中央研究院 ACADEMIA SINICA
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EDUCATION AND PROFESSIONAL EXPERINCE

Genomics Research Center, Academia Sinica, Taipei, Taiwan	**Assistant Professor**	2023 – present
Center for Nanomedicine, Brigham and Women's Hospital, Harvard Medical School, Harvard University, Boston, MA, USA **(Advisor: Dr. Wei Tao and Dr. Omid C. Farokhzad 院士)**	**Postdoctoral Fellow**	2020 – 2023
Department of Chemistry and Biochemistry, University of California Los Angeles (UCLA), Los Angeles, CA, USA **(Advisor: Dr. Jeffrey I. Zink)**	**Ph.D.**	2014 – 2019
Department of Chemistry, National Taiwan University, Taipei, Taiwan **(Advisor: Dr. Chung-Yuan Mou)**	**M.S.**	2009 – 2011
Department of Chemistry, National Taiwan University, Taipei, Taiwan **(Advisor: Dr. Chung-Yuan Mou, 牟中原 院士)**	**B.S.**	2005 – 2009

PERSONAL STATEMENT

I am a materials chemistry, nanomedicine, and biomedical engineering investigator with a multidisciplinary background in Nanomedicine, Drug Delivery, Chemistry, Materials Science, Biomedical Engineering, Nanotechnology, and Biology. My research thrusts encompass both the innovation of fundamental materials (such as nanoparticles, two-dimensional materials, hydrogels, and RNA nanomedicine) and living materials (such as engineered microalgae, microbes, and cells) and their diverse applications in disease treatment, vaccine development, and translational medicine. These innovations are designed to facilitate the efficient delivery of therapeutics to lesion areas for the treatment of various diseases, including cancer, atherosclerotic cardiovascular disease and other inflammatory diseases.

I have established exceptional expertise in the research fields of materials and bionanotechnology, with emphasis on nanomaterials, drug delivery, biomaterials, nanomedicine, living materials, immunology, RNA medicine, and nano-bio interactions. My research includes a highly interdisciplinary combination of material synthesis, stimuli-responsive materials design and development, two-dimensional (2D) materials, RNA nanomedicine, porous materials, hydrogel technology, immunotherapy, sonodynamic therapy, and macrophage immunology.

I have so far authored 50+ peer-reviewed papers including 20+ first-author or corresponding-author papers in prestigious journals such as ***Nature Nanotechnology*** 2024, *19*, 1386–1398; ***Nature Reviews Cardiology*** 2022, *19*, 228-249 **(Front Cover Featured)**; ***Nature Reviews Cardiology*** 2025, *22*, 255–272; ***Nature Communications***, 2023, *14*, 6973; ***Science Advances*** 2025, *11*, adw7191; ***Science Advances*** 2021, *7*, abi9265 **(Front Cover Paper)**; ***J. Am. Chem. Soc.*** 2023, *145*, 8375-8388 **(Cover Featured)**; ***J. Am. Chem. Soc.*** 2019, *141*, 12475-12480; ***J. Am. Chem. Soc.*** 2019, *141*, 17670-17684; ***Angew. Chem. Int. Ed.*** 2023, *62*, e202308413 **(Front Cover Paper, Top 5% VIP)**, ***Angew. Chem. Int. Ed.*** 2021, *60*, 7155-7164 **(Front Cover Paper, Top 5% VIP)**; ***Chem. Rev.*** 2024 *124*, 929-1033; ***Acc. Chem. Res.*** 2019, *52*, 1531-1542; ***ACS Nano*** 2019, *13*, 1292-1308; ***ACS Nano*** 2013, *7*, 8423-8440; ***Matter*** *(Cell Press)* 2024; *7*, 3811-3844; ***Matter*** *(Cell Press)* 2022, *5*, 2471-247; ***Matter*** *(Cell Press)* 2022, *5*, 18-19; ***Advanced Science*** 2023, *10*, 2207439; ***Advanced Science*** 2023, *10*, 2207768, ***Biomaterials*** 2023, *295*, 122031, ***ACS Appl. Mater. Interfaces*** 2018, *10*, 31870-31881, etc. Additionally, I have been dedicated to serving as an exceptional collaborator, and through these collaborations, we have achieved numerous high-impact papers, including publications in journals, such as ***Nature Reviews Methods Primers*** 2023, *3*, 63; ***Nature Communications*** 2021, *12*, 1124; ***Nature Communications*** 2022, *13*, 1413; ***Proc. Natl. Acad. Sci. U.S.A.*** 2023, *120*, e2304966120; ***J. Am. Chem. Soc.*** 2023, *145*, 12193–12205; ***Chemical Society Reviews*** 2022, *51*, 3828-3845; ***Advanced Materials*** 2023, *35*, 2207391; ***Advanced Materials*** 2023, *35*, 2207787; ***Advanced Materials*** 2021, *33*, 2102504; ***Materials Today*** 2023, *62*, 296-326; ***Med*** *(Cell press) 5*, P863-885; ***Nano Letters*** 2021, *21*, 9706-9714; ***Advanced Drug Delivery Reviews*** 2022, *185*, 114268, ***Advanced Drug Delivery Reviews*** 2023, *203*, 115116, and ***Trends in Biotechnology*** 2024, *42*, P1439-1452. Many of these papers have been rated as ***Top 1% ESI Highly Cited Paper*** and/or ***Top 0.1% ESI Hot Paper***.

PUBLICATIONS (Total citation: 4400+; H-index: 38)

- ***First-author or Corresponding-author Papers*:**

57. He Z(#), **Chen W(*)(#)**, Hu K(#), Luo Y, Zeng W, He X, Li T, Ouyang J, Li Y, Xie L, Zhang Y, Xu Q, Yang S, Guo M, Zou W, Li Y, Huang L, Chen L, Zhang X, Saiding Q, Wang R, Zhang MR, Kong N, Xie T, Song X,* Tao W*. "*Resolvin D1 delivery to lesional macrophages using antioxidative black phosphorus nanosheets for atherosclerosis treatment.*" ***Nature Nanotechnology*** 2024, *19*, 1386–1398. **(*: Corresponding author) (#: Co-first author, equal contribution) (Highlighted in the "Biomedical Engineering" Series of articles from across *Nature* Portfolio)**

56. Zhou Z, **Chen W(*)**, Cao Y, Abdi R, Tao W*. "*Nanomedicine-based Strategies for the Treatment of Vein Graft Disease.*" ***Nature Reviews Cardiology*** 2025, *22*, 255–272 **(*: Corresponding author)**

55. Chen S(#), Li Y(#), Zhou Z, Saiding Q, Zhang Y, An S, Khan MM, Ji X, Qiao R, Tao W*, Kong N*, **Chen W(*)**, Xie T*. "Macrophage hitchhiking nanomedicine for enhanced β-elemene delivery and tumor therapy." ***Science Advances*** 2025, *11*, adw7191. **(*: Corresponding author)**

54. Shi Y(#), Zhen X(#), Zhang Y, Li Y, Koo S, Saiding Q, Kong N, Liu G, **Chen W(*)**, Tao W*. "*Chemically Modified Platforms for Better RNA Therapeutics.*" ***Chemical Reviews*** 2024, *124*, 929–1033. **(*: Corresponding author) (*Top 1% ESI Highly Cited Paper*)**

53. Ouyang J, **Chen W(*)**, Tao W* "*Design of application-optimized hydrogels based on a swollen polymer network model.*" ***Matter*** **(Cell Press)**, 2022, *5*, 2471–2473. **(*: Corresponding author)**

52. Li Y(#), **Chen W(#)**, Kang Y, Zhen X, Zhou Z, Liu C, Chen S, Huang X, Liu H, Koo S, Kong N, Ji X, Xie T, Tao W*. "*Nanosensitizer-mediated augmentation of sonodynamic therapy efficacy and antitumor immunity.*" ***Nature Communications*** 2023, *14*, 6973. **(#: Co-first author; equal contribution; *Top 1% ESI Highly Cited Paper*, Highlighted in the "Biomedical applications for nanotechnologies" Collection)**

51. **Chen W**, Li Y, Liu C, Kang Y, Qin D, Chen S, Zhou J, Liu H, Ferdows BE, Patel DN, Huang X, Koo S, Kong N, Ji X, Cao Y, Tao W, Xie T "*In situ Engineering of Tumor-Associated Macrophages via a Nanodrug-Delivering-Drug (β-Elemene@Stanene) Strategy for Enhanced Cancer Chemo-Immunotherapy.*" ***Angew. Chem. Int. Ed.*** 2023, *62*, e202308413. (*Highlight as* **Top 5% V**ery **I**mportant **P**aper **VIP, Front Cover Featured, *Top 1% ESI Highly Cited Paper***, ***Top 0.1% ESI Hot Paper***)

50. **Chen W**, Schilperoort M, Cao Y, Shi J, Tabas I, Tao W "*Macrophage-Targeted Nanomedicine for the Diagnosis and Treatment of Atherosclerosis.*" ***Nature Reviews Cardiology*** 2022, *19*, 228–249. (**Front Cover Featured**; ***Top 1% ESI Highly Cited Paper*; Highlighted in the "Mechanisms of atherosclerosis" Series of articles** from *Nature Reviews Cardiology*; **Highlighted in the "Monthly Science Spotlight"** of *Brigham and Women's Hospital, Harvard Medical School*)

49. **Chen W**, Tao W "*Precise Control of the Structure of Synthetic Hydrogel Networks for Precision Medicine Applications.*" ***Matter*** **(Cell Press)** 2022, *5*, 18–19. **(Invited article)**

48. **Chen W**, Liu C, Ji X, Joseph J, Tang Z, Ouyang J, Xiao Y, Kong N, Joshi N, Farokhzad OC, Tao W, Xie T "*Stanene-Based Nanosheets for β-Elemene Delivery and Ultrasound-Mediated Combination Cancer Therapy.*" ***Angew. Chem. Int. Ed.*** 2021, *60*, 7155–7164. (*Highlight as* **Top 5% V**ery **I**mportant **P**aper **VIP, Front Cover Featured, *Top 1% ESI Highly Cited Paper***)

47. **Chen W**, Cheng CA, Cosco ED, Ramakrishnan S, Lingg JGP, Bruns OT, Zink JI, Sletten EM. "*Shortwave Infrared Imaging with J-aggregates Stabilized in Hollow Mesoporous Silica Nanoparticles.*" ***J. Am. Chem. Soc.*** 2019, *141*, 12475–12480. (***Top 1% ESI Highly Cited Paper***)

46. **Chen W**, Cheng CA, Zink JI. "*Spatial, Temporal, and Dose Control of Drug Delivery Using Noninvasive Magnetic Stimulation.*" ***ACS Nano*** 2019, *13*, 1292–1308. (***Top 1% ESI Highly Cited Paper***)

45. **Chen W**, Glackin CA, Horwitz MA, Zink JI. "*Nanomachines and Other Caps on Mesoporous Silica Nanoparticles for Drug Delivery.*" ***Acc. Chem. Res.*** 2019, *52*, 1531–1542. (***Top 1% ESI Highly Cited Paper***)

44. **Chen W**, Cheng CA, Lee BY, Clemens DL, Huang WY, Horwitz MA, Zink JI. "*Facile Strategy Enabling Both High Loading and High Release Amounts of the Water-Insoluble Drug Clofazimine Using Mesoporous Silica Nanoparticles.*" ***ACS Appl. Mater. Interfaces*** 2018, *7*, 31870–31881.

43. **Chen W**, Cheng CA, Xiang D, Zink JI "*Expanding Nanoparticle Multifunctionality: Size-Selected Cargo Release and Multiple Logic Operations*." ***Nanoscale*** 2021, *13*, 5497–5506. (**Highlighted in the "Weekly Science"** of *Department of Chemistry and Biochemistry, University of California Los Angeles*)

42. **Chen W**, Tsai PH, Hung Y, Chiou SH, Mou CY "*Nonviral Cell Labeling and Differentiation Agent for Induced Pluripotent Stem Cells Based on Mesoporous Silica Nanoparticles*." ***ACS Nano*** 2013, *7*, 8423–8440.

41. **Chen W**, Lu F, Chen CCV, Mo KC, Hung Y, Guo ZX, Lin CH, Lin MH, Lin YH, Chang C, Mou CY. "*Manganese-Enhanced Magnetic Resonance Imaging of Rat Brain Based on Slow Cerebral Delivery of Mn(II) with Silica-Encapsulated $Mn_xFe_{1-x}O$ Nanoparticles*." ***NMR Biomed.*** 2013, *26*, 1176–1185.

40. Cheng CA(#), **Chen W(#)**, Zhang L, Wu HH, Zink JI. "*A Responsive Mesoporous Silica Nanoparticle Platform for Magnetic Resonance Imaging-Guided High-Intensity Focused Ultrasound-Stimulated Cargo Delivery with Controllable Location, Time, and Dose*." ***J. Am. Chem. Soc.*** 2019, *141*, 17670–17684. (**#: Co-first author, equal contribution**)

39. Zhong D(#), Zhang D(#), **Chen W(#)**, He J, Ren C, Zhang X, Kong N, Tao W, Zhou M "*Orally Deliverable Strategy Based on Microalgal Biomass for Intestinal Disease Treatment*." ***Science Advances*** 2021, *7*, abi9265. (**#: Co-first author, equal contribution, Front Cover Paper, *Top 1% ESI Highly Cited Paper*) (Highlighted: Nature Medicine 2022, 28(6): 1100-1102)**

38. Yu L(#), Yu M(#), **Chen W(#)**, Sun S, Huang W, Wang T, Peng Z, Luo Z, Fang Y, Li Y, Deng Y, Wu M, Tao W. "*In situ separable nanovaccines with stealthy bioadhesive capability for durable cancer immunotherapy*." ***J. Am. Chem. Soc.*** 2023, *145*, 8375–8388. **(#: Co-first author; equal contribution) (Cover Paper, *Top 1% ESI Highly Cited Paper*)**

37. Liu H(#), **Chen W(#)**, Wu G(#), Zhou J, Liu C, Tang Z, Huang X, Gao J, Xiao Y, Kong N, Joshi N, Cao Y, Abdi R, Tao W*. "*Glutathione-scavenging nanoparticle-mediated PROTACs delivery for targeted protein degradation and amplified antitumor effects.*" ***Advanced Science*** 2023, *10*, 2207439. **(#: Co-first author, equal contribution)**

36. Li Y(#), **Chen W(#)**, Koo S, Liu H, Saiding Q, Xie A, Kong N, Cao Y, Abdi R, Serhan CN, Tao W*. "*Innate immunity-modulating nanobiomaterials for controlling inflammation*." ***Matter (Cell Press)*** 2024, *7*, 3811-3844. **(#: Co-first author, equal contribution)**

35. Nie Y(#), **Chen W(#)**, Kang Y(#), Yuan X, Li Y, Zhou J, Tao W, Ji X "*Two-dimensional porous vermiculite-based nanocatalysts for synergetic catalytic therapy*." ***Biomaterials*** 2023, *295*, 122031. **(#: Co-first author, equal contribution)**

34. Ma S(#), Kim JH(#), **Chen W(#)**, Li L, Lee J, Xue J, Liu Y, Chen G, Tang B, Tao W, Kim JS "*Cancer Cell-Specific Fluorescent Prodrug Delivery Platforms*." ***Advanced Science*** 2023, *10*, 2207768 **(#: Co-first author, equal contribution)**

33. Khan MM, Li Y, Zhou Z, Ni A, Saiding Q, Qin D, Tao W,* **Chen W(*)** "*Macrophage-modulating nanomedicine for cancer immunotherapy.*" ***Nanoscale*** 2024, *16*, 7378–7386. **(Royal Society of Chemistry *Nanoscale* Emerging Investigators Collection: Invited Article)**

32. Ferdows BE, Patel DN, **Chen W(*)**, Huang X, Kong N, Tao, W* "*RNA cancer nanomedicine: nanotechnology-mediated RNA therapy*." ***Nanoscale***, 2022, *14*, 4448–4455. **(*: Corresponding author; Front Cover Paper)**

➢ ***Co-author Papers***

31. Zheng B, Li M, Zhang T, Li B, Li Q, Saiding Q, **Chen W**, Guo M, Koo S*, Ji X*, Tao W* "*Functional modification of gut bacteria for disease diagnosis and treatment.*" ***Med (Cell press)*** 2024, *5*, P863-885.

30. Zhang Y, Shi Y, Khan MM, Xiao F, **Chen W**, Tao W*, Yao K*, Kong N* "*Ocular RNA nanomedicine: engineered delivery nanoplatforms in treating eye diseases.*" ***Trends in Biotechnology*** 2024, *42*, P1439-1452.

29. Chen S, Huang X, Xue Y, Álvarez-Benedi E, Shi Y, **Chen W**, Koo S, Siegwart D, Dong Y, Tao W* "*Nanotechnology-based mRNA vaccines*." ***Nature Reviews Methods Primers*** 2023, *3*, 63. **(Highlighted in the "Nobel Prize in Physiology or Medicine 2023" Collection)**

28. Ouyang J, Deng B, Zou B, Li Y, Bu Q, Tian Y, Chen M, **Chen W**, Kong N, Chen T, Tao W*. "*Oral hydrogel*

microbeads-mediated in situ synthesis of selenoproteins for regulating intestinal immunity and microbiota." ***J. Am. Chem. Soc.*** 2023, *145*, 12193–12205. **(Cover Paper)**

27. Tang Z(#), You X(#), Xiao Y(#), **Chen W**, Li Y, Huang X, Liu H, Xiao F, Liu C, Koo S, Kong N, Tao W* "*Inhaled mRNA nanoparticles dual-targeting cancer cells and macrophages in the lung for effective transfection*." ***Proceedings of the National Academy of Sciences USA*** 2023, *120*, e2304966120 **(PNAS Direct Submission)**

26. Chen Y, Qin D, Zou J, Li X, Guo X, Tang Y, Liu C, **Chen W**, Kong N, Zhang C, Tao W*. "*Living Leukocyte-Based Drug Delivery Systems*." ***Advanced Materials*** 2023, *35*, 2207787. **(Front Cover Paper)**

25. Zhang F, Kang Y, Feng L, Xi G, **Chen W**, Kong N, Tao W, Luan T, Koo S, Ji X "*Infected wound repair with an ultrasound-enhanced nanozyme hydrogel scaffold.*" ***Materials Horizons*** 2023, *10*, 5474–5483.

24. Saiding Q, Zhang Z, Chen S, Xiao F, Chen Y, Li Y, Zhen X, Khan M, **Chen W**, Koo S, Kong N, Tao W*. "*Nano-bio interactions in mRNA nanomedicine: Challenges and opportunities for targeted mRNA delivery.*" ***Advanced Drug Delivery Reviews*** 2023, *203*, 115116. **(Invited Article)**

23. Ouyang J, Zhang Z, Deng B, Liu J, Wang L, Liu H, Koo S, Chen S, Li Y, Yaremenko AV, Huang X, **Chen W**, Lee Y, Tao W. "*Oral drug delivery platforms for biomedical applications.*" ***Materials Today*** 2023, *62*, 296–326. **(Invited Article)**

22. Ji X, Tang Z, Liu H, Kang Y, Chen L, Dong J, **Chen W**, Kong N, Tao W, Xie T "*Nanoheterojunction-Mediated Thermoelectric Strategy for Cancer Surgical Adjuvant Treatment and β-Elemene Combination Therapy.*" ***Advanced Materials*** 2023, *35*, 2207391.

21. Xiao Y(#), Tang Z(#), Huang X(#), **Chen W**, Zhou J, Liu H, Liu C, Kong N, Tao W, "*Emerging mRNA technologies: delivery strategies and biomedical applications.*" ***Chem. Soc. Rev.*** 2022, *51*, 3828-3845. **(Front Cover Paper)**

20. Ouyang J, Rao S, Liu R, Wang L, **Chen W**, Tao W, Kong N "*2D materials-based nanomedicine: From discovery to applications.*" ***Advanced Drug Delivery Reviews*** 2022, *185*, 114268.

19. Zhang D, Zhong D, Ouyang J, He J, Qi Y, **Chen W**, Zhang X, Tao W, Zhou M "*Microalgae-based oral microcarriers for gut microbiota homeostasis and intestinal protection in cancer radiotherapy.*" ***Nature Communications*** 2022, *17*, 1413. **(*Top 1% ESI Highly Cited Paper*)**

18. Ouyang J, Zhang L, Li L, **Chen W**, Tang Z, Ji X, Feng C, Tao N, Kong N, Chen T, Liu YN, Tao W. "*Cryogenic Exfoliation of 2D Stanene Nanosheets for Cancer Theranostics.*" ***Nano-Micro Lett.*** 2021, *13*, 90.

17. Ji X, Ge L, Liu C, Tang Z, Xiao Y, **Chen W**, Lei Z, Gao W, Blake S, De D, Shi B, Zeng X, Kong N, Zhang X, Tao W. "*Capturing Functional Two-Dimensional Nanosheets from Sandwich-Structure Vermiculite: Synthesis and Application in Cancer Theranostics.*" ***Nature Communications*** 2021, *12*, 1124. **(*Web of Science Top 0.1% Hot Paper* | *Top 1% ESI Highly Cited Paper*)**

16. Xiao Y, Tang Z, Huang X, Joseph J, **Chen W**, Liu C, Zhou J, Kong N, Joshi N, Du J, Tao W. "*Glucose-responsive oral insulin delivery platform for one-treatment-a-day in diabetes.*" ***Matter*** **(Cell Press)** 2021, *4*, 3269–3285. **(*Highlighted in Matter, 2021, 4, 3790-3791*)**

15. Huang X, Wu G, Liu C, Hua X, Tang Z, Xiao Y, **Chen W**, Zhou J, Kong N, Huang P, Shi J, Tao W. "I*ntercalation-driven Formation of siRNA Nanogels for Cancer Therapy.*" ***Nano Letters*** 2021, *21,* 9706–9714.

14. Tang Z, Xiao Y, Kong N, Liu C, **Chen W**, Huang X, Xu D, Ouyang J, Feng C, Wang C, Wang J, Zhang H, Tao W. "*Nano-bio interfaces effect of two-dimensional nanomaterials and their applications in cancer immunotherapy.*" ***Acta Pharm. Sin. B.*** 2021, *11*, 3447–3464.

13. Zhou J, Zhang Z, Joseph J, Zhang X, Ferdows BE, Patel DN, **Chen W**, Banfi G, Molinaro R, Cosco D, Kong N, Joshi N, Farokhzad OC, Corbo C, Tao W. "*Biomaterials and Nanomedicine for Bone Regeneration: Progress and Future Prospects.*" ***Exploration*** 2021, *1,* 20210011. **(Front Cover Paper)**

12. Liu C, Sun S, Feng Q, Wu G, Wu Y, Kong N, Yu Z, Yao J, Zhang X, **Chen W**, Tang Z, Xiao Y, Huang X, Lv A, Yao C, Cheng H, Wu A, Xie T, Tao W. "*Arsenene Nanodots with Selective Killing Effects and their Low-Dose Combination with β-Elemene for Cancer Therapy.*" ***Advanced Materials*** 2021, 2102054. **(Frontispiece Cover Paper**; ***Web of Science Hot Paper* | *Top 1% ESI Highly Cited Paper*)**

11. Cheng CA, **Chen W**, Zhang L, Wu HH, Zink JI. "*Magnetic resonance imaging of high-intensity focused ultrasound-*

stimulated drug release from a self-reporting core@shell nanoparticle platform." ***Chemical Communications*** 2020, *56*, 10297–10300.

10. Ruan L, **Chen W**, Wang R, Lu J, Zink JI. "*Magnetically Stimulated Drug Release Using Nanoparticles Capped by Self-Assembling Peptides.*" ***ACS Appl. Mater. Interfaces*** 2019, *11*, 43835–43842.

9. Ray S, Cheng CA(#), **Chen W(#)**, Li Z(#), Zink JI, Lin YY. "*Magnetic Heating Stimulated Cargo Release with Dose Control using Multifunctional MR and Thermosensitive Liposome.*" ***Nanotheranostics*** 2019, *3*, 166–178. (**#: equal contribution, Front Cover Feature**)

8. Tsai PH, Wang ML, Chang JH, Yarmishyn AA, Nguyen PNN, **Chen W**, Chien Y, Huo TI, Mou CY, Chiou SH. "*Dual Delivery of HNF4α and Cisplatin by Mesoporous Silica Nanoparticles Inhibits Cancer Pluripotency and Tumorigenicity in Hepatoma-derived CD133-expressing Stem Cells.*" ***ACS Appl. Mater. Interfaces*** 2019, 11, 19808–19818.

7. Kumar N, **Chen W**, Cheng CA, Deng T, Wang R, Zink JI. "*Stimuli-Responsive Nanomachines and Caps for Drug Delivery.*" ***The Enzymes*** 2018, *43*, 31–65.

6. Chou CC*, **Chen W**, Hung Y, Mou CY. "*Molecular Elucidation of Biological Response to Mesoporous Silica Nanoparticles in Vitro and in Vivo.*" ***ACS Appl. Mater. Interfaces*** 2017, *6*, 22235–22251.

5. Chang JH, Tsai PH, **Chen W**, Chiou SH, Mou CY. "*Dual Delivery of siRNA and Plasmid DNA Using Mesoporous Silica Nanoparticles to Differentiate Induced Pluripotent Stem Cells into Dopaminergic Neurons.*" ***J. Mater. Chem. B*** 2017, 5, 3012–3023.

4. Guardado-Alvarez TM, **Chen W**, Norton AE, Russell MM, Connick WB, Zink JI. "*Analyte-responsive Gated Hollow Mesoporous Silica Nanoparticles Exhibiting Inverse Functionality and an AND Logic Response.*" ***Nanoscale*** 2016, *8*, 18296–18300.

3. Chen JY, Ho CY, Lu ML, Chu LJ, Chen KC, Chu SW, **Chen W**, Mou CY, Chen YF. "*Efficient Spin Light Emitting Diodes Arising from InGaN/GaN Quantum Disks at Room Temperature: A New Self-polarized Paradigm.*" ***Nano Letters*** 2014, *14*, 3130–3137.

2. Wu P, Yuan SS, Ho CC, Hsieh WY, Hong QS, Yu SL, **Chen W**, Chen HY, Wang CD, Li KC, Yang PC, Chen HW. "*Focal Amplification of HOXD-harboring Chromosome Region is Implicated in Multiple-Walled Carbon Nanotubes-Induced Carcinogenicity.*" ***Nano Letters*** 2013, *13*, 4632–4641.

1. Wu SH, Lin CY, Hung Y, **Chen W**, Chang C, Mou CY. "*PEGylated Silica Nanoparticles Encapsulating Multiple Magnetite Nanocrystals for High-Performance Microscopic Magnetic Resonance Angiography.*" ***J. Biomed. Mater. Res. B*** 2011, *99B*, 81–88.

PATENT

1. Zink JI, Wu H, Cheng CA, **Chen W**, Deng T, Kumar N, Zhang L. "*Stimuli-Responsive Compositions, Imaging Systems, and Methods for Using the Same for Biomedical Applications.*" WO/2020/186268.

HONORS AND AWARDS

- 2025 **Japan Society for the Promotion of Science (JSPS) HOPE Fellow**, JSPS, Japan
- 2024 **2030 Cross-Generation Young Scholars Program**, Emerging Young Scholars, National Science and Technology Council, Taiwan (國科會 2030 跨世代年輕學者方案-新秀學者)
- 2024 **Special Outstanding Talent Recruitment and Retainment (Recruitment)**, Academia Sinica, Taipei, Taiwan (中央研究院延攬及留住特殊優秀人才獎勵-攬才)
- 2024 **"Dr. Yun MOU" Outstanding Young Scholar Award**, Taiwan Nanomedicine Society, Taiwan
- 2024 **Nanoscale Emerging Investigator Award**, Royal Society of Chemistry, London, UK
- 2023 **Newly-Appointed Faculty Academic Research Grants**, Academia Sinica, Taipei, Taiwan
- 2023 **American Heart Association (AHA) Transformational Project Award,** Co-Investigator, AHA, US
- 2022 **Young Scientist Award**, International Association of Advanced Materials (IAAM)
- 2019 **Inorganic Faculty Chemistry Dissertation Award** (Outstanding Research Achievements in Chemistry), Department of Chemistry and Biochemistry, UCLA
- 2019 **Ralph & Charlene Bauer Award for research in Inorganic Chemistry** (Outstanding Research Achievements in Inorganic Chemistry), Department of Chemistry and Biochemistry, UCLA

- 2019 **Doctoral Student Travel Grant for Conference**, UCLA
- 2018 **Mautner Graduate Award** (Meritorious graduate students at UCLA), Division of Physical Sciences, UCLA
- 2018 **Southern California Scholarship Award**, the Yin Chin Foundation USA and STUF United. Fund Inc.
- 2015 **Government Scholarship to Study Abroad**, the Ministry of Education, Taiwan
- 2014 **Dean's Scholar Award**, College of Science, UCLA
- 2011 **Master Poster Thesis Award**, Department of Chemistry, National Taiwan University
- 2011 **Dean's Award**, College of Science, National Taiwan University
- 2011 **Travel Grant for International Conference**, National Science Council, Taiwan
- 2010 **Mr. Kao Ying-Shih Research Scholarship,** Kaohsiung, Taiwan.
- 2010 Honorary Member, **The Phi Tau Phi Scholastic Honor Society**
- 2010 **Thesis Award in Nanomaterial Chemistry**, Chemical Society Located in Taipei, Taipei, Taiwan
- 2009 **Dean's Award**, College of Science, National Taiwan University
- 2009 **The Research Idea Award**, National Science Council, Taiwan
- 2008 **Research Proposals Grant for College-Level Students**, National Science Council, Taiwan

INVITED SEMINAR

1. Department of Chemistry, National Taiwan University, Taipei, Taiwan (*April, 2024*)
2. Institute of Biomedical Engineering, National Tsing Hua University, Hsinchu, Taiwan (*April, 2024*)
3. Institute of Chemistry, Academia Sinica, Taipei, Taiwan (*May, 2024*)
4. Department of Biochemical Science & Technology, National Taiwan University, Taipei, Taiwan (*June, 2024*)
5. Department of Chemistry, Osaka University, Osaka, Japan (*June, 2024*)
6. Agricultural Chemical Society of Taiwan, Taipei, Taiwan (*June, 2024*)
7. Taiwan Nanomedicine Society, Taiwan (*June, 2024*)
8. Center of Applied Nanomedicine, National Cheng Kung University, Tainan, Taiwan (*August, 2024*)
9. GRC-NYCU Retreat, Genomics Research Center, Academia Sinica, Taipei, Taiwan (*August, 2024*)
10. GRC-Harvard Griffin IDDH-HGG Youth in Health Science Summer Program, Genomics Research Center, Academia Sinica, Taipei, Taiwan (*August, 2024*)
11. Institute of Biochemistry, Academia Sinica, Taipei, Taiwan (*August, 2024*)
12. Research Center for Applied Science, Academia Sinica, Taipei, Taiwan (*August, 2024*)
13. 2024 Metabolomics in Experimental & Translational Medicine, National Taiwan University Hospital, Taipei, Taiwan (*September, 2024*)
14. School of Pharmacy, National Taiwan University, Taipei, Taiwan (*October, 2024*)
15. Open House Day, Genomics Research Center, Academia Sinica (*October,* 2024)
16. Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan (*October, 2024*)
17. Graduate Institute of Biomedical Sciences, China Medical University, Taichung, Taiwan (*November*, 2024)
18. Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan (*November, 2024*)
19. Genomics Research Center, Academia Sinica, Taipei, Taiwan (*December*, 2024)
20. Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan (*February, 2025*)
21. HOPE Meetings with Nobel Laureates (Japan Society for the Promotion of Science, JSPS), Yokohama, Japan (*March*, 2025)
22. Department of Entomology, National Taiwan University, Taipei, Taiwan (*April, 2024*)

CONFERENCES

1. **Chen W**, "Macrophage-targeted nanoparticles for drug delivery and atherosclerotic cardiovascular disease treatment" Oral Presentation for *ACS 2025 Spring National Meeting* **(2025)** (San Diego, California, US)
2. **Chen W**, "Stanene-based Nanosheets for Drug Delivery and Combination Cancer Therapy" Oral Presentation for *ACS 2024 Spring National Meeting* **(2024)** (New Orleans, Louisiana, US)
3. **Chen W**, Tao W. "Nano-/Microscale Materials-enabled Drug Delivery Technologies" Oral Presentation for *Department Retreat Brigham and Women's Hospital, Harvard Medical School* **(2023)** (Boston, Massachusetts, US)
4. **Chen W**, Cheng CA, Lee BY, Clemens DL, Huang WY, Horwitz MA, Zink JI. "Facile Strategy Enabling Both High Loading and High Release Amounts of the Water-Insoluble Drug Clofazimine Using Mesoporous Silica Nanoparticles." Oral Presentation for *ACS 2019 Spring National Meeting* **(2019)** (Orlando, Florida, US)
5. **Chen W**, Cheng CA, Lee BY, Clemens DL, Huang WY, Horwitz MA, Zink JI. "Facile Strategy Enabling Both High Loading and High Release Amounts of the Water-Insoluble Drug Clofazimine Using Mesoporous Silica Nanoparticles." Poster Presentation

for *Southern California Biomedical Sciences Graduate Student Symposium.* **(2018)** (Cedars-Sinai Medical Center, California, US)

6. **Chen W**, Zink JI. "Analyte-responsive Gated Hollow Mesoporous Silica Nanoparticles Exhibiting Inverse Functionality and an AND Logic Response." Oral Presentation for *Southern California Inorganic Photochemistry Conference*. **(2016)** (Catalina Island, California, US)
7. **Chen W**, Zink JI. "Fluorescent Dye Conjugated Mesoporous Silica Nanoparticles and Biological Applications." Oral Presentation for *Southern California Inorganic Photochemistry Conference*. **(2015)** (Catalina Island, California, US)
8. **Chen W**, Tsai PH, Hung Y, Chiou SH, Mou CY. "Modified Mesoporous Silica Nanoparticles for High Performance Cells Labeling of Induced Pluripotent Stem Cell." Poster Presentation for *International Symposium on Zeolites and Microporous* Crystals **(2012)**. (Department of Applied Chemistry, Hiroshima University, Japan)
9. **Chen W**, Lu F, Chen CCV, Hung Y, Chang C, Mou CY. "Development of a Smart T_1 Contrast Agent for *In Vivo* Magnetic Resonance Imaging." Poster Presentation for *East Asian Postgraduate Workshop on Nanoscience and Technology* **(2011)**. (The Hong Kong University of Science and Technology, Hong Kong)
10. **Chen W**, Lu F, Chen CCV, Tsai PH, Hung Y, Chiou SH, Chang C, Mou CY. "Multifunctional MRI Contrast Agents for Bioimaging.", Poster Presentation for *Annual Meeting of Chemical Society Located in Taipei* **(2010)**. (National Taiwan University, Taiwan)

PROFESSIONAL ACTIVITIES

1. **Independent Journal Article Reviewer**: *Advanced Materials* (*IF=27.4*), *Biomaterials* (*IF=14.0*); *Chemical Engineering Journal* (*IF=15.1*), *Small (IF=11.46), Journal of Controlled Release (IF=10.8), Biosensors and Bioelectronics (IF=10.7), Bioactive Materials (IF=14.11), Journal of Nanobiotechnology (IF=10.6), Acta Pharmaceutica Sinica B (IF=11.41), Theranostics (IF=12.40), Small Methods (IF=12.13), Materials Today Bio (IF=8.7); Research (IF=8.5); Exploration, etc*
   Invitation from the Editor-in-Chief or Associate Editors for professional reviews
2. **Journal Article Co-Reviewer**: *Nature Materials*, *Nature Nanotechnology*, *Nature Review Materials, Nature Biomedical Engineering, Nature Cardiovascular Research*, *PNAS USA, Nano Today*, *ACS Nano*, *Advanced Functional Materials*, *Trends in Pharmacological Sciences*, *ACS Appl. Mater. Interfaces*, *J. Chem. Eng.*, *Advanced Therapeutics, J. Mater. Chem. B, and etc.*
3. **Grant and Award Reviewer**: *Academia Sinica, Taiwan; National Science and Technology Council, Taiwan, and etc.*
4. **Professional Community**: Committee member of 2025 Annual meeting of Taiwan Nanomedicine Society

LAB MENTOR EXPERIENCE

Mentee

Genomics Research Center, Academia Sinica

1. Iris Ya-Chih Huang, Ph.D. ***(Postdoctoral Researcher)***
2. Cheng-Mu Wu, Ph.D. ***(Postdoctoral Researcher)***
3. Eason Kai-Yun Cheng ***(Research Assistant)***
4. Chuck Shou-Hou Liu ***(Research Assistant)***
5. Jack Wei-Chieh Liu ***(Research Assistant)***
6. Yu-Ting Su ***(Research Assistant)***
7. Jason Yu-Chieh Hu **(*Research Assistant)***
8. Sin-Si Lin ***(Master Student; Incoming Ph.D. student)***
9. Angel En-Chi Hsu ***(Research Intern; In coming Master student)***
10. Irene Lo-Chueh Chu ***(Research Intern)***
11. Cheng-Yeh Yu ***(Research Intern)***
12. Ken Kai-En Huang ***(Research Intern)***
13. Sabrina Peng-Hua Cheng ***(Research Intern)***
14. Barry Po-Hui Chen ***(Research Intern)***
15. Sophia Li ***(Research Intern)***

Harvard Medical School, Harvard University

1. Yiming Zhang, Ph.D. ***(Postdoctoral Researcher)***
2. Shuying Chen, M.D. ***(Postdoctoral Researcher)***
3. Yongjiang Li, Ph.D. ***(Ph.D. Student and Postdoctoral Researcher)***
4. Yesi Shi, Ph.D. ***(Postdoctoral Researcher)***
5. Muhammad Muzamil Khan, Ph.D. ***(Postdoctoral Researcher)***
6. Zhuoming Zhou, M.D. ***(Ph.D. Student*** and ***Postdoctoral Researcher)***
7. Qimanguli Saiding, M.D. ***(Ph.D. Student*** and ***Postdoctoral Researcher)***
8. Dora Duotian Qin ***(M.S. Student and Research Assistant)***

9. Bijan Emiliano Ferdows ***(Undergraduate Student)***
10. Dylan Patel ***(Summer Intern*** and ***Undergraduate Student)***

University of California Los Angeles

1. Amina Hussain ***(Ph.D. student)***
2. Annie Chen ***(Summer Intern)***
3. Judie Chen **(*Summer Intern*)**

National Taiwan University

1. Jen-Hsuan Chang ***(Ph.D. Student)***
2. Yu-Hsuan Lin ***(Master Student)***

TEACHING EXPERIENCE (teaching assistant)

1. Lecture (Group Theory and Applications in Inorganic Chemistry) (*teaching assistant and lecture*), Department of Chemistry and Biochemistry, UCLA
2. General chemistry laboratory (I) (*teaching assistant*), Department of Chemistry and Biochemistry, UCLA
3. General chemistry laboratory (II) (*teaching assistant*), Department of Chemistry and Biochemistry, UCLA
4. Organic chemistry laboratory (*teaching assistant*), Department of Chemistry and Biochemistry, UCLA
5. Physical chemistry laboratory (I) (*teaching assistant*), Department of Chemistry, National Taiwan University
6. Physical chemistry laboratory (II) (*teaching assistant*), Department of Chemistry, National Taiwan University