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
Taipei, Taiwan

POSTGRADUATE EDUCATION IN MATERIALS SCIENCE AND ENGINEERING — *Sep. 2013 - Feb. 2015*

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

University of Manchester
Manchester, UK

M.S. IN ADVANCED ENGINEERING MATERIALS — *Jun. 2010 - Dec. 2011*

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

Skills

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

Work Experience

University of Tromsø
Tromsø, Norway

DOCTORAL RESEARCH FELLOW — *Apr. 2019 - Dec. 2021*

- 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.

Masdar Institute
Abu Dhabi, UAE

MASTER RESEARCH ASSISTANCE — *Sep. 2016 - May. 2018*

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

Intel Microelectronic Asia Ltd
Taipei, Taiwan

SENIOR HARDWARE TESTING ENGINEER — *Feb. 2016 - Aug. 2016 & Jan. 2013 - Aug. 2013*

- 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 soldiering, 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.

Topco Scientific
Taipei, Taiwan

EXECUTIVE ASSISTANT TO CEO — *Oct. 2013 - Jan. 2016*

- Surveyed novel materials for future use in transistors, solar cells, and LEDs and reported to CEO directly.
- Investigated the market trend of the future semiconductor industry.
- Developed potential customers in Asia Pacific.

National Chiao Tung University
Hsinchu, Taiwan

RESEARCH ASSISTANT — *Apr. 2012 - Nov. 2012*

- 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.

Taiwan Air Force, Military services — *Taipei, Taiwan & Tainan, Taiwan*

Sr. Aircraft Maintenance Aircraftman — *Jul. 2008 - Jul. 2009*

- Implemented routine maintenance.

Guang Hua Digital Plaza — *Taipei, Taiwan*

Technical Support Engineer and Sales — *Nov. 1997 - Apr. 2004*

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

Research Experience

Two-dimensional Materials — *Tromsø, Norway*

Project — *Apr. 2019 - Dec. 2021*

- Direct growth graphene on conventional semiconductor substrates.

Energy demand and Power data analytics — *Tromsø, Norway*

Project — *Apr. 2019 - Dec. 2020*

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

Graphene growth mechanism and its challenges on various substrate — *Taipei Taiwan & Tromsø, Norway*

Project — *May. 2018 - Dec. 2021*

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

Predicted the soil similarity using machine learning by portable devices. — *Abu Dhabi, UAE & Tromsø, Norway*

Project — *Jan. 2018 - Jun. 2020*

- 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.

Van der Waals force interaction corresponds to single, bi-, and multi-layers graphene — *Abu Dhabi, UAE*

Project — *Sep. 2016 - Apr. 2018*

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

Thin-film transistors developed for wearable devices — *Abu Dhabi, UAE*

Project — *Sep. 2016 - Apr. 2018*

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

Publication

Master Thesis

2011	**"Microwave Dielectric Ceramics"**, Yu-Cheng Chiou	*University of Manchester*

Journal Papers

2017	**"Impact of short duration, high-flow H 2 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*

2017. **"Spectral splitting for thermal management in photovoltaic cells",** H. Apostoleris, Y.-C. Chiou, M. Chiesa, and I. Almansouri — *Thermal Radiation Management for Energy Applications San Diego, California, USA,*

Reference People

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Dr. Mariam Al Mahri **Email**: malmahri@outlook.com; Mariam.aalmahri@ku.ac.ae, **Phone**: (+971) 529948419