

# Yu-Cheng Chiou

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*"If At First the Idea Is Not Absurd, Then There Is No Hope for It."* **Albert Einstein**

## Education

### National Taiwan University

POSTGRADUATE EDUCATION IN MATERIALS SCIENCE AND ENGINEERING

- Professional Education and Continuing Studies in Semiconductor Physics, (Total Credits Earned: 28)

Taipei, Taiwan

Sep. 2013 - Feb. 2015

### University of Manchester

M.S. IN ADVANCED ENGINEERING MATERIALS

- Master Thesis: Microwave Dielectric Ceramics, (Second-class honours, upper division)

Manchester, UK

Jun. 2010 - Dec. 2011

## Skills

<b>Programming</b>	C/C++, Python, Scheme, Matlab
<b>Simulation</b>	Sentaurus TCAD, Quantum Espresso, python-meep
<b>Fabrication</b>	CVD, ALD, Sputtering, Thermal and E-beam Evaporator
<b>Characterization</b>	SEM, Optic Microscopy, XRD, Raman Spectroscopy
<b>Languages</b>	Mandarin, English

## Work Experience

### University of Tromsø

DOCTORAL RESEARCH FELLOW

- Developed a visualization framework with Python for adaptive industrial and household electricity price plans in Arctic Norway.
- Investigated in transfer-free Graphene growth on the various semiconductor substrate.
- Led the hands-on experiments in two courses, Solar Energy and Energy Storage and undergraduate Physics.
- Installed and maintained Raman spectroscopy lab and designed the training courses.
- Rebuilt, refined, and maintained the solar cell measurement equipment.

Tromsø, Norway

Apr. 2019 - Dec. 2021

### Masdar Institute

MASTER RESEARCH ASSISTANCE

- Al-doped ZnO TFT for wearable device applications.
- TA in two courses, Semiconductor Physics and Semiconductor Manufacturing.

Abu Dhabi, UAE

Sep. 2016 - May. 2018

### Intel Microelectronic Asia Ltd

SENIOR HARDWARE TESTING ENGINEER

- Developed new products and testing plans for new products.
- Coordinated resources for the USA headquarter and vendors, including Broadcom, Realtek, and Qualcomm, to fulfill new products' technical and quality requirements, and assist clients in phasing these new Intel products into their future product lines.
- Engineered sample fabrications, including soldering, Jumper, etc.
- Implemented failure analysis, debugging, and product improvements of current products.
- Delivered NPI internal training to FAEs, AEs, and PMs as well as annual workshops to partners and clients.

Taipei, Taiwan

Feb. 2016 - Aug. 2016 & Jan. 2013 - Aug.

2013

### National Chiao Tung University

RESEARCH ASSISTANT

- Participated in wireless sensor networks design and application.
- Designed a wireless surveillance system with an information security mechanism.
- Investigated in super-capacitor recharge mechanism analysis-material selection.

Hsinchu, Taiwan

Apr. 2012 - Nov. 2012

### Taiwan Air Force, Military services

SR. AIRCRAFT MAINTENANCE AIRCRAFTMAN

- Implemented routine maintenance.

Taipei, Taiwan & Tainan, Taiwan

Jul. 2008 - Jul. 2009

## Guang Hua Digital Plaza

TECHNICAL SUPPORT ENGINEER AND SALES

- Provided technical knowledge to customers (mainly 3C products and PC components).
- Customized computers for various customer needs.
- Issued reproduce and consult for clients.

Taipei, Taiwan

Nov. 1997 - Apr. 2004

## Research Experience

### Two-dimensional Materials

PROJECT

- Direct growth graphene on conventional semiconductor substrates.

Tromsø, Norway

Apr. 2019 - Dec. 2021

### Energy demand and Power data analytics

PROJECT

- Cooperated with tromsø kraft to study power shortage in an Arctic fish village via data science and data visualization.

Tromsø, Norway

Apr. 2019 - Dec. 2020

### Graphene growth mechanism and its challenges on various substrate

PROJECT

- Graphene growth on semiconductor substrates for remote epitaxy focused on Ge, GaN, and GaAs.(MIT-MI Flagship research project).

Taipei Taiwan & Tromsø, Norway

May. 2018 - Dec. 2021

### Predicted the soil similarity using machine learning by portable devices.

PROJECT

- Imaging analysis techniques based on: 1. easiness in image acquisition (Digital Camera) and 2. availability of machine learning and statistical techniques packed into visual inspection.

Abu Dhabi, UAE & Tromsø, Norway

Jan. 2018 - Jun. 2020

### Van der Waals force interaction corresponds to single, bi-, and multi-layers graphene

PROJECT

- The possibility of representing van der Waals force interaction via Hamaker constant.

Abu Dhabi, UAE

Sep. 2016 - Apr. 2018

### Thin-film transistors developed for wearable devices

PROJECT

- Varied dopant, Al, Hf, Zr, impact to ZnO-Based TFT properties.

Abu Dhabi, UAE

Sep. 2016 - Apr. 2018

## Publication

### MASTER THESIS

2011 **"Microwave Dielectric Ceramics"**, Yu-Cheng Chiou

University of  
Manchester

### JOURNAL PAPERS

2017 **"Impact of short duration, high-flow H<sub>2</sub> annealing on graphene synthesis and surface morphology with high spatial resolution assessment of coverage"**, Sohail Shah, **Yu-Cheng Chiou**, Chia Yun Lai, Harry Apostoleris, Md.Mahfuzur Rahman, Hammad Younes, Ibraheem Almansouri, Amal Al Ghaferi, and Matteo Chiesa

Carbon

2017 **"Spectral management for temperature control in photovoltaic systems"**, Harry Apostoleris, **Yu-Cheng Chiou**, Matteo Chiesa, and Ibraheem Almansouri,

Optics for Solar  
Energy

2018 **"Direct Measurement of the Magnitude of the van der Waals Interaction of Single and Multilayer Graphene"**, **Yu-Cheng Chiou**, Tuza Adeyemi Olukan, Mariam Ali Almahri, Harry Apostoleris, Cheng- Hsiang Chiu, Chia-Yun Lai, Jin-You Lu, Sergio Santos, Ibraheem Almansouri, and Matteo Chiesa

Langmuir

2020 **"Predicting the suitability of lateritic soil type for low cost sustainable housing with image recognition and machine learning techniques"**, Tuza Adeyemi Olukan, **Yu-Cheng Chiou**, Cheng-Hsiang Chiu, Chia-Yun Lai, Sergio Santos, Matteo Chiesa Chiesa

Journal of Building  
Engineering

2021 **"Predicting Energy Demand in Semi-Remote Arctic Locations"**, Odin Foldvik Eikeland, Filippo Maria Bianchi, Harry Apostoleris, Morten Hansen, **Yu-Cheng Chiou**, Matteo Chiesa Chiesa

Energies

### CONFERENCE PAPER

2017. **"Spectral splitting for thermal management in photovoltaic cells"**, H. Apostoleris, Y.-C. Chiou, M. Chiesa, and I. Almansouri

## Reference People

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