

WEI-TSE HSU

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Education

- Sept. 2018 – Present **University of Colorado, Boulder (CU Boulder), CO, United States**
Ph.D. in Chemical Engineering
- Sept. 2013 – June 2017 **National Taiwan University (NTU), Taipei, Taiwan**
Bachelor of Science in Chemical Engineering
Cumulative GPA: 3.75/4.00
Last 60 GPA: 3.91/4.00

Research Experience

- Sept. 2018 – Present **Shirts Group, Dept. of CheE, CU Boulder**
- Advisor: **Prof. Michael R. Shirts**
 - Applying advanced sampling techniques to free energy calculation and drug design
 - Developing an extensible framework to support adaptive and asynchronous execution of ensembles
- July 2016 – Apr. 2018 **Biomolecular Engineering Laboratory, Dept. of CheE, NTU**
- Advisor: **Prof. Steven Sheng-Shih Wang**
 - Explored the effects of various small molecules on amyloid fibrillogenesis of hen egg-white lysozyme (HEWL) using a variety of spectroscopic and analytical techniques.
 - Investigated the aggregation process of human γ D-crystallin (HGDC) from the results of molecular docking and molecular dynamics simulations using diverse simulation software.
- July 2015 – Feb. 2016 **Biomimetic Membrane Interfacial Phenomena and Engineering Laboratory, Dept. of CheE, NTU**
- Advisor: **Prof. Ling Chao**
 - Probed into the deposition of giant plasma membrane vesicles on polymer cushions.
 - Constructed supported lipid bilayers platform to study on membrane protein.
 - Developed MATLAB codes measuring fluorophores mobility by FRAP kinetics.

Publications

- Su-Chun How, Ai Hsin, Guan-Yu Chen, **Wei-Tse Hsu**, Szu-Ming Yang, Wei-Lung Chou, Shiu-Huey Chou, Steven S.-S. Wang, (2019) Exploring the influence of brilliant blue G on amyloid fibril formation of lysozyme. *International Journal of Biological Macromolecules*, 138, 37-48. doi: 10.1016/j.ijbiomac.2019.07.055
- Katarina Ulicna, Zuzana Bednarikova, **Wei-Tse Hsu**, Martina Holtztragerova, Josephine W. Wu, Slavka Hamulakova, Steven S.-S. Wang, Zuzana Gazova*, (2018). Lysozyme amyloid fibrillation in presence of tacrine/acridone-coumarin heterodimers. *Colloids and Surfaces B: Biointerfaces*, 166, 108-118. doi:10.1016/j.colsurfb.2018.03.010
- Su-Chun How, **Wei-Tse Hsu**, Chia-Ping Tseng, Chun-Hsien Lo, Wei-Lung Chou* and Steven S.-S. Wang*, (2017) Brilliant blue R is capable of suppressing amyloid fibrillogenesis of lysozyme. *Journal of Biomolecular Structure and Dynamics*. 36:13, 3420-3433, doi:10.1080/07391102.2017.1388848 (**co-1st author**)
- Katarina Ulicna, Zuzana Bednarikova, **Wei-Tse Hsu**, Steven S.-S. Wang, Slavka Hamulakova, Martina Holtztragerova, Zuzana Gazova*, (2017). Structure of coumarin derivatives affects amyloid aggregation of lysozyme. *European Biophysics Journal with Biophysics Letters*, 46, S353-S353
- Chun-Tien Kuo, Yi-Lin Chen, **Wei-Tse Hsu**, Su Chun How, Yu-Hong Cheng, Su Shun Hsueh, Hwai-Shen Liu, Ta-Hsien Lin, Josephine W. Wu* and Steven S.-S. Wang*, “Investigating the effects of erythrosine B on amyloid fibril formation derived from lysozyme”. *International Journal of Biological Macromolecule*. 98 (2017) 159-168.

Oral Presentations & Posters

- **Wei-Tse Hsu**, Ai Hsin, Josephine W. Wu* and Steven S.-S. Wang*, "Brilliant Blue G's Inhibitory Effects on Amyloid Fibril Formation of Lysozyme", 2017 Green Bioprocessing Engineering Forum. Biochemical Engineering Center, Ming-Chi University of Technology, New Taipei, Taiwan, Dec. 2017 (**Poster & Oral Presentation**)
- **Wei-Tse Hsu**, Ai Hsin, Josephine W. Wu* and Steven S.-S. Wang*, "Investigating the Suppressing Effects of Brilliant Blue G on Amyloid Fibrillogenesis of Lysozyme", The 64th Annual Meeting of Taiwan Institute of Chemical Engineers. Taipei, Taiwan, Nov. 2017 (**Oral Presentation**)
- **Wei-Tse Hsu**, Tsai-Wei Lin and Tzu-Yuan Fu, "Process Optimization and Economic Assessment of the Production of Glycerol Carbonate from Glycerol" The 64th Annual Meeting of Taiwan Institute of Chemical Engineers, Taipei. Taiwan, Nov. 2017 (**Poster**)
- **Wei-Tse Hsu**, Ai Hsin, Josephine W. Wu* and Steven S.-S. Wang*, "Exploring the inhibitory activity of Brilliant blue G toward the formation of amyloid fibrils derived from lysozyme", BEST Conference & International Symposium on Biotechnology and Bioengineering. Yunlin, Taiwan, Jun. 2017 (**Oral Presentation**)

Honors and Awards

- Dec. 2017 **1st Prize (Winner), 3 Minute Thesis Competition – Poster Presentation**, 2017 Green Bioprocessing Engineering Forum, Biochemical Engineering Center, Ming-Chi University of Technology, Taiwan
- Dec. 2017 **2nd Prize (First Runner-up), 3 Minute Thesis Competition – Oral Presentation**, 2017 Green Bioprocessing Engineering Forum, Biochemical Engineering Center, Ming-Chi University of Technology, Taiwan
- Nov. 2017 **1st Prize (Outstanding Research Paper Award), Oral Presentation Competition**, The 64th Annual Meeting of Taiwan Institute of Chemical Engineers
- Oct. 2017 **3rd Prize, 2017 University Students Process Design Competition**, Institute of Chemical Engineers, Taiwan
- Jun. 2017 **1st Prize, Oral Presentation Competition**, 2017 BEST conference & International Symposium on Biotechnology and Bioengineering
- Sep. 2015 **Excellent Work Award, 2015 National Mechanics Competition**, Society of Theoretical and Applied Mechanics of the Republic of China

Work Experience

- Sept. 2018 – Present **Research Assistant** in Shirts Group, Dept. of CheE, CU Boulder (Advisor: Prof. Michael R. Shirts)
- Mar. 2017 – Apr. 2018 **Research Assistant** of Biomolecular Engineering Laboratory, Dept. of CheE, NTU (Advisor: Prof. Steven Sheng-Shih Wang)

Career Development Activities

- July 2019 – July 2019 **Student of 2019 MolSSI Software Engineering Summer School, The Molecular Sciences Software Institute**
- Developed a Python software package for Monte Carlo simulations of Lennard-Jones fluids at University of Texas, Austin
- June 2016 – June 2017 **Treasurer of AIChE, National Taiwan University Student Chapter**
- Managed financial assets of the organization.
- July 2015 – June 2016 **Chair of Academic Section in Student Association, Department of Chemical Engineering, National Taiwan University**
- Held a large-scale 2-day exposition to introduce the curriculum and future career of chemical engineering to high school students nationwide.
 - Arranged series of speeches on the research of department faculty to help undergraduates explore their research interests.