陳雯灝（ WEN-HAO CHEN ）

學經歷 | Education & Training

國立中正大學 化學暨生物化學研究所 博士
Ph.D., Department of Chemistry and Biochemistry, National Chung Cheng University

中央研究院 化學研究所 博士後研究員
Postdoctoral Research Fellow, Institute of Chemistry, Academia Sinica

專長領域 | Areas of Expertise

物聯網生物檢測技術、側向層析免疫分析、奈米材料與表面功能化、生物分析化學、食品安全與麩質檢測、智慧型快速檢測系統、奈米藥物應用於神經退化疾病
Internet of Things (IoT)-enabled biosensing technologies, lateral flow immunoassays, nanomaterials and surface functionalization, bioanalytical chemistry, food safety and gluten detection, intelligent rapid detection systems, and nanomedicine applications for neurodegenerative diseases

學術期刊論文 | Refereed Papers

Chen, W.-H.; Smith, J. C.; Smith, S.; Huang, H.-Y.; Chu, C. Y.-C.; Choi, Y.-Y.; Chen, Y.; Chang, H.-C.; Hsu, C.-C.; Hsiao, Y.-C. (2025). Empowering Gliadin Detection: A Visible-Code Semiquantitative Lateral Flow System for Rapid and Reliable Results. Journal of Agricultural and Food Chemistry, 73(38), 24369-24378. DOI: 10.1021/acs.jafc.5c07872.

Chen, W.-H.; Chen, C.-Y.; Huang, H.-Y.; Hsiao, Y.-C. (2025). Different Protecting Groups to Cap Mercapto Propyl Silatrane Affect Water Solubility and Surface Modification Efficiency. ACS Omega, 10(40), 46343-46352. DOI: 10.1021/acsomega.4c06255.

學術期刊論文 | Refereed Papers

Chen, W.-H.; Hsu, C.-C.; Ho, H.-J.; Smith, J.; Smith, S.; Huang, H.-Y.; Chang, H.-C.; Hsiao, Y.-C. (2024). Rapid Gluten Allergen Detection Using an Integrated Photoimaging Assay and Ionic Liquid Extraction Sensor. ACS Omega, 9(50), 49767-49777. DOI: 10.1021/acsomega.4c08411.

Chen, W.-H.; Hsu, C.-C.; Huang, H.-Y.; Cherng, J.-Y.; Hsiao, Y.-C. (2024). Optimizing Gluten Extraction Using Eco-friendly Imidazolium-Based Ionic Liquids: Exploring the Impact of Cation Side Chains and Anions. ACS Omega, 9(15), 17028-17035. DOI: 10.1021/acsomega.3c08683.

Wahyuningtyas, D.; Chen, W.-H.; He, R.-Y.; Huang, Y.-A.; Tsao, C.-K.; He, Y.-J.; Yu, C.-Y.; Lu, P.-C.; Chen, Y.-C.; Wang, S.-H.; Ng, K. C.; Chen, B. P.-W.; Wei, P.-K.; Shie, J.-J.; Kuo, C.-H.; Sun, Y. H.; Huang, J. J.-T. (2021). Polyglutamine-Specific Gold Nanoparticle Complex Alleviates Mutant Huntingtin-Induced Toxicity. ACS Applied Materials & Interfaces, 13(51), 60894-60906. DOI: 10.1021/acsami.1c18754.

Wahyuningtyas, D.; Chen, W.-H.; Huang, C.-H.; He, Y.-J.; Huang, J. J.-T. (2019). Biocompatible Inhibitor Based on Chitosan and Amphiphilic Peptide against Mutant Huntingtin Toxicity. ChemBioChem, 20(16), 2133-2140. DOI: 10.1002/cbic.201900242.

Tseng, Y.-T.; Lu, H.-Y.; Li, J.-R.; Tung, W.-J.; Chen, W.-H.; Chau, L.-K. (2016). Facile Functionalization of Polymer Surfaces in Aqueous and Polar Organic Solvents via 3-Mercaptopropylsilatrane. ACS Applied Materials & Interfaces, 8(49), 34159-34169. DOI: 10.1021/acsami.6b13926.

Chen, W.-H.; Tseng, Y.-T.; Hsieh, S.; Liu, W.-C.; Hsieh, C.-W.; Wu, C.-W.; Huang, C.-H.; Lin, H.-Y.; Chen, C.-W.; Lin, P.-Y.; Chau, L.-K. (2014). Silanization of Solid Surfaces via Mercaptopropylsilatrane: A New Approach of Constructing Gold Colloid Monolayers. RSC Advances, 4(87), 46527-46535. DOI: 10.1039/C4RA05583G.

專利 | Patents

Chen, W.-H.; Chu, Y.-C.; Smith, J.; Smith, S.; Huang, H.-Y. Formulation, a Kit, and Method for Food Allergen Detection. U.S. Patent Application Publication No. US20250369965A1; Application No. 19/220,060. Filed May 27, 2025; published Dec. 4, 2025.

Chau, L.-K.; Huang, C.-J.; Chen, W.-H.; Chen, C.-W. Hydrocarbyl Carboxybetaine and Method for Preventing Hofmann Elimination in Alkaline Environment. U.S. Patent No. 10,351,524 (US20170001956A1). Granted Jul. 16, 2019.

Chen, W.-H.; Chau, L.-K.; Tseng, Y.-T.; Chen, C.-W. Manufacturing Method of Silatrane with Thiol Group and Preservation Method Thereof. U.S. Patent Application Publication No. US20160264602A1; Application No. 14/856,145. Published Sep. 15, 2016.

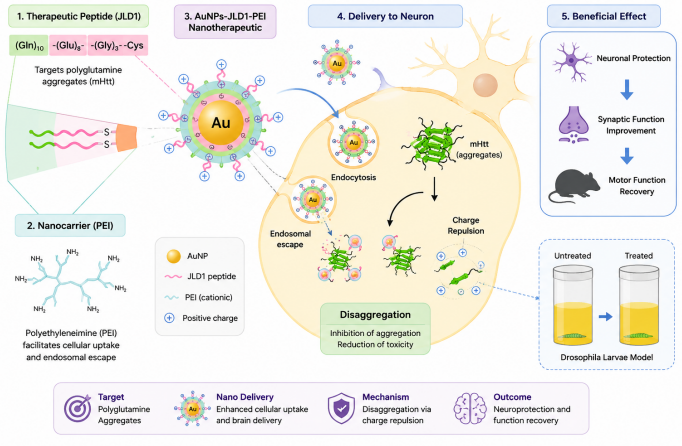
Chau, L.-K.; Chen, W.-H.; Tseng, Y.-T.; Wu, C.-W.; Chen, C.-W. Method for Fixing Metal onto Surface of Substrate. U.S. Patent No. 9,394,320 (US20140295075A1); Taiwan Patent TWI582101B. U.S. patent granted Jul. 19, 2016.

Chen, W.-H.; Chau, L.-K.; Chen, C.-W.; Tseng, Y.-T. Mercaptoalkylsilatrane Derivative Having Protecting Group and Method of Manufacturing the Same. U.S. Patent No. 9,096,620 (US20140296552A1). Granted Aug. 4, 2015.

AI物聯網檢測系統暨前瞻技術研究室 | AI-IoT Detection Systems & Advanced Technology Laboratory

智慧檢測系統 AI-IoT Detection Systems	結合側向層析、影像辨識、AI定量分析與物聯網資料傳輸，建立由檢測到雲端分析的一體化平台。 Integrating lateral flow assays, image recognition, AI-based quantification, and IoT connectivity from testing to cloud analytics.
數位化應用 Digital Applications	將檢測結果整合至手機、雲端資料庫與視覺化平台，應用於食品安全、疾病與生物檢測。 Connecting test results to mobile, cloud, and visualization platforms for food safety, disease, and biosensing applications.

奈米藥物與神經退化性疾病 | Nanomedicine for Neurodegenerative Diseases



奈米藥物治療概念 | Nanomedicine Concept

以金奈米粒子作為藥物載體，結合具標靶功能的胜　與聚乙烯亞胺（PEI），促進細胞攝取並干擾致病蛋白聚集，降低神經細胞毒性。

Gold nanoparticles act as nanocarriers for targeting peptides and polyethyleneimine (PEI), enhancing cellular uptake and disrupting pathogenic protein aggregation to reduce neuronal toxicity.

現職與產學應用 | Current Position & Industry Applications

・ LEO Verification Systems Inc. – Founder & CEO，投入快速檢測、食品安全與智慧型生物感測系統之研發與商品化。
Founder & CEO of LEO Verification Systems Inc., leading the R&D; and commercialization of rapid testing, food safety, and intelligent biosensing systems.

・ 大專院校教學與研究涵蓋生物化學、分析化學、奈米材料、生物檢測與疾病檢測技術開發。
University teaching and research cover biochemistry, analytical chemistry, nanomaterials, biosensing, and diagnostic technology development.

・ 持續推動產學合作，將AI物聯網快速檢測技術導入品質管理、健康檢測與數位化資料平台。
Advancing industry–academia collaboration to apply AI-IoT rapid testing to quality management, health testing, and digital data platforms.