

DANNY LIU

MECHANICAL ENGINEER

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Mechanical Engineer with research and hands-on experience in battery systems, heat transfer, and thermal management. Published on lithium-ion batteries and cooling technologies. Skilled in simulation, CAD, and experimental testing. Driven to enhance battery performance and safety through innovative engineering.

AREA OF EXPERTISE

Battery Thermal Management
Heat Transfer Engineering

Simulation & Modeling
CAD & Mechanical Design

Materials Engineering
Experimental Testing

PROFESSIONAL EXPERIENCE

Asia Vital Components Co., Ltd — Fan & Thermal Systems

Oct 2023 – June 2024

- Designed high-efficiency fan blades using Creo Parametric to enhance airflow and cooling in compact electronic systems.
- Conducted CFD simulations in Ansys Fluent to analyze airflow, pressure distribution, and heat dissipation.
- Created biomimetic fan blade designs inspired by bird feathers to reduce aerodynamic noise.
- Optimized blade geometry and housing shape to balance cost, noise reduction, and manufacturing feasibility.
- Collaborated with thermal engineers and designers to develop compact cooling modules for battery systems.
- Verified design accuracy by comparing simulation data with prototype testing results.

Industrial Technology Research Institute — Surface Engineering for Heat Exchange May 2023 – Oct 2023

- Created nano-coatings and surface treatments to improve heat exchanger and condenser performance.
- Used hydrophobic/hydrophilic surface etching to collect more water and boost condensation efficiency.
- Applied nanotechnology to improve heat transfer in dehumidification and battery cooling systems.
- Designed and analyzed fin structures with Autodesk Inventor to improve heat dissipation.
- Tested surface coatings for durability, adhesion, and heat transfer performance using lab instruments.

EDUCATION

University of Wisconsin–Milwaukee, Milwaukee, WI

Expected May 2026

Master of Engineering in Mechanical Engineering & Industrial Engineering

- Coursework: Thermodynamics, Computational Fluid Dynamics (CFD), Six Sigma, Operations Research

Chung Yuan Christian University, Taoyuan, Taiwan

Sep 2020 - June 2024

Bachelor & Master of Science in Mechanical Engineering (Accelerated Program)

- Research in battery thermal management and cooling technologies.
- Thesis on “Thermal performance optimization of lithium-ion batteries using misaligned multi-minichannels”.

ADDITIONAL INFORMATION

- **Languages:** English, Mandarin.
- **Technical Skills:** Ansys Fluent, Creo Parametric, SolidWorks, Autodesk Inventor, MATLAB.
- **Awards/Activities:** UWM Chancellor’s Graduate Student Award (2024), Outstanding Graduate Award at CYCU (2024)