Yu, Bor-Yih （余柏毅）

Associate Professor

B.S. in Chemical Engineering
National Taiwan University, 2011

Ph.D. in Chemical Engineering
National Taiwan University, 2017

Research and Professional Interests
Process Systems Engineering
Process Intensification
Chemical Engineering
Simulation Technologies

Journal Papers (started from 2022)

1. H. H. Chiou, C. J. Lee, B. S. Wen, J. X. Lin, C. L. Chen, **B. Y. Yu***. "Evaluation of alternative processes of methanol production from CO2: Design, optimization, control, techno-economic, and environmental analysis". Fuel, 2023, 343, 127856. (IF=8.035). https://doi.org/10.1016/j.fuel.2023.127856

2. Y. P. Shia, **B. Y. Yu***. "Development of a rigorous and generalized model on the hydrothermal liquefaction (HTL) process for bio-oil production", Process safety and environmental production, 2023, 171, 541-554. (IF=7.926) https://doi.org/10.1016/j.psep.2023.01.046

3. **B. Y. Yu***, I. L. Chien. "Novel temperature-control strategy for single column side-stream extractive distillation process with intermediate-boiling entrainer", Separation and Purification Technology, 2023, 310, 123163. (IF=9.136) https://doi.org/10.1016/j.seppur.2023.123163

4. Y. W. Chiao, W. Liao, P. A. Krisbiantoro, **B. Y. Yu***, K. C.-W. Wu*. "Waste-battery-derived multifunctional zinc catalysts for glycolysis and decolorization of polyethylene terephthalate", Applies Catalysis B: Environmental, 2023, 325, 122302. (IF=24.319) https://doi.org/10.1016/j.apcatb.2022.122302

5. M. T. Lee, **B. Y. Yu***. "Evaluation on the intensified hydropropyl acrylate (HPA) production processes: Rigorous design, optimization, techno-economic and environmental analysis, and control", Process Safety and Environmental Protection, 2022, 167, 671-685. (IF=7.926) https://doi.org/10.1016/j.psep.2022.09.051

6. Z. Uddin, **B. Y. Yu***, H.Y. Lee*. "Evaluation of alternative processes of CO2 methanation: Design, optimization, control, techno-economic and environmental analysis", Journal of CO_2 Utilization, 2022, 60, 101974. (IF=8.321) https://doi.org/10.1016/j.jcou.2022.101974

7. **B. Y. Yu***, T. Y. Tseng, Z. Y. Yang, S. J. Shen. "Evaluation on the Solketal Production Processes: Rigorous Design, Optimization, Environmental Analysis, and Control", Process Safety & Environmental Protection, 2022, 157, 140-155. (IF=7.926) https://doi.org/10.1016/j.psep.2021.11.011

8. C. T. Lee, C. C. Tsai, P. J. Wu, **B. Y. Yu***, S. T. Lin*. "Screening of CO2 utilization routes from process simulation: Design, optimization, environmental and techno-economic analysis", Journal of CO_2 Utilization, 2021, 53, 101722. (IF=8.321) https://doi.org/10.1016/j.jcou.2021.101722

9. S. J. Chen, **B. Y. Yu***. “Rigorous simulation and techno-economic evaluation on the hybrid membrane/cryogenic distillation processes for air separation” Journal of the Taiwan Institute of Chemical Engineers, 2021, 127, 56-68. (IF=5.477) https://doi.org/10.1016/j.jtice.2021.08.001

10. **B. Y. Yu***, J. W. Ciou, P. J. Wu, G. B. Wang, “Conceptual design, optimization and carbon emission analysis for the Acrylonitrile/Acetonitrile/Water separation process” Journal of the Taiwan Institute of Chemical Engineers, 2021, 122, 32-39. (IF=5.477) https://doi.org/10.1016/j.jtice.2021.04.044

11. **B. Y. Yu***, “Development of two plant-wide glycerol carbonate production processes: Design, optimization and environmental analysis” Journal of the Taiwan Institute of Chemical Engineers, 2020, 117, 19-25. (IF=5.477) https://doi.org/10.1016/j.jtice.2020.12.016

12. Y.C. Yu, T. Y. Wang, L. S. Chang, P.J. Wu, **B. Y. Yu***, W. Y. Yu*. “Conceptual design, environmental, and economic evaluation of direct copolymerization process of carbon dioxide and 1,4-butanediol” Journal of Taiwan Chemical Engineers, 2020, 116, 36-42. (IF=5.477) https://doi.org/10.1016/j.jtice.2020.11.009

13. **B. Y. Yu***, P. J. Wu, C. C. Tsai, S. T. Lin*. “Evaluating the Direct CO2 to Diethyl Carbonate (DEC) Process: Rigorous Simulation, Techno-Economical and Environmental Evaluation” Journal of CO_2 Utilization, 2020, 41, 102154. (IF=8.321) https://doi.org/10.1016/j.jcou.2020.101254

14. **B. Y. Yu***, C. C. Tsai. “Rigorous simulation and techno-economic analysis of a bio-jet-fuel intermediate production process with various integration strategies”. Chemical Engineering Research and Design, 2020,159, 47-65. (IF=4.119) https://doi.org/10.1016/j.cherd.2020.03.012

15. **B. Y. Yu**, C. Y. Chung, I. L. Chien*. “Development of a Plant-wide Dimethyl Oxalate (DMO) Synthesis Process from Syngas: Rigorous Simulation Design and Optimization”. Computers & Chemical Engineering, 2018, 119, 85-100. (IF=3.845) https://doi.org/10.1016/j.compchemeng.2018.08.025

16. **B. Y. Yu,** M. K. Chen, I. L. Chien*. “Assessment on CO_2 Utilization through Rigorous Simulation: Converting CO_2 to Dimethyl Carbonate” Industrial Engineering & Chemistry Research, 2018, 57, 639-652. (IF=3.720) https://doi.org/10.1021/acs.iecr.7b02923

17. **B. Y. Yu**, R. Huang, X. Zhong, M. J. Lee, I. L. Chien*. “Energy-Efficient Hybrid Extraction-Distillation Process for Separating Diluted Acetonitrile-Water Mixture: Rigorous Design with Experimental Verification from Ternary Liquid-Liquid Equilibrium Data.” Industrial Engineering & Chemistry Research, 2017, 56, 15112-15121. (IF=3.720) https://doi.org/10.1021/acs.iecr.7b04408

18. **B. Y. Yu**, I. L. Chien*. “Design and Optimization of Dimethyl Oxalate Hydrogenation Process to Produce Ethylene Glycol” Chemical Engineering Research & Design, 2017, 121, 173-190. (IF=3.739) https://doi.org/10.1016/j.cherd.2017.03.012

19. Y. C. Chen, B. Y. Yu, C. C. Hsu, I. L. Chien*. “Comparison of Heterogeneous and Extractive Distillation for the Dehydration of Propylene Glycol Methyl Ether” Chemical Engineering Research & Design, 2016, III, 184-195. (IF=3.739) https://doi.org/10.1016/j.cherd.2016.05.003

20. **B. Y. Yu**, I. L. Chien*. “Design and Optimization of the Methanol-to-Olefin Process: Part II: Comparison of Different Methods for Propylene/Propane Separation”. Chemical Engineering & Technology, 2016, 39, 2304-2311. (IF=1.728)

https://doi.org/10.1002/ceat.201600168

21. **B. Y. Yu**, I. L. Chien*. “Design and Optimization of the Methanol-to-Olefin Process: Part I: Steady-State Design and Optimization” Chemical Engineering & Technology. 2016, 39, 2293-2303. (IF=1.728) https://doi.org/10.1002/ceat.201500654

22. **B. Y. Yu**, I. L. Chien*. “Design and Economic Evaluation of a Coal-based Poly-generation Process to Co-produce Synthetic Natural Gas and Ammonia” Industrial Engineering & Chemistry Research, 2015, 54, 10073-10087. (IF=3.720) https://doi.org/10.1021/acs.iecr.5b02345

23. **B. Y. Yu,** I. L. Chien*. “Design and Economical Evaluation of Coal to Synthetic Natural Gas (SNG) Process” Industrial Engineering & Chemistry Research, 2015, 54, 2339-2352. (IF=3.720, Published in 2015/02) https://doi.org/10.1021/ie503595r

24. B. C. Chen, B. Y. Yu, Y. L. Lin, H. P. Huang, I. L. Chien*. “Reactive-Distillation Process for Direct Hydration of Cyclohexene to Product Cyclohexanol” Industrial Engineering & Chemistry Research, 2014, 53, 7079-7086. (IF=3.720) https://doi.org/10.1021/ie404226m

Conference Papers

1. **B. Y. Yu***, “Evaluations on the Pathways for Converting CO2 into Chemicals”, PSE Asia 2022, Chennai, India. (**Keynote speech**)

2. **B. Y. Yu***, “Evaluations on the Pathways for Converting CO2 into Chemicals”, 台灣化學工程學會第 69 屆年會，Dec 3-4, 2022, 新北市，台灣 **(invited speech)**

3. **B. Y. Yu***, “理論與數據模型在化工上之應用”, 台灣化學工程學會第 68 屆年會，Jan 7-8, 2022, 高雄市，台灣 **(invited speech)**

4. S. J. Chen, **B. Y. Yu***. “Hybrid Membrane Process for Cryogenic Air Separation”, 2021 熱力學暨程序系統工程研討會，May 14-15, 2021, 南投，台灣 (virtual meeting)

5. 李洺霆、黃集鑫、**余柏毅**，“丙烯酸酯化之整廠製程與二聚探討”， 2021 熱力學暨程序系統工程研討會，May 14-15, 2021, 南投，台灣 (virtual meeting)

6. 楊鎮宇、曾亭瑜、**余柏毅**，“甘油經縮酮化反應產製丙酮縮甘油之設計探討”， 2021 熱力學暨程序系統工程研討會，May 14-15, 2021, 南投，台灣 (virtual meeting)

7. 夏遠斌、**余柏毅**，“Hydrothermal Liquefaction Reaction for Biomass Decomposition”，2021 熱力學暨程序系統工程研討會，May 14-15, 2021, 南投，台灣 (virtual meeting)

8. 吳佩蓁、**余柏毅**，“Simulation of Biomass Fast Pyrolysis Process Using Aspen Custom Modeler”， 2021 熱力學暨程序系統工程研討會，May 14-15, 2021, 南投，台灣 (virtual meeting)

9. **B. Y. Yu***, C. C. Tsai. "Rigorous Simulation and Techno-Economic Analysis of a Bio-Jet-Fuel Intermediate Production Process with Various Integration Strategies", PSE Asia 2020, 4-6 Nov.

10. **B. Y. Yu***, P. J. Wu, C. C. Tsai, S. T. Lin* "Evaluating the Direct CO2 to Diethyl Carbonate (DEC) Process: Rigorous Simulation, Techno-Economical and Environmental Evaluation", PSE Asia 2020, 4-6 Nov, Taiwan. (virtual meeting)

11. **B. Y. Yu***. "Rigorous Simulation and Optimization of the Plant-wide Glycerol Carbonate (GC) Production Process through transesterification" PSE Asia 2020, 4-6 Nov, Taiwan. (virtual meeting)

12. Y. C. Cheng, B. Y. Yu, H. Y. Lee. "Startup Operation Strategies of Styrene-Acrylonitrile (SAN) Copolymerization Process", PSE Asia 2020, 4-6 Nov, Taiwan. (virtual meeting)

13. B. Y. Yu*, "Evaluating the Direct CO2 to Diethyl Carbonate (DEC) Process: Rigorous Simulation, Techno Economical and Environmental Evaluation", Oct. 24-25, 2020, 新竹市，台灣

International Book Chapters and Conference Articles

1. **B. Y. Yu***, "Design of a Biomass-to-Bio-Jet fuel (BJF) Intermediate Process", Foo (Ed). Chemical Engineering Process Simulation, 2nd Edition, Elsevier.

2. **B. Y. Yu***, P. J. Wu, C. C. Tsai, S. T. Lin. "Production of Diethyl Carbonate (DEC) from Direct CO2 Conversion", Foo (Ed). Chemical Engineering Process Simulation, 2nd Edition, Elsevier.

3. **B. Y. Yu***, W. J. Chen. "Rigorous Simulation and Optimization of a Plant-wide Glycerol Carbonate (GC) Production Process" Computer Aided Chemical Engineering, 2020, 48, 283-288. (30th European Symposium on Computer Aided Process Engineering)

4. I. L. Chien*, B. Y. Yu, Lee, H. Y.*; Chemical Engineering Process Simulation, Chap. 13: Process Simulation of Acrylic Acid Production, 2017, Elsevier.

5. Chien, I. L.*, B. Y. Yu, Ai, Z. J. Chemical Engineering Process Simulation, Chap. 15: Design of Azeotropic Distillation Systems, 2017, Elsevier.

6. B. Y. Yu, I. L. Chien. "Design and Economic Evaluation of Coal to Synthetic Natural Gas (SNG) Process" Computer Aided Chemical Engineering, 2015, 37, 1109-1114. (12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering)