

Yu-Ming Tu

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Education

- 2019 – Present Ph.D. Student, Department of Chemical Engineering, The University of Texas at Austin, USA
Advisors: Dr. Manish Kumar and Dr. Benny Freeman
- 2017 – 2019 Ph.D. Candidate, Department of Chemical Engineering, The Pennsylvania State University, USA
Advisor: Dr. Manish Kumar
- 2013 – 2015 Master of Science in Chemical Engineering, *GPA: 4.15/4.30*, National Taiwan University, Taiwan
Advisor: Dr. Ling Chao
- 2009 – 2013 Bachelor of Science in Chemical Engineering, *GPA: 3.9/4.0*, National Cheng Kung University, Taiwan

Publications and Presentations

1. Chao Lang, Dan Ye, Woochul Song, Chenhao Yao, **Yu-Ming Tu**, Clara Capparelli, Jacob A LaNasa, Michael A Hickner, Esther W Gomez, Enrique D Gomez, Robert J Hickey, Manish Kumar*, Biomimetic Separation of Transport and Matrix Functions in Lamellar Block Copolymer Channel-Based Membranes (2019), ACS Nano (in press).
2. **Yu-Ming Tu**, Woochul Song, Tingwei Ren, Manish Kumar*, Scalable High-Performance Membranes with High Density Channel Protein-Polymer Nanosheets, North American Membrane Society 28th Annual Meeting, Pittsburgh, USA, oral presentation (2019)
3. Yu-Ling Shih, Ling-Ting Huang[†], **Yu-Ming Tu**[†], Bo-Fan Lee, Yu-Chiuan Bau, Chia Yee Hong, Hsiao-Lin Lee, Yan-Ping Shih, Min-Feng Hsu, Zheng-Xin Lu, Jui-Szu Chen, Ling Chao, Active Transport of Membrane Components by Self-Organization of the Min Proteins. *Biophysical Journal* (†equal contribution) (2019)
4. Woochul Song, **Yu-Ming Tu**, Hyeonji Oh, Laxmicharan Samineni, Manish Kumar*, Hierarchical Optimization of High Performance Biomimetic and Bioinspired Membranes. *Langmuir* (2018)
5. **Yu-Ming Tu**, Hsiao-Lin Lee, Yu-Ling Shih, Ling Chao, “Study of Min Protein-Induced Membrane Waves *in vitro*”, 59th Biophysical Society Annual Meeting, Baltimore, USA, Biophysical Journal, p78a, Poster (2015)
6. **Yu-Ming Tu**, Hsiao-Lin Lee, Yu-Ling Shih, Ling Chao, “Study of Min Protein-Induced Membrane Waves *in vitro*”, Taiwan Institute of Chemical Engineers Annual Meeting, Taoyuan, Taiwan, Oral presentation (2014)

Honors/Awards

- 2014 Dec. **Honorable mention in English oral presentation award**, Taiwan Institute of Chemical Engineers Annual Meeting, Taoyuan, Taiwan
- 2014 Sep. **Best in English oral presentation award**, International Symposium on Chemical-Environmental-Biomedical Technology, Taoyuan, Taiwan, Taiwan Institute of Chemical

2009 – 2012 **Outstanding Student Award** for the academic achievement (Top 5% student in National Cheng Kung University) for **3 times** in 2009-2010, 2010-2011, 2011-2012 school year

Technical Skills

- ✓ **Material analytical tools:** Contact angle, Nuclear magnetic resonance spectroscopy, Gel permeation chromatography, Thermogravimetric analysis, X-ray photoelectron spectroscopy
- ✓ **Surface analytical tools:** Confocal microscopy, Fluorescence recovery after photobleaching microscopy, Surface plasmon resonance, Total internal reflection fluorescence microscopy, Fluorescence correlation spectroscopy, Transmission electron microscopy
- ✓ **Image processing and mathematic modeling:** MATLAB, ImageJ, Kymograph, Mathematica
- ✓ **Molecular assemblies:** Supported lipid bilayer formation, Large unilamellar vesicles formation, membrane protein crystallization, Layer-by-layer technique
- ✓ **Protein purification:** Cell disruption, Affinity chromatography, Size exclusion chromatography, Gel electrophoresis, ATPase assay