Peir-Ru, Wang (Louis)

EXPERIENCE

National Tsing Hua University (NTHU) ***2024.03–Now***

Postdoc in **Materials Science and Engineering**

EDUCATION

National Tsing Hua University (NTHU) ***2016.09–2024.01***

Ph.D. in **Materials Science and Engineering**

National Tsing Hua University (NTHU) ***2012.09–2016.06***

B.S. in **Power Mechanical Engineering**

Minor in **Physics**

PUBLICATIONS

Nature Scientific Reports (Impact Factor: 4.997)

The effect of critical coupling constants on superconductivity enhancement

Sci Rep 13, 6475 (2023)

- The theory of critical coupling constants **unifies** the effects of the phonon frequency Ω, the carrier number Z, and the pressure P on superconductivity.
- Demonstrate **general zigzag methods** for T_c enhancement.

A.A.S.R.C Conference (2014)

Low Speed Wind Tunnel Study of Variable Tandem Wing Aircraft Design

- The variable tandem wing design can **increase 33%** lifting force.

PATENTS

United States Invention ***2018.07***

Continuously Variable Transmission

US 10030745 B2

- This self-adaptable, positive motion CVT is able to transmit power by way of engagement.
- Able to transmit a torque density 8 times larger than the traditional design.
- Competitive in high torsion application.

Taiwan Invention Patent ***2017.05***

Continuously Variable Transmission

I580876

LABORATORY AUTOMATION

Resistivity-Temperature ρ-T Measurement Automation

- Temperature 70K~400K, resistivity $1\mu\Omega \cdot \text{cm} \sim 1\text{G}\Omega \cdot \text{cm}$
- Program LabVIEW codes to control and collect information from the instruments, including Keithley, HP, Stanford Research Systems, and Cryo-Con.

Chemical Powder Mixture Preparation Automation

- Prepare 96 different mixtures within 14 hours and 40 types of powder for selections.

TEACHING ASSISTANT

***NTHU Outstanding Teaching Assistant Award* (*2019*)**

TA Courses:

- General Relativity I & II
- Classical Mechanics
- Theoretical Mechanics II
- Statistical and Thermal Physics I & II
- Fluid Dynamics
- General Physics I & II

COURSES WITH GOOD PERFORMANCE

Studied across various subjects, including **materials science, mechanical engineering**, **physics**, and **mathematics**. Capable of **integrating and applying knowledge from multiple fields.**

Materials Science:

- Phase Equilibria of Materials (A+)
- Thermodynamics of Solid State (A)
- Ceramic Materials (A)
- Transmission Electron Microscopy (A)

Power Mechanical Engineering

- Thermal and Fluid Science I (A+)
- Introduction to Nuclear Engineering (A+)
- Electric Circuits (A+)
- Kinematics of Machinery (A)
- Vehicle Power System (A)
- Programming Language (A+)
- Engineering Mathematics II (A+)
- Heat and Mass Transfer (A)
- Manufacturing Processes (A)
- Energy Engineering (A)

Physics:

- String Theory (A+)
- Elementary Particle Physics I (A+)
- Theoretical Mechanics Il (A+)
- Statistical Mechanics II (A)
- Fluid Dynamics (A+)
- Nonlinear Dynamics and Chaos (A+)
- Quantum Field Theory (A)

Mathematics:

- Advanced Calculus I (A+)

SKILLS

- LabVIEW
- AutoCAD
- 3D Printing
- Arduino
- MATLAB
- Python
- VBA
- C

CERTIFICATE

- TOEIC 880 (Gold)