

Kuang-Jung Hsu

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EDUCATION

- **National Taiwan University (NTU)** Taipei, Taiwan (2016.09-2018.06)
Master in Chemical engineering- Overall GPA: 4.01/4.3
 - **National Cheng Kung University(NCKU)** Tainan, Taiwan (2012.09-2016.06)
Major in Chemical engineering- Overall GPA: 4.00/4.3
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RESEARCH EXPERIENCE

- **Graduate Research Thesis** (2016.09-2018.08)
 - Synthesis of Porous Biocompatible Scaffold Using Poly(2-hydroxyethyl methacrylate) as Matrix in Supercritical Carbon Dioxide
 - Advisor: Yan-Ping Chen, National Taiwan University, Chemical Engineering
 - **Developed novel approach** combining synthesis and foaming into **one step synthesis** to fabricate polymer scaffolds
 - Used ***In Situ* Polymerization, graft polymerization and emulsion polymerization** to synthesize polymers with organic/inorganic nanoparticles
 - Analyzed characteristics of **porous and core-shell polymers composites**, including structures, molecular weight, structure of crystalline and thermal properties
 - Analyzed **pore morphology, surface area and particles distribution** in porous polymers
 - **Undergraduate Research Thesis** (2015.08-2016.06)
 - Photoresponsive Behaviors of Azobenzene-Containing Amphiphilic Block Copolymers
 - Advisor: Chieh-Tsung Lo, National Cheng Kung University, Chemical Engineering
 - Analyzed structure of azobenzene-containing amphiphilic block copolymers
 - Conducted experiment of photoresponsive behavior of azobenzene in organic/aquatic solvent
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Technical Skills

- Analysis of characteristics of polymers:
 - Nuclear magnetic resonance spectroscopy (NMR), Fourier-transform infrared spectroscopy (FTIR), X-ray powder diffraction (XRD), Thermal gravimetric analysis (TGA), Gel permeation chromatography (GPC), Differential scanning calorimetry (DSC) and Ultraviolet-visible spectroscopy (UV/VIS)
 - Analysis of pore morphology and particles distribution:
 - Scanning electron microscopy (SEM), Energy-dispersive X-ray spectroscopy (EDX), Transmission electron microscope (TEM), Mercury intrusion porosimetry(MIP), Brunauer–Emmett–Teller (BET) and Optical microscope (OM)
 - Others: High-performance liquid chromatography (HPLC), Universal mechanical tester (UMT), Laser particle size distribution analyzer (LPSA) and Water absorption.
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PUBLICATIONS

- **Kuang-Jung Hsu**¹, Yan-Ping Chen¹, Pei-Hua, Chen², Muoi Tang^{3*}, Supercritical carbon dioxide synthesis of porous biocompatible scaffolds (2-hydroxyethyl methacrylate) and Hydroxylapatite as additive, 2018, Submitted to *Journal of CO₂ Utilization*.
- **Kuang-Jung Hsu**¹, Yan-Ping Chen¹, Pei-Hua, Chen², Muoi Tang^{3*}, Supercritical carbon dioxide synthesis of porous biocompatible scaffolds (2-hydroxyethyl methacrylate) with collagen and beta-tricalcium phosphate as mixed additives, 2018, Submitted to *Journal of CO₂ Utilization*.
- **Kuang-Jung Hsu**¹, Yan-Ping Chen¹, Pei-Hua, Chen², Muoi Tang^{3*}, Supercritical carbon dioxide synthesis of porous biocompatible scaffolds (2-hydroxyethyl methacrylate) and beta-tricalcium phosphate as additive, 2018, Submitted to *Journal of Supercritical Fluid*.
- **Kuang-Jung Hsu**¹, Yan-Ping Chen¹, Pei-Hua, Chen², Muoi Tang^{3*}, Supercritical carbon dioxide synthesis of porous biocompatible scaffolds (2-hydroxyethyl methacrylate) with bicalcium phosphate as mixed additives, 2018, Submitted to *Journal of Supercritical Fluid*.
- **Kuang-Jung Hsu**^{1*}, Muoi Tang², and Yan-Ping Chen¹, Synthesis of a Temperature and pH-Sensitive Copolymer Using the Supercritical Fluid Technology, *The 10th International Conference on Supercritical Fluids*, Nagoya, Japan, Dec 01-03, 2017 (2017.12)

AWARDS AND HONORS

- International Conference on Supercritical Fluids at Nagoya, **The Best Poster Award** (2017.12)
- Academic Excellence Scholarship of LCY GROUP (2017.02)
- Champion in Chemical Industrial Design Competition in National Cheng Kung University (2016.12)
- National Cheng Kung University Academic Excellence Award (2015.09)
- Principle Chemistry Excellent Award in National Cheng Kung University (2012.12)
 - Top 3% of 5600 students in the principle chemistry competition

LANGUAGE ABILITY

- Chinese: Native English: Fluent, TOEFL 102 (Speaking 24 Writing 26) (2018.09)

WORK EXPERIENCE

- **Air Liquide Singapore International Internship** (2017.07-2017.09)
 - Successfully designed process and logic loops in automatically start-up system called Exapilot
 - Learned deeply cryogenic process in air separation unit plants, providing high quality gas to Exxon Mobile, Shell, The Polyolefin Company and Systems on Silicon Manufacturing Company
 - Worked and communicated with people from 6 different countries harmoniously and had good teamwork
 - **Taiwan Semiconductor Manufacturing Company R&D Summer intern** (2016.07-2016.08)
 - Analyzed and optimized chemical vapor deposition(CVD) epitaxy process of P-type and N-type wafers
 - Developed latest epitaxy process via CVD method for 3 nm P-type and N-type chips.
 - Selected as a candidate in R&D epitaxy department for R&D competition with good research achievement
 - **Formosa Petrochemical Corporation Summer intern** (2014.07-2014.08)
 - Well studied hazard and operability studies
 - Tracked risk of chemical plants and proposed possible solution to eliminate danger
 - Assessed project feasibility of constructing new heat exchangers in plant sites and made a proposal in detail
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EXTRACURRICULAR ACTIVITIES

- **The receptionist of foreign students in National Cheng Kung University** (2015.10-2016.06)
Received foreign students from different countries and culture. Bridged culture gap and had good friendship.
 - **Captain in Chemical Department Basketball team** (2014.06-2015.05)
Achieved awards in national basketball tournament with strong teamwork and collaboration.
 - **Working holiday in National Kenting Park**
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