

## Prof. Ming-Chung Wu of Chang Gung University (Update 2025/01/20)

### Award List

#### 2025-

1. Jia-Mao Chang, Ting-Han Lin, Yin-Hsuan Chang, and Ming-Chung Wu\*, "Designing High-Efficiency Photocatalysts—Insights from a Photo-Assisted Kelvin Probe Force Microscopy Study", **2025 中華民國高分子學會年會**, Jan. 15-16, 台中-朝陽科技大學. (海報發表及競賽佳作) 【MOST 113-2628-E-182-001-MY4】
2. Hong-Yi Lin, Shu-Chi Lu, Kai-Chi Hsiao, Ting-Han Lin, Kun-Mu Lee, and Ming-Chung Wu\*, "Strategic Passivation of Perovskite Layer Interfaces Using Multiple Functional Groups to Enhance Photovoltaic Performance", **2025 中華民國高分子學會年會**, Jan. 15-16, 台中-朝陽科技大學.
3. Ting-Hung Hsieh, Hao-Yun Yu, Yin-Hsuan Chang, Ting-Han Lin, and Ming-Chung Wu\*, "Multifunctional Electrospun Nanocomposite Fibers for the Detection of Various Biomarkers in Exhaled Breath", **2025 中華民國高分子學會年會**, Jan. 15-16, 台中-朝陽科技大學. (海報發表及競賽優等) 【MOST 111-2628-E-182-001-MY2】

#### 2024-

4. Jia-Mao Chang, Ting-Han Lin, Yin-Hsuan Chang, and Ming-Chung Wu\*, "Synergistic Photothermal and Photocatalytic Reduction of Carbon Dioxide to Methane via the Integration of Topological Bismuth Selenide and Zinc Indium Sulfide Photocatalysts", **2024 MRS Materials Research Society Fall Meeting & Exhibit (MRS 2024)**, Dec. 1-6, Boston, Massachusetts, United States of America. (Best Poster Award Nominee)
5. 張家茂, 陳彥璋, 陳嘉佑, 林岑薰, 許子綸, 吳明忠\*, "塑料裂解與製氫—新式單原子光觸媒原型反應器", **2024 華立創新材料大賽**, Nov. 15-16, 台中-國立中興大學. (入選獎)
6. 吳明忠\*, 林廷翰, 張胤萱, "光重整廢塑料製氫裝置", **2024 台灣創新技術博覽會**, Oct. 17-19, 台北世貿1館. (發明競賽銅牌獎)
7. Hong-Yi Lin, Shu-Chi Lu, Kai-Chi Hsiao, Ting-Han Lin, and Ming-Chung Wu\*, "Strategic Passivation of Perovskite Layer Interfaces Using Multiple Functional Groups to Enhance Photovoltaic Performance", **2024 SDSE 2<sup>nd</sup> International Conference on Smart Devices and Sustainable Energy (SDSE 2024)**, Oct. 16-18, New Taipei, Taiwan. (Honorable Mentions)
8. Jia-Mao Chang, Ting-Han Lin, Yin-Hsuan Chang, and Ming-Chung Wu\*, "Synergistic CO<sub>2</sub>-to-CH<sub>4</sub> Conversion via Photothermal and Photocatalytic Integration of Topological BizSes and ZnInS Photocatalysts", **2024 SDSE 2<sup>nd</sup> International Conference on Smart Devices and Sustainable Energy (SDSE 2024)**, Oct. 16-18, New Taipei, Taiwan. (Honorable Mentions)
9. Yen-Chang Chen, Ting-Han Lin, Jia-Mao Chang, Kuo-Ping Chiang, and Ming-Chung Wu\*, "Construction of BaTiO/Ag-Doped TiO<sub>2</sub> Heterostructures to Enhance Carbon Dioxide Reduction Reaction via Synergistic Piezo-Photocatalysis", **2024 SDSE 2<sup>nd</sup> International Conference on Smart Devices and Sustainable Energy (SDSE 2024)**, Oct. 16-18, New Taipei, Taiwan. (Second Award)
10. 林廷翰, 張胤萱, 張家茂, 蔣國斌, 廖盈涵, 吳明忠\*, "塑料裂解與製氫—新式單原子光觸媒原型反應器", **第 19 屆台塑關係企業應用技術研討會**, Jun. 14, 桃園市-長庚大學. (研發實物競賽第三名)

11. 陳彥璋, 林廷翰, 蔣國斌, 張家茂, 吳明忠\*, "藉由壓電-光協同催化效應增益銀摻雜 BaTiO<sub>3</sub>/TiO<sub>2</sub> 奈米異質結構觸媒性能之應用與機制探討", 第 19 屆台塑關係企業應用技術研討會, Jun. 14, 桃園市-長庚大學. (研發論文暨海報競賽優勝)
12. Yen-Chang Chen, Ting-Han Lin, Jia-Mao Chang, and Ming-Chung Wu\*, "Enhanced Photo-Piezocatalytic Performance through Synergistic Effects for Silver-Modified BaTiO<sub>3</sub>/TiO<sub>2</sub> Heterostructure", 2024 JSAP The 71<sup>th</sup> Japan Society of Applied Physics Spring Meeting (JSAP 2024), Mar. 22-25, Tokyo, Japan. (Poster Award)
13. Yu-Chi Peng, Kuo-Ping Chiang, Jia-Mao Chang, Ting-Han Lin, and Ming-Chung Wu\*, "Enhancing Solar-Driven Photocatalytic Hydrogen Production through Incorporation of ZnIn<sub>2</sub>S<sub>4</sub> with BaTiO<sub>3</sub> Piezocatalyst to Decompose Polymeric Biomass", 2024 中華民國高分子學會年會, Jan. 24-25, 台南-國立成功大學. (海報論文競賽佳作) 【MOST 112-2813-C-182-036-E】
14. Mei-Yu Chen, Ting-Hung Hsieh, Yin-Hsuan Chang, Ting-Han Lin, and Ming-Chung Wu\*, "Multifunctional Electrospun Nanocomposite Fibers for the Detection of Various Biomarkers in Exhaled Breath", 2024 中華民國高分子學會年會, Jan. 24-25, 台南-國立成功大學. (海報論文競賽優等) 【MOST 111-2628-E-182-001-MY2】

## 2023-

15. Shu-Chi Lu, Yuan-Yu Chiu, Hong-Yi Lin, and Ming-Chung Wu\*, "Bifunctional Carbazole-Based Interlayer for Defect Passivation in High-Efficiency Perovskite Solar Cells", 2023 台灣化學工程學會 70 週年年會暨國科會化工學門成果發表會, Dec. 9-10, 台北-國立臺灣大學. (海報論文競賽佳作)
16. 林廷翰, 吳明忠\*, "The Beautiful Island: Formosa, Taiwan", 2023 台灣材料科學微結構影像美學競賽, Nov. 17-20, 新竹-國立清華大學. (佳作)
17. 張胤萱, 林廷翰, 吳明忠\*, "Floral Resilience: A Glimpse into the Layered Beauty of Bi<sub>2</sub>Se<sub>3</sub> Topological Materials", 2023 台灣材料科學微結構影像美學競賽, Nov. 17-20, 新竹-國立清華大學. (銅質獎)
18. 邱遠宇, 陳世軒, 李坤穆, 吳明忠\*, "利用金屬摻雜 n 型半導體材料調控鈣鈦礦太陽能電池光電轉換效率與陷阱狀態之研究", 第 18 屆台塑關係企業應用技術研討會, Jun. 9, 新北市-明志科技大學. (研發論文暨海報競賽優勝)
19. Yuan-Yu Chiu, Shih-Hsuan Chen, and Ming-Chung Wu\*, "Interlayer of 2-Chloroethyl Vinyl Ether Chain-Grafted Carbazole Derivatives Confer Highly Efficient and Stable Perovskite Solar Cell", 2023 中華民國高分子學會年會, Jan. 17-18, 桃園-長庚大學. (海報論文競賽優等) 【MOST 109-2221-E-182-059】
20. Ting-Hung Hsieh, Yin-Hsuan Chang, Ting-Han Lin, Kai-Chi Hsiao, and Ming-Chung Wu\*, "Breath Acetone Sensing Based on Polymer Nanocomposite Sensing Material for Application in Non-Invasive Diabetics Monitoring", 2023 中華民國高分子學會年會, Jan. 17-18, 桃園-長庚大學. (海報論文競賽優等) 【MOST 110-2628-E-182-001】

## 2022-

21. 陳天豪, 吳明忠\*, "金屬摻雜硫化錫(IV)複合碳化奈米纖維素薄膜於二氧化碳還原產生再利用能源之研究", 中國機械工程學會 111 年度年會, Dec. 2-3, 苗栗-國立聯合大學. (111 年度能源學門-大專生優良創作獎)
22. 王哲麒, Rajat Subhra Karmakar, 林廷翰, 吳明忠\*, 張國軒, "藉由 PEDOT:PSS 與 ITO 電極間之抑制介面塗層提升壓阻式壓力感測器之可靠度", 台灣化學工程學會 69 週年年會暨國科會化學工程學門成果發表會&台、日、韓、捷化學工程國際研討會, Dec. 2-3, 新北-淡江大學. (石延平教授論文獎)

23. Kou-Ping Chiang, Jia-Mao Chang, Kai-Chi Hsiao, and Ming-Chung Wu\*, "Enhanced Photocatalytic CO<sub>2</sub> Reduction Activity of Silver-Bismuth-Iodide Decorated TiO<sub>2</sub> NF by Chemical Vapor Deposition", 台灣化學工程學會 69 週年年會暨國科會化學工程學門成果發表會&台、日、韓、捷化學工程國際研討會, Dec. 2-3, 新北-淡江大學. 【MOST 111-2221-E-182-040-MY3】 (海報競賽佳作)
24. Ting-Hung Hsieh, Yin-Hsuan Chang, Ting-Han Lin, Kai-Chi Hsiao, and Ming-Chung Wu\*, "Ultra-Sensitive Breath Acetone Detection by Polymer Nanocomposite Sensing Material", 台灣化學工程學會 69 週年年會暨國科會化學工程學門成果發表會&台、日、韓、捷化學工程國際研討會, Dec. 2-3, 新北-淡江大學. 【MOST 111-2221-E-182-040-MY3】 (海報競賽佳作)
25. 廖盈涵, 吳明忠\*, "The Ancient Sea Lamprey", 2022 台灣材料科學微結構影像美學競賽, Nov. 18-19, 苗栗-國立聯合大學. (金質獎)
26. Jia-Mao Chang, Ting-Han Lin, Yin-Hsuan Chang, and Ming-Chung Wu\*, "Composition Engineering in Silver Bismuth Iodide for Efficient Photocatalytic CO<sub>2</sub> Reduction", 中國材料科學學會 111 年年會, Nov. 18-19, 苗栗-國立聯合大學. 【MOST 111-2221-E-182-040-MY3】 (海報競賽特優)
27. Yin-Hsuan Chang, Ting-Hung Hsieh, Kai-Chi Hsiao, and Ming-Chung Wu\*, "Development of Electrospun Nanofiber-Based Sensing Materials for Monitoring Biomarkers in Exhaled Breath", 中國材料科學學會 111 年年會, Nov. 18-19, 苗栗-國立聯合大學. 【MOST 111-2221-E-182-040-MY3】 (海報競賽優等)
28. Jia-Mao Chang, Ting-Han Lin, Yin-Hsuan Chang, and Ming-Chung Wu\*, "Composition Engineering in Silver Bismuth Iodide for Efficient Photocatalytic CO<sub>2</sub> Reduction", 2022 第二十八屆用戶年會暨研討會, Aug. 30-Sep. 1, 新竹-國家同步輻射研究中心. (壁報人氣獎)
29. Yin-Hsuan Chang, Yu-Han Liao, Ting-Han Lin, and Ming-Chung Wu\*, "Organic Solvent Resistant Nanocomposite Films Made Self-Precipitated Ag/TiO<sub>2</sub> Nanofibers and Cellulose Nanofiber for Harmful Volatile Organic Compounds Photodegradation", 2022 中華民國高分子學會年會, Jan. 18-19, 台中-國立勤益科技大學. 【MOST 110-2628-E-182-001】 (論文海報競賽銅牌)

## 2021-

30. 吳明忠\*, 張胤萱, 林廷翰, 盧怡靜, 張家茂, "奈米光觸媒纖維複合紙燈罩 360° 無死角淨化空氣", 110 年度複合材料設計競賽, Dec. 17, 台中-逢甲大學. (佳作)
31. Yu-Hsiang Chang, Yen-Fu Yu, Kai-Chi Hsiao, Shih-Hsuan Chen, and Ming-Chung Wu\*, "Enhance Power Conversion Efficiency of Non-Toxic Rudorffites Solar Cells Through Modification of Carrier Transporting Layer", 2021 IEDMS International Electron Devices & Materials Symposium (IEDMS 2021), Nov. 18-19, Kaohsiung, Taiwan. (Excellent Poster Paper Award)
32. Ting-Hun Hsieh, Yin-Hsuan Chang, Ting-Han Lin, and Ming-Chung Wu\*, "Ultra-Sensitive Breath Acetone Detection by Polymer Nanocomposite Sensing Material for Non-Invasive Diabetics Health Monitoring", 2021 MRSTIC Materials Research Society-Taiwan International Conference (MRSTIC 2021), Nov. 13-17, Virtual Conference. (First Prize)
33. 林廷翰, 張胤萱, 王前翰, 張家茂, 吳明忠\*, "塑氫專案", 2021 長庚大學青年老闆築夢計畫校際盃創新創業競賽, Mar. 6, 桃園-長庚大學. (第三名及評審特別獎)

## 2020-

34. Yin-Hsuan Chang, Yen-Tung Lin, Shih-Hsuan Chen, Meng-Huan Jao, and Ming-Chung Wu\*, "Morphology Engineering of Low-Temperature Processed Electron Transport Layer for Pursuing High Performance Perovskite Photovoltaic", 2020 第二十六屆用戶年會暨研討會, Nov. 10-12, 新竹-國家同步輻射研究中心. (論文海報人氣獎)

35. Shih-Hsuan Chen, Yen-Tung Lin, and Ming-Chung Wu\*, "Spray Deposition of Nanostructured Low-Temperature TiO<sub>2</sub> Electron Transport Layer for High-Performance Perovskite Solar Cells", 2020 中國材料科學學會年會, Nov. 6-7, 新北-明志科技大學. 【MOST 109-2221-E-182-059】 (論文海報競賽優等)
36. Ying-Han Liao, and Ming-Chung Wu\*, "Using Sn Doping to Modify TiO<sub>2</sub> Phase Junction of Electron Extraction Layer to Enhance Power Conversion Efficiency of Perovskite Solar Cells", 2020 中國材料科學學會年會, Nov. 6-7, 新北-明志科技大學. 【MOST 109-2221-E-182-059】 (論文海報競賽優等)
37. Kai-Chi Hsiao, Meng-Huan Jao, Kuo-Yu Tian, Ting-Han Lin, Dinh-Phuc Tran, Hsueh-Chung Liao, Cheng-Hung Hou, Jing-Jong Shyue, Ming-Chung Wu, and Wei-Fang Su\*, "Acetamidinium Cation to Confer Ion Immobilization and Structure Stabilization of Organometal Halide Perovskite Toward Long Life and High Efficiency p-i-n Planar Solar Cell via Air-Processable Method", 2020 中國材料科學學會年會, Nov. 6-7, 新北-明志科技大學. (論文海報競賽特優)
38. Kuo-Ping Chiang, Ting-Han Lin, Yin-Hsuan Chang, Jia-Mao Chang, Jen-Fu Hsu, Kai-Hsiang Hsu, and Ming-Chung Wu\*, "Highly Efficient Solar-Driven Photodegradation on Antibiotics by Self-Precipitated Ag NPs/TiO<sub>2</sub> Nanofibers Photocatalyst", 2020 台灣化學工程學會 67 週年年會暨科技部化學工程學門成果發表會&台日韓捷永續化學工程國際研討會, Oct. 23-24, 新竹-國立清華大學. 【MOST 109-2221-E-182-059】 (海報論文競賽佳作)
39. Yen-Ting Lin, Chi-Hui Tsao, Ting-Han Lin, and Ming-Chung Wu\*, "Solar-Triggered Silver Doped Titanium Oxide Nanofibers with High Efficient Photothermal Therapy for Tumor Ablation", 2020 台灣化學工程學會 67 週年年會暨科技部化學工程學門成果發表會&台日韓捷永續化學工程國際研討會, Oct. 23-24, 新竹-國立清華大學. 【MOST 109-2221-E-182-059】 (海報論文競賽優勝)
40. Ting-Han Lin, Duy Linh Vu, Ming-Chung Wu\*, and Chao-Sung Lai, "Using Electrospun PANI/P3TI/PMMA Fibers for Highly-Sensitive Detection of Volatile Organic Compounds Vapor", 2020 ICSS International Conference on Smart Sensors, 25<sup>th</sup> Symposium of Association of Chemical Sensors in Taiwan, and 23<sup>rd</sup> Nano Engineering and Microsystem Technology Conference (ICSS 2020), Oct. 19-20, Kaohsiung, Taiwan. (Oral Presentation) (Best Oral Paper Award)

## 2019-

41. 謝定宏, 林騏宏, 張胤萱, 吳明忠\*, "以靜電紡絲技術製備奈米級銀/聚甲基丙烯酸甲酯纖維應用於低濃度丙酮氣體感測", 2019 台灣化學工程學會 66 週年年會暨科技部化學工程學門成果發表會, Nov. 8-9, 台中-東海大學. (海報論文競賽佳作)
42. Ting-Han Lin, Ching-Ting Chiu, and Ming-Chung Wu\*, "Construction of 3D/1D Porous g-C<sub>3</sub>N<sub>4</sub>/TiO<sub>2</sub> with Z-Scheme Heterostructure for Efficient Water", 2019 台灣化學工程學會 66 週年年會暨科技部化學工程學門成果發表會, Nov. 8-9, 台中-東海大學. (海報論文競賽佳作)
43. Yin-Hsuan Chang, Ting-Han Lin, Yu-Han Liao, Chiao-Yun Huang, and Ming-Chung Wu\*, "Hierarchically Cellulose Nanofiber/TiO<sub>2</sub> Nanofiber Composite Film for Organic Pollutant Photodegradation", 2019 台灣化學工程學會 66 週年年會暨科技部化學工程學門成果發表會, Nov. 8-9, 台中-東海大學. (海報論文競賽優勝)
44. Shih-Hsuan Chen, Yen-Tung Lin, and Ming-Chung Wu\*, "Control Perovskite Crystallization via Interface Engineering for Highly Efficient Low-Temperature Perovskite Solar Cells" 2019 A-COE The 11<sup>th</sup> Asian Conference on Organic Electronics (A-COE 2019), Nov. 6-9, New Taipei, Taiwan. (Excellent Poster Award)
45. 林騏宏, 吳明忠\*, 邱敬庭, 賴朝松, "雙面蝕刻增益偏極化纖維於揮發性氣體感測器之應用", 第 17 屆台塑關係企業應用技術研討會, Jun. 14, 桃園市-長庚大學. (海報論文競賽優勝)
46. 李怡穎, 吳明忠\*, "高分子添加物調控表面形貌之高效能低鉛混合型陽離子鈣鈦礦太陽能電池", 第 17 屆台塑關係企業應用技術研討會, Jun. 14, 桃園市-長庚大學. (海報論文競賽優勝)

47. Chi-Hung Lin, Ting-Han Lin, Ching-Ting Chiu, and Ming-Chung Wu\*, "Construction Of 2D/1D g-C<sub>3</sub>N<sub>4</sub>/TiO<sub>2</sub> with Z-Scheme Heterostructure of Efficient Water Splitting" **2019 3<sup>rd</sup> International Workshop on Graphene and C<sub>3</sub>N<sub>4</sub>-based Photocatalysts (IWGCP3 2019)**, Mar. 23-26, Wuhan, China. (Excellent Poster Award)

48. Chi-Hung Lin, Ching-Ting Chiu, Ting-Hung Hsieh, Tz-Feng Lin, Kai Wang, Chao-Sung Lai, and Ming-Chung Wu\*, "Highly-Efficient Volatile Organic Compounds Detection of Freestanding Ag/CdSe-CdS/PMMA Sensors", **2019 中華民國高分子年會及前瞻高分子科學與技術國際研討會暨 107 年度科技部高分子學門成果發表會**, Jan. 18-19, 台南-南臺科技大學. (海報論文競賽銅牌獎)

## 2018-

49. Ying-Han Liao, Shun-Hsiang Chan, and Ming-Chung Wu\*, "Interface Engineering for Controlling Photovoltaic Performance of Perovskite Solar Cell Based on Sn-Doped TiO<sub>2</sub> Compact Layer", **2018 中國材料科學學會 107 年會暨 50 週年慶**, Nov. 16-17, 台中-逢甲大學. (海報論文競賽優等)

50. Shun-Hsiang Chan, Ming-Chung Wu\*, and Wei-Fang Su "Using Znic-Doped TiO<sub>2</sub> Electron Extraction Layer to Enhance the Photovoltaic Performance of Perovskite-Structured Solar Cells", **2018 台灣化學工程學會 65 週年年會暨科技部化工學門成果發表會**, Nov. 9-10, 雲林-國立雲林科技大學. (海報論文競賽優勝)

51. 黃任賢, 王前翰, 黃巧昫, 范景州, 吳明忠\*, "阿布的小車車", **第17屆全國化工E車(Chem-E-Car)創意競賽**, Oct. 19, 桃園市-國防大學. (性能獎佳作)

52. 黃任賢, 王前翰, 劉杰穎, 賴瑄憶, 吳明忠\*, "阿布的小車車", **第17屆全國化工E車(Chem-E-Car)創意競賽**, Oct. 19, 桃園市-國防大學. (化工E車化學動力獎)

53. Shun-Hsiang Chan, Ming-Chung Wu\*, Kun-Mu Lee, Shih-Hsuan Chen, Meng-Huan Jao, Yang-Fang Chen, and Wei-Fang Su, "Enhancing Performance of Perovskite Solar Cells Using Mesoporous Znic-Doped TiO<sub>2</sub> as Electron Transport Layer", **2018 台灣鍍膜科技協會年會暨科技部專題計畫研究成果發表會**, Oct. 12-13, 新北市-明志科技大學. (海報論文競賽特優)

54. Shih-Hsuan Chen, Shun-Hsiang Chan, Yen-Tung Lin, and Ming-Chung Wu\*, "Enhancing Power Conversion Efficiency of Perovskite Solar Cells Based on Mesoscopic Ag-Doped TiO<sub>2</sub> Electron Transport Layer", **2018 台灣鍍膜科技協會年會暨科技部專題計畫研究成果發表會**, Oct. 12-13, 新北市-明志科技大學. (海報論文競賽佳作)

55. Ting-Han Lin, Kuo-Ping Chiang, and Ming-Chung Wu\*, "One-Pot Synthesis of Silver Oxide Nanoparticles Loaded TiO<sub>2</sub> Nanofibers and Its Synergistic Effect on Visible-Driven Photocatalytic Activity" **2018 Chinese Symposium on Photocatalytic Materials (2018CSPM1)**, July 26-29, Wuhan, China. (Excellent Poster Award)

56. Yin-Hsuan Chang, Ting-Han Lin, Kuo-Ping Chiang, and Ming-Chung Wu\*, "Recyclable Magnetic Fe<sub>3</sub>O<sub>4</sub>/Ag/TiO<sub>2</sub> Photocatalyst for Removing Hexavalent Chromium" **2018 Chinese Symposium on Photocatalytic Materials (2018CSPM1)**, July 26-29, Wuhan, China. (Excellent Poster Award)

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