

# Curriculum vitae

John Chi-Wei Lan, Ph.D



Professor,

Chair of Department of Chemical Engineering and Materials Science,  
Chair of Graduate School of Biot, Faculty of Engineering, Yuan Ze University,  
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## Education

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1. PhD, Biochemical Engineering, Dec 1996 - Dec 2000  
The University of Birmingham, England  
School of Chemical Engineering, Centre for Bioprocess Engineering
  2. Deng, Chemical Engineering, Sep 1990 - Jun 1995  
National Taipei Institute of Technology  
Department of Chemical Process Engineering
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## Postgraduate Training

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1. Post-Doctoral Research Fellow, Oct 2000-Jan 2004  
Institute of BioAgricultural Sciences, Academia Sinica, Taiwan
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## Academic Appointment

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1. Professor, Jan, 2018-present  
Department of Chemical Engineering and Materials Science, Yuan Ze University
  2. Associate Professor, Aug 2013- Dec, 2017  
Department of Chemical Engineering and Materials Science, Yuan Ze University
  3. Assistant Professor, Mar 2007- Jul 2013  
Department of Chemical Engineering and Materials Science, Yuan Ze University
- \*Teaching subjects: Chemical Thermodynamics, Advance Chemical Thermodynamics, Mass and energy balance, Biochemical Engineering, Applied Biochemistry, Biomaterials, Physical Chemistry, Instrumental Analysis, Seminar in Science and Engineering, Special topics on Chemical Industry
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## Other Employment

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1. Lecturer and Research fellow, Jan 2004-Aug 2004  
Department of Applied Chemistry, Yamaguchi University, Japan
  2. Research fellow, Aug 2004-Mar 2007  
Energy and Environment Research Laboratories, ITRI, Taiwan
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## Association Memberships

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1. Vice President, Biotechnology and Biochemical Engineering Society of Taiwan (BEST) (since Jul, 2022 to present)
  2. Secretary in General, Biotechnology and Biochemical Engineering Society of Taiwan (BEST) (since Jul, 2019 to 2022)
  3. Managing Supervisor, Committee board of supervisors, Taiwan Physcological Society (since Feb., 2012 to present)
  4. Execute Secretary, the Biomass Energy Society of China (Feb 2006- Dec 2008)
  5. The member of a council board, The Biomass Energy Society of China (Dec 2005 to Feb 2006)
  6. Member of AIChE
  7. Member of Society for Industrial Microbiology
  8. Member of American Society of Microbiology
  9. Member of Taiwan Institute of Chemical Engineers
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## Awards

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1. Academia Sinica Post-doc award, Taiwan (2001-2003)
  2. Excellence in Teaching Award, Yuan Ze University (2011)
  3. Excellent in Research Award, Yuan Ze University (2013)
  4. Excellent in Research Award, Yuan Ze University (2015-2024)
  5. Young Scholar Research Award, Yuan Ze University (2015)
  6. Young Asian Biotechnologist Prize 2017, Society of Biotechnology Japan (2017)
  7. Outstanding Research Award of Yuan Ze University (2019)
  8. Y.Z. Hsu Outstanding Professor Prize, Y.Z.Hsu Foundation (2022)
  9. Academic Service Award, Biotechnology and Biochemical Engineering Society of Taiwan (BEST) (2024)
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## Research interests

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Biorefinery technologies, Bioseparation, Electro-fermentation, Bio-based materials.

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## Research performance: H-index: 27

<https://www.scopus.com/authid/detail.uri?authorId=58856613000>

Prof. John Chi-Wei Lan received his Ph.D. from the School of Chemical Engineering at the University of Birmingham (UK) in 2000. His doctoral research focused on developing an efficient large-scale process for the recovery of C595 diabody from fermentation broth using expanded bed adsorption technology. From 2000 to 2003, he served as a postdoctoral researcher at Academia Sinica (Taiwan), working on bioprocess design for feed enzyme production. He later held research fellow positions at Yamaguchi University (Japan) and the Industrial Technology Research Institute (ITRI, Taiwan), before joining Yuan Ze University (YZU) in 2007. Prof. Lan currently serves as Chair and Professor in the Department of Chemical Engineering and Materials Science at YZU. He is also the Vice President of the Biotechnology and Biochemical Engineering Society of Taiwan (BEST). He has received several prestigious awards, including the Young Asian Biotechnologist Prize (2017), the Y.Z. Hsu Outstanding Professor Prize (2022), and the 2024 Academic Service Award from the Biotechnology and Biochemical Engineering Society of Taiwan (BEST). Prof. Lan has extensive experience in industrial plant design and construction and is highly active in fostering academia–industry collaborations. His current research focuses on integrated biorefinery processes for the production of bio-based chemicals from waste biomass and industrial feedstocks.

# 生物煉製之循環經濟概念實踐

## Realizing Circular Economy Principles through Biorefinery Practices

### **Abstract:**

The concept of the circular economy has emerged as a transformative strategy for addressing global sustainability challenges by promoting resource efficiency, waste minimization, and closed-loop systems. Biorefinery, as a core technological enabler, plays a pivotal role in turning this concept into practical and scalable solutions. This presentation aims to explore how circular economy principles can be realized through biorefinery practices, with a particular emphasis on the valorization of industrial by-products from the craft brewing industry.

Craft breweries generate significant volumes of nutrient-rich waste streams, such as spent grain, yeast, and process water. Traditionally regarded as disposal burdens, these side-streams present untapped potential for resource recovery. In this talk, I will present practical case studies and recent research on how these biomass residues can be transformed into high-value products, including bioplastics, enzymes, organic acids, and functional ingredients, through integrated bioprocesses.

Key strategies covered include the development of scalable fermentation platforms, microbial engineering for value-added compound synthesis, and system integration for energy and material recycling. The presentation will also highlight the collaborative frameworks established between academia and industry to support technology translation and market-driven innovation.

By demonstrating the application of circular economy principles in a familiar and relatable industry context, this talk aims to showcase how biorefinery not only provides a technical pathway for sustainability but also fosters new economic models aligned with environmental and social values. The insights shared will be relevant to researchers, industry stakeholders, and policy-makers seeking practical approaches to implement circular economy strategies through biotechnological innovation.