

鍾文蔚 博士簡歷

教育背景

2014 – 2017 | PhD | UNSW Australia, Australia

2010 – 2014 | BEng | UNSW Australia, Australia

工作經歷

2025.09 至今 | 助理教授，博士生導師 | 澳門科技大學

2022.06 至 2025.06 | 副研究員，研究生導師 | 廣東藥科大學

2019.08 至 2022.02 | 中藥制藥學博士后 | 广州南沙资讯科技园博士后科研工作站

2017.09 至 2019.08 | 助理研究員 | 广州中國科學院先進技術研究所

科研專案

1. 2026.08 - 2028.07, 澳門科技發展基金能力提升項目，面向經典名方中藥複方製劑濃縮過程的膜集成技術構建及優化原理與方法—以四君子湯的“膜集成”濃縮工藝為例，項目負責人，0010/2026/ITP1，項目經費 349,500 MOP。
2. 2025.10 - 2028.09, 南京市國際/港澳臺聯合研發專案（合作開發），澳門方項目負責人，項目經費 30 萬元人民幣。
3. 2020.12 – 2021.12, 廣州白雲山漢方現代藥業有限公司技術委託項目，項目負責人，項目經費 30 萬元人民幣。
4. 2020.09 – 2021.10, 中国博士后科学基金第 13 批特别资助，2020T130130，项目负责人，2020T130130，項目經費 18 萬人民幣。
5. 2020.08 – 2021.10, 中国博士后科学基金面上资助第 67 批，2020M672575，项目负责人，項目經費 8 萬人民幣。
6. 2019.12 – 2021.12, 参与科技部中药现代化重点专项“质量评价导向的特种膜中药绿色制造技术与装备研究”，No. 2019YFC1711300，课题二任务负责人（負責經費 50 萬元人民幣），項目總經費 825 万人民币。
7. 2019.04 – 2021.03, 广州市科学研究计划一般项目专题，201904010054，项目负责人，項目經費 20 萬人民幣。

學術成果

论文

1) 第一/通訊作者

1. G. Li, H. Zeng, S. Li, L. Guo, **W. Zhong***. “Core-shell microsphere structure stimulation: Effects on cell behavior and collagen synthesis for regenerative applications”. Colloids and Surfaces B: Biointerfaces, 2026, 268, 116064. (Sole corresponding author)
2. J. Xiong, X. Li, G. Li, H. Zeng, J. Chen, Y. Wang, L. Guo, **W. Zhong***. “Co-encapsulation of quercetin and bakuchiol in PCL microspheres via membrane emulsification: preparation, release and biological effects”. Journal of Drug Delivery Science and Technology, 2025, 114: 107431. (Sole corresponding author)

3. G. Li, X. Li, J. Xiong, H. Zeng, J. Chen, Y. Wang, L. Guo, **W. Zhong***. “Unraveling the role of shell hydrophilicity of core-shell microspheres on fibroblast cell bioactivity as biostimulators”. *International Journal of Pharmaceutics*, 2025, 681: 125815. (Sole corresponding author)
4. **W. Zhong**, X. Cao, H. Zeng, M. Tang, G. Li, J. Xiong, Y. Wang, L. Guo*, J. Ji*. “Baicalin loaded monodispersed polycaprolactone (PCL) microspheres preparation by polyvinylidene fluoride (PVDF) membrane emulsification for wound healing in dermal fibroblasts”. *Journal of Biomaterials Applications*, 2025, 39(10): 1143-1155. (Sole first author)
5. M. Tang, **W. Zhong***, L. Guo, H. Zeng, Y. Pang*. “Role of borneol as enhancer in drug formulation: A review”. *Chinese Herbal Medicines*, 2025, 17: 473-483.
6. **W. Zhong**, L. Long, J. Ji*, L. Guo, Y. Wang*, J. Chen. “Microencapsulated bufalin: From membrane preparation to microspheres tailoring, and sustained release”. *Food and Bioproducts Processing*, 2023, 140: 60-71. (第一作者, JCR 一區, 中科院二區, IF=4.6)
7. S. Tan, Q. Li, L. Guo*, Y. Wang*, **W. Zhong***. “Investigation of foaming behavior in herbal extracts via the characterization of solution environment for reverse osmosis concentration”. *Food and Bioproducts Processing*, 2023, 137: 28-44.
8. L. Long¹, **W. Zhong**^{1,*}, L. Guo, J. Ji, H. Nie*. “Effect of Bufalin-PLGA microspheres in the alleviation of neuropathic pain via CCI model”. *Frontiers in Pharmacology*. 2022, 13:910885. doi: 10.3389/fphar.2022.910885.
9. 龍利娜, **鍾文蔚***, 周丹, 郭立瑋, 聶紅*. “基於藥效權重評價的杜仲葉-刺五加複方‘濕法超微提取-膜澄清耦合’工藝篩選研究”. *中草藥*, 2022, 53(7):2053-2063. (共同通訊, 北大核心)
10. W. Li, Q. Li, L. Guo, J. Liu, K. Wang, **W. Zhong**. “Traditional Chinese Medicine Extract Properties Incorporated Energy Analysis for Membrane Concentration Processes”. *Membranes*. 2021, 11(9):673.
11. **鍾文蔚**¹, 鄭東陽¹, 鄒洪薈, 卓澤偉, 郭立瑋. “基於中藥液、固體物料指標成分含量相關性的膜工藝評估方法創新研究——以杜仲葉水提液為例”. *中草藥*, 2021, 52(11):3234-3238. (第一作者, 北大核心)
12. **鍾文蔚**, 黎萬鈺, 丁菲, 李除夕, 鄭東陽, 郭立瑋. “基於中藥水提液濃縮過程溶液環境特徵參數相關性的暫態能耗計算方法探索——以玉屏風散水提液為例”, *中草藥*, 2021, 52 (7) : 1937-1944. (第一作者, 北大核心)
13. **W. Zhong**, L. Guo, C. Ji, G. Dong, S. Li, “Membrane distillation for zero liquid discharge during treatment of wastewater from the industry of traditional Chinese medicine: a review”. *Environmental Chemistry Letters*, 2021, 19: 2317-2330.
14. **W. Zhong**, Y. Zhao, S. Chen, J. Zhong, L. Guo, D. Zheng, C. Xie, C. Ji, Y. Guo, G. Dong, F. Zhang, A. An, S. Li, “Resources recycle of traditional Chinese medicine (TCM) wastewater 1: Effectiveness of the UF-MD hybrid system and MD process optimization.” *Desalination*, 2021, 504, 114953.
15. **鍾文蔚**, 紀超, 郭立瑋, 李博, 徐雪松. 關於“基於數據科學的中藥膜過程研究”的思考與實踐, *中草藥*, 2020, 51 (1) , 1-8. (第一作者, 北大核心)
16. **鍾文蔚**, 郭立瑋, 袁海, 陳順權. 以“材料化學工程”理念構建“基於膜過程的中藥綠色製造工程理論、技術體系”的探索, *中草藥*, 2020, 51 (14) 3609-3616. (第一作者, 北大核心)
17. **鍾文蔚**, 李紹平, 郭立瑋, 陳順權, 袁海, 駱玉鳳. “面向中藥綠色製造的特徵膜技術與專屬裝備”的研究策略與實踐——20餘年中藥膜科技研究與應用的

回顧、反思與展望，膜科學與技術，2020，40（1）361-367。（第一作者，北大核心）

18. **W. Zhong**, J. Hou, H. Li, V. Chen, “*Fouling mitigation in submerged VMD for the treatment of brackish groundwater concentrates with transverse vibration and crystallizer*”. Desalination, 2018,426 ,32-41.

19. **W. Zhong**, H-C. Yang, J. Hou, V. Chen, “*Superhydrophobic membrane via bio-inspired mineralization with enhanced long-term stability in vacuum membrane distillation*”, Journal of membrane science, 2017, 540, 98-107.

20. H-C. Yang[#], **W. Zhong**[#], J. Hou, V. Chen, Z-K. Xu, “*Janus hollow fiber membrane with a mussel-inspired coating on the lumen surface for direct contact membrane distillation*”, Journal of membrane science, 2017,523, 1-7.

21. **W. Zhong**, H. Li, Y. Ye, V. Chen, “*Evaluation of silica fouling for coal seam gas produced water in a submerged vacuum membrane distillation system*”, Desalination, 2016, 393, 52-64.

2) 其他作者

1. J Jiang , P Li , J Zhu , F Cai , S Wang , Z Huang , S Zhang , Fu Zhou , **W Zhong** , J Chen, “ *Pathway-level insights into the epigenetic ageing of human skin* ” , Age and Ageing, 2026, 55(4), afag118.

2. P Zhang, Y Chen, Z Xiao, H Tan, S Nie, H Li, Y Cai, S A U Rehman, **W Zhong**, Wenxiang Zhang, “Predicting microalgae recovery and pollutant removal in membrane filtration systems for microalgae using machine learning”, Journal of Membrane Science, 2026, 753, 125685.

3. W. Li, X. Zhao, H. Qiu, Z. Zhang, F. Xuan, H. Wang, Y. Hu, C. Yang, Y. Zhang, **W. Zhong**, T. Wu, H. Lo, C. Xie, S. Li, “*Macrophage exosome-engineered nanoplatfrom with pH-responsive ratiometric photoacoustic and NIR-II fluorescence imaging for guided photothermal immunotherapy of hepatocellular carcinoma*”, Materials Today Bio, 2026, 38, 103058.

4. S. Nie, Z. Xiao, T. Yuan, **W. Zhong**, W. Zhang, “*Synergistic co-catalysis by seawater salts and CO₂ for degradation of marine microplastics in hydrothermal gasification: Mechanism and modeling based on ReaxFF molecular dynamics*”, Energy, 2025,341, 139489.

5. X. Peng, **W. Zhong**, DD. Lichti, Y. Cai, Y. Wang, T. Chan, “*Enhanced mask-random forest RCNN and 3D point cloud assisted shape and defect recognition for protein and aflatoxin prediction in nut processing*”, Food and Bioproducts Processing, 2025,154, 702-716.

6. P. Zhang, Z. Xiao, Y. Chen, S. Nie, W. Liang, **W. Zhong**, T. Yuan, H. Li, W. Zhang, “*Machine learning-based response and prediction analysis for gravity-driven membrane*”, Desalination, 2026,618,119450.

7. Q. Li , L-J. Beier, J. Tan, C. Brown, B. Lian, **W. Zhong**, Y. Wang, C. Ji, P. Dai, T. Li, P. Le Clech, H. Tyagi; X. Liu; G. Leslie, R. A. Taylor , “*An integrated, solar-driven membrane distillation system for water purification and energy generation*”, Applied Energy, 2019, 237, 534-548.

8. Q. Li, B. Lian, **W. Zhong**, A. Omar, A. Razmjou, P. Dai, J. Guan, G. Leslie, R.A. Taylor, “*Improving the Performance of Vacuum Membrane Distillation Using a 3D-printed Helical Baffle and a Superhydrophobic Nanocomposite Membrane*”, Separation and purification technology, 2020, 248, 117072.

专著

1. 劉菊妍，郭立瑋，鍾文蔚（主編）.（2024）微納米中藥製劑研究與應用. 中國上海：

科學出版社.

2. 郭立瑋，劉菊妍，鍾文蔚（主編）.（2023） 中藥制藥分離過程：工程原理與技術應用. 中國上海：科學出版社.
3. **W. Zhong**, Q. Li, X. Zhao, S. Chen. (2020) Membrane Preparation for Unconventional Desalination by Membrane Distillation and Pervaporation. In: Zhang Z., Zhang W., Lichtfouse E. (eds) Membranes for Environmental Applications. Environmental Chemistry for a Sustainable World, vol 42. Springer, Cham. （章節，第七章，第一作者及通訊作者）

標準

1. 主持起草行業標準《中藥液濃縮用膜蒸餾微孔膜 HG/T 6468-2026》
2. 參與國家標準《海水或苦鹹水淡化用膜蒸餾裝置通用技術規範 GB/T 39801-2021》制定

WENWEI ZHONG

Education

PH.D. IN CHEMICAL ENGINEERING | NOV 2017 | UNSW
AUSTRALIA|AUSTRALIA

BACHELOR IN ENGINEERING (1ST CLASS HONOURS) | MAR 2014 | UNSW
AUSTRALIA|AUSTRALIA

Publications/Conferences/Patents

PUBLISHED PEER-REVIEWED PAPERS (SCI INDEXED)

1) FIRST AUTHOR/CORRESPONDING AUTHOR

1. G. Li, H. Zeng, S. Li, L. Guo, W. Zhong*. “Core-shell microsphere structure stimulation: Effects on cell behavior and collagen synthesis for regenerative applications”. Colloids and Surfaces B: Biointerfaces, 2026, 268, 116064. (Sole corresponding author)
2. J. Xiong, X. Li, G. Li, H. Zeng, J. Chen, Y. Wang, L. Guo, **W. Zhong***. “Co-encapsulation of quercetin and bakuchiol in PCL microspheres via membrane emulsification: preparation, release and biological effects”. Journal of Drug Delivery Science and Technology, 2025, 114: 107431. (Sole corresponding author)
3. G. Li, X. Li, J. Xiong, H. Zeng, J. Chen, Y. Wang, L. Guo, **W. Zhong***. “Unraveling the role of shell hydrophilicity of core-shell microspheres on fibroblast cell bioactivity as biostimulators”. International Journal of Pharmaceutics, 2025, 681: 125815. (Sole corresponding author)
4. **W. Zhong**, X. Cao, H. Zeng, M. Tang, G. Li, J. Xiong, Y. Wang, L. Guo*, J. Ji*. “Baicalin loaded monodispersed polycaprolactone (PCL) microspheres preparation by polyvinylidene fluoride (PVDF) membrane emulsification for wound healing in dermal fibroblasts”. Journal of Biomaterials Applications, 2025, 39(10): 1143-1155. (Sole first author)
5. M. Tang, **W. Zhong***, L. Guo, H. Zeng, Y. Pang*. “Role of borneol as enhancer in drug formulation: A review”. Chinese Herbal Medicines, 2025, 17: 473-483.
6. **W. Zhong**, L. Long, J. Ji*, L. Guo, Y. Wang*, J. Chen. “Microencapsulated bufalin: From membrane preparation to microspheres tailoring, and sustained release”. Food and Bioproducts Processing, 2023, 140: 60-71.
7. S. Tan, Q. Li, L. Guo*, Y. Wang*, **W. Zhong***. “Investigation of foaming behavior in herbal extracts via the characterization of solution environment for reverse osmosis concentration”. Food and Bioproducts Processing, **2023**, 137: 28-44.
 - S. Tan was an undergraduate student from UNSW Australia working in my lab in 2021
8. L. Long^{1,*}, W. Zhong^{1,*}, L. Guo, J. Ji, H. Nie*. “Effect of Bufalin-PLGA microspheres in the alleviation of neuropathic pain via CCI model”. Frontiers in Pharmacology. 2022, 13:910885. doi: 10.3389/fphar.2022.910885.
 - Co-first author, co corresponding author,
 - L. Long was a master student from Jinan University where I supervised her on completing her thesis and paper writing

9. W. Li, Q. Li, L. Guo, J. Liu, K. Wang, **W. Zhong**, “*Traditional Chinese medicine extract properties incorporated energy analysis for membrane concentration processes.*” *Membranes* **2021**, 11: 673
 - Corresponding author
 - W. Li was an undergraduate student from USYD working in my lab in 2020
10. **W. Zhong**, L. Guo, C. Ji, G. Dong, S. Li, “*Membrane distillation for zero liquid discharge during treatment of wastewater from the industry of traditional Chinese medicine: a review*”. *Environmental Chemistry Letters* **2021**, 19: 2317-2330.
 - First author, IF 15.0, JCR Q1, 34 citations
11. **W. Zhong**, Y. Zhao, S. Chen, J. Zhong, L. Guo, D. Zheng, C. Xie, C. Ji, Y. Guo, G. Dong, F. Zhang, A. An, S. Li, “*Resources recycle of traditional Chinese medicine (TCM) wastewater 1: Effectiveness of the UF-MD hybrid system and MD process optimization.*” *Desalination*, **2021**, 504, 114953.
12. **W. Zhong**, J. Hou, H. Li, V. Chen, “*Fouling mitigation in submerged VMD for the treatment of brackish groundwater concentrates with transverse vibration and crystallizer*”. *Desalination*, **2018**, 426, 32-41.
13. **W. Zhong**, H-C. Yang, J. Hou, V. Chen, “*Superhydrophobic membrane via bio-inspired mineralization with enhanced long-term stability in vacuum membrane distillation*”, *Journal of Membrane Science*, **2017**, 540, 98-107.
14. H-C. Yang¹, **W. Zhong**¹, J. Hou, V. Chen, Z-K. Xu, “*Janus hollow fiber membrane with a mussel-inspired coating on the lumen surface for direct contact membrane distillation.*” *Journal of membrane science*, **2017**, 523, 1-7.
15. **W. Zhong**, H. Li, Y. Ye, V. Chen, “*Evaluation of silica fouling for coal seam gas produced water in a submerged vacuum membrane distillation system.*” *Desalination*, **2016**, 393, 52-64.

2) NON FIRST/CORRESPONDING AUTHOR

1. J Jiang , P Li , J Zhu , F Cai , S Wang , Z Huang , S Zhang , Fu Zhou , **W Zhong** , J Chen , “ *Pathway-level insights into the epigenetic ageing of human skin* ” , *Age and Ageing*, 2026, 55(4), afag118.
2. P Zhang, Y Chen, Z Xiao, H Tan, S Nie, H Li, Y Cai, S A U Rehman, **W Zhong**, Wenxiang Zhang, “Predicting microalgae recovery and pollutant removal in membrane filtration systems for microalgae using machine learning”, *Journal of Membrane Science*, 2026, 753, 125685.
3. W. Li, X. Zhao, H. Qiu, Z. Zhang, F. Xuan, H. Wang, Y. Hu, C. Yang, Y. Zhang, **W. Zhong**, T. Wu, H. Lo, C. Xie, S. Li, “*Macrophage exosome-engineered nanoplatfrom with pH-responsive ratiometric photoacoustic and NIR-II fluorescence imaging for guided photothermal immunotherapy of hepatocellular carcinoma*”, *Materials Today Bio*, 2026, 38, 103058.
4. S. Nie, Z. Xiao, T. Yuan, **W. Zhong**, W. Zhang, “*Synergistic co-catalysis by seawater salts and CO₂ for degradation of marine microplastics in hydrothermal gasification: Mechanism and modeling based on ReaxFF molecular dynamics*”, *Energy*, 2025, 341, 139489.
5. X. Peng, **W. Zhong**, DD. Lichti, Y. Cai, Y. Wang, T. Chan, “*Enhanced mask-random forest RCNN and 3D point cloud assisted shape and defect recognition for protein and aflatoxin prediction in nut processing*”, *Food and Bioproducts Processing*, 2025, 154, 702-716.
6. P. Zhang, Z. Xiao, Y. Chen, S. Nie, W. Liang, **W. Zhong**, T. Yuan, H. Li, W. Zhang, “*Machine learning-based response and prediction analysis for gravity-driven membrane*”, *Desalination*, 2026, 618, 119450.

7. Q. Li, L.-J. Beier, J. Tan, C. Brown, B. Lian, **W. Zhong**, Y. Wang, C. Ji, P. Dai, T. Li, P. Le Clech, H. Tyagi; X. Liu; G. Leslie, R. A. Taylor, “*An integrated, solar-driven membrane distillation system for water purification and energy generation*”, *Applied Energy*, 2019, 237, 534-548.
8. Q. Li, B. Lian, **W. Zhong**, A. Omar, A. Razmjou, P. Dai, J. Guan, G. Leslie, R.A. Taylor, “*Improving the Performance of Vacuum Membrane Distillation Using a 3D-printed Helical Baffle and a Superhydrophobic Nanocomposite Membrane*”, *Separation and purification technology*, 2020, 248, 117072.

BOOK CHAPTER/BOOK

1. J. Liu, L. Guo, **W. Zhong**. (eds) (2024) *Nano and Microscale Drug Delivery for TCM: Research and Application*. Science Press, Shanghai.
2. L. Guo, J. Liu, **W. Zhong**. (eds) (2023) *Separation Process for Traditional Chinese Medicine Manufacturing: Principles and Applications*. Science Press, Shanghai.
3. **W. Zhong**, Q. Li, X. Zhao, S. Chen. (2020) *Membrane Preparation for Unconventional Desalination by Membrane Distillation and Pervaporation*. In: Zhang Z., Zhang W., Lichtfouse E. (eds) *Membranes for Environmental Applications*. *Environmental Chemistry for a Sustainable World*, vol 42. Springer, Cham. (First author and corresponding author)

AWARDS

1. **Award of Excellence** at the 1st China Post-doctoral Innovation & Entrepreneurs Competition, ‘Key techniques for the production of microspheres with sustained release’, 2021. 12, Foshan, China.

Experience

ASSISTANT PROFESSOR | MACAU UNIVERSITY OF SCIENCE AND TECHNOLOGY | 2025.09-PRESENT

ASSOCIATE PROFESSOR | GUANGDONG PHARMACEUTICAL UNIVERSITY| 2022.06 - 2025.06

POST-DOCTORAL RESEARCHER | GUANGZHOU NANSHA INFORMATION TECHNOLOGY PARK POST-DOCTORAL SCIENTIFIC RESEARCH STATION | 2019.08 - 2022.02

Funding

CAPABILITY ENHANCEMENT|FDCT MACAU| AUG 2026 - JUL 2028| 349,500 MOP

- Lead investigator

13TH CHINA POSTDOCTORAL SCIENCE FOUNDATION SPECIAL PROGRAM| AUG 2020 - AUG 2021| ¥180,000 CNY

- Lead investigator

67TH CHINA POSTDOCTORAL GENERAL PROGRAM| JUL 2020 - AUG 2021| ¥80,000 CNY

- Lead investigator

**2019 NATIONAL KEY RESEARCH AND DEVELOPMENT PROGRAM OF CHINA|
DEC 2019 – DEC 2021| ¥8,250,000 CNY**

- Principal investigator for the sub-task and is in charge of ¥500,000 CNY fund

**RESEARCH ON KEY TECHNOLOGIES AND INDUSTRY STANDARDS OF GREEN
MANUFACTURING OF TRADITIONAL CHINESE MEDICINE BASED ON
MEMBRANE PROCESS| DEC 2020 – DEC 2021| ¥300,000 CNY**

- Principal investigator

**2019 SCIENCE AND TECHNOLOGY PROGRAM OF GUANGZHOU GENERAL
PROGRAM| APR 2019 - MAR 2021| ¥200,000 CNY**