole transporting materials for hysteresis-free and stable perovskite solar cells". *J. Am. Chem. Soc.*, 142, 1792

15. S. Weissenseel, N. A. Drigo, L. G. Kudriashova, M. Schmid, T. Morgenstern, **K.-H. Lin**, A. Prlj, C. Corminboeuf, A. Sperlich*, W. Brütting, M. K. Nazeeruddin*, V. Dyakonov (2019). "Getting the Right Twist: Influence of Donor–Acceptor Dihedral Angle on Exciton Kinetics and Singlet–Triplet Gap in Deep Blue Thermally Activated Delayed Fluorescence Emitter". *J. Am. Chem. Soc.*, 142, 1792

16. **K.-H. Lin**, A. Prlj, L. Yao, N. Drigo, H. H. Cho, M. K. Nazeeruddin, K. Sivula, C. Corminboeuf* (2019). "Multiarm and substituent effects on charge transport of organic hole transport materials". *Chem. Mater.*, 31, 6605

17. T. Tran, A. Prlj, **K.-H. Lin**, D. Hollas, C. Corminboeuf* (2019). "Mechanisms of fluorescence quenching in prototypical aggregation-induced emission systems: excited state dynamics with TD-DFTB". *Phys. Chem. Chem. Phys.*, 21, 9026

2018

18. G. Gryn'ova, **K.-H. Lin**, C. Corminboeuf* (2018). "Read between the molecules: computational insights into organic semiconductors". *J. Am. Chem. Soc.*, 140, 16370

19. S.-J. Wu, N. Schuergers, **K.-H. Lin**, A. J. Gillen, C. Corminboeuf, A. A. Boghossian* (2018). "Restriction enzyme analysis of double-stranded DNA on pristine single-walled carbon nanotubes". *ACS Appl. Mater. Interfaces*, 10, 37386

20. **K.-H. Lin**, A. Prlj, C. Corminboeuf* (2018). "How does alkyl chain length modify the properties of triphenylamine-based hole transport materials?". *J. Mater. Chem. C*, 6, 960

B. Conference Presentations

2022

1. (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。

2019

2. (Poster) SCS 2019. Title: Mobility Volcano: Interplay of Transport Quantities in Acenes and Thienoacenes Based HTMs. Lausanne, Switzerland.

2018

3. (Poster) MRS 2018. Title: Understanding the Crucial Design of Amorphous Hole Transport Materials in Perovskite Solar Cell. Boston, USA.

4. (Poster) SCS 2018. Title: Understanding the Crucial Design of Amorphous Hole Transport Materials in Perovskite Solar Cell. Lausanne, Switzerland.

5. (Poster) SCS 2018. Title: Revealing the Structure-Property Relationship of Organic Hole Transport Materials in Perovskite Solar Cell. Lausanne, Switzerland.

6. (Poster) COMDI 2018. Title: Understanding the Crucial Design of Amorphous Hole Transport Materials in Perovskite Solar Cell. Lausanne, Switzerland.

7. (Poster) COMDI 2018. Title: High-Throughput Screening of Novel 2D Support Materials for Catalysis. Lausanne, Switzerland.

C. Other

1. 2020-2022 | **Early Postdoc.Mobility Fellowship**, Swiss National Science Foundation

2. 2018 | **SCS Travel Award**, Swiss Chemical Society

Publications of Shih-Yuan Lu (呂世源)

A. Journal Papers (* Corresponding author)

2023

1. Chun–Lung Huang, Yan–Gu Lin, Chao–Lung Chiang, Chun–Kuo Peng, Duraisamy Senthil Raja, Cheng–Ting Hsieh, Yu–An Chen, **Shih–Yuan Lu**,* 2023, "Atomic scale synergistic interactions lead to breakthrough catalysts for electrocatalytic water splitting," *Appl. Catal. B. – Environ.*, **320**, 122016.

2. Yong-Xian Yeh, Chih-Chieh Cheng, Shin-Hong Lin, Po-Wei Chen, Pei-Syuan Jhu, **Shih-Yuan Lu**,* "Core-shell FTO@Co_3O_4 Nanoparticles as Active and Stable Anode Catalysts for Acidic Oxygen Evolution Reaction and Proton Exchange Membrane Water Electrolysis," *J. Mater. Chem. A*, **11**, 3399-3407. (inside back cover)

2022

3. Che-Ming Yang, Minh Viet Huynh, Tien Khoa Le, Thi Kieu Xuan Huynh, **Shih-Yuan Lu**, De-Hao Tsai,* 2022, "Metal-Organic Framework-derived Mg-Zn Hybrid Nanocatalyst for Biodiesel Production," *Adv. Powder Technol.*, **33**(1), 103365.

4. Kok Chung Chong,* Pui San Ho, Soon Onn Lai, Sze Shin Lee, Woei Jye Lau, **Shih-Yuan Lu**, and Boon Seng Ooi, 2022, "Solvent-free Synthesis of MIL-101(Cr) for CO_2 Gas Adsorption: the effect of metal precursor and molar ratio," *Sustainability*, **14**, 1152.

5. Chun Chang,* Li Kan, Weina Mu, Qiong Wang, **Shih-Yuan Lu**,* 2022, "Tetragonal/orthorhombic-bismuth tungstate homojunction formed through in situ bismuth induced phase transformation as highly efficient photocatalyst for pollutant degradation," *J. Colloid & Interface Sci.*, **607(part 1)**, 269-280.

6. Cheng-Hao Chen, Shin-Hong Lin, Yen-Ju Wu, Jing-Ting Su, Chih-Chieh Cheng, Po-Yin Cheng, Yu-Chieh Ting, and **Shih-Yuan Lu**,* 2022, "MOF-derived Cobalt Disulfide/Nitrogen-doped Carbon Composite Polyhedrons Linked with Multi-walled Carbon Nanotubes as Sulfur Hosts for Lithium-Sulfur Batteries," *Chemical Engineering J.*, **431, Part 1**, 133924.

7. Duraisamy Senthil Raja, Po-Yin Cheng, Chih-Chieh Cheng, Shun-Qin Chang, Chun-Lung Huang, **Shih-Yuan Lu**,* 2022, "In-situ Grown Metal-Organic Framework-derived Carbon-coated Fe-doped Cobalt Oxide Nanocomposite on Fluorine-doped Tin Oxide Glass for Acidic Oxygen Evolution Reaction," *Appl. Catal. B. – Environ.*, **303**, 120899.

8. 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)

9. 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.

10. 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)

11. Po-Yin Cheng, Yu-Chieh Ting, Chih-Chieh Cheng, Duraisamy Senthil Raja, Shin-Hong Lin, Yong-Xian Yeh, Jing-Ting Su, and **Shih-Yuan Lu**,* 2022, "Nitrogen-doped Carbon Armored Cobalt Oxide Hollow Nanocubes Electrochemically anchored on Fluorine-doped Tin Oxide Substrate for Acidic Oxygen Evolution Reaction," *J. Colloid & Interface Sci.*, 623, 327-336.

12. 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.

13. 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.

2021

14. Jia-Yu Tan, Jing-Ting Su, Yen-Ju Wu, Chun-Lung Huang, Po-Yin Cheng, Yu-An Chen, and **Shih-Yuan Lu**,* 2021, "Hollow porous α-Fe_2O_3 nanoparticles as anode materials for high performance lithium ion capacitors," *ACS Sustainable Chem. Engr.*, **9**(3), 1180-1192.

15. Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, Duraisamy Senthil Raja, Yen-Ju Wu, and **Shih-Yuan Lu**,* 2021, "Gold nanocrystal decorated trimetallic metal organic frameworks as high performance electrocatalysts for oxygen evolution reaction," *Appl. Catal. B. – Environ.*, **286**, 119916.

16. Liang-Guo He, Po-Yin Cheng, Chih-Chieh Cheng, Chun-Lung Huang, Cheng-Ting Hsieh, and **Shih-Yuan Lu**,* 2021, "$(Ni_xFe_yCo_{6-x-y})Mo_6C$ Cuboids as Outstanding Bifunctional Electrocatalysts for Overall Water Splitting," *Appl. Catal. B. – Environ.*, **290**, 120049.

17. Yen-Ju Wu, Cheng-Hao Chen, Chun-Lung Huang, Yong-Xian Yeh, Jia-Yu Tan, Jing-Ting Su, Cheng-Ting Hsieh, and **Shih-Yuan Lu**,* 2021, "Triple Functionalization of Carved N-doped Carbon Nanoboxes with Synergistic Tri-metallic Sulfide for High Performance Lithium-Sulfur Batteries," *J. Mater. Chem. A*, **9**(14), 9028-9037. (inside back cover)

18. Shengrui Chen, Runming Tao, Chi Guo, Wang Zhang, Xiaolang Liu, Guang Yang, Pingmei Guo, Gengzhi Sun, Jiyuan Liang,* **Shih-Yuan Lu,*** 2021, "A new trick for an old technology: ion exchange syntheses of advanced energy storage and conversion nanomaterials," *Energy Storage Materials*, **41**, 758-790.

19. Shengrui Chen,+ Runming Tao,+ Ji Tu, Pingmei Guo, Guang Yang, Wenjun Wang, Jiyuan Liang,* **Shih-Yuan Lu**,* 2021, "High performance flexible lithium ion battery electrodes: ion exchange assisted fabrication of carbon coated nickel oxide nanosheet arrays on carbon cloth," *Adv. Functional Mater.*, **31**(24), 2101199. (+: co-first authors)

20. Chun Chang, Huanchun Yang, Li Kan, Weina Mu, Qiong Wang, **Shih-Yuan Lu**,* Baole Deng,* 2021, "Mechanism and impacts of inorganic ion addition on photocatalytic degradation of triclosan catalyzed by heterostructured $Bi_7O_9I_3$/Bi," *J. Taiwan Inst. Chem. Engr.*, **125**, 176-185.

21. 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, "Twinning enhances efficiencies of metallic catalysts toward electrolytic water splitting," *Adv. Energy Mater.*, **11**(46), 2101827. (inside front cover)

2020

22. Cheng-Ting Hsieh, Chun-Lung Huang, Yu-An Chen, **Shih-Yuan Lu**,* 2020, "NiFeMo Alloy Inverse-Opals on Ni Foam as Outstanding Bifuctional Catalysts for Electrolytic Water Splitting of Ultra-Low Cell Voltages at High Current Densities," *Appl. Catal. B. – Environ.*, **267**, 118376.

23. Yuan-Xin Zhu, Lei Zhang,* Guo-Gang Zhu, Xin Zhang, and **Shih-Yuan Lu,*** 2020, "N-doped carbon armored metal phosphides grown in-situ on nickel foam as chainmail electrocatalysts for high efficiency overall water splitting," *J. Colloid & Interface Sci.*, **562**, 42-51.

24. Xin Zhang, Lei Zhang,* Guo-Gang Zhu, Yuan-Xin Zhu, and **Shih-Yuan Lu,*** 2020, "Mixed Metal Phosphide Chainmail Catalysts Confined in N-Doped Porous Carbon Nanoboxes as Highly Efficient Water Oxidation Electrocatalysts with Ultralow Overpotentials and Tafel Slopes," *ACS Appl. Mater. & Interfaces*, **12**, 7153-7161. (supplementary journal cover)

25. Yuan-Xin Zhu, Lei Zhang,* Guo-Gang Zhu, Xin Zhang, and **Shih-Yuan Lu**,* 2020, "Open-Mouth N-doped Carbon Nanoboxes Embedded with Mixed Metal Phosphides Nanoparticles as High-Efficiency Catalysts for Electrolytic Water Splitting," *Nanoscale*, **12**(10), 5689-6212. (inside front cover)

26. Teng-Yun Liang,+ Duraisamy Senthil Raja,+ Kah-Chun Chin,+ Chun-Lung Huang, Sumathi A/P Sethupathi, Loong-Kong Leong,* De-Hao Tsai,* and **Shih-Yuan Lu**,* 2020, "Bimetallic Metal-Organic Framework-derived Hybrid Nanostructures as High-Performance Catalysts for Methane Dry Reforming," *ACS Appl. Mater. & Interfaces*, **12**(13), 15183-15193. (+: co-first authors)

27. Yen-Ju Wu, Yu-An Chen, Chun-Lung Huang, Jing-Ting Su, Cheng-Ting Hsieh, and **Shih-Yuan Lu**,* 2020, "Small highly mesoporous silicon nanoparticles for high performance lithium ion based energy storage," *Chemical Engineering J.*, **400**, 125958.

28. Jing-Ting Su, Yu-An Chen, Chun-Lung Huang, Yen-Ju Wu, Heng-Yi Cheng, Xui-Fang Chuah, Cheng-Ting Hsieh, and **Shih-Yuan Lu**,* 2020, "Nitrogen doped carbon nanoboxes as high rate capability and long-life anode materials for high-performance Li-ion capacitors," *Chemical Engineering J.*, **396**, 125314.

29. Duraisamy Senthil Raja, Chun-Lung Huang, Yu-An Chen, YongMan Choi, **Shih-Yuan Lu**,* 2020, "Composition-Balanced Trimetallic MOFs as Ultra-Efficient Electrocatalysts for Oxygen Evolution Reaction at High Current Densities," *Appl. Catal. B. – Environ.*, **279**, 119375.

2019

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50. Kuan-Ting Lee,[#] Yu-Jen Lu,[#] Shao-Chieh Chiu, Wen-Chi Chang, Er-Yuan Chuang*, and **Shih-Yuan Lu**,* 2018, "Heterogeneous Fenton Reaction Enabled Selective Colon Cancer Cell Treatment," *Scientific Reports,* **8**(1), 16580. (#: co-first authors)

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B. Conference Presentations

2022

1. 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)

2. 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)

3. 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)

4. 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)

5. 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)

6. 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)

7. 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)

8. **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)

9. 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)

10. **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)

11. Duraisamy Senthil Raja, **Shih-Yuan Lu**,* 2022, "Effect of Fe-doping on the Electrocatalytic Oxygen Evolution Performances of Cobalt MOF-derived Co3O4 Nanocomposites," 2022 ICGET-TW, Hsinchu, Taiwan. (11/10-12/2022)

12. 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)

13. 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)

14. 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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15. 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)

16. 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)

17. 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)

18. 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)

19. **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)

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,*** 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)

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21. Duraisamy Senthil Raja, Hao-Wei Lin, and **Shih-Yuan Lu,*** 2020, "Exploring Synergistic Effects for High Performance Catalysts of Electrolytic Water Splitting," 台灣化學工程學會 67 周年年會, 新竹. (keynote speech)

22. Shun-Qin Chang, Chun-Lung Huang, and **Shih-Yuan Lu,*** 2020, "Precious-metal-free high entropy alloys as electrolytic water splitting catalysts in acidic media," 台灣化學工程學會 67 周年年會, 新竹.

23. Cheng-Hao Chen, Jing-Ting Su, Yen-Ju Wu, and **Shih-Yuan Lu,*** 2020, "MOF-derived Cobalt Sulfide Interlaced with Multi-walled Carbon Nanotubes as Sulfur Hosts for Lithium-Sulfur Batteries," 台灣化學工程學會 67 周年年會, 新竹.

24. Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, Duraisamy Senthil Raja, Yen-Ju Wu, and **Shih-Yuan Lu,*** 2020, "Gold nanocrystal decorated trimetallic MOFs as high performance electrocatalysts for oxygen evolution reaction," 台灣化學工程學會 67 周年年會, 新竹.

25. Jing-Ting Su, Yen-Ju Wu, and **Shih-Yuan Lu,*** 2020, "Applications of Core-Shell Silicon-Carbon Composites as Anode Materials for Lithium Ion Capacitors," 台灣化學工程學會 67 周年年會, 新竹.

26. Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, Duraisamy Senthil Raja, Yen-Ju Wu, and **Shih-Yuan Lu,*** 2020, "Gold nanocrystal decorated trimetallic MOFs as high performance electrocatalysts for oxygen evolution reaction," 26th Users' Meeting & Workshops of NSRRC, Hsinchu.

27. Shun-Qin Chang, Chun-Lung Huang, and **Shih-Yuan Lu,*** 2020, "Precious-metal-free high entropy alloys as electrolytic water splitting catalysts in acidic media," 2020 The International Conference on Green Electrochemical Technologies, Taichung.

28. Cheng-Hao Chen, Jing-Ting Su, Yen-Ju Wu, and **Shih-Yuan Lu,*** 2020, "MOF-derived Cobalt Sulfide Interlaced with Multi-walled Carbon Nanotubes as Sulfur Hosts for Lithium-Sulfur Batteries," 2020 The International Conference on Green Electrochemical Technologies, Taichung.

29. Chih-Chieh Cheng, Po-Yin Cheng, Chun-Lung Huang, Duraisamy Senthil Raja, Yen-Ju Wu, and **Shih-Yuan Lu,*** 2020, "Gold nanocrystal decorated trimetallic MOFs as high performance electrocatalysts for oxygen evolution reaction," 2020 The International Conference on Green Electrochemical Technologies, Taichung. (Best Poster Golden Award)

30. Jing-Ting Su, Yen-Ju Wu, and **Shih-Yuan Lu**,* 2020, "Applications of Core-Shell Silicon-Carbon Composites as Anode Materials for Lithium Ion Capacitors," 2020 The International Conference on Green Electrochemical Technologies, Taichung.

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31. Duraisamy Senthil Raja, Hao-Wei Lin, Xui-Fang Chuah, **Shih-Yuan Lu**,*2019, "MOF based electrocatalysts for electrolytic water splitting," 235th ECS Meeting, Dallas, USA.

32. Duraisamy Senthil Raja, Hao-Wei Lin, Xui-Fang Chuah, **Shih-Yuan Lu**,* 2019, "MOF based Electrocatalysts for Electrolytic Water Splitting," Taiwan-Japan-Korea Joint Workshop on Energy Materials and Sustainable Development, Hsinchu, Taiwan. (invited talk)

33. **Shih-Yuan Lu**,* 2019, "Nanostructured Catalysts for Electrolytic Water Splitting," Seoul National University & National Tsing Hua University Joint Workshop 2019 Nano/Biotechnology, Seoul, Korea. (invited talk)

34. Duraisamy Senthil Raja, Hao-Wei Lin, Xui-Fang Chuah, **Shih-Yuan Lu**,* 2019, "MOF based electrocatalysts for electrolytic water splitting," Taiwan-Malaysia Workshop on Clean Water and Sustainable Energy 2019, Johor, Malaysia. (invited talk)

35. Duraisamy Senthil Raja, Hao-Wei Lin, Xui-Fang Chuah, **Shih-Yuan Lu**,* 2019, "MOF based Electrocatalysts for Electrolytic Water Splitting," 第十二屆海峽兩岸化學工程學術研討會，高雄. (invited talk)

36. **Shih-Yuan Lu**,* 2019, "Nanostructured Catalysts for Electrolytic Water Splitting," APCChE 2019, Sapporo, Japan. (keynote speech)

37. Chih-Chieh Cheng, Yu-An Chen, and **Shih-Yuan Lu**,* 2019, "Ni-Fe Based Bi-metallic Metal-Organic Framework in-situ Grown on Nickel Foam as High Efficiency Overall Water Splitting Catalysts," APCChE 2019, Sapporo, Japan. (Excellent Poster Award)

38. Liang-Guo He, Cheng-Ting Hsieh, Chun-Lung Huang, and **Shih-Yuan Lu**,* 2019, "Ni–Fe-Mo based Nanorod Arrays as Bifunctional Electrocatalyst for Overall Water Splitting," APCChE 2019, Sapporo, Japan.

39. Jia-Yu Tan, Po-Yuan Cheng, and **Shih-Yuan Lu**,* 2019, "Mn-Fe based Bimetallic Metal-Organic Framework as Electrode Materials for Supercapacitors," APCChE 2019, Sapporo, Japan.

40. Yen-Ju Wu, Po-Yuan Cheng, Yu-An Chen, and **Shih-Yuan Lu**,* 2019, "Silicon nanoparticle composited with N-dope carbon as anode in Li-ion storage," APCChE 2019, Sapporo, Japan.

41. **Shih-Yuan Lu**,* 2019, "Nanostructured Catalysts for Electrolytic Water Splitting," The 10th Asian Conference on Electrochemical Power Sources 2019, Kaohsiung, Taiwan. (keynote speech)

42. Duraisamy Senthil Raja and **Shih-Yuan Lu**,* 2019, "Iron, Nickel, and Cobalt based Metal-Organic Framework Grown In-situ on Nickel Foam as Highly Efficient Electrocatalyst for Oxygen Evolution Reaction," The 10th Asian Conference on Electrochemical Power Sources 2019, Kaohsiung, Taiwan.

43. Chun–Lung Huang, Xui–Fang Chuah, Cheng–Ting Hsieh, and **Shih–Yuan Lu**,* 2019, "NiFe Alloy Nanotube Arrays as Highly Efficient Bifunctional Electrocatalysts for Overall Water Splitting at High Current Densities," 2019 AIChE Annual Meeting, Orlando, USA.

44. Chih-Chieh Cheng, Yu-An Chen, and **Shih-Yuan Lu**,* 2019, "Ni-Fe Based Bi-metallic Metal-Organic Framework in-situ Grown on Nickel Foam as High Efficiency Overall Water Splitting Catalysts," 台灣化學工程學會 66 周年年會, 台中. (壁報論文競賽優勝獎)

45. Liang-Guo He, Cheng-Ting Hsieh, Chun-Lung Huang, and **Shih-Yuan Lu**,* 2019, "Ni–Fe-Mo based Nanorod Arrays as Bifunctional Electrocatalyst for Overall Water Splitting," 台灣化學工程學會 66 周年年會, 台中.

46. Jia-Yu Tan, Po-Yuan Cheng, and **Shih-Yuan Lu**,* 2019, "Mn-Fe based Bimetallic Metal-Organic Framework as Electrode Materials for Supercapacitors," 台灣化學工程學會 66 周年年會, 台中.

47. Yen-Ju Wu, Po-Yuan Cheng, Yu-An Chen, and **Shih-Yuan Lu**,* 2019, "Silicon nanoparticle composited with N-dope carbon as anode in Li-ion storage," 台灣化學工程學會 66 周年年會, 台中.

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48. Lei Zhang, Chun Chang, and **Shih-Yuan Lu**,* 2018, "Mixed Oxides/Phosphides as Efficient Electrocatalysts for Oxygen Evolution Reaction," 233rd ECS Meeting, Seattle, USA.

49. **Shih-Yuan Lu**,* 2018, "Nanostructured Catalysts for Electrolytic Water Splitting," Bilateral Conference of South China Advanced Institute for Soft Matter Science and Technology (AISMST), South China University of China (SCUT) & Department of Chemical Engineering, National Tsing Hua University (NTHU), 廣州, China. (invited talk)

50. **Shih-Yuan Lu**,* 2018, "Nanostructured Catalysts for Electrolytic Water Splitting," 第十一屆海峽兩岸化學工程學術研討會, 太原, China. (invited talk)

51. Cheng-Ting Hsieh, Xui-Fang Chuah, Hao-Wei Lin, **Shih-Yuan Lu**,* 2018, "NiFe Alloy Nanowire Arrays as Outstanding Bifunctional Electrocatalysts for Overall Water Splitting," 2018 AIChE Annual Meeting, Pittsburgh, USA.

52. Po-yuan Cheng, Heng-Yi Cheng, and **Shih-Yuan Lu**,* 2018, "N-doped Hierarchical Porous Carbon Nanostructure for High Performance Flexible Gel-Type Supercapacitors," 台灣化學工程學會年會, Yunlin, Taiwan. (壁報論文競賽優勝獎)

53. Hao-Wei Lin and **Shih-Yuan Lu**,* 2018, "Optimally Alloying Bi-metallic MOFs to be High Performance Electrocatalysts for Overall Water Splitting at High Current Densities," 台灣化學工程學會年會, Yunlin, Taiwan.

54. Cheng-Ting Hsieh and **Shih-Yuan Lu**,* 2018, "NiFe Core / $(Ni,Fe)_3S_2$ Shell Nanowire Arrays as Outstanding Catalysts for Electrolytic Overall Water Splitting at High Current Densities," 台灣化學工程學會年會, Yunlin, Taiwan.

55. **Shih-Yuan Lu**,* 2018, "Nanostructured Catalysts for Electrolytic Water Splitting," 兩岸清華大學學術研討會, Hsinchu, Taiwan. (invited talk)

56. **Shih-Yuan Lu**,* 2018, "Applications of Nanostructured Materials in Electrocatalytic Water Splitting, Lithium Ion Capacitors, and Bio-refinery," 2018 NTHU - UTAR Symposium, Universiti Tunku Abdul Rahman, Sungai Long, Malaysia. (invited talk)

C. Patents

1. Kuan-Ting Lee and **Shih-Yuan Lu**, 2018, "Kit for wastewater treatment, and manufacturing method for and use of photocatalyst," 美國發明專利, US9,902,631B2, 2/27/2018 – 5/13/2036.

2. Kuan-Ting Lee and **Shih-Yuan Lu**, 2018, “Paste for Manufacturing Photocatalyst and Manufacturing Method of Photocatalyst,” 美國發明專利, US10,150,101B2, 12/11/2018-2/28/2037.

3. 黃俊龍, **呂世源**, 2020,“電解水的方法及用於電解水的觸媒的製備方法,” 中華民國發明專利, 發明第 I 745828 號, 11/11/2021–1/8/2040.

4. 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.

5. Chun-Lung Huang, **Shih-Yuan Lu**, 2022,“Method for Electrolysis of Water,”美國發明專利, approved.

D. Other

1. **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.

2. **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.

3. **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.

4. **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.

5. **呂世源**, 2020, "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(1/3)",科技部專題研究計畫期中報告, MOST 108-2221-E-007-073-MY3.

6. **呂世源**, 2020, "新穎集電器複合之氮摻雜階層式多孔碳奈米結構應用於鋰離子電容器(2/2)",科技部專題研究計畫期末報告, MOST 107-2221-E-007-044-MY2.

7. **呂世源**, 2019, "有機金屬骨架結構物衍生之金屬氧化物與磷化物修飾之奈米孔洞碳材做為價廉高效長壽之析氧反應電觸媒(2/2)",科技部專題研究計畫期末報告, MOST 106-2221-E-007-090-MY2.

8. **呂世源**, 2019, "新穎集電器複合之氮摻雜階層式多孔碳奈米結構應用於鋰離子電容器(1/2)",科技部專題研究計畫期中報告, MOST 107-2221-E-007-044-MY2.**呂世源**, 2018, "以石墨烯/碳布複合物為基礎的柔性膠態超級電容器(2/2)",科技部專題研究計畫期末報告, MOST 105-2221-E-007-126-MY2.

9. **呂世源**, 2018, "有機金屬骨架結構物衍生之金屬氧化物與磷化物修飾之奈米孔洞碳材做為價廉高效長壽之析氧反應電觸媒(1/2)",科技部專題研究計畫期中報告, MOST 106-2221-E-007-090-MY2.
10. **呂世源**, 2018, "以石墨烯/碳布複合物為基礎的柔性膠態超級電容器(2/2)",科技部專題研究計畫期末報告, MOST 105-2221-E-007-126-MY2.

國際重要期刊編輯

1. Editor-in-Chief: J. Taiwan Inst. Chem. Engr., 7/2015 – 6/2018
2. Editorial Board: J. Chin. Inst. Engr., 1/2015 – 12/2021
3. Editor: Advanced Powder Technology, 1/2013 – present
4. 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
- 2019 起, 科技部, 特約研究員
- 2019, 中國工程師學會, 工程論文獎
- 2020, The Royal Society of Chemistry, United Kingdom, Fellow
- 2020, International Association of Advanced Materials, Sweden, Fellow
- 2020, 國立清華大學, 傑出教學獎及榮譽教學獎
- 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

Publications of Claire Roa-Pu Shen (沈若樸)

A. Journal Papers (* Corresponding author)

2022

1. 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.

2. 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

3. 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.

2020

4. Fan ES, Lu KW, Wen RC, **Shen CR***. Photosynthetic Reduction of Xylose to Xylitol Using Cyanobacteria. Biotechnol J 2020, 15(6).

5. Lin TY, Wen RC, **Shen CR**, Tsai SL. Biotransformation of 5-Hydroxymethylfurfural to 2,5-Furandicarboxylic Acid by a Syntrophic Consortium of Engineered Synechococcus elongatus and Pseudomonas putida. Biotechnol J 2020, 15(6).

2018

6. Putri SP, Nakayama Y, **Shen CR**, Noguchi S, Nitta K, Bamba T, Pontrelli S, Liao JC, Fukusaki E. “Identifying metabolic elements that contribute to productivity of 1-propanol bioproduction using metabolomic analysis”, *Metabolomics* 2018, 14(7): 96.

B. Conference and Workshop Presentations

2022

1. 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)

2. Invited Speaker: "Random mutagenesis of the flavin-containing monooxygenase enhanced indigo and indirubin production", 12th Green Sustainable Biotechnology Symposium (2022/01)

2021

3. 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)

4. 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)

2020

5. Invited Speaker: "分子生物學簡介", 工業技術研究院, Hsinchu, Taiwan (2020/12)

6. Invited Speaker: "Redox balance as a driving force for enzyme evolution and biochemical production", 2020 Innovation and Application of Microbial and Biological Conversion Technology (前瞻性生物轉換技術及其應用研討會), Taipei, Taiwan (2020/6)

2019

7. Symposium Moderator: *Biology for Chemical Production Symposium*, Institute of Biomedical Science, Academic Sinica, Taipei, Taiwan (2019/5)

8. Session Chair / Invited Speaker: "Characterization and application of the growth selection platform based on anaerobic redox balance", *14th Asian Congress on Biotechnology (ACB 2019)*, Taipei, Taiwan (2019/7)

9. Invited Speaker: "Expanding and fine-tuning the biochemical spectrum in iterative ketoacid elongation", *10th Asian Symposium on Innovative Bio-Production (iBioT 2019)*, Taichung, Taiwan (2019/11)

10. Poster: "Engineering NADH-dependence of reductase by directed evolution based on anaerobic redox balance", *The 25th Young Asian Biological Engineers' Community (YABEC)*, Seoul, Korea (2019/11)

2018

11. Invited Speaker: "Preferential tuning of product specificity from the ketoacid elongation cycle by saturated mutagenesis of ketoisovalerate decarboxylase", *The 24th Young Asian Biological Engineers' Community (YABEC)*, Taipei, Taiwan (2018/11)

C. Patents

1. **沈若樸**、楊子儀、阮勻、楊璧如. "用於提升靛類化合物的產量之方法及重組型多肽", 中華民國專利申請號: TW 111107819

2. **Roa-Pu Shen**, Yang Zi-Yi, Vincent Ruan, Pi-Ju Yang. METHOD AND RECOMBINANT POLYPEPTIDE FOR INCREASING PRODUCTION OF INDIGOID COMPOUND. US Application #: US 18/076,680 (2022).

3. **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 I 732205 號 (專利權期間: 2021/07/01 - 2039/04/10).

4. **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).

5. **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).

6. **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).

7. **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).

8. **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).

9. 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).

D. Other

1. 105-107學年度 優秀年輕學者研究計畫

Publications of Yung-Tin Pan (潘詠庭)

A. Journal Papers

2023

1. 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

2. **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.

3. 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

4. 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**

5. 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

6. 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.

7. 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

8. 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

9. 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.

10. 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.

11. 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.

12. 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.

2020

13. **Y-T. Pan**, Hong Yang, Design of Bimetallic Catalysts and Electrocatalysts through the Control of Reactive Environments, *Nano Today*, **2020**, 100832.

2019

14. D. Li, **Y.-T. Pan**, X. Wang, C. Wang, Y. S. Kim, J. S. Spendelow, Effect of the Catalyst Metal Content on PEMFC Durability, *ECS Transactions*, **2019**, 589

15. J. Li, S. Sharma, X. Liu, **Y.-T. Pan**, J. S. Spendelow, M. Chi, Y. Jia, P. Zheng, D. A. Cullen, Z. Xi, H. Lin, Z. Yin, B. Shen, M. Muzzio, C. Yu, Y. S. Kim, A. A. Peterson, K. L. More, H. Zhu, S. Sun. Hard-Magnet $L1_0$-CoPt Nanoparticles Advance Fuel Cell Catalysis, *Joule*, **2019**, 124-135.

2018

16. X. X. Wang, S. Hwang, **Y.-T. Pan**, K. Chen, Y. He, S. G. Karakalos, H. Zhang, J. S. Spendelow, D. Su, G. Wu, Ordered Pt3Co Intermetallic Nanoparticles Derived from Metal-organic Frameworks for Oxygen Reduction, *Nano Lett.*, **2018**, *18*, 4163-4171

17. X. X. Wang, D. A. Cullen, **Y-T. Pan**, S. Hwang, M. Wang, Z. Feng, J. Wang, M.H. Engelhard, H. Zhang, Y. He, Y. Shao, D. Su, K. L. Moore, J. S. Spendelow, G. Wu, Nitrogen-Coordinated Single Cobalt Atom Catalysts for Oxygen Reduction in Proton Exchange Membrane Fuel Cells, *Adv. Mater.*, **2018**, 30, 1706758.

18. N. M. Wilson, **Y-T. Pan**, Y-T. Shao, J-M. Zuo, H. Yang, D. W. Flaherty, Direct Synthesis of H_2O_2 on AgPt Octahedra: The Importance of Ag–Pt Coordination for High H2O2 Selectivity, *ACS Catal.*, **2018**, 8, 2880-2889.

19. J. Li, Z. Xi, **Y-T. Pan**, J. S. Spendelow, P. N. Duchesne, D. Su, Q. Li, C. Yu, Z. Yin, B. Shen, Y. S. Kim, P. Zhang, S. Sun, Fe stabilization by intermetallic $L1_0$-FePt and Pt catalysis enhancement in $L1_0$-FePt/Pt nanoparticles for efficient oxygen reduction reaction in fuel cells, *J. Amer. Chem. Soc.*, **2018**, 140, 2926-2932.

B. Conference Papers

2022

1. **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.

2. 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.

3. 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

4. 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.

5. 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.

6. 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**

7. 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**

8. 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**

9. 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**

10. 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**

11. 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**

2019

12. Dongguo Li, **Yung-Tin Pan**, Chenyu Wang, Xiaojing Wang, Yu Seung Kim, Jacob S. Spendelow, Effect of the Catalyst Pt Content and Carbon Support on PEMFC Durability, *236th ECS Meeting*, **2019**, Atlanta

13. Chenyu Wang, **Yung-Tin Pan**, Dongguo Li, Xiaojing Wang, Yu Seung Kim, Jacob S. Spendelow, Support Effect of $L1_0$-CoPt Catalyst in Hydrogen Fuel Cell Application, *236th ECS Meeting*, **2019**, Atlanta

14. **Y-T. Pan**, Dispersion Control Through Crystal Ordering: The Case of L11 Ag-Pt, *The 2019 EITA Conference on New Materials, Nanotechnology, Healthcare, New Energy and Sustainable Smart Manufacturing*, **2019**

2018

15. **Y-T. Pan**, J. Spendelow, Active and Durable Fuel Cell Catalyst through Crystallographic Design, *The 2018 International Conference on Green Electrochemical Tehcnologies and the 2018 Annual Meeting of Electrochemical Society of Taiwan*, **2018** (Topic 4: Fuel Cells)

C. 重要成就及榮譽

1. 2022 年 台灣氫能與燃料電池學會第一屆優秀年輕學者獎

2. 清華工學院第 109 學年度傑出教學獎

3. 2018 通過科技部年輕學者養成計畫，授予 MOST Young Scholar Fellowship (愛因斯坦)

D. 學生得獎紀錄

Student	Degree	Conference/Award	Year	Award
Lu-Yu Chueh	MS	68th Annual Meeting of TWIChE	2022	Poster, Honorable Mentioned
Lu-Yu Chueh	MS	TICC2022	2022	Best Oral Presentation
Ding-Huei Tsai	MS	TICC2022	2022	Excellent Poster Presentation
Yu-Hsuan Hsu	MS	2022 ICGET-Tw	2022	Poster, Honorable Mentioned
Wei-Ting Tu	Undergrad	69th Annual Meeting of TWIChE	2022	Poster, Honorable Mentioned
Ding-Huei Tsai	Ph. D	69th Annual Meeting of TWIChE	2022	English Oral Competition, Honorable Mentioned
Ding-Huei Tsai	Ph. D	財團法人慶恩教育基金會	2022	2022 綠色科技論文獎

Publications of Hsing-Wen Sung (宋信文)

A-1.Refereed Journal Papers (*Corresponding Author)

2022

1. Kuan-Hung Chen, Tun-Yu Huang, Nhien Nguyen, Yu-Tzu Yu, Yu-Jung Lin, Hsiang-Lin Song, Jui-To Wang, Hsin-Lung Chen, **Hsing-Wen Sung***, "Macrophage-Hitchhiked Orally Administered β-Glucans-Functionalized Nanoparticles as "Precision-Guided Stealth Missiles" for Targeted Pancreatic Cancer Therapy" Advanced Materials (Under Resubmission)

2. 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 **Hsing-Wen Sung***, "Selective Accumulation of Ionic Nanocrystal H2 Storage System as an In Situ H2/Boric Acid Nanogenerator Fights against Ethanol-Induced Gastric Ulcers" Chemical Engineering J (Minor Revision)

3. 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.(11.467)

4. 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 18.072)

5. 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. (IF 15.304)

6. 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 May.)"Engineering an Integrated Electroactive Dressing to Accelerate Wound Healing and Monitor Noninvasively Progress of Healing. "Nano Energy, 107393. (IF: 17.881)

2021

7. 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 30.849)

8. 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 11.092)

9. 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 30.849)

10. 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. (SCI 18.027)

11. 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 15.304)

12. 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 11.600)

2020

13. 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, pp2001384, 2020. (SCI 9.933)

14. Chen, P. M., Pan, W. Y., Miao, Y. B., Liu, Y. M., Luo, P. K., Phung, H. N., Wu, W.W., Ting, Y.-H., Yeh, C.-Y., Chiang, M.-C., Chia,W.-T*., **Sung, H.W***,"Bioinspired engineering of a bacterium-like metal-organic framework for cancer immunotherapy" Advanced Functional Materials, pp 2003764, 2020. (SCI 18.808)

15. He, S., Wu, J., Li, S.H., Wang, L., Sun, Y., Xie, J.; Ramnath, D., Weisel, Richard D., Yau, Terrence M., **Sung, H.W**; Li, R.K., "The conductive function of biopolymer corrects myocardial scar conduction blockage and resynchronizes contraction to prevent heart failure," Biomaterials, vol.3, pp. 120285, 2020. (SCI 12.479)

16. Chen, K. H., Miao, Y. B., Shang, C. Y., Huang, T. Y., Yu, Y. T., Yeh, C. N., Song, H. L., Chen,C.T., Mi, F. L. , 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 tumors in rats," Biomaterials, vol.255, pp. 120157, 2020. (SCI 12.479)

17. Lin, Y.J., Chen, C.C., Dang N., Su, H.R., Lin, K.J., Chen, H.L., Hu, Y.J., Lai, P.L., **Sung, H.W*.** ,"Biomimetic Engineering of a Scavenger-Free Nitric Oxide-Generating/Delivering System to Enhance Radiation Therapy," Small, vol 16, pp.2070126, 2020. (SCI 13.281)

18. Chen, S., Hsieh, M.H., Li, S.H., Wu, J., Weisel, R.D., Chang, Y., **Sung, H.W**.*, Li, R.K.* , "A Conductive Cell-Delivery Construct as a Bioengineered Patch that Can Improve Electrical Propagation and Synchronize Cardiomyocyte Contraction for Heart Repair," Journal of Controlled Release, vol.320, pp.73-82, 2020. (SCI 9.776)

19. Wan, W.L., Tian, B. Lin, Y.J., Korupalli, C., Lu, M.Y., Cui, Q., Wan, D.H., Chang, Y.*, **Sung, H.W.***, "Photosynthesis-Inspired H_2 Generation Using a Chlorophyll-Loaded Liposomal Nanoplatform to Detect and Scavenge Excess ROS," Nature Communications, vol.11, pp.534, 2020. (SCI 14.919)

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20. Zhang, C., Hsieh, M. H., Wu, S. Y., Li, S. H., Wu, J., Liu, S.M., Wei, H.J., Weisel, R.D., **Sung, H.W.***, Li, R.K.*, "A self-doping conductive polymer hydrogel that can restore electrical impulse propagation at myocardial infarct to prevent cardiac arrhythmia and preserve ventricular function," Biomaterials, vol.231, pp. 119672, 2019. (SCI 12.479)

21. Cui, Q., Le, T. H., Lin, Y. J., Miao, Y. B., Sung, I. T., Tsai, W. B., Chan, H.Y., Lin, Z.H.*, **Sung, H. W.***, "A self-powered battery-driven drug delivery device that can function as a micromotor and galvanically actuate localized payload release," Nano Energy, vol.66, pp. 104120, 2019. (SCI 16.88)

22. Miao, Y.B., Pan, W.Y., Chen, K.H., Wei, H.J., Mi, F.L., Lu, M.Y., Chang, Y.*, **Sung, H.W.***, "Engineering a Nanoscale Al-MOF-Armored Antigen Carried by a "Trojan Horse"-Like Platform for Oral Vaccination to Induce Potent and Long-Lasting Immunity," Advanced Functional Materials, vol.29, pp. 1904828, 2019. (SCI 18.808)

23. Hsieh, M.H., Tsai, H.W., Lin, K.J., Wu, Z.Y., Hu, H.Y., Chang, Y., Wei, H.J.*, **Sung, H.W.***, "An in situ slow-releasing H2S donor depot with long-term therapeutic effects for treating ischemic diseases," Materials Science and Engineering:C, vol.104, pp. 109954, 2019 (SCI 7.06)

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26. Lin, P.-Y., Chen, K.-H., Miao, Y.-B., Chen, H.-L., Lin, K.-J., Chen, C.-T., Yeh, C.-N., Chang, Y.*, **Sung, H.-W.***, "Phase-Changeable Nanoemulsions for Oral Delivery of a Therapeutic Peptide: Toward Targeting the Pancreas for Antidiabetic Treatments Using Lymphatic Transport," Advanced Functional Materials, vol.29, pp. 1809015, 2019. (SCI 18.808)

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27. Lin, Y.-J., Mi, F.-L., Lin, P.-Y., Miao, Y.-B., Huang, T., Chen, K.-H., Chen, C.-T., Chang, Y.*, **Sung, H.-W.***, "Strategies for improving diabetic therapy via alternative administration routes that involve stimuli-responsive insulin-delivering systems," Advanced Drug Delivery Reviews, vol. 139, pp. 71-82, 2018. (SCI 13.300)

28. Lin, W.-C., Pan, W.-Y., Liu, C.-K., Huang, W.-X., Song, H.-L., Chang, K.-S., Li, M.-J.*, **Sung, H.-W.*** " In situ self-spray coating system that can uniformly disperse a poorly water-soluble H2S donor on the colorectal surface to treat inflammatory bowel diseases," Biomaterials, vol. 182, pp. 289-298, 2018. (SCI 12.479)

29. Lin, P.-Y., Chiu, Y.-L., Huang, J.-H., Chuang, E.-Y., Mi, F.-L., Lin, K.-J., Juang, J.-H., **Sung, H.-W.***, Leong, K. W.*, "Oral Nonviral Gene Delivery for Chronic Protein Replacement Therapy," Advanced Science. vol.5, 1701079, 2018. (SCI 16.806)

30. Wan, W.-L., Lin, Y.-J., Shih, P.-C., Bow, Y.-R., Cui, Q., Chang, Y., Chia, W.-T.*, **Sung, H.-W.***," An In Situ Depot for Continuous Evolution of Gaseous H_2 Mediated by a Magnesium Passivation/Activation Cycle for Treating Osteoarthritis," Angew Chem Int Ed Engl. vol. 57, pp. 9875-9879, 2018. (SCI15.336)

31. Chuang, E.-Y.$^{+}$, Lin, K.-J.$^{+}$, Huang, T.-Y., Chen, H.-L., Miao, Y.-B., Lin, P.-Y., Chen, C.-T., Juang, J.-H*, **Sung, H.-W.***, An Intestinal "Transformers"-Like Nanocarrier System for Enhancing the Oral Bioavailability of Poorly Water-Soluble Drugs, ACS Nano. vol.12, pp. 6389-6397, 2018. (SCI 15.881)

32. Lin, Y.-J.$^{+}$, Chen, C.-C.$^{+}$, Chi, N.-W., Nguyen, T., Lu, H.-Y., Nguyen, D., Lai, P.-L.*, **Sung, H.-W.***, "In situ self-assembling micellar depots that can actively trap and passively release NO with long-lasting activity to reverse osteoporosis," Advanced Materials. vol.30, 1705605, 2018. (SCI 30.849)

33. Cui, Z., Ni, N.-C., Wu, J., Du, G.-Q., He, S., Yau, T.-M., Weisel, R.-D., **Sung, H.-W.**, Li, R.-K.* "Polypyrrole-Chitosan Conductive Biomaterial Synchronizes Cardiomyocytes Contraction and Improves Myocardial Electrical Impulse Propagation," Theranostics. vol. 8, pp. 2752–2764, 2018. (SCI 11.556)

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

12. Chen, P.-M., Pan, W.-Y., Wu, C.-Y., Yeh, C.-Y., Luo, P.-K., Liu, Y.-M., Chou, C.-J. , **Sung, H.-W.***, " Modulation of Tumor Microenvironment Using a TLR-7/8 Agonist-Laden Nanoparticle System that Combines Mild Hyperthermia and Immunotherapy for In Situ Cancer Vaccination"此篇論文榮獲 2019 國際創新藥物制放研討會暨中華民國生醫材料及藥物制放學會年會 (2019 IADDS-BCRS) 學生口頭論文競賽藥物制放組特優

13. Hsieh, M.-H.,Wu, J., Li, S.-H., Wu, S.-Y., Gao, X.-Y., Wei, H.-J., Li, R.-K., **Sung, H.-W.***"An Injectable Self-doping Conductive Hydrogel that Improves Electrical Coupling of Isolated Cardiomyocytes, Restoring Heart Function after Myocardial Infarction"此篇論文榮獲 2018 中華民國生醫材料及藥物制放學會壁報競賽活動生醫材料組第一名

14. Hsieh, M.-H.,Wu, J., Li, S.-H., Wu, S.-Y., Gao, X.-Y., Wei, H.-J., Li, R.-K., **Sung, H.-W.***" An Injectable Self-doping Conductive Hydrogel that Improves Electrical Coupling of Isolated Cardiomyocytes, Restoring Heart Function after Myocardial Infarction"此篇論文榮獲 2018 第 19 屆工學院研究生論文發表競賽壁報展示組佳作

15. Chen, P.-M., Pan, W.-Y, Wu ,Y.-R., Yeh, C.-Y., Yang ,Y.-Z., Luo, P.-K., Chou, C.-J., **Sung, H.-W.***,"An NIR-Absorbing Nanoparticle System Loaded with TLR-7/8 Ligand for Combinational Photothermal Immunotherapy"此篇論文榮獲 2018 The 2nd International Conference on Biomedical Application of Nanomaterials, Best Poster Award in 3rd Prize

C. Patents

Taiwan

1. **宋信文**,繆養寶,陳冠宏“口服藥物組成物及其用途” 2022年中華民國專利發明I783175 (專利權起訖日: 2022/11/11 ~ 2039/09/09)
2. **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” 2021年中華民國專利發明I739450 (專利權起訖日: 2021/09/11 ~ 2040/05/27)
3. **宋信文**,繆養寶,陳冠宏,“口服藥物傳遞系統及其製備方法” 2021年中華民國專利發明I727411(專利權起訖日: 2021/05/11~ 2039/08/28)
4. **宋信文**,繆養寶,陳冠宏,“口服藥物傳遞系統及其用途” 2020年中華民國專利發明J2P108043-TW(申請號)
5. 林柏諺,陳冠宏,**宋信文**,“口服釋放之醫藥組合物ORAL DRUG DELIVERY SYSTEM AND METHOD FOR FABRICATING THEREOF” 2020年中華民國專利發明第I686214.
6. **宋信文**, 林威志, 林淑娟, “ 緩釋型組成物、其製備方法及其用途, SUSTAINED-RELEASE COMPOSITION, METHOD FOR FABRICATING, AND USE THEREOF,” 2018年中華民國專利發明第I638666號.
7. **Sung, H.-W.**, Lin, Y.-J., Chi, N.-W., Wan, W.-L., “溫度反應型組成物、其製備方法及其用途/Temperature-Responsive Composition, Method for Fabricating, And Use Thereof,”2017年中華民國專利發明第I606829號.

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8. **宋信文**,繆養寶,陳冠宏,“ ORAL DRUG COMPOSITION AND USE THEREOF,” (U.S. Patent No. 11,278,630, 03/22/2022)
9. **宋信文**,繆養寶,陳冠宏,“ ORAL DRUG DELIVERY SYSTEM AND METHOD FOR FABRICATING THEREOF,” U.S. Patent No. (申請號)J2P108042 US
10. **Sung, H. W.**, Huang, C. C., Wei-Lin, W. A. N., Hsieh, M. H., Shih, P. C., & Hu, H. Y., “Sustained-release composition, method for fabricating, and use thereof ,” (USPTO 15/672,280, filed on 8/8/2017. U.S. Patent No. 10322088, 6/18/2019)

11. **Sung, H.-W.**, Chuang, E.-Y., Lin, P.-Y., TU, Hosheng., "A pharmaceutical composition comprising a gas generating ingredient," (USPTO EP2974721A1, filed on 7/16/2015. U.S. Patent No. 15177007.0, 1/20/2018)

12. **Sung, H.-W.**, Lin, Y.-J., Chi, N.-W., Wan, W.-L., "TEMPERATURE-RESPONSIVE COMPOSITION, METHOD FOR FABRICATING, AND USE THEREOF," (USPTO 15/603,419, filed on 05/23/2017. U.S. Patent No. US20180161276A1, 6/14/2018)

13. **Sung, H.-W.**, Chuang, E.-Y., Lin, P.-Y., "Nano/Micro Bubbles for Drug Delivery," (USPTO 14/537,448, filed on 11/10/2014. U.S. Patent No. 9,603,793, 3/28/2017)

14. **Sung, H.-W.**, Hsiao, C.-W., Huang, C.-C., Chung, M.-F., Liao, Z.-X., Chiang, W.-L., "Acid-Substituted Polyaniline-Grafted Hydrogel Copolymer And Use Thereof," (USPTO 14/488,571 , filed on 9/17/2014. U.S. Patent No. 9,539,326 1/10/2017)

Other Countries

15. **Sung, H.-W.**, Chuang, E.-Y., Lin, P.-Y., Chiang C.-H.,"醫藥組合物/ Pharmaceutical composition" (Japan Patent No. 2016029034, 03/03/2016)

16. **Sung, H.-W.**, Chuang, E.-Y., Lin, P.-Y., "Nano/Micro Bubbles for Drug Delivery,"(China Patent No.105267178, 01/27/2016)

17. **Sung, H.-W.**, Chuang, E.-Y., Lin, P.-Y., Chiang C.-H.,"醫藥組合物/ Pharmaceutical composition" (European Patent No. 2974721, 01/20/2016)

18. **Sung, H.-W.**, Chuang, E.-Y., Lin, P.-Y., "Pharmaceutical Composition for Preparing Drug Delivery Nano/Micro Bubbles," (China Patent No.105250237, 01/20/2016)

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 15.304)副主編。

Publications of De-Hao Tsai (蔡德豪)

A. Book Chapters (* Corresponding author)

Wang, H.-L.; **Tsai, D.-H.*** (2019). "Self-Assembly of Noble Metal-Based Hybrid Nanostructures Using a Combination of Colloidal and Aerosol-Based Approaches" In *Targeted Nanosystems for Therapeutic Applications: New Concepts, Dynamic Properties, Efficiency, and Toxicity*. American Chemical Society, Chapter 7, pp 139-156.

B. Journal Papers (* Corresponding author)

2022

1. 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**

2. 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.

3. 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.

4. 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.

5. 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**

6. 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.

7. Z. X. Law, **D-H Tsai*** (2022, Jul). Design of Aerosol Nanoparticles for Interfacial Catalysis. *Langmuir*, 38(30), 9037-9042.

8. 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.

9. 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**

10. 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. MOST 109-2223-E-007-002. **獲選為期刊封面**

11. 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.

12. 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

13. 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)

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

2020

19. T. Y. Liang, D. Senthil Raja, K. C. Chin, C.-L. Huang, S. A. Sethupathi, L. K. Leong*, **D-H Tsai***, S-Y Lu* (2020). "Bimetallic Metal–Organic Framework-Derived Hybrid Nanostructures as High-Performance Catalysts for Methane Dry Reforming". *ACS Applied Materials & Interfaces*. 12(13), 15183-15193.

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21. T. Y. Liang, H. H Chen, **D-H Tsai*** (2020). "Nickel Hybrid Nanoparticle Decorating on Alumina Nanoparticle Cluster for Synergistic Catalysis of Methane Dry Reforming". *Fuel Processing Technology*, 201, 106335.

22. H. L. Chiang, Y. S. Chen, Y. A. Sun, D. S. H. Wong, **D-H Tsai*** (2020). "Aerosol Spray Controlled Synthesis of Nanocatalyst using Differential Mobility Analysis Coupled to Fourier-Transform Infrared Spectroscopy". *Ind. Eng. Chem. Res.*, 59, 24, 11187–11195.

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27. J. L. Kang*, K. T. Liu, D. S. H. Wong, S. S. Jang, **D-H Tsai** (2020). Multi-Scale Modeling and Study of Aerosol Growth in an Amine-based CO_2 Capture Absorber". *Environment*, 7 (8), 58. (2019 IF: 2.3. 141/265)

2019

28. G. H. Lai, J. H. Lak, **D-H Tsai*** (2019). "Hydrogen Production via Low-Temperature Steam-Methane Reforming using Ni-CeO_2-Al_2O_3 Hybrid Nanoparticle Clusters as Catalysts". *ACS Appl. Energy Mater.* 2, 11, 7963-7971.

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30. H. L. Wang, H. Yeh, B. H. Li, C. H. Lin, T.-C. Hsiao*, **D-H Tsai*** (2019). "Zirconium-Based Metal–Organic Framework Nanocarrier for the Controlled Release of Ibuprofen". *ACS Applied Nano Materials, 2 (6),* 3329-3334.

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33. S.-Y. Hsu, S.-C. Lin, J.-A. Wang, C.-C. Hu*, C.-C. M. Ma*, **D-H Tsai*** (2019). "Aerosol-based synthesis of silsesquioxane-graphene oxide and graphene-manganese oxide nanocomposites for high-performance asymmetric supercapacitors", *Electrochimica Acta*, 296, 427-437.

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37. T. Y. Tang, H.-L. Wang; H. C. T. Yao, K. C. Yang, R. M. Ho, **D-H Tsai*** (2018). "A Facile Method to Functionalize Gold Nano-tripods with High Suspension Stability in Aqueous Environment", *Nanoscale*, 10(16):7352-7356.

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39. L. T. Chen, U. H. Liao, J. W. Chang, S. Y. Lu, **D-H Tsai*** (2018), "Aerosol-Based Self-Assembly of Ag-ZnO Hybrid Nanoparticle Cluster with Mechanistic Understanding for Enhanced Photocatalysis", *Langmuir*, 34 (17), 5030–5039.

40. T. Y. Liang, C. Y. Lin, F. C. Chou, M. Wang, **D-H Tsai*** (2018), "Gas-Phase Synthesis of Ni-CeOx Hybrid Nanoparticles and Their Synergistic Catalysis for Simultaneous Reforming of Methane and Carbon Dioxide to Syngas", *Journal of Physical Chemistry C*, 122 (22), 11789–11798.

41. C. Y. Lin, F. C. Chou, **D-H Tsai*** (2018). "Mechanistic Understanding of Surface Reduction of Cu-Ce-O Hybrid Nanoparticles for Catalytic Methane Combustion", *Journal of the Taiwan Institute of Chemical Engineers*, 92. 80-90.

42. J. Tan, T. J. Cho, **D-H Tsai**, J. Liu, J. M. Pettibone, R. You, V. A Hackley, M. R. Zachariah (2018). "Surface Modification of Cisplatin-complexed Gold Nanoparticles and its Influence on Colloidal Stability, Drug Loading and Release". *Langmuir*, 34(1):154-163.

C. Conference Presentations

2022

1. 2021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。

2. 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.

3. (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。

4. (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。

5. (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

6. (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)

7. (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)

8. Pacifichem 2021 Congress. Title: Development of biofunctional nanomaterial colloid using gas-phase electrophoresis method. December 18, 2021. (online presentation)

9. 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。

2020

10. (Invited) Industrial Technology Research Institute (ITRI) Workshop on Nanotechnology and Applications. Title: Quantifying Functional Nanoparticles using Aerosol-based Ion Mobility-Coupling Technique. October 15, 2020. Hsinchu, Taiwan.

2019

11. Okinawa Colloids 2019。發表論文題目: Hybrid nanoparticles for energy and photocatalytic。2019年11月7日於日本沖繩萬國津梁館會議中心。

12. (Invited) 2019 ACCIS亞洲膠體與界面學會年會。發表論文題目: Development of new colloidal nanomaterials: surface functionalization and colloidal stability。2019年9月26日於尼泊爾加德滿都Tribhuvan University

13. 2019美國化學學會秋季年會。發表論文題目: Quantifying hyaluronic acid and metal-organic framework for biomedical applications using gas-phase electrophoresis。August 28, 2019於美國加州聖地牙哥會議中心。

14. 11th Asian Aerosol Conference (AAC) 2019 亞洲氣溶膠會議。發表論文題目: Metal-organic frameworks and gas-phase encapsulation of CuO nanocrystals for highly active catalysis。May 30, 2019於香港城市大學。

2018

15. (Invited) Cross-strait Conference, Taiyuan, Shanxi. Title: Gas-Phase Synthesis of Functional Nanoparticles for Energy Application. August 4, 2018.

16. 2018台灣化工學會64週年慶祝大會邀請演講。題目：Surface Functionalization and Colloidal Stability of Hybrid Nanomaterials using a Combination of Colloidal- and Aerosol-based Approaches。2018年11月10日於國立雲林科技大學。

17. 2018 International Aerosol Conference. Title: A Facile Aerosol-based Synthesis of Cu-Ce-O Hybrid Nanoparticles for Synergistic Catalysis of Methane Combustion. Sep 3, 2018. St. Louis, MO. USA.

18. 國立清華大學-馬來西亞拉曼大學化工系聯合雙邊會議邀請演講。題目：A Facile Gas-Phase Synthesis of Hybrid Nanoparticles as Heterogeneous Catalysts。2018年10月1日於馬來西亞拉曼大學。

D. Patents

1. **蔡德豪***、陳育伸、楊哲銘、阮黃清竹、陳家穎、張鴻銘。“丙二醇甲醚的合成方法“。 中華民國發明專利，ROC Patent # I755128 (2022)
2. **蔡德豪***、張宏彥、賴冠宏。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。中華民國發明專利，ROC Patent # I768264 (2022).
3. **蔡德豪***、張宏彥、賴冠宏、林致遠、李浚瑀、賈志成、黃春利、張鴻銘 (2021)。METHOD FOR FABRICATING HETEROGENEOUS NICKEL-BASED CATALYST ON ALUMINUM OXIDE SUPPORT, HETEROGENEOUS NICKEL-BASED CATALYST ON ALUMINUM OXIDE SUPPORT AND METHOD FOR SYNTHESIZING POLYETHERAMINE。美國發明專利，#11141715。
4. **蔡德豪***、張宏彥、賴冠宏、林致遠；李浚瑀、賈志成、黃春利、張鴻銘。非匀相鎳系氧化鋁載體觸媒的製備方法、其製備之非匀相鎳系氧化鋁載體觸媒及合成聚醚胺的方法。中華民國發明專利，ROC Patent # I677374 (2019).
5. **蔡德豪***、張威昌，”石墨烯材料的數量表面積的定量方法”，中華民國發明專利，ROC Patent # I666441 (2019)
6. **Tsai, D-H***; Chang, W. C. (2020). Quantitative method of number surface area of graphene material. US Patent: #10,670,505。
7. **蔡德豪***、林致遠、周芳群、梁騰云 (國立清華大學)，”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”，中華民國發明專利，ROC Patent # I655967 (2019)。

E. Other

1. 科技部107年度吳大猷先生紀念獎
2. 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。
3. 台灣化工學會107年度化工傑作獎
4. 期刊編輯，Advanced Powder Technology (Elsevier, IF=4.83)。2018至今。
5. 科技部優秀年輕學者計畫。2018至今。
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. 四度獲選期刊封面故事：“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）

Publications of Hsing-Yu Tuan (段興宇)

A. Journal Papers (* Corresponding author)

2023

1. Jia-Zheng Yen, Che-Bin Chang, Kai-Siang Jhang and **Hsing-Yu Tuan*** (2023, Jan). An Excellent Metal Phosphide Electrode for Potassium Ion Hybrid Capacitors: the Case of Carbon Nanotube-Wrapped AgP2. *ACS Applied Energy Materials*, 6,822. (SCI, IF: 6.959). 本人為通訊作者.

2. Sheng-Feng Ho and **Hsing-Yu Tuan** (2023, Jan). Cu3PS4: a sulfur-rich metal phosphosulfide with superior ionic diffusion channel for high-performance potassium ion batteries/hybrid capacitors. *Chemical Engineering journal*, 452, 139199. (SCI, IF:16.744). 本人為通訊作者.

3. Yan-Fu Huang, Yi-Chun Yang, Yen-Yang Tseng, and **Hsing-Yu Tuan*** (2023, Jan). Two dimensional MnPSe3 layer stacking composites with superior storage performance for alkali metal-ion batteries. *Journal of Colloid and Interface Science*, 635,336. (SCI, IF:9.965). 本人為通訊作者.

4. Yan-Fu Huang, Yi-Chun Yang, and **Hsing-Yu Tuan** (2023, Jan). Construction of Strongly Coupled Few Layer FePSe3-CNT Hybrids for High Performance Potassium-Ion Storage Devices. *Chemical Engineering Journal*, 451, 139013. (SCI, IF:16.744). 本人為通訊作者.

2022

5. Jia-Zheng Yen, Yi-Chun Yang, and **Hsing-Yu Tuan**. (2022, Dec). Interface Engineering of High Entropy Oxide@Polyaniline Heterojunction Enables Highly Stable and Excellent Lithium Ion Storage Performance. *Chemical Engineering Journal*, 450, 137924. (SCI, IF:16.744). 本人為通訊作者.

6. Wei-Cheng Lin, Yi-Chun Yang, and **Hsing-Yu Tuan**. (2022, Oct). Ternary Chalcogenide Anodes for High-Performance Potassium-Ion Batteries and Hybrid Capacitors via Composition-Mediated Bond Softening and Intermediate Phase. *Energy Storage Materials*, 51, 38-53. (SCI, IF:20.831). 本人為通訊作者.

7. Yi-Yen Hsieh, and **Hsing-Yu Tuan** (2022, Oct). Architectural Van Der Waals Bi2S3/Bi2Se3 Topological Heterostructure as a Superior Potassium-Ion Storage Material. *Energy Storage Materials*, 51, 789-805. (SCI, IF:20.831). 本人為通訊作者.

8. Sheng-Feng Ho, Yi-Chun Yang, and **Hsing-Yu Tuan**. (2022, Sep). Silver Boosts Ultra-Long Cycle Life for Metal Sulfide Lithium-Ion Battery Anodes: Taking AgSbS2 Nanowires as an Example. *Journal of Colloid and Interface Science*, 621, 416-430. (SCI, IF:9.965). 本人為通訊作者.

9. Yi-Yen Hsieh, and **Hsing-Yu Tuan**. (2022, Jun). Recent Progress and Strategies on Mixed-Dimensional Heterostructures for Potassium-Ion Storages. *Materials Today Sustainability*, 18, 100141. (SCI, IF:7.244). 本人為通訊作者.

10. Che-Bin Chang, and **Hsing-Yu Tuan**. (2022, Apr). Recent Progresson Sb- and Bi- based Chalcogenide Anodes for Potassium-Ion Batteries. *Chemistry—An Asian Journal*, 17, e202200170. (SCI, IF:4.839). 本人為通訊作者.

11. Chao-Hung Chang, Kuan-Ting Chen, Yi-Yen Hsieh, Che-Bin Chang, and **Hsing-Yu Tuan**. (2022, Jan). Crystal Facet and Architecture Engineering of Metal Oxide Nanonetwork Anodes for High-Performance Potassium-Ion Batteries and Hybrid Capacitors. *ACS Nano*, 16, 1486-1501. (SCI, IF:18.027). 本人為通訊作者.

2021

12. Che-Bin Chang, Kuan-Ting Chen and **Hsing-Yu Tuan** (2021, Sep). Large-scale synthesis of few-layered copper antimony sulfide nanosheets as electrode materials for high-rate potassium-ion storage. *Journal of Colloid and Interface Science*, 608, 984-994. (SCI, IF: 9.965). 本人為通訊作者.

13. Kuan-Ting Chen, Yi-Chun Yang, Lian-Ming Lyu, Ming-Yen Lu, and **Hsing-Yu Tuan** (2021, Jun). In situ formed robust submicron-sized nanocrystalline aggregates enable highly-reversible potassium ion storage. *Nano Energy*, 88, 106233. (SCI, IF: 19.069). 本人為通訊作者.

14. Yi-Yen Hsieh, Kuan-Ting Chen, and **Hsing-Yu Tuan** (2021, May). A synergetic SnSb-amorphous carbon composites prepared from polyesterification process as an ultrastable potassium-ion battery anode . *Chemical Engineering Journal* , 420, 130451. (SCI, IF: 16.744). 本人為通訊作者.

15. Kuan-Ting Chen, Shaokun Chong, Lingling Yuan, Yi-Chun Yang, **Hsing-Yu Tuan** (2021, Apr). Conversion-alloying dual mechanism anode: Nitrogen-doped carbon-coated Bi2Se3 wrapped with graphene for superior potassium-ion storage. *Energy Storage Materials*, 39, 239-249. (SCI, IF: 20.831). 本人為通訊作者.

16. Che-Bin Chang, Chun-Yu Tsai, Kuan-Ting Chen, and **Hsing-Yu Tuan** (2021, Mar). Solution-Grown Phosphorus-Hyperdoped Silicon Nanowires/Carbon Nanotubes Bilayer Fabric as a High-performance Lithium-ion Battery Anode. *ACS Applied Energy Materials* , 4, 3160-3168. (SCI, IF:6.959). 本人為通訊作者.

17. Kuan-Ting Chen, Yi-Chun Yang, Yuan-Hsing Yi, Xiang-Ting Zheng, **Hsing-Yu Tuan** (2021, Mar). A carbon ink for use in thin, conductive, non peelable, amphiphilic, antioxidant, and large-area current collector coating with enhanced lithium ion battery performance. *Journal of Colloid and Interface Science*, 598, 155-165. (SCI, IF: 9.965). 本人為通訊作者.

18. Chun-Yu Tsai, Chao-Hung Chang, Tzu-Lun Kao, Kuan-Ting Chen, **Hsing-Yu Tuan** (2021, Jan). Shape matters: SnP0.94 teardrop nanorods with boosted performance for potassium ion storage. *Chemical Engineering Journal*, 417, 128552 . (SCI, IF: 16.744). 本人為通訊作者.

2020

19. Xiang-Ting Zheng, Kuan-Ting Chen, Yi-Yen Hsieh and **Hsing-Yu Tuan** (2020, Dec). Ultrafine Antimony Nanocrystals/Phosphorus Pitaya-Like Nanocomposites as Anodes for High-Performance Sodium-Ion Batteries. *ACS Sustainable Chemistry & Engineering* , 50, 18535-18544. (SCI, IF:9.224). 本人為通訊作者.

20. Sheng-Bor Huang, Yi-Yen Hsieh, Kuan-Ting Chen and **Hsing-Yu Tuan** (2020, Nov). Flexible nanostructured potassium-ion batteries. *Chemical Engineering Journal*, 127697. (SCI, IF: 16.744). 本人為通訊作者.

21. Cheng-Ying Chan, Chao-Hung Chang and **Hsing-Yu Tuan** (2020, Sep). Synthesis of raspberry-like antimony-platinum (SbPt) nanoparticles as highly active electrocatalysts for hydrogen evolution reaction. *Journal of Colloid and Interface Science*, 584, 729-737. (SCI, IF: 9.965). 本人為通訊作者.

22. Kuan-Ting Chen and **Hsing-Yu Tuan** (2020, Sep). Bi–Sb Nanocrystals Embedded in Phosphorus as High-Performance Potassium Ion Battery Electrodes. *ACS Nano*, 14, 11648-11661. (SCI, IF: 18.027). 本人為通訊作者.

23. Hsuan-Peng Lin, Kuan-Ting Che, Che-Bin Chang, **Hsing-Yu Tuan** (2020, Jul). Aluminum phosphide as a high-performance lithium-ion battery anode. *Journal of Power Sources*, 465, 228262. (SCI, IF: 9.794). 本人為通訊作者.

24. Cheng-Chieh Chuang, Yi-Yen Hsieh, Wei-Chung Chang and **Hsing-Yu Tuan** (2020, May). Phosphorus-sulfur/graphene composites as flexible lithium-sulfur battery cathodes with super high volumetric capacity. *Chemical Engineering Journal*, 387, 123904. (SCI, IF: 16.744). 本人為通訊作者.

25. Cheng-Ying Chan, Chao-Hung Chang and **Hsing-Yu Tuan** (2020, May). Colloidal synthesis of porous red phosphorus nanoparticles as a metal-free electrocatalyst for the hydrogen evolution reaction. *Chemical Communications*, 56, 2937-2940. (SCI, IF:6.065). 本人為通訊作者.

26. Kuo-Lung Wang, Kuan-Ting Chen, Yuan-Hsing Yi, Yi-Hao Hung, **Hsing-Yu Tuan** and Masaki Horie (2020, Jan). High-Performance Lithium Ion Batteries Combining Submicron Silicon and Thiophene-Terephthalic Acid-Conjugated Polymer Binders. *ACS Sustainable Chem. Eng*, 8, 1043-1049. (SCI, IF:9.224). 本人為通訊作者.

2019

27. Kuan-Ting Chen, Wei-Chung Chang, Shu-Chen Lu, Po-Yuan Yang and **Hsing-Yu Tuan** (2019, Dec). Facile Synthesis of Cu Nanocrystals with Morphology Evolution from Transitional Truncated Octahedra to Octahedra. *Journal of Nanomaterials*, 2019, 1-7. (SCI, IF:3.791). 本人為通訊作者.

28. Cheng-Chieh Chuang, Hsun-Chen Chu, Sheng-Bor Huang, Wei-ShunChang, **Hsing-Yu Tuan** (2019, Jul). Laser-induced plasmonic heating in copper nanowire fabric as a photothermal catalytic reactor. *Chemical Engineering Journal*, 7, 122285. (SCI, IF: 16.744). 本人為通訊作者.

29. Kuan-Ting Chen, Wei-Chung Chang, Hong-Jie Yang , Chun-Yu Tsai , Sheng-Bor Huang , **Hsing-Yu Tuan** (2019, Jun). Free standing Si (Ge) nanowire/Cu nanowire composites as lithium ion battery anodes. *Journal of the Taiwan Institute of Chemical Engineers*. (SCI, IF: 5.477). 本人為通訊作者.

30. Jee-Yee Chen, Shao-Lou Jheng, Cheng-Ying Chan, **Hsing-Yu Tuan** (2019, May). Morphology controlled synthesis of Pd2Ge nanostructures and their shape-dependent catalytic properties for hydrogen evolution reaction. *International Journal of Hydrogen Energy*, 44, 12958. (SCI, IF: 7.139). 本人為通訊作者.

31. Suh-Ciuan Lim, Cheng-Ying Chan , Kuan-Ting Chen and **Hsing-Yu Tuan** (2019, May). The shape-controlled synthesis of gallium–palladium (GaPd2) nanomaterials as high-performance electrocatalysts for the hydrogen evolution reactio. *Nanoscale*, 11, 8518. (SCI, IF: 8.307). 本人為通訊作者.

32. Jee-Yee Chen, Suh-Ciuan Lim, Chun-Hong Kuo, and **Hsing-Yu Tuan** (2019, Apr). Sub-1 nm PtSn ultrathin sheet as an extraordinary electrocatalyst for methanol and ethanol oxidation reactions. *Journal of Colloid and Interface Science*, 545, 54-62. (SCI, IF: 9.965). 本人為通訊作者.

33. Yu-Ju Chen, Yi-Rui Chen, Cheng-Hsuan Chiang, Kuo-Lun Tung, Tsung-Kuang Yeh and **Hsing-Yu Tuan** (2019, Apr). Monodisperse ordered indium–palladium nanoparticles: synthesis and role of indium for boosting superior electrocatalytic activity for ethanol oxidation reaction. *Nanoscale*, 11, 3336. (SCI, IF: 8.307). 本人為通訊作者.

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35. Suh-Ciuan Lim, Cheng-Ying Chan, Kuan-Ting Chen, **Hsing-Yu Tuan** (2019, Feb). Synthesis of popcorn-shaped gallium-platinum (GaPt3) nanoparticles as highly efficient and stable electrocatalysts for hydrogen evolution reaction. *Electrochimica Acta*, 297, 288-296. (SCI, IF: 7.336). 本人為通訊作者.

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39. Ching-Yu Wang, Yuan-Hsing Yi, Wei-Chung Chang, Tzu-Lun Kao, **Hsing-Yu Tuan** (2018, Aug). Multi-walled carbon nanotube-wrapped SiP2 as a superior anode material for lithium-ion and sodium-ion batteries. *Journal of Power Sources*, 399, p49. (SCI, IF: 9.794). 本人為通訊作者.

40. Kuan-Wei Tseng, Sheng-Bor Huang, Wei-Chung Chang and **Hsing-Yu Tuan** (2018, Jul). Synthesis of Mesoporous Germanium Phosphide Microspheres for High-Performance Lithium-Ion and Sodium-Ion Battery Anodes. *Chemistry of Materials*, 30, 4440. (SCI, IF: 10.058). 本人為通訊作者.

41. Jee-Yee Chen, Shao-Lou Jheng and **Hsing-Yu Tuan** (2018, May). Synthesis of nickel germanide (Ge12Ni19) nanoparticles for durable hydrogen evolution reaction in acid solutions. *Nanoscale*, 10, 11072. (SCI, IF: 8.307). 本人為通訊作者.

42. Kuan-Chen Lin, Mei-Wei Lin, Mu-Nung Hsu, Guan Yu-Chen, Yu-Chan Chao, **Hsing-Yu Tuan**, Chi-Shiun Chiang and Yu-Chen Hu (2018, Apr). Graphene oxide sensitizes cancer cells to chemotherapeutics by inducing early autophagy events, promoting nuclear trafficking and necrosis. *Theranostics*, 8, p2477. (SCI, IF: 11.6).

43. Shao-Lou Jheng, Jee-yee Chen, **Hsing-Yu Tuan**. (2018, Apr). Solution-liquid-solid growth of CuInTe2 nanowires as lithium-ion battery anodes. *Materials and Design*, 149, p113. (SCI, IF: 9.417). 本人為通訊作者.

44. Chiu-Yen Wang, Fang-Wei Yuan, Yu-Chen Hung, Ya-Wen Su, **Hsing-Yu Tuan** (2018, Feb). In-situ TEM and XRD analysis of microstructures changes in solution-grown copper silicide nanowires array for field emitters. *Journal of Alloys and compounds*, 735, 2373. (SCI, IF: 5.316). 本人為通訊作者.

45. Chien-Ming Lai, Tzu-Lun Kao, **Hsing-Yu Tuan** (2018, Jan). Si nanowires/Cu nanowires bilayer fabric as a lithium ion capacitor anode with excellent performance. *Journal of Power Sources*,, 379, p261. (SCI, IF: 9.794). 本人為通訊作者.

Publications of Jane Wang (王潔)

A. Book Chapters (* Corresponding author)

1. **Wang, J.**, Borenstein, J. T. "Chapter 28: Micro and Nano Patterning Technologies," In: Biology and Engineering of Stem Cell Niches (A. Vishwakarma & J. Karp ed.). Boston, MA, Academic Press (2017), pp375-390.

B. Journal Papers (* Corresponding author)

2022

1. Huang, W.-J., **Wang, J.***,"Development of 3D-Printed, Biodegradable, Conductive PGSA Composites for Nerve Tissue Regeneration," *Macromolecular Bioscience*, 2022, in press
2. Hsiao, S.-K., Liang, C.-W., Chang, T.-L., Sung, Y.-C., Chen, Y.-T., Chen, Y., **Wang, J.,***"An in vitro fibrotic liver lobule model through sequential cell-seeding of HSC and HepG2 on 3D-printed poly(glycerol sebacate) acrylate scaffolds,"*Journal of Materials Chemistry B*, 2022, 10, 9590-9598
3. Cheng, H.-T., Huang, H.-C., Lee, T.-Y., Liao, Y.-H., Sheng, Y.-H., Jin, P.-R., Huang, K.-W., Chen, L.-H., Chen, Y.-T., Liu, Z.-Y., Lin, T.-C., Wang, H.-C., Chao, C.-H., Juang, I P., Su, C.-T., Huang, K.-H.,Lin, S.-L., **Wang, J.**, Sung, Y.-C., Chen, Y.,"Delivery of sorafenib by myofibroblast-targeted nanoparticles for the treatment of renal fibrosis,"*Journal of Controlled Release*, 2022, 346, 169-179
4. Wang, C.-C., Chen, J.-Y., **Wang, J.***," The selection of photoinitiators for photopolymerization of biodegradable polymers and its application in digital light processing additive manufacturing," *Journal of Biomedical Materials Research Part A*, 2022, 110, 204-216

2021

5. Chang, P.-Y., **Wang, J**., Li, S.-Y., Suen, S.-Y.*, "Biodegradable Polymeric Membranes for Organic Solvent/Water Pervaporation Applications", *Membranes*, 2021, 11, 970.

6. Huang, H.-C., Sung, Y.-C., Li, C.-P., Wang, D., Chao, P.-., Tseng, Y.-T., Liao, B.-W., Cheng, H.-T., Hsu, F.-F., Huang, C.-C., Chen, Y.-T., Liao, Y.-H., Hsieh, H. T., Shih, Y.-C., Liu, I.-J., Wu, H.-C., Lu, T.-T.,* **Wang, J.***, Chen, Y.*, "Reversal of pancreatic desmoplasia by a tumour stroma-targeted nitric oxide nanogel overcomes TRAIL resistance in pancreatic tumours". *Gut,* 2021, 0:1–13. 10.1136/gutjnl-2021-325180

7. Wang, C.-C., Chen, J.-Y., **Wang, J.***, "The selection of photoinitiators for photopolymerization of biodegradable polymers and its application in digital light processing additive manufacturing". *Journal of Biomaterials Research Part A*, 2021, 110:204–216.

8. Jiang, W.-C., Hsu, W.-Y., Ao-Ieong, W.-S., Wang, C.-Y., **Wang, J.**, Yet, S.-F.* (2021, Jul). "A novel engineered vascular construct of stem cell-laden 3D-printed PGSA scaffold enhances tissue revascularization", *Biofabrication*, 2021, 13, 045004.

9. Ao-Ieong, W.-S., Chien, S.-T., Jiang, W.-C., Yet, S.-F., **Wang, J.***, "The Effect of Heat Treatment toward Glycerol-Based, Photocurable Polymeric Scaffold: Mechanical, Degradation and Biocompatibility". *Polymers*, 2021, 13, 1960.

10. Chang, C.-T., Chen, Y.-T., Hsieh, Y.-K., Girsang, S. P., Wang, R. S., Chang, Y.-C., Shen, S.-H., Shen, C. R., Lin, T.-P., Wan, D., **Wang, J**.*,"Dual-functional antibiofilm polymer composite for biodegradable medical devices", *Materials Science and Engineering: C*, 2021, 123, 111985.

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11. Chiang, M.-T., Wang, H.-L., Han, T.-Y., Hsieh, Y.-K., **Wang, J.**, Tsai, D.-H., "Assembly and Detachment of Hyaluronic Acid on a Protein-Conjugated Gold Nanoparticle," *Langmuir*, 2020, 36, 14782-14792.

12. Wang, W.-H., Huang, C.-W., Tsou, E.-Y., Ao-Ieong, W.-S., Hsu, H.-C., Wong, D. S.-H., **Wang, J.**, "Characterization of Degradation Behavior of Poly(Glycerol Maleate) Films in Various Aqueous Environments," *Polymer Degradation and Stability*, 2020, 183, 109441.

13. Chang, C.-T., Chen, H.-T., Chen, Y.-M., Wan, D., Shen, S.-H., **Wang, J.**, "3D-printed radiopaque polymer composites for the *in situ* monitoring of biodegradable medical implants," *Applied Materials Today*, 2020, 20, 100771.

14. Wang, C.-C., Shih, T.-Y., Hsieh, Y.-T., Huang, J.-L., and **Wang, J.***, "L-Arginine Grafted Poly(Glycerol Sebacate) Materials:An Antimicrobial Material for Wound Dressing," *Polymer*, 2020, 12(7), 1457.

15. Hsieh, Y.-K., Hung, P.-H., Huang, C.-W., Chuang, K.-C., **Wang, J.***, "Study on the Degradation of Biodegradable Poly (Glycerol Maleate) (PGM) Microbeads Polymer Degradation and Stability," *Polymer Degradation and Stability*, 2020, 179, 109223.

16. Teng, C.-L., Chen, J.-Y., Chang, T.-L., Hsiao, S.-K., Hsieh, Y.-K., Villalobos Gorday, K. A., Cheng, Y.-L., and **Wang, J.**, "Design of photocurable, biodegradable scaffolds for liver lobule regeneration via digital light processing-additive manufacturing," *Biofabrication*, 2020, 12(3):035024.

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17. Sung, Y.-C., Jin, P.-R., Chu, L.-A., Hsu, F.-F., Wang, M.-R., Chang, C.-C., Chiou, S.-J., Qiu, J.T., Gao, D.-Y., Lin, C.-C., Chen, Y.-S., Hsu, Y.-C., **Wang, J.**, Wang, F.-N., Yu, P.-L., Chiang, A.-S., Wu, A.Y., Ko, J.J., Lai, C.P., Lu, T.-T. & Chen, Y.* "Delivery of nitric oxide with a nanocarrier promotes tumour vessel normalization and potentiates anti-cancer therapies," *Nature Nanotechnology*, **2019**, 14, 1160–1169.

18. Hsiao,M.-H., Ye,H.-F., Liu, T.-J., and **Wang, J. *, "**Drug Loading on Microneedles," *Advances in Chemical Engineering and Science*, 2019, 9, 204-222.

2018

19. Chen, J.-Y., HWang, J. V., Ao-Ioeng, W.-S., Lin, Y.-C., Hsieh, Y.-K., Cheng, Y.-L., **Wang, J. *,** "Study of physical and degradation properties of 3D-printed biodegradable, photocurable copolymers, PGSA-co-PEGDA and PGSA-co-PCLDA," *Polymers*, **2018**, 10, 1263.

20. Lin, L.-K., **Wang, J. ,** Liu*,Y.-L., "Effective Synthesis Route for Linear and Cross-Linked Biodegradable Polyesters Using Aliphatic Meldrum's Acid Derivatives as Monomers," ACS Omega, **2018**, 3(4), 4641-4646

21. Sung,Y.-C., Liu,Y.-C. , Chao,P.-H. , Chang, C.-C., Jin, P.-R., Lin,T.-T., Lin,J.-A., Cheng,H.-T., **Wang,J.,** Lai,C. P., Chen,L.-H., Wu,A.-Y., Ho,T.-L., Chiang,T., Gao,D.-Y., D. Duda,G. , Chen*,Y. ,"Combined delivery of sorafenib and a MEK inhibitor using CXCR4-targeted nanoparticles reduces hepatic fibrosis and prevents tumor development," Theranostics, **2018**, 8(4), 894-905

22. Hsieh, Y.-K., Kaiser, G., Hsiao, S.G., Hsu, K.-P., Wang, T.-H., **Wang, J.***, "Contact Guidance on Laser-Patterned Biodegradable Polymeric Material", *Journal of Materials Chemistry B* **2018,** *6*, 3684-3691

23. Hsieh, Y.-K., Chang, C.-T., Jen, I.-H., Pu, F.-C., Wan, D. and**Wang, J.***, "Using Gold Nanoparticles (AuNPs) as an Additive to Investigate the Drug Embedding and Releasing Performance in Poly(Glycerol Sebacate)," *ACS Applied Nano Materials*, **2018**, *1(9)*, 4474-4482

C. Conference Presentations

2019

1. Soo, B.C., Ao-Ieong, W.-S., and **Wang, J.*** (Dec 2019) "Biodegradable Ocular Implants for Anti-glaucoma Drug Delivery," The 16th Pacific Polymer Conference, Singapore.

2. Chang, J.-Y., Chang, Y.-M., Villalobos Gorday, K. A., and **Wang, J.*** (Dec 2019) "The Application of 3D Printing of Biodegradable Polymers toward Vasculature Regeneration" 2019 Materials Research Society Fall Meeting, Boston, USA

3. **Wang, J.*** (Nov 2019) "Drug Delivery to the Inner Ears—What Happened to My Super Star Dream" The 25th Symposium of Young Asian Biological Engineer's Community, YABEC 2019, Seoul, South Korea, (Invited Talk)

4. Chang, C.-T., Soo, B.C., Chen, Y.-J., Hsieh, Y.-K., Wan, D., and **Wang, J.*** (Oct 2019) "The Investigation of the Drug Embedding and Releasing Performance in Glycerol-Based, Biodegradable Polymers Using Gold Nanoparticles" The 6th Federation of Asian Polymer Societies Polymer Congress (FAPS 2019), Taipei, Taiwan.

5. **Wang, J.*** (Oct 2019) "The Development and Characterization of Biodegradable, DLP-Printable, Glycerol-Based Copolymers"Korea-Taiwan Joint Symposium: Emerging Technology in Polymer Science at the 2019 Fall Meeting of the Polymer Society of Korea, Jeju Island, South Korea, (Invited Talk)

6. **Wang, J.*** (Jul 2019)"The Fabrication of Biodegradable Lobule-Like Scaffolds for Liver Regeneration via Additive Manufacturing." The 14th Asian Congress on Biotechnology, ACB 2019, New Taipei City, Taiwan, Jul 2019

7. Chang, C.-T., Soo, B.C., Chen, T.-Y., Wan, D., and **Wang, J.*** (Jun 2019) "Use of Gold Nanoparticles to Investigate the Drug Embedding and Releasing Performance in Glycerol-Based, Biodegradable Polymers." The 10th International Conference on Materials for Advanced Technologies (ICMAT 2019), Singapore.

8. Chang, C.-T., Hsieh, Y.-K., Chen, T.-Y., Wan, D., and **Wang, J.*** (Jun 2019) "The Investigation of Releasing Profile of Gold Nanoparticles (AnNPs) Embedded in Biodegradable Polymeric Scaffolds," Global Chemistry Congress (GCC-2019), Rome, Italy, Jun 2019.

2018

9. **Wang, J.*** (Nov. 2018) Polymeric Tissue Engineering Scaffolds via Additive Manufacturing," The 24th Symposium of Young Asian Biological Engineer's Community, YABEC 2018, Taipei City, Taiwan (Invited Talk).

10. Teng,C.-L., Hsiao,S.-K., Ao-Ieong,W.-S., Hsieh,Y.-K., **Wang, J.*** (Jul, 2018)"The Fabrication of Glycerol-Based Biodegradable "The Fabrication of Glycerol-Based Biodegradable Polymeric Scaffolds for Liver Regeneration via Additive Manufacturing", International Symposium on PRecision Engineering and Sustainable Manufacturing (PRESM2018), Sapporo, Japan.

D. 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)

2. **王潔**、鄭逸琳、陳怡文、謝明佑"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", 中華民國發明專利**I 644801.** (專利有效期間: 2018/12~2037/08)

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)

E. 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

2. 107學年度國立清華大學校傑出教學獎, 2018/08-2019/06

Committees of International Conferences:

1. The 2020 Taiwan Institute of Chemical Engineers Annual Conference and Taiwan-Czech-Korean Trilateral International Conference (TwIChE 2020), Hsinchu, Taiwan, Oct 2020 (session organizer, session chair, conference MC)

2. The 6th Federation of Asian Polymer Societies Polymer Congress (FAPS 2019), Taipei, Taiwan, Oct 2019 (session chair, conference MC)

3. The 14th Asian Congress on Biotechnology, ACB 2019, New Taipei City, Taiwan, Jul 2019 (conference MC, organizing committee)

4. The 10th International Conference on Materials for Advanced Technologies (ICMAT 2019), Singapore, Jun 2019 (session organizer)

5. The 24th Symposium of Young Asian Biological Engineer's Community (YABEC 2018), Nov 2018, Taipei City, Taiwan

Publications of Tzu-Chien Wei (衛子健)

A. Journal Papers

After serving as an associate professor in National Tsing Hua University

All SCI journals IF 2018; *: corresponding author)

(1) 通訊及第一作者期刊論文 Corresponding or First-Authored Journal Papers

2023

1. Vinh Son Nguyen, Tzu-Sen Su, Ching-Chin Chen, Chen-Yu Yeh, **Tzu-Chien Wei**" Efficient counter electrode for copper (I)(II)-mediated dye-sensitized solar cells based on polyvinyl alcohol capped platinum nanoclusters" ***Journal of the Taiwan Institute of Chemical Engineers*** 2023,01,01

2022

2. Yi-Chen Teng, Tzu-Sen Su, Shiang Lan, Ahmed Fouad Musa, **Tzu-Chien Wei**, "Toward Clean and Economic Production of Highly Efficient Perovskite Solar Module Using a Cost-Effective and Low Toxic Aqueous Lead-Nitrate Precursor" ***Nanomaterials*** 2022, 12(21), 3783(SCIE; 2021 Impact Factor= 5.719; Ranking 37/161 in Physics, Applied, Q1)

3. Chun-Yi Tsai, Tzu-Sen Su, **Tzu-Chien Wei**, Mao-Sung Wu,"δ-Type Manganese Oxides with Preintercalated Sodium Ions as Atomic Pillars for High-Performance Supercapacitors" ***Electrochimica Acta***, 2022, 8 月 141107 (SCIE; 2021 Impact Factor= 7.336; Ranking 7/30 in Electrochemistry, Q2)

4. Yu-Hsuan Chen, Ching-Chin Chen, Vinh Son Nguyen, Man-Ning Lu, Yan-Da Chen, Yu-Cheng Lin, **Tzu-Chien Wei**, Chen-Yu Yeh, **"**Modified Hagfeldt Donor for Organic Dyes That Are Compatible with Copper Electrolytes in Efficient Dye-Sensitized Solar Cells**"** ***ACS Applied Energy Materials***, 2022, 10(Early Access) (SCIE; 2021 Impact Factor= 6.959; Ranking 86/345 in Materials Science, Multidisciplinary, Q1)

5. Nideesh Perumbalathodi, Tzu-Sen Su, **Tzu-Chien Wei**, "Antisolvent Treatment on Wet Solution-Processed CuSCN Hole Transport Layer Enables Efficient and Stable Perovskite Solar Cells" ***Advanced Materials Interfaces***, 2022, 9 (30), 2201191 (SCIE; 2021 Impact Factor=6.389; Ranking 48/179 in Chemistry, Multidisciplinary, Q2)

6. Ching-Chin Chen, Vinh Son Nguyen, Hsiao-Chi Chiu, Yan-Da Chen, **Tzu-Chien Wei**, Chen-Yu Yeh, "Anthracene-Bridged Sensitizers for Dye-Sensitized Solar Cells with 37% Efficiency under Dim Light" ***Advanced Energy Materials***, 2022, 12 (20) (SCIE; 2021 Impact Factor=29.698; Ranking 5/163 in Chemistry, Physical, Q1)

2021

7. Pylnev, Mikhail, Ana Maria Barbisan, and **Tzu-Chien Wei**. "Effect of wettability of substrate on metal halide perovskite growth." ***Applied Surface Science*** ,2021,541,148559 (IF=6.182,Rank= 27/155)

8. Ching-Chin Chen, Jia-Sian Chen, Vinh Son Nguyen, **Tzu-Chien Wei**, Chen-Yu Yeh," Double Fence Porphyrins that are Compatible with CoII/III Electrolyte for High Efficiency Dye-Sensitized Solar Cells"**,*Angewandte Chemie International Edition***, 2021, 60, 4886-4893.(IF=12.959,Rank=15/177)

9. Pylnev, Mikhail, Tzu-Sen Su, and **Tzu-Chien Wei**. "Titania augmented with TiI4 as electron transporting layer for perovskite solar cells." *Applied Surface Science* 549 (2021): 149224. (IF=6.707,Rank= 1/21)

10. Wang, Wei-Yen, Yu-Hsiang Kao, Tzu-Yi Yang, Yu-Lun Chueh, and **Tzu-Chien Wei**. "Adhesive Wet Metallization on TiO2-Coated Glass." *Journal of The Electrochemical Society* 168, no. 4 (2021): 042506. (IF=4.316,Rank= 5/21)

11. Su, Tzu-Sen, et al. "Characterization on Highly Efficient Perovskite Solar Cells Made from One-Step and Two-Step Solution Processes." *Solar RRL* 5.7 (2021): 2100109. (IF=8.582,Rank= 14/114)

12. Peng, Shiuan-Ying, Tzu-Sen Su, Cheng-An Chen, Kai-Wen Chuang, **Tzu-Chien Wei**, and Ying-Chih Liao. "Recrystallized Perovskite Thin Film via Intense Pulse Light Sintering for Vertical Gradient Band Gap Perovskite Solar Cells." *ACS Applied Energy Materials* 4, no. 12 (2021): 14240-14248. (IF=6.024,Rank= 87/334)

13. Lu, Man Ning, Tzu-Sen Su, Mikhail Pylnev, Yean-San Long, Teng-Chun Wu, Min-An Tsai, and **Tzu-Chien Wei**. "Stepwise optimizing photovoltaic performance of dye-sensitized cells made under 50-lux dim light." *Progress in Photovoltaics: Research and Applications* 29, no. 5 (2021): 533-545. (IF=7.953,Rank= 21/160)

14. Nguyen, De, Tuan Van Huynh, Vinh Son Nguyen, Phuong-Lien Doan Cao, Hai Truong Nguyen, **Tzu-Chien Wei**, Phuong Hoang Tran, and Phuong Tuyet Nguyen. "Choline chloride-based deep eutectic solvents as effective electrolytes for dye-sensitized solar cells." *RSC Advances* 11, no. 35 (2021): 21560-21566. (IF=3.361,Rank= 81/178)

15. Wubie, Gebremariam Zebene, Man-Ning Lu, Mekonnen Abebayehu Desta, Hulugirgesh Degefu Weldekirstos, Mandy M. Lee, Wen-Ti Wu, Sie-Rong Li, **Tzu-Chien Wei**, and Shih-Sheng Sun. "Structural Engineering of Organic D–A−π–A Dyes Incorporated with a Dibutyl-Fluorene Moiety for High-Performance Dye-Sensitized Solar Cells." *ACS Applied Materials & Interfaces* 13, no. 20 (2021): 23513-23522. (IF=9.229,Rank= 44/334)

2020

16. Tsung-Yu Hsieh, Mikhail Pylnev, Emilio Palomares, and **Tzu-Chien Wei**, "Exceptional Long Electron Lifetime of Methylammonium Lead Iodide Perovskite Solar Cell Made from Aqueous Lead-Nitrate Precursor", ***Advanced Functional Materials, (Accepted)*** (IF = 15.621, Rank = 5/148).

17. Kannankutty, Kala; Chen, Ching-Chin; Nguyen, Vinh Son; Lin, Yu-Cheng; Chou, Hsien-Hsin; Yeh, Chen-Yu; **Wei, Tzu-Chien***, "Tert-butylpyridine Coordination with [Cu(dmp)2]2+/+ Redox Couple and its Connection to the Stability of the Dye-sensitized Solar Cell", ***ACS Applied Materials & Interfaces, Proof corrected***, 2020,12,5812-5819 (IF = 8.456, Rank = 27/293).

18. Su,Tzu-Sen, Felix Thomas Eickemeyer, MichaelA. Hope, Farzaneh Jahanbakhshi, Marko Mladenović, Jun Li, Zhiwen Zhou, Aditya Mishra, Jun-Ho Yum, Dan Ren, Anurag Krishna, Olivier Ouellette, **Tzu-Chien Wei**, Hua Zhou, Hsin-Hsiang Huang, Mounir Driss Mensi, Kevin Sivula, Shaik M. Zakeeruddin, Jovana V. Milić, Anders Hagfeldt, Ursula Rothlisberger, Lyndon Emsley, Hong Zhang*, and Michael Grätzel*, "Crown Ether Modulation Enables over 23% Efficient Formamidinium-Based Perovskite Solar Cells." ***Journal of the American Chemical Society*** ,2020,142,19980-19991.(IF=14.612,Rank=13/177)

19. Vinh Son Nguyen, Ting-Kuang Chang, Kala Kannankutty, Jia-Ling Liao, Yun Chi, **Tzu-Chien Wei**, 2020, "Novel Ruthenium Sensitizers Designing for Efficient Light Harvesting under Both Sunlight and Ambient Dim Light", ***Solar RRL***, 4, 2000046 (IF = 7.527, Rank = 14/112)

20. Yu-Hsuan Chen, Vinh Son Nguyen, Hsien-Hsin Chou, Yogesh S. Tingare, **Tzu-Chien Wei**, Chen-Yu Yeh, "Anthracene Organic Sensitizer with Dual Anchors for Efficient and Robust Dye-Sensitized Solar Ce*lls",* ***ACS Applied Energy Mate*rials**, 2020, 3, 5479-5486 (IF = 4.473, Ranking = 39/112).

2019

21. Peng Zhai, Tzu-Sen Su, Tsung-Yu Hsieh, Wei-Yen Wang, Lixia Ren, Jiayi Guo, **Tzu-Chien Wei**, "Toward clean production of plastic perovskite solar cell: Composition-tailored perovskite absorber made from aqueous lead nitrate precursor", ***Nano Energy***, 2019, 65, 104036. (IF = 15.548, Rank = 6/148).

22. Tzu-Sen Su, **Tzu-Chien Wei**, "Co-Electrodeposition of Sn-Doped TiO2 Electron-Transporting Layer for Perovskite Solar Cells", ***Phys. Status Solidi A***, 2019. (Early View). (IF = 1.606, Rank = 91/148).

23. Tzu-Sen Su, Han-Yan Tsai, Kala Kannankutty, Chien-Tien Chen, Yun Chi, **Tzu-Chien Wei**, "New Spiro Phenylpyrazole/dibenzosuberene Derivatives as Hole Transporting Material for Perovskite Solar Cells" ***Solar RRL***, 2019, 3, 10, 1900143. (New journal)

24. Kuan-Ting Wang, Wei-Yen Wang, **Tzu Chien Wei**, "Photomask-Free, Direct Selective Electroless Deposition on Glass by Controlling Surface Hydrophilicity." ***ACS Omega***, 2019, 4, 4, 7706-7710. (IF = 2.584, Rank = 76/172).

25. Tsung-Yu Hsieh, Tzu-Sen Su, Masashi Ikegami, **Tzu-Chien Wei**, Tsutomu Miyasaka. "Stable and Efficient Perovskite Solar Cells Fabricated using Aqueous Lead Nitrate Precursor: Interpretation of the Conversion Mechanism and Renovation of the Sequential Deposition" ***Materials Today Energy***, 2019, 14, 100125. (New journal)

2018

26. Mulu Berhe Desta, Nguyễn Sơn Vinh, CH. Pavan Kumar, Sumit Chaurasia, Wei-Ti Wu, Jiann T. Lin, **Tzu-Chien Wei** and Eric Wei-Guang Diau, "Pyrazine-incorporating panchromatic sensitizers for dye sensitized solar cells under one sun and dim light", ***Journal of Materials Chemistry A***, 2018,6, 13778-13789. (IF = 10.733, Rank = 6/103).

27. Krishnan Shanmugam Anurathaa, Hsiao-Shan Peng, Yaoming Xiao, Tzu-Sen Su, **Tzu-Chien Wei**, Jeng-Yu Lin "Electrodeposition of Nanostructured TiO2 Thin Film as an Efficient Bifunctional Layer for Perovskite Solar Cells" ***Electrochimica Acta,*** 2018,295, 662-667. (IF = 5.383, Rank = 5/26).

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29. Wei-Yen Wang, Kannankutty Kala, **Tzu-Chien Wei**, "Solvent Dependent Adhesion Strength of Electroless Deposited Ni–P Layer on an Amino-Terminated Silane Compound-Modified Si Wafer" ***Langmuir***, 2018,34(45), 13597-13602. (IF = 3.683, Rank = 76/293).

30. Tzu-Sen Su, Yao-Shan Wu, Yung-Liang Tung, **Tzu-Chien Wei**, "One-pot Electrodeposition of Compact Layer and Mesoporous Scaffold for Perovskite Solar Cells" ***ACS Applied Energy Materials***, 2018,1, 2429-2433. (New journal)

31. Tzu-Sen Su, Tsung-Yu Hsieh**, Tzu-Chien Wei**, "Electrodeposited TiO2 Film with Mossy Nanostructure for Efficient Compact Layer in Scaffold Type Perovskite Solar Cell" ***Solar RRL***, 2018, 2, 1700120. (New journal)

(2) 共同作者期刊論文 Co-authored SCI Journal Papers

2019

1. Thu Anh Pham Phan, Nghi Phuong Nguyen, Le Thi Nguyen, Phu Hoang Nguyen, Tien Khoa Le, Tuan Van Huynh, Torben Lund, De-Hao Tsai, **Tzu-Chien Wei**, Phuong Tuyet Nguyen, "Direct experimental evidence for the adsorption of 4-tert-butylpyridine and 2,2-bipyridine on TiO2 surface and their influence on dye-sensitized solar cells performance", ***Applied Surface Science***, 2019, 144878, (IF = 5.155, Rank = 1/20).

2. Phuong Tuyet Nguyen, Thuy-Duy Thi Nguyen, Vinh Son Nguyen, Diem Thi-Xuan Dang, Hung Minh Le, **Tzu-Chien Wei**, Phuong Hoang Tran, "Application of deep eutectic solvent from phenol and choline chloride in electrolyte to improve stability performance in dye-sensitized solar cells", ***Journal of Molecular Liquids***, 2019,277, 157-162. (IF = 4.561, Rank = 7/36).

3. Chiang, TH., Chen, CH., **Tzu-Chien Wei**, "Characterization of UV-curable adhesives containing acrylate monomers and fluorosurfactant and their performance in dye-sensitized solar cells in long-term thermal stability tests". ***J Appl Polym Sci***, 2019,136, 47948. (IF = 2.188, Rank = 35/87).

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4. Chih-Wen Chang, Zai-Wen Kwang, Tsung-Yu Hsieh, **Tzu-Chien Wei**, Shih-Yuan Lu. "High Performance Perovskite Solar Cells Fabricated from Porous PbI2-xBrx Prepared with Mixture Solvent Pore Generation Treatment" ***Electrochimica Acta***, 2018,292(1), 399-406. (IF = 5.383, Rank = 5/26)

5. Yu-Ze Chen, Yen-Ting You, Pin-Jung Chen, Dapan Li, Teng-Yu Su, Ling Lee, Yu-Chuan Shih, Chia-Wei Chen, Ching-Chen Chang, Yi-Chung Wang, Cheng-You Hong, **Tzu-Chien Wei**, Johnny C. Ho, Kung-Hwa Wei, Chang-Hong Shen, and Yu-Lun Chueh. "Environmentally and Mechanically Stable Selenium 1D/2D Hybrid Structures for Broad-Range Photoresponse from Ultraviolet to Infrared Wavelengths" ***ACS Applied Materials & Interfaces***, 2018,10 (41), 35477–35486. (IF = 8.456, Rank = 27/293)

6. Zai-Wen Kwang, Chih-Wen Chang, Tsung-Yu Hsieh, **Tzu-Chien Wei**, Shih-Yuan Lu. "Solvent-Modulated Reaction between Mesoporous PbI_2 Film and CH_3NH_3I for Enhancement of Photovoltaic Performances of Perovskite Solar Cells" ***Electrochimica Acta***, 2018, 266, 118-129. (IF = 5.383, Rank = 5/26).

B. 專利 (近五年所獲得之專利)

請填入近五年所獲得之專利。「類別」請填入代碼：(A)發明專利(B)新型專利(C)新式樣專利。

類別	專利名稱	國別	專利號碼	發明人	專利權人	專利期間
	DIFFUSION BARRIER STRUCTURE, AND CONDUCTIVE LAMINATE AND MANUFACTURING METHOD THEREOF	美國	US11331883	**衛子健** / 王偉彥	清華大學	2022/05/17-2040/04/16

類別	專利名稱	國別	專利號碼	發明人	專利權人	專利期間
	INSPECTION METHOD FOR MULTILAYER SEMICONDUCTOR DEVICE	美國	US11313670	徐米克 / **衛子健** / 黎德英	清華大學	2022/04/26-2041/01/09
	METHOD FOR NO-SILANE ELECTROLESS METAL DEPOSITION USING HIGH ADHESIVE CATALYST AND PRODUCT THEREFROM	美國	US11098407	許晉偉 / 王偉彥 / **衛子健**	清華大學	2021/08/24-2037/01/17
A	擴散阻障結構、導電疊層及其製法	中華民國	I669209	**衛子健** / 王偉彥	國立清華大學	2019/8/21-2038/9/27
A	扩散阻障结构、导电迭层及其制法	中國大陸	CN110970393B	**衛子健** / 王偉彥	衛子健	2021/7/6-2038/9/28
A	SELF-ADSORBED CATALYST COMPOSITION, METHOD FOR PREPARING THE SAME AND METHOD FOR MANUFACTURING ELECTROLESS PLATING SUBSTRATE	美國	10828624	**衛子健** / 高育祥	國立清華大學	2020/11/10-2039/1/5
A	自吸附觸媒組成物、自吸附觸媒組成物的製造方法以及無電鍍基板的製造方法	中華民國	I672175	**衛子健** / 高育祥	國立清華大學	2019/9/21-2037/10/19
A	METHOD FOR PREPARING PEROVSKITE CRYSTAL	美國	10883193	**衛子健** / 鄧克頎	國立清華大學	2021/1/5-2038/6/16

類別	專利名稱	國別	專利號碼	發明人	專利權人	專利期間
A	鈣鈦礦晶體的製備方法	中華民國	I630293	**衛子健** / 鄧克頎	國立清華大學	2018/7/21-2037/5/18
A	钙钛矿晶体的制备方法	中國大陸	CN108950689B	**衛子健** / 鄧克頎	衛子健	2020/12/4-2037/5/19
A	使用高附著性觸媒的無矽烷無電鍍金屬沉積方法及其生成物	中華民國	I608124	許晉偉 / 王偉彥 / **衛子健**	國立清華大學	2017/12/11-2036/9/11
A	SUBSTRATE SURFACE METALLIZATION METHOD AND SUBSTRATE HAVING METALLIZED SURFACE MANUFACTURED BY THE SAME	美國	9875984	**衛子健** / 陳志銘 / 潘贈傑 / 賴奎璋 / 吳中瀚 / 陳奎伯 / 歐乃天 / 洪承佑	國立清華大學	2018/1/23-2035/12/3
A	SUBSTRATE SURFACE METALLIZATION METHOD AND SUBSTRATE HAVING METALLIZED SURFACE MANUFACTURED BY THE SAME	美國	9514965	**衛子健** / 陳志銘 / 潘贈傑 / 賴奎璋 / 吳中瀚 / 陳奎伯 / 歐乃天 / 黃桂武	國立清華大學	2016/12/6-2035/12/3
A	金屬化基板表面的方法及具有金屬化表面的基板	中華民國	I540222	**衛子健** / 陳志銘 / 潘贈傑 / 賴奎璋 / 吳中瀚 / 陳奎伯 / 歐乃天 / 黃桂武	國立清華大學	2016/7/1-2034/12/4

Publications of David Shan Hill Wong（汪上曉）

A. Journal Papers (* Corresponding author)

2022

1. Jiang ZF, Wei XZ, **Wong DSH***, Yao Yao*, Kang JL*, Chuang YC, Jang SS, Ou JDY: Model Predictive Control of Grade Transition with Attention Base Sequence-to-Sequence Model. Computer Aided Chemical Engineering, 49, 367-372 (2022).

2. Yang XY, Zheng Y*, Zhang Y, **Wong DSH***, Yang WD: Bearing Remaining Useful Life Prediction Based on Regression Shapalet and Graph Neural Network. IEEE Transactions on Instrumentation and Measurement, 71, 3505712 (2022).

3. Kang JL*, Chiu CT, Huang JS, **Wong DSH***: A surrogate model of sigma profile and COSMOSAC activity coefficient predictions of using transformer with SMILES input. Digital Chemical Engineering, 2, 100016-100021 (2022).

4. Wang ZJ, Zheng Y*, **Wong DSH**, Wang Y, Yang WD: Stationary Mapping based Generalized Monitoring Scheme for Industrial Processes with Mixed Operational Stages. IEEE Transactions on Instrumentation and Measurement, 71, 3503313 (2022).

5. Kang JL, Chen CJ, Wu CH, **Wong DSH***, Jang SS, Tan CS: Dynamic modeling of the absorption of acetic acid in rotating packed bed. Journal of the Taiwan Institute of Chemical Engineers, 130, 103966-103982 (2022).

6. Yu CH, Lin YJ, **Wong DSH**, Chen CC*: Process Modeling of CO_2 Absorption with Monoethanolamine Aqueous Solutions Using Rotating Packed Beds. Industrial & Engineering Chemistry, 61 (33), 12142-12152 (2022).

7. Liu JL*, **Wong DSH**, Chen DS: Energy-saving performance of the process modifications for carbon capture by diluted aqueous ammonia. Journal of the Taiwan Institute of Chemical Engineers, 130, 103966-103982 (2022).

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8. Chen ZH, Zhang T, Zheng Y*, **Wong DSH**, Deng ZH: Fully Decoupled Control of the Machine Directional Register in Roll-to-Roll Printing System. IEEE Transactions on Industrial Electronics, 68(10), 10007-10018 (2021).

9. Cuia CT*, Zhang XD, Lyu H, Wang SJ, Sun JS, Qu YP, Wu WC, Bo CM, **Wong DSH**, Zhang QL: Process intensification in ternary distillation via comparative grassroots and retrofit designs: A case study of distilling an industrial multicomponent C6 alkane mixture in caprolactam processing. Chemical Engineering and Processing- Process Intensification, 164, 108423-108444 (2021).

10. Nguyen HLQ, **Wong DSH***: Integration of rich and lean vapor recompression configurations for aqueous ammonia-based CO_2 capture process. Chemical Engineering Research and Design, 169, 86-96 (2021).

11. Yang XY, **Wong DSH**, Zheng Y*, Zhang Y, Yang W, Kang JL*: A universal LPC health monitoring method for rolling element bearings with ADSCI feature. Measurement, 176, 108969 (2021).

12. Hsiao YD, Kang JL*, **Wong DSH***: Development of Robust and Physically Interpretable Soft Sensor for Industrial Distillation Column Using Transfer Learning with Small Datasets. Processes, 9(4), 667-678 (2021).

13. Yu CH, Lin YJ, **Wong DSH**, Bruno JC, Chen CC*: Modeling fluid phase equilibria of carbon dioxidemethanol binary system. Fluid Phase Equilibria, 529, 112866-112874 (2021).

14. 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 the Taiwan Institute of Chemical Engineers, 118, 60-67 (2021).

15. Chang JJ, **Wong DSH***, Huang CH, Kang JL, Hsu HH, Lin ST: Towards a universal digital chemical space for pure component properties prediction. Fluid Phase Equilibria , 527(1), 112829-112838 (2021).

16. Wang WH, Huang CW, Tsou EY, Ao-Ieong WS, Hsu HC, **Wong DSH**, Wang Jane*: Characterization of degradation behavior of poly(glycerol maleate) films in various aqueous environments. Polymer Degradation and Stability, 183, 109441-109448 (2021).

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17. Wang ZJ, Zheng Y*, **Wong DSH***: Trajectory based operation monitoring of transition procedure in multimode process. Journal of Process Control, 96, 67-81 (2020).

18. Zheng Y, Liu L*, Zhou W, Yang WD, **Wong DSH**: Between-class difference analysis based multidimensional RBC for multivariate fault isolation of industrial processes. Journal of the Taiwan Institute of Chemical Engineers, 115, 1-12 (2020).

19. Liu JL*, **Wong DSH**, Chen DS: Energy-saving performance of advanced stripper configurations for CO_2 capture by ammonia based solvents. Journal of the Taiwan Institute of Chemical Engineers, 113, 273-284 (2020).

20. Huang SH, Kang JL*, **Wong DSH**, Jang SS*, Lin CA: Particle-Scavenging prediction in sieve plate scrubber via dimension reduction in computational fluid dynamics. Chemical Engineering Research and Design, 160, 540-550 (2020).

21. Kang JL*, Liu KT, **Wong DSH**, Jang SS, Tsai DH: Multi-Scale Modeling and Study of Aerosol Growth in an Amine-based CO_2 Capture Absorber. Environments, 7(8), 58-72 (2020).

22. Tseng ST*, Yao YC, **Wong DSH**: The effects of model misspecification on shelf-life prediction of nano-sols under pH acceleration. Quality Technology & Quantitative Management, 17(4), 383-398 (2020).

23. Chiang HL, Chen YS, Sun YA, **Wong DSH**, Tsai DH*: Aerosol Spray Controlled Synthesis of Nano catalyst using Differential Mobility Analysis coupled to Fourier-Transform Infrared Spectroscopy. Industrial & Engineering Chemistry Research, 59(24), 11187-11195 (2020).

24. Chou CH, Wu HB, Kang JL*, **Wong DSH**, Yao Y, Chuang YC, Jang SS, Ou J DY: Physically Consistent Soft-Sensor Development Using Sequence-to-Sequence Neural Networks. IEEE Transactions on Industrial Informatics, 16(4), 2829-2838 (2020).

25. Wang SJ*, Lu CY, Huang SH, **Wong DSH**: Reactive vapor-recompression distillation for green hexamethylene-1,6-dicarbamate synthesis. Chemical Engineering and Processing Process Intensification, 149, 107827-107836 (2020).

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26. Nguyen HLQ, **Wong DSH***: Eliminating Steam Requirement of Aqueous Ammonia Capture Process by Lean Solution Flash and Vapor Recompression. Process Integration and Optimization for Sustainability, 3(3), 307-319 (2019).

27. Chen YH, **Wong DSH**, Chen YC, Chang CM and Chang S*: Design and Performance Comparison of Methanol Production Processes with Carbon Dioxide Utilization. Energies, 12(22), 4322-4339(2019).

28. Zambare AS, Ou JDY, **Wong DSH**, Yao CW and Jang SS*: Controlling the product selectivity in the conversion of methanol to the feedstock for phenol production. RSC Advances, 9, 23864-23875 (2019).

29. Chang JJ, Kang JL, **Wong DSH***, Chou CH, Hsu HH, Huang CH, Lin ST: Machine Learning of Molecular Classification and Quantum Mechanical Calculations. Computer Aided Chemical Engineering, 46, 787-792 (2019).

30. Kang JL, Ciou YC, Lin DY, **Wong DSH***, Jang SS: Investigation of hydrodynamic behavior in random packing using CFD simulation. Chemical Engineering Research and Design, 147, 43-54 (2019).

31. Chen ZH, Zheng Y*, Zhang T, **Wong DSH**, Deng ZH: Modeling and Register Control of the Speed-Up Phase in Roll-to-Roll Printing Systems. IEEE Transactions on Automation Science and Engineering, 16(3), 1438-1449 (2019).

32. Liu Y, Hseu BF, Gao ZL, **Wong DSH**, Yao Y*: Dynamic Profile Monitoring for Flooding Prognosis in Packed Columns. Chemical Engineering Technology, 42(6), 1232-1239 (2019).

33. Wang HY, Pan HTH*, **Wong DSH** and Tan F: An Extended State Observer-Based Run to Run Control for Semiconductor Manufacturing Processes. IEEE Transactions on Semiconductor Manufacturing, 32(2), 154-162 (2019).

34. Hsu CM, Wang SJ*, Chen YT, **Wong DSH**: Novel separation process design for non-phosgene dimethylhexane-1,6-dicarbamate synthesis by reacting dimethyl carbonate with 1,6-hexanediamine. Journal of the Taiwan Institute of Chemical Engineers, 97, 54-65 (2019).

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35. Chen Z, Zheng Y*, Zhang T, **Wong DSH**, Deng ZH: Modeling and Register Control of the Speed-Up Phase in Roll-to-Roll Printing Systems. IEEE Transactions on Automation Science and Engineering, 16(3), 1438-1449 (2018).

36. Chuang YC, Chen T, Yao Y, **Wong DSH***: Transfer learning for efficient meta-modeling of process simulations. Chemical Engineering Research & Design, 138, 546-553 (2018).

37. Kang JL*, Ciou YC, Lin DY, Cheng CH, **Wong DSH**, Jang SS: Hydrodynamic Behavior of Helical Rings Random Packing Using CFD Simulation. Computer Aided Chemical Engineering, 44, 817-822 (2018).

38. Shi L, Wang SJ*, **Wong DSH***, Huang KJ, Lee EK, Jang SS: Plant-wide process design of producing dimethyl carbonate by indirect alcoholysis of urea. Computer Aided Chemical Engineering 44, 115-120 (2018).

39. Wang SJ*, **Wong DSH***, Lim IJQ, Chen YT, Huang CC: Design and Control of a Novel Plant-Wide Process for Epichlorohydrin Synthesis by Reacting Allyl Chloride with Hydrogen Peroxide. Industrial Research & Engineering Chemistry, 57(20), 6926-6936 (2018).

B. Conference Presentations

2022

1. Hsu XH, **Wong DSH***: Physics Inspired Deep Learning for Distributed Parameter Systems. 10th Asian Symposium on Process Systems Engineering (2022 PSE Asia), 11 – 14 Dec 2022, Chennai, India.

2. Huang JS, ng, **Wong DSH***, Chiu CT, Kang JL, Tai SH, Tang PH: Graph-Based Deep Learning Quantitative Structure Properties Relation (QSPR) for Solvents. 10th Asian Symposium on Process Systems Engineering (2022 PSE Asia), 11 – 14 Dec 2022, Chennai, India.

3. Huang KL, **Wong DSH***, Yao Y: System Identification with Physics Informed Neural Network. 32th European Symposium on Computer Aided Process Engineering(ESCAPE-32), 12-15 Jun 2022, Toulouse, France.

2021

4. 戴瑋德，江振峯，**汪上曉***，姚遠，鄭西顯，莊曜禎，區迪頤: Comparison of Different Forms of Sequence-to-Sequence Models Obtained by Training with Open-Loop Operation data of a Vapor Recompression Distillation Tower. Symposium on Thermodynamics and Process Systems Engineering, May 14-15, 2021, Nanto, Taiwan.

5. 張博勛，**汪上曉***，鄭西顯: Using 2-Furoic Acid as a Raw Material to Produce High Values 2,5-Furandicarboylic Acid. Symposium on Thermodynamics and Process Systems Engineering, May 14-15, 2021, Nanto, Taiwan.

6. 陳靜蓉，**汪上曉***，鄭西顯，康嘉麟: Experiment and Modeling of the Absorption of Acetic Acid in Rotating Packed Bed. Symposium on Thermodynamics and Process Systems Engineering, May 14-15, 2021, Nanto, Taiwan.

2020

7. Frias JM, Wang SJ*, **Wong DSH**, Chou CH, Jang SS, Lee EK: Floating Pressure Control of Vapor Recompression Distillation in Propane Propylene Separation. The 30th European Symposium on Computer Aided Process Engineering (ESCAPE 30, Virtual Symposium), August 31- September 2, 2020, Milano, Italy.

8. Wang SJ*, **Wong DSH**, Chen YZ, Lee EK: Intensified Green Process for Synthesizing Non-phosgene Hexamethylene-1,6-dicarbamate. The 30th European Symposium on Computer Aided Process Engineering (ESCAPE30), Virtual Symposium, August 31- September 2, 2020, Milano, Italy.

9. Kang JL*, Wang CC, Chang PH, **Wong DSH**, Jang SS, Wang CH: Modeling of The Solid Oxide Fuel Cell Considering H_2 and CO Electrochemical Reactions. The 30th European Symposium on Computer Aided Process Engineering (ESCAPE30), Virtual Symposium, August 31- September 2, 2020, Milano, Italy.

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10. Chou CH, Kang JL, Wu HB, **Wong DSH***, Chuang YC, Yao Y, Ou JDY, Jang SS: Soft-sensor Development Using Sequence to Sequence Conversation Models. 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019), Sapporo, Japan.

11. Hsu CM, Wang SS*, **Wong DSH**, Lee EK: Heat-integrated process design for green hexamethylene-1,6-dicarbamate synthesis. 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019), Sapporo, Japan.

12. Chang JJ, **Wong DSH***, Chou CH, Kang JL, Hsu HH, Huang CH, Lin ST: Machine Learning of Molecular Classification and Quantum Mechanical Calculations. 18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019), Sapporo, Japan.

13. Chang JJ, Kang JL, **Wong DSH***, Chou CH, Hsu HH, Huang CH and Lin ST: Machine Learning of Correlation Between Molecular Structure and Solvation Characteristics. Foundations of Process Analytics and Machine learning (2019 FOPAM), Raleigh, NC, USA.

14. Hsiao YD, Chou CH, Wu HB, Kang JL, **Wong DSH***, Yao Y, Chuang YC, Jang SS and Ou JDY: Physically Consistent Data-Driven Soft-Sensor Development. Foundations of Process Analytics and Machine learning (2019 FOPAM), Raleigh, NC, USA.

15. **Wong DSH***, Kang JL, Chang JJ, Chou CH, Hsu HH, Huang CH and Lin ST: Machine Learning of Molecular Classification and Quantum Mechanical Calculations. 29th European Symposium on Computer Aided Process Engineering ESCAPE-29), Eindhoven, The Netherlands.

16. Shieh SS*, Jang SS and **Wong DSH**: Development of Guidelines for Optimal Operation of A Cogeneration System. 29th European Symposium on Computer Aided Process Engineering (ESCAPE-29), Eindhoven, The Netherlands.

17. Chou CH, Kang JL*, Nabera A, **Wong DSH***, Jang SS: Development of Nonparametric Dynamic Model with Generalization Capability Using Deep learning. The 8th International Symposium on Design, Operation, and Control of Chemical Processes (PSE ASIA 2019), Thailand, Bangkok.

18. Hsu CM, Wong SJ*, Chen YT, **Wong DSH**, Lee EK, Jang SS: Design of Non-Phosgene Dimethylhexane-1,6-Dicarbamate Synthesis Process Using Dimethyl Carbonate. The 8th International Symposium on Design, Operation, and Control of Chemical Processes (PSE ASIA 2019), Thailand, Bangkok.

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19. Cheng CH, Kang JL, Tsai DH, **Wong DSH***, Lee EK, Jang SS: Comparison of MEA Slip in Capturing Carbon Dioxide by Rotating Packed Bed and Packed Bed. 6th International Symposium on Processes Intensification, Taipei, ROC.

20. **Wong DSH***: Big data, artificial intelligence, and smart manufacturing, lessons learned from semiconductor manufacturing and perspective from chemical process industry. 25th Regional symposium on chemical engineering (RSCE 2018), Manila, Philippine.

21. Cheng YH, **Wong DSH***, Lee EK: Microwave Enhancement of Direct Epoxidation of Bisphenol A Diallyl Ether (BADAE) Into Bisphenol A DiGlycidyl Ether (BADGE). 6th International Symposium on Processes Intensification, Taipei. ROC.

22. Cheng CH, Kang JL, Tsai DH, **Wong DSH***, Jang SS, Tan CS: Effect of Aerosol on MEA Slip in Capturing Carbon Dioxide. 2018 AIChE Annual meeting, Pittsburgh, PA, US.

23. Nguyen HLQ, **Wong DSH***: Techno-Economic Assessment of CO_2 and SOx Capture Process By Dilute Aqueous Ammonia. 2018 AIChE Annual Meeting, Pittsburgh, PA, US.

24. Kang JL*, Ciou YC, Lin DY, Cheng CH, **Wong DSH** , Jang SS: Hydrodynamic Behaviour of Helical Rings Random Packing Using CFD Simulation. Process Systems Engineering, PSE 2018, San Diego, US.

25. Shi L, Wang SJ*, **Wong DSH**, Huang KJ, Lee EK, Jang SS: Plant-wide Process Design of Producing Dimethyl Carbonate by Indirect Alcoholysis of Urea. Process Systems Engineering (PSE 2018), San Diego, US.

26. Wang SJ*, **Wong DSH**, Lee EK: Design and Control of a Reactive Distillation Process for Synthesizing Propylene Carbonate from Indirect Alcoholysis of Urea. 10th IFAC Symposium on Advanced Control of Chemical Processes, Shenyang, China.

C. Patents

專利名稱	國別	專利號碼	發明人	專利核准日
以氨水進行二氧化碳捕捉後再生氨水之方法及以氨水進行二氧化碳捕捉之方法	中華民國/美國	I 695734/11311834B2	霍安、**汪上曉**	2020/4
二氧化碳捕捉系統與方法	中華民國	I 626080	霍安、**汪上曉**、鄭西顯	2018/6
以氯丙烯與雙氧水反應生產環氧氯丙烷的製造裝置及製造方法	中華民國	I 622584	王聖潔、黃建智、李恩各、**汪上曉**、鄭西顯	2018/5
聚氨酯樹脂的製備方法	中華民國/中華人民共和國/美國	I 663188/201710805574.X/15/10570254B2	**汪上曉**、陳幹男、楊秉霖、杜安邦、李恩各	2019/6
含鹽甘油廢水處理系統與方法	中華民國/中華人民共和國/美國	I 636967/201710523679.6/10,364,162	莊世晟、鄭西顯、**汪上曉**、王聖潔、李恩各	2018/10
氣體中的目標成分的捕獲裝置與捕獲方法	中華民國	I 614058	**汪上曉**、泰爾馬蒂亞斯、游承修、康嘉麟、鄭西顯	2018/2
碳五產物分離裝置	中華民國	I 572706	**汪上曉**、徐筱靜、區迪頤、王聖潔	2017/3~2035/8

D. Others

1. 清華大學 111 學年度國際競爭重點領域人才培育補助-獎勵優良學者。
2. 執行科技部產學大聯盟「前瞻技術產學合作計畫 以再生原料為基礎之新世代綠色化工技術」計畫，成效卓著，獲長春集團頒發特殊貢獻獎 (2019)。
3. 清華大學 108~110 學年度「延攬及留住特殊優秀人才彈性薪資暨獎勵補助」獲選現職績優教研人員。
4. 指導碩士生獲得台灣「2021 化工學會年會暨科技部年度研究成果發表會壁報論文競賽」優勝及佳作。
5. 指導本系學生獲得 台灣化工學會辦理之 2020 全國化工啤酒釀造創意競賽淺色組第 2 名，深色組第 3 名的佳績。
6. 指導碩士生獲得台灣「2019 化工學會年會暨科技部年度研究成果發表會壁報論文競賽」優勝及佳作。
7. Journal of the Taiwan Institute of Chemical Engineers, Deputy Editor

   (2020 IF=5.477, JCR Engineering, Chemical 34/143, Q1)

   台灣化學工程學會會誌副總編輯 (2015~2018)

Publications of Yuan Yao (姚 遠)

A. Book Chapters (* Corresponding author)

2021

1. Ya Wen, **Yuan Yao** (2021). Autism Spectrum Disorders: the mitochondria connection. In: Andreas M. Grabrucker, editor. *Autism Spectrum Disorders*. Brisbane (AU): Exon Publications; 2021. ISBN: 978-0-6450017-8-5.

B. Journal Papers (* Corresponding author)

2022

1. Ching-Mei Wen, Zhengbing Yan, Yu-Chen Liang, Haibin Wu, Le Zhou, **Yuan Yao*** (2022). A control chart-based symbolic conditional transfer entropy method for root cause analysis of process disturbances. *Computers & Chemical Engineering*, 164, 107902.

2. Haibin Wu, Yu-Han Lo, Le Zhou, **Yuan Yao*** (2022). Process modeling by integrating quantitative and qualitative information using a deep embedding network and its application to an extrusion process. *Journal of Process Control*, 115, 48-57.

3. Kaixin Liu, Mingkai Zheng, Yi Liu*, Jianguo Yang, **Yuan Yao*** (2022). Deep autoencoder thermography for defect detection of carbon fiber composites. *IEEE Transactions on Industrial Informatics*, doi: 10.1109/TII.2022.3172902.

4. Kaixin Liu, Qing Yu, Yi Liu*, Jianguo Yang, **Yuan Yao*** (2022). Convolutional graph thermography for subsurface defect detection in polymer composites. *IEEE Transactions on Instrumentation and Measurement*, 71, 1-11.

5. Jian-Guo Wang, Hui-Min Shao, **Yuan Yao***, Jian-Long Liu, Hua-Ping Sun, Shi-Wei Ma (2022). Electroencephalograph-based emotion recognition using convolutional neural network without manual feature extraction. *Applied Soft Computing*, 128, 109534.

6. Kaixin Liu, Qing Yu, Weiyao Lou, Stefano Sfarra, Yi Liu*, Jianguo Yang, **Yuan Yao*** (2022). Manifold learning and segmentation for ultrasonic inspection of defects in polymer composites. *Journal of Applied Physics,* 132, 024901.

7. Yi Liu, Mingkai Zheng, Kaixin Liu, **Yuan Yao***, Stefano Sfarra* (2022). TriMap thermography with convolutional autoencoder for enhanced defect detection of polymer composites. *Journal of Applied Physics*, 131, 144901.

8. Wei Qi, Tzu-Heng Chiu, Yi-Kai Kao, **Yuan Yao***, Yu-Ho Chen, Hsun Yang, Chen-Chieh Wang, Chia-Hsiang Hsu, Rong-Yeu Chang (2022). Sensor fusion for simultaneous estimation of in-plane permeability and porosity of fiber reinforcement in resin transfer molding. *Polymers*, 14(13), 2652.

9. Yun Dai, Angpeng Liu, Meng Chen, Yi Liu*, **Yuan Yao*** (2022). Enhanced soft sensor with qualified augmented samples for quality prediction of the polyethylene process. *Polymers*, 14(21), 4769.

10. Jinchuan Qian, Zhihuan Song, **Yuan Yao**, Zheren Zhu, Xinmin Zhang* (2022). A review on autoencoder based representation learning for fault detection and diagnosis in industrial processes. *Chemometrics and Intelligent Laboratory Systems*, 231, 104711.

11. Jue Hu, Hai Zhang*, Stefano Sfarra, Elena Pivarčiová, **Yuan Yao**, Yuxia Duan, Clemente Ibarra-Castanedo, GuiyunTian, Xavier Maldague (2022). Autonomous dynamic line-scan continuous-wave terahertz non-destructive inspection system combined with unsupervised exposure fusion. *NDT and E International*, 132, 102705.

12. Wei Liu, Beiping Hou, Yaoxin Wang, **Yuan Yao**, Le Zhou* (2022). Sparse structural principal component thermography for defect signal enhancement in subsurface defects detection of composite materials. *Journal of Nondestructive Evaluation*, 41, Article number: 8.

13. Vasiliki Dritsa, Noemi Orazi, **Yuan Yao**, Stefano Paoloni, Maria Koui, Stefano Sfarra* (2022). Thermographic imaging in cultural heritage: a short review. *Sensors*, 22(23), 9076.

14. Wei Liu, Beiping Hou, **Yuan Yao**, Le Zhou* (2022) Signal enhancement in defect detection of CFRP material using a combination of difference of Gaussian convolutions and sparse principal component thermography. *IEEE Access*, 10, 108103-108116.

2021

15. Kaixin Liu, Kai-Lun Huang, Stefano Sfarra, Jianguo Yang, Yi Liu*, **Yuan Yao*** (2021). Factor analysis thermography for defect detection of panel paintings. *Quantitative InfraRed Thermography Journal*, doi: 10.1080/17686733.2021.2019658.

16. Ching-Mei Wen, Stefano Sfarra, Gianfranco Gargiulo, **Yuan Yao*** (2021). Thermographic data analysis for defect detection by imposing spatial connectivity and sparsity constraints in principal component thermography. *IEEE Transactions on Industrial Informatics*, 17(6), 3901-3909.

17. Hongying Deng, Keyun Yang, Yi Liu*, Shengchang Zhang, **Yuan Yao*** (2021). Actively exploring informative data for smart modeling of industrial multiphase flow processes. *IEEE Transactions on Industrial Informatics*, 17(12), 8357-8366.

18. Kaiyi Zheng, **Yuan Yao*** (2021). Automatic three-dimensional reconstruction of subsurface defects by segmenting ultrasonic point cloud. *Journal of the Taiwan Institute of Chemical Engineers*, 120, 24-32.

19. Jian-Guo Wang, Hui-Min Shao, **Yuan Yao***, Jian-Long Liu, Shi-Wei Ma (2021). A personalized feature extraction and classification method for motor imagery recognition. *Mobile Networks and Applications*, 26, 1359–1371.

20. Kai-Lun Huang, Stefano Sfarra, Ching-Mei Wen, **Yuan Yao***, Chunhui Zhao (2021). Exploratory factor analysis for defect identification with active thermography. *Measurement Science and Technology*, 32(4), 114010.

21. Kaixin Liu, Yuwei Tang, Weiyao Lou, Yi Liu*, Jianguo Yang, **Yuan Yao*** (2021). A thermographic data augmentation and signal separation method for defect detection. *Measurement Science and Technology*, 32(4), 045410.

22. Katherine Tu, Clemente Ibarra-Castanedo, Stefano Sfarra*, **Yuan Yao***, Xavier P. V. Maldague (2021). Multiscale analysis of solar loading thermographic signals for wall structure inspection. *Sensors*, 21(8), 2806.

23. Kaixin Liu, Zhengyang Ma, Yi Liu*, Jianguo Yang, **Yuan Yao*** (2021). Enhanced defect detection in carbon fiber reinforced polymer composites via generative kernel principal component thermography. *Polymers*, 13(5), 825.

24. Kaixin Liu, Stefano Perilli, Arsenii O. Chulkov, **Yuan Yao**, Mohammed Omar, Vladimir Vavilov, Yi Liu*, Stefano Sfarra* (2021). Defining the thermal features of sub-surface reinforcing fibres in non-polluting thermo–acoustic insulating panels: a numerical–thermographic–segmentation approach. *Infrastructures*, 6(9), 131.

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25. Yi Liu, Han-Sheng Chen, Haibin Wu, Yun Dai, **Yuan Yao***, Zhengbing Yan* (2020). Simplified Granger causality map for data-driven root cause diagnosis of process disturbances. *Journal of Process Control*, 95, 45–54.

26. Yi Liu, Chao Yang, Mingtao Zhang, Yun Dai, **Yuan Yao*** (2020). Development of adversarial transfer learning soft sensor for multi-grade processes. *Industrial & Engineering Chemistry Research*, 59(37), 16330-16345.

27. Ching-Mei Wen, Stefano Sfarra, Gianfranco Gargiulo, **Yuan Yao*** (2020). Thermographic data analysis for defect detection by imposing spatial connectivity and sparsity constraints in principal component thermography. *IEEE Transactions on Industrial Informatics*, DOI: 10.1109/TII.2020.3010273.

28. Le Zhou, Yao-Chen Chuang, Shao-Heng Hsu, **Yuan Yao***, Tao Chen* (2020). Prediction and uncertainty propagation for completion time of batch processes based on data-driven modeling. *Industrial & Engineering Chemistry Research*, 59, 14374–14384.

29. Kaixin Liu, Yingjie Li, Jianguo Yang, Yi Liu*, **Yuan Yao*** (2020). Generative principal component thermography for enhanced defect detection and analysis. *IEEE Transactions on Instrumentation and Measurement*, 69(10), 8261-8269.

30. Haibin Wu, Kaiyi Zheng, Stefano Sfarra, Yi Liu, **Yuan Yao*** (2020). Multiview learning for subsurface defect detection in composite products: a challenge on thermographic data analysis. *IEEE Transactions on Industrial Informatics*, 16(9), 5996-6003.

31. Yi Liu, Kaixin Liu, Jianguo Yang, **Yuan Yao*** (2020). Spatial-neighborhood manifold learning for nondestructive testing of defects in polymer composites. *IEEE Transactions on Industrial Informatics*, 16(7), 4639-4649.

32. Jinlin Zhu, **Yuan Yao***, Furong Gao (2020). Multiphase two-dimensional time-slice dynamic system for batch process monitoring. *Journal of Process Control*, 85, 184-198.

33. Jian-Guo Wang*, Xue-Zhi Cai, **Yuan Yao***, Chunhui Zhao, Bang-Hua Yang, Shi-Wei Ma, Sen Wang (2020). Statistical process fault isolation using robust nonnegative garrote. *Journal of the Taiwan Institute of Chemical Engineers*, 107, 24-34.

34. Feifei Huang, Ruihao Li, Gan Wang, Jueting Zheng, Yongxiang Tang, Junyang Liu, Yang Yang, **Yuan Yao***, Jia Shi*, Wenjing Hong* (2020). Automatic classification of single-molecule charge transport data with an unsupervised machine-learning algorithm. *Physical Chemistry Chemical Physics*, 22, 1674-1681.

35. Cheng-Hung Chou, Hai-Bin Wu, Jia-Lin Kang*, David Shan Hill Wong, **Yuan Yao**, Shi-Shang Jang, Yao-Chen Chuang, John Di-Yi Ou (2020). Physically consistent soft-sensor development using sequence-to-sequence neural networks. *IEEE Transactions on Industrial Informatics*,16(4), 2829-2838.

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36. Yi Liu, Chao Yang, Kaixin Liu, Bocheng Chen, **Yuan Yao*** (2019). Domain adaptation transfer learning soft sensor for product quality prediction. *Chemometrics and Intelligent Laboratory Systems*, 192, 103813.

37. Yi Liu, Bo-Fan Hseuh, Zengliang Gao, David Shan Hill Wong, **Yuan Yao*** (2019). Dynamic profile monitoring for flooding prognosis in packed columns. *Chemical Engineering Technology*, 42(6), 1232-1239.

38. Jian-Guo Wang*, Zhongtao Xie, **Yuan Yao***, Bang-Hua Yang, Shi-Wei Ma, Li-Lan Liu (2019). Soft sensor development for improving economic efficiency of the coke dry quenching process. *Journal of Process Control*, 77, 20-28.

39. Jian-Guo Wang*, Yu Wang, **Yuan Yao***, Bang-Hua Yang, Shi-Wei Ma (2019). Stacked autoencoder for operation prediction of coke dry quenching process. *Control Engineering Practice*, 88, 110-118.

40. Yi Liu, Kaixin Liu, Zengliang Gao, **Yuan Yao***, Stefano Sfarra*, Hai Zhang, Xavier P.V. Maldague (2019). Non-destructive defect evaluation of polymer composites via thermographic data analysis: A manifold learning method. *Infrared Physics & Technology*, 97, 300-308.

41. Yi Liu, Jin-Yi Wu, Kaixin Liu, Hsiu-Li Wen, **Yuan Yao***, Stefano Sfarra*, Chunhui Zhao (2019). Independent component thermography for nondestructive testing of defects in polymer composites. *Measurement Science and Technology*, 30(4), 044006.

42. Fei Chu*, Xu Zhao, **Yuan Yao**, Tao Chen, Fuli Wang (2019). Transfer learning for batch process optimal control using LV-PTM and adaptive control strategy. *Journal of Process Control*, 81, 197-208.

43. Kaiyi Zheng*, Tao Feng, Wen Zhang, Xiaowei Huang, Zhihua Li, Di Zhang, **Yuan Yao**, Xiaobo Zou* (2019). Variable selection by double competitive adaptive reweighted sampling for calibration transfer of near infrared spectra. *Chemometrics and Intelligent Laboratory Systems*, 192, 109-117.

44. Stefano Sfarra, **Yuan Yao**, Hai Zhang*, Stefano Perilli, Marco Scozzafava, Nicolas P. Avdelidis, Xavier P.V. Maldague (2019). Precious walls built in indoor environments inspected numericallyand experimentally within long-wave infrared (LWIR) and radio regions. *Journal of Thermal Analysis and Calorimetry*, 137(3), 1083–1111.

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45. Jin-Yi Wu, Stefano Sfarra, **Yuan Yao*** (2018). Sparse principal component thermography for subsurface defect detection in composite products. *IEEE Transactions on Industrial Informatics*, 14(12), 5594-5600.

46. Yao-Chen Chuang, Tao Chen, **Yuan Yao***, David Shan Hill Wong* (2018). Transfer learning for efficient meta-modeling of process simulations. *Chemical Engineering Research and Design*, 138, 546-553.

47. Zhengbing Yan, **Yuan Yao***, Tsai-Bang Huang, Yi-Sern Wong (2018). Reconstruction-based multivariate process fault isolation using Bayesian Lasso. *Industrial & Engineering Chemistry Research*, 57, 9779−9787.

48. Han-Sheng Chen, Zhengbing Yan, **Yuan Yao***, Tsai-Bang Huang, Yi-Sern Wong (2018). Systematic procedure for Granger-causality-based root cause diagnosis of chemical process faults. *Industrial & Engineering Chemistry Research*, 57, 9500−9512.

49. Tzu-Heng Chiu, Jia-Bin Li, **Yuan Yao***, Chih-Wei Wang, Shih-Po Sun, Chia-Hsiang Hsu, Rong-Yeu Chang (2018). Estimation of local permeability/porosity ratio in resin transfer molding. *Journal of the Taiwan Institute of Chemical Engineers*, 91, 32-37.

50. Jinlin Zhu, **Yuan Yao***, Dewei Li, Furong Gao* (2018). Monitoring big process data of industrial plants with multiple operating modes based on Hadoop. *Journal of the Taiwan Institute of Chemical Engineers*, 91, 10-21.

51. Yi Liu, Chao Yang, Zengliang Gao, **Yuan Yao*** (2018). Ensemble deep kernel learning with application to quality prediction in industrial polymerization processes. *Chemometrics and Intelligent Laboratory Systems*, 174, 15-21.

52. Yi Liu, Yu Liang, Zengliang Gao, **Yuan Yao*** (2018). Online flooding supervision in packed towers: an integrated data-driven statistical monitoring method. *Chemical Engineering & Technology*, 41(3), 436-446.

53. **Yuan Yao**, Stefano Sfarra*, Susana Lagüela, Clemente Ibarra-Castanedo, Jin-Yi Wu, Xavier P.V. Maldague, Dario Ambrosini (2018). Active thermography testing and data analysis for the state of conservation of panel paintings. *International Journal of Thermal Sciences*, 126, 143-151.

54. Kai-Hong Wang, Yao-Chen Chuang, Tzu-Heng Chiu, **Yuan Yao*** (2018). Flow pattern control in resin transfer molding using a model predictive control strategy. *Polymer Engineering and Science*, 58(9), 1659-1665.

55. Jinlin Zhu, **Yuan Yao***, Furong Gao* (2018). Transfer of qualitative and quantitative knowledge for similar batch process monitoring. *IEEE Access*, 6, 73856-73870.

56. Linkai Luo*, **Yuan Yao**, Furong Gao*, Chunhui Zhao (2018). Mixed-effects Gaussian process modeling approach with application in injection molding processes. *Journal of Process Control*, 62, 37-43.

57. Stefano Perilli, Stefano Sfarra*, Dario Ambrosini, Domenica Paoletti, Sabrina Mai, Marco Scozzafava, **Yuan Yao** (2018). Combined experimental and computational approach for defect detection in precious walls built in indoor environments. *International Journal of Thermal Sciences*, 129, 29-46.

C. Conference Presentations

2022

1. Wen-An Lee, **Yuan Yao**, Jia-Lin Kang* (2022). Development of unknown identification capabilities for chemical process fault diagnosis using autoencoder generative network. *10th Asian Symposium on Process Systems Engineering (PSE Asia 2022)*, Chennai, India.

2. Po-Wei Yeh, Ming-Li Huang, **Yuan Yao*** (2022). Root cause diagnosis of process disturbances based on edge-group sparse principal component analysis and transfer entropy. *32nd European Symposium on Computer Aided Process Engineering (ESCAPE32)*, Toulouse, France.

3. Kai-Lun Huang, David Shan Hill Wong*, **Yuan Yao*** (2022). System identification with physics informed neural network. *32nd European Symposium on Computer Aided Process Engineering (ESCAPE32),* Toulouse, France.

4. Tung-Yu Hsiao, Stefano Sfarra, Yi Liu, **Yuan Yao*** (2022). Application of Hilbert-Huang transform to thermographic data analysis for enhanced nondestructive testing of materials. *16th Quantitative InfraRed Thermography Conference (QIRT 2022)*, Paris, France.

5. Kaixin Liu, R. Saminathan, Hung-Kun Shih, Stefano Sfarra, Jianguo Yang, Yi Liu*, **Yuan Yao*** (2022). Detection and evaluation of fabric defects using warp-weft statistical analysis. *SPIE Smart Structures + Nondestructive Evaluation 2022*, Long Beach, California, United States.

6. Stefano Sfarra*, **Yuan Yao** (2022). The contribution of mock-ups for the inspection of cultural heritage objects: a short review centered on infrared thermography technique. *Analysing Art 2022: New Technologies – New Applications*, Florence, Italy.

7. Zhen-Feng Jiang, Xi-Zhan Wei, Jia-Lin Kang*, David Shan-Hill Wong*, **Yuan Yao***, Yao-Cheng Chuang, Shi-Shang Jang, John Di-Yi Ou (2022). Development of a data-driven nonlinear dynamic model for a high density polyethylene reactor using a sequence-to-sequence model with attention and application in model predictive control of grade transition. *14th International Symposium on Process Systems Engineering (PSE 2021+)*, Kyoto, Japan.

2021

8. Ching-Mei Wen, **Yuan Yao*** (2021). Symbolic transfer entropy for root cause analysis of process disturbances. *31st European Symposium on Computer Aided Process Engineering (ESCAPE-31),* Istanbul, Turkey.

9. Mingwei Jia, Yun Dai, Danya Xu, Tao Yang, **Yuan Yao**, Yi Liu (2021). Deep graph network for process soft sensor development. *2021 International Conference on Information, Cybernetics, and Computational Social Systems (ICCSS 2021)*, Beijing, China.

10. Mingkai Zheng, Kaixin Liu, Nanxin Li, **Yuan Yao**, Yi Liu (2021). Deep autoencoder for non-destructive testing of defects in polymer composites. *2021 International Conference on Information, Cybernetics, and Computational Social Systems (ICCSS 2021)*, Beijing, China.

11. Yun Dai, Qing Yu, Yi Liu, **Yuan Yao**, Tao Yang (2021). Enhanced soft sensor with qualified augmented data using centroid measurement criterion. *2021 International Conference on Information, Cybernetics, and Computational Social Systems (ICCSS 2021)*, Beijing, China.

12. Wei Hng Lim, Stefano Sfarra, **Yuan Yao*** (2021). A physics-informed neural network method for defect Identification in polymer composites based on pulsed thermography. *16th International Workshop on Advanced Infrared Technology & Applications (AITA 2021)*, Online.

13. Rui Chen, Jian-Guo Wang, Junjie Pan, **Yuan Yao** (2021). Classification of Coronary artery lesions based on XGBoost. *2021 International Conference on Life System Modeling and Simulation & International Conference on Intelligent Computing for Sustainable Energy and Environment (ISMS2021 & ICSEE2021)*, Hangzhou, China.

14. Wei Hng Lim, **Yuan Yao***, David Shan-Hill Wong (2021). Defect detection of carbon fiber reinforced polymer with a physically constrained deep learning method. *3rd International Conference on Industrial Artificial Intelligence (IAI 2021)*, Shenyang, China.

15. Kaixin Liu, Weiyao Lou, Jianguo Yang, **Yuan Yao**, Yi Liu* (2021). Manifold learning automatic defect detection for ultrasonic inspection of composite materials. *3rd International Conference on Industrial Artificial Intelligence (IAI 2021)*, Shenyang, China.

2020

16. Tzu-Tang Liu, **Yuan Yao*** (2020). Small data integration for process modeling by feature learning via deep convolutional autoencoder. *9th Asian Symposium on Process Systems Engineering (PSE Asia 2020)*. Taipei, Taiwan.

17. Hung-Pin Hsu, **Yuan Yao*** (2020). Infrared thermography-based statistical process control for defect detection in vaccum-assisted resin transfer molding. *9th Asian Symposium on Process Systems Engineering (PSE Asia 2020)*. Taipei, Taiwan.

18. Jing Ru Su, **Yuan Yao***, Jian-Guo Wang, Longfei Deng, Jianlong Liu (2020). Granger causality detection based on neural network. IEEE 8th Data Driven Control and Learning Systems Conference (DDCLS 2020), Liuzhou, China.

19. Fei Wang, Jian-Guo Wang, Xiangyun Ye, **Yuan Yao***, Jun-Jiang Liu (2020). An improved Granger causal analysis framework based on redundancy index. IEEE 8th Data Driven Control and Learning Systems Conference (DDCLS 2020), Liuzhou, China.

20. Xiang-Yun Ye, Jian-Guo Wang, Fei Wang, **Yuan Yao***, Jun-Jiang Liu (2020). Root cause diagnosis framework based on Granger causality with the combination of normal and fault data. IEEE 8th Data Driven Control and Learning Systems Conference (DDCLS 2020), Liuzhou, China.

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21. Cheng-Hung Chou, Jia-Lin Kang, Hai-bin Wu, David Shan Hill Wong, Yao-Cheng Chuang, **Yuan Yao**, John Di-Yi Ou, Shi-Shang Jang (2019). Soft-sensor development using sequence to sequence conversation models. *18th Asian Pacific Confederation of Chemical Engineering Congress (APCChE 2019)*, Sapporo, Japan.

22. Ching-Mei Wen, Stefano Sfarra, Gianfranco Gargiulo, **Yuan Yao*** (2019). Edge-group sparse principal component thermography for defect detection in an ancient marquetry sample. *15th International Workshop on Advanced Infrared Technology and Applications (AITA 2019)*, Florence, Italy.

23. Cheng-Yi Yang, Yi-Kai Kao, **Yuan Yao***(2019). Simulating resin infusion for manufacturing sandwich-structured composites. *22nd International Conference for Composite Materials (ICCM22)*, Melbourne, Australia.

24. Yu-Da Hsiao, Cheng-Hung Chou, Hai-Bin Wu, Jia-Lin Kang, David Shan Hill Wong*, **Yuan Yao**, Yao-Chen Chuang, Shi-Shang Jang, John Di-Yi Ou (2019). Physically consistent data-driven soft-sensor development. *Foundations of Process Analytics and Machine learning 2019 (FOPAM 2019)*, Raleigh, USA.

25. Wu Haibin, Chou Cheng-Hung, **Yuan Yao***, David Shan Hill Wong, Yi Liu (2019). Process monitoring using a sequence to sequence network. *IEEE 7th Data Driven Control and Learning Systems Conference (DDCLS 2019)*, Dali, China.

26. Chao Yang, Bocheng Chen, **Yuan Yao**, Yi Liu* (2019). Transfer learning soft sensor for product quality prediction in multi-grade chemical processes. *IEEE 7th Data Driven Control and Learning Systems Conference (DDCLS 2019)*, Dali, China.

27. Yu-Han Lo, Yao-Cheng Chuang, Tao Chen, **Yuan Yao***, Zhengbing Yan (2019). Gaussian process regression-based "small data" integration for process modeling. *8th International Symposium on Design, Operation, and Control of Chemical Processes (PSE Asia 2019)*, Bangkok, Thailand.

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28. Chien-Yu Lien, Yao-Chen Chuang, **Yuan Yao***, Edward Charn, Eric Chen (2018). Block-based finite element modeling, simulation, and optimization of the warpage of embedded trace substrate. *IEEE 20th Electronics Packaging Technology Conference (EPTC)*, Singapore.

29. Jin-Yi Wu, Stefano Sfarra, **Yuan Yao*** (2018). Sparse principal component thermography for structural health monitoring of composite structures. *10th IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes (Safeprocess 2018)*, Warsaw, Poland.

30. Han-Sheng Chen, Zhengbing Yan, Xuelei Zhang, Yi Liu, **Yuan Yao*** (2018). Root cause diagnosis of process faults using conditional Granger causality analysis and maximum spanning tree. *10th International Symposium on Advanced Control of Chemical Processes (ADCHEM 2018)*, Shenyang, China.

31. Jin-Yi Wu, Stefano Sfarra, Hsiu-Li Wen, **Yuan Yao*** (2018). Independent component thermography for subsurface defect detection. *14th Quantitative Infrared Thermography Conference (QIRT 2018)*, Berlin, Germany.

32. Shao-Heng Hsu, Yao-Chen Chuang, Tao Chen, **Yuan Yao*** (2018). Data-based modeling for predicting the completion time of batch processes. *28th European Symposium on Computer-Aided Process Engineering (ESCAPE-28)*, Graz, Austria.

33. Jia-Bin Li, Cheng-Yi Yang, **Yuan Yao***, Chih-Wei Wang, Shih-Po Sun (2018). In-plane permeability measurement of fiber preforms in resin transfer molding by using multi-directional flow front data. *34th International Conference of the Polymer Processing Society (PPS 34)*, Taipei, Taiwan.

D. Patents

1. **Yuan Yao**, Cheng-Yi Yang. Non-contact fiber permeability measurement system and method thereof. 2019.11.1–2041.2.17 (Publication date: 2022.10.4), United States, US11460392B2.

2. **姚遠**, 邱子恆, 張榮語, 許嘉翔, 王智偉, 孫士博, 黃松煒, 楊巡, 蔡在恒. 樹脂轉移模製系統的流動特性的測量系統和測量方法. 2018.5.4–2038.5.4 (Publication date: 2021.6.22), 中國大陸, CN108790218B.

3. **Yuan Yao**, Tzu-Heng Chiu, Rong-Yeu Chang, Chia-Hsiang Hsu, Chih-Wei Wang, Shih-Po Sun, Sung-Wei Huang, Hsun Yang, Tsai-Heng Tsai. Method for measuring a flowing property in a resin transfer molding system. 2019.10.29–2038.3.14 (Publication date: 2022.3.16), United States, US10946597B2.

4. **姚遠**, 楊政毅. 非接觸式纖維滲透率量測系統及其方法. 2019.5.13–2039.5.12 (Publication date: 2019.7.1), 中華民國, TWI697660B.

5. **Yuan Yao**, Bo-Fan Hseuh. Method of real-time prognosis of flooding phenomenon in packed column. 2017.9.21–2038.04.05 (Publication date: 2019.11.12), United States, US10472640B2.

6. **Yuan Yao**, Bo-Fan Hseuh. Method of real-time prognosis of flooding phenomenon in packed column, 2017.10.27–2038.06.23 (Publication date: 2019.10.29), United States, US10456704B2.

7. **姚遠**, 邱子恆, 張榮語, 許嘉翔, 王智偉, 孫士博, 黃松煒, 楊巡, 蔡在恒. 樹脂轉移模製系統之流動特性的測量系統和測量方法. 2018.4.13–2038.4.12 (Publication date: 2019.9.1), 中華民國, TWI670500B.

8. **姚遠**, 薛博帆. 即時預檢填料塔液泛現象的方法. 2017.3.14–2037.3.13 (Publication date: 2018.8.21), 中華民國, TWI633405B.

9. **姚遠**, 薛博帆. 即時預檢填料塔液泛現象的方法. 2017.3.14–2037.3.13 (Publication date: 2018.3.11), 中華民國, TWI617788B.

10. **姚遠**, 魏百鍵. 即時控制樹脂轉注成型製程的方法. 2015.7.2–2035.7.2 (Publication date: 2018.3.2), 中國大陸, CN105690805B.

E. Other

1. Associate Editor of Quantitative InfraRed Thermography Journal
2. Associate Editor of Frontiers in Chemical Engineering
3. Editorial Board Member of Sensors
4. I&EC Research 2020 Class of Influential Researchers

Publications of Tung-Han Yang (楊東翰)

A. Journal Papers (* Corresponding author)

2022

1. Jui-Tai Lin, Yi-Hong Liu, Chi-Yen Tsao, Cheng-Yu Wu, Chia-Jui Hsieh, Meng-Zhe Chen, Chun-Wei Chang, Yueh-Chun Hsiao, Hsin-Lung Chen, and **Tung-Han Yang***. Toward a Quantitative Understanding of Crystal-Phase Engineering of Ru Nanocrystals. *(Submitted)*

2. Kei Kwan Li, Chia-Ying Wu, **Tung-Han Yang**, and Younan Xia*. Quantification, Removal, and Replacement of Surface Ligands on Noble-Metal Nanocrystals *(Submitted)*

3. Yi-Hong Liu, Chia-Jui Hsieh, Yueh-Chun Hsiao, Chong-Chi Chi, Jui-Tai Lin, Chun-Wei Chang, Shang-Cheng Lin, Chia-Chi Kuo, Yin-Mei Chang, Ming-Yen Lu, Shan Zhou, and **Tung-Han Yang***. Toward Controllable and Predictable Synthesis of High-Entropy-Alloy Nanocrystals. *Science Advances* (*In Revision*)

4. **Tung-Han Yang**, Peng Wang, and Dong Qin*. Preserving the Shape of Silver Nanocrystals. *Journal of Materials Chemistry C (Accepted*)

5. Chia-Jui Hsieh, Yi-Hong Liu, Chi-Yen Tsao, Jui-Tai Lin, Chong-Chi Chi, Chun-Wei Chang, Yueh-Chun Hsiao, Cheng-Yu Wu, and **Tung-Han Yang***. Bromide-Mediated Reduction Kinetics and Oxidative Etching for Manipulating the Twin Structure and Facet of Pd Nanocrystals for Catalysis. *Advanced Materials Interfaces* 2022, 9, 2201036.

2021

6. **T. H. Yang**, J. Ahn, S. Shi, and D. Qin*. Understanding the Role of Poly(vinylpyrrolidone) in Stabilizing and Capping Colloidal Silver Nanocrystals. *ACS Nano* 2021, 15, 14242.

7. **T. H. Yang**, J. Ahn, S. Shi, P. Wang, R. Gao, and D. Qin*. Noble-Metal Nanoframes and Their Catalytic Applications. *Chemical Reviews* 2021, 121, 796.

2020

8. **T. H. Yang** and D. Qin*. Capturing the Equilibration Pathway of Nanomaterials Metastable in Both Crystal Structure and Morphology. *Matter* 2020, 2, 519.

9. **T. H. Yang**+, Y. Shi+, A. Janssen+, and Y. Xia*. Surface Capping Agents and Their Roles in Shape-Controlled Synthesis of Colloidal Metal Nanocrystals. *Angewandte Chemie International Edition* 2020, 59, 2. (+Equal Contribution)

10. **T. H. Yang**, S. Zhou, M. Zhao, and Y. Xia*. Quantitative Analysis of the Multiple Roles Played by Halide Ions in Controlling the Growth Patterns of Palladium Nanocrystals. *ChemNanoMat* 2020, 6, 576.

2019

11. S. Zhou, M. Zhao, **T. H. Yang**, and Y. Xia*, Decahedral Nanocrystals of Noble Metals: Synthesis, Characterization, and Applications. *Materials Today* 2019, 22, 108.

12. T. S. Rodrigues+, M. Zhou+, **T. H. Yang**+, K. D. Gilroy, A. G. M. Silva, P. H. C. Camargo, and Y. Xia*. Synthesis of Colloidal Metal Nanocrystals: A Comprehensive Review on the Reductants. *Chemistry-A European Journal* 2019, 24, 16944. (+Equal Contribution)

13. C. T. Lee, H. Wang, Ming. Zhou, **T. H. Yang**, and Y. Xia*. One-Pot Synthesis of Pd@Pt_{nL} Core–Shell Icosahedral Nanocrystals in High Throughput through a Quantitative Analysis of the Reduction Kinetics. *Chemistry-A European Journal* 2019, 25, 5322.

2018

14. **T. H. Yang**+, K. C. Chiu+, Y. W. Harn, H. Y. Chen, R. Cai, S. C. Lo, J. M. Wu, and Y. H. Lee*. Electron Field Emission of Geometrically-Modulated Monolayer Semiconductors. *Advanced Functional Materials* 2018, 28, 1706113. (+Equal Contribution)

15. S. Zhou, D. Huo, **T. H. Yang**, Z. Lyu, M. Zhao, K. Gilroy, Y. Wu, Z. D. Hood, M. Xie, and Y. Xia*. Enabling Complete Ligand Exchange on the Surface of Gold Nanocrystals through the Deposition and then Etching of Silver. *Journal of the American Chemical Society* 2018, 141, 11898.

16. L. Figueroa-Cosme, K. D. Gilroy, **T. H. Yang**, M. Vara, J. Park, S. Bao, A. G. M. da Silva, and Y. Xia*. Synthesis of Pd Nanoscale Octahedra through a One-Pot, Dual-Reductant Route and the Kinetic Analysis. *Chemistry-A European Journal* 2018, 64, 1233.

17. S. Zhou, D. S. Mesina, M. A. Organt, **T. H. Yang**, X. Yang, D. Huo, M. Zhao, and Y. Xia*. Site-Selective Growth of Ag Nanocubes for Sharpening Their Corners and Edges, Followed by Elongation into Nanobars through Symmetry Reduction. *Journal of Materials Chemistry C* 2018, 6, 1384.

National Tsing Hua University
Department of Chemical Engineering
國立清華大學 化學工程學系

http://www.che.nthu.edu.tw