

## Curriculum Vitae

Yu-Lun Chueh

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### Researcher ID number:

Google scholar: <http://scholar.google.com.tw/citations?user=PYHVJ3UAAAAJ&hl=zh-TW>  
(>19000 citations and 64 of H factor)

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Web of Science Researcher ID: E-2053-2013

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### Education

Ph.D., National Tsing Hua University, Taiwan, 2006

B.S., National Sun Yat-sen University, Taiwan, 1999

### Academic Experiences

Distinguished Professor in the Department of Materials Science and Engineering, National Tsing-Hua University, 2022/Aug ~present

Professor in the Department of Materials Science and Engineering, National Tsing-Hua University, 2015/Aug ~ 2022/July

Associate Professor in the Department of Materials science and Engineering, National Tsing-Hua University, 2012/Aug ~ 2015/Aug

Assistant Professor in the Department of Materials science and Engineering, National Tsing-Hua University, 2009/Aug ~ 2012/Aug

### International and Domestic Awards and Honors

-2013 Ta-You Wu Award (The most significant research award for young faculty below 42 in Taiwan)

-2013 Taiwan Vacuum Society Young Researcher Award, Taiwan

-2013 Electronics Devices and Materials Association-Outstanding Achievement-Outstanding Young Researcher Award, Taiwan

-2015 Lam Research Foundation University Funding Award, USA

-2015 Excellent Young Researcher Award Project from the Ministry of Science and Technology, Taiwan

-2015 Chinese Material Engineering Society Young Researcher Award, Taiwan

-2015 Lam Research Foundation University Funding Award, USA

-2016 Excellent Young Researcher Award Project from the Ministry of Science and Technology, Taiwan

-2017 APEC Science Prize for Innovation, Research and Education, Taiwan

-2019 MOST Research Award (The most significant research award in Taiwan)

-2022 MOST Research Award (The most significant research award in Taiwan)

-2022 World's Top 2% Scientists

-2022 Ranking of Top 1000 Scientists in the area of Materials Science from Research.com

### Research Interests and Publication Statistics

Prof. Yu-Lun Chueh's lab is highly interdisciplinary and is committed to exploring new unpredicted levels of functional materials to enable new schemes on manipulating and processing of engineering nanomaterials in nanoelectronics and energy harvesting applications. Some representatives of my excellent scientific achievements toward "*New Materials Technologies*" The current research directions include:

(1) Development of Cu(In,Ga)Se<sub>2</sub> solar cell and its investigation on light-harvesting behaviors.

(2) Growth of low dimensional materials and its possible functional applications

(3) Low power resistive random access memory

(4) Development of various method to synthesize different Graphene/two dimensional Materials

### Volunteer/Professional Society Activities

#### Editor in Chief

Discover Nano, Impact Factor: 5.418 (2012-Now)

#### Editor/Senior Editor/Associate Editor

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Journal of Nanomaterials, (2013-Now)  
Nanoscience and Nanotechnology Letter, (2012-Now)  
Journal of Nanoscience Letters (2016-Now)

**Academic Editor/Editorial board members**

Scientific Reports, (2014-Now)  
Hydrogen, (2019-Now)  
Journal of Semiconductor (2018-Now)

**Guest Editor**

Journal of Nanomaterials, (2012)  
Materials Today Energy, (2019)

**Activity in the Professional Society**

Fellow of the Optical Society (OSA)  
Fellow of the Royal Society of Chemistry (RSC)  
Fellow of the Institute of Physics (IOP)  
Fellow of the Institute of Materials, Minerals and Mining (IOM3)  
Associate Academician and Member of Asia Pacific Academy of Materials  
Senior Member of IEEE  
Executive Director of Electronics and Photonics Division, the electrochemical society (2010-Now)  
Executive Director of Taiwan Vacuum Society (2016-Now)  
Executive Director of Taiwan Microscopy Society (2019-Now)

**Selected Publication List within five years (2022-2018) with IF>12 related to only 2D materials (Total 367 papers with more than 18,200 citations since 2002) (\*Corresponding author)**

1. Po-Hung Tan, Che-Hao Hsu, Ying-Chun Shen, Chien-Ping Wang, Kun-Lin Liou, Jiaw-Ren Shih, Chrong Jung Lin, Ling Lee, Kuangye Wang, Hong-Min Wu, Tsung-Yu Chiang, Yue-Der Chih, Jonathan Chang, Ya-Chin King, **Yu-Lun Chueh\***, "Complementary Metal–Oxide–Semiconductor Compatible 2D Layered Film-Based Gas Sensors by Floating-Gate Coupling Effect" **Advanced Functional Materials**. 2022. 32 (13). 2108878
2. Po-Hung Tan, Che-Hao Hsu, Ying-Chun Shen, Chien-Ping Wang, Kun-Lin Liou, Jiaw-Ren Shih, Chrong Jung Lin, Ling Lee, Kuangye Wang, Hong-Min Wu, Tsung-Yu Chiang, Yue-Der Chih, Jonathan Chang, Ya-Chin King\*, **Yu-Lun Chueh\***, "Complementary Metal–Oxide–Semiconductor Compatible 2D Layered Film-Based Gas Sensors by Floating-Gate Coupling Effect", **Advanced Functional Materials**, 2022, 32(13), 2108878.
3. Kun Zhao, Wanru Sun, Xueting Zhang, Jingke Meng, Ming Zhong, Li Qiang, Ming-Jin Liu, Bing-Ni Gu, Chia-Chen Chung, Maocheng Liu, Fucheng Yu, **Yu-Lun Chueh\***, "High-performance and Long-Cycle Life of Triboelectric Nanogenerator Using PVC/MoS<sub>2</sub> Composite Membranes for Wind Energy Scavenging Application", **Nano Energy**, 2022, 91, 106649.
4. Po-Hung Tan, Che-Hao Hsu, Ying-Chun Shen, Chien-Ping Wang, Kun-Lin Liou, Jiaw-Ren Shih, Chrong Jung Lin, Ling Lee, Kuangye Wang, Hong-Min Wu, Tsung-Yu Chiang, Yue-Der Chih, Jonathan Chang, Ya-Chin King\*, **Yu-Lun Chueh\***, "Complementary Metal–Oxide–Semiconductor (CMOS) Compatible 2D Layered Film-Based Gas Sensors by Floating-Gate Coupling Effect", **Advanced Functional Materials**, 2021, 2108878.
5. Shu-Chi Wu, Yu-Hsiang Huang, Cheng-Ru Liao, Shin-Yi Tang, Tzu-Yi Yang, Yi-Chung Wang, Yi-Jen Yu, Tsong-Pyng Perng, and **Yu-Lun Chueh\***, "Rational Design of a Polysulfide Catholyte Electrocatalyst by Interfacial Engineering Based on Novel MoS<sub>2</sub>/MoN Heterostructures for Superior Room-Temperature Na–S Batteries", **Nano Energy**, 2021, 106590.
6. Ying-Chun Shen, Yu-Ting Wu, Ling Lee, Jun-Hong Chen, Sumayah Shakil Wani, Tzu-Yi Yang, Chih Wei Luo, Ming-Deng Siao, Yi-Jen Yu, Po-Wen Chiu\*, and **Yu-Lun Chueh\***, "Rational Design on Wrinkle-Less Transfer of Transition Metal Dichalcogenide Monolayer by Adjustable Wettability-Assisted Transfer (AWAT) Method", **Advanced Functional Materials**, 2021, 2104978.
7. Wen-Jun Niu, Jin-Zhong He, Bing-Ni Gu, Mao-Cheng Liu, **Yu-Lun Chueh\***, "Opportunities and Challenges in Precise Synthesis of Transition Metal Single-Atom Supported by Two-Dimensional Materials as Catalysts Toward Oxygen Reduction Reaction" **Advanced Functional Materials**, 2021, 210539.

8. Ling Lee, Yu-Chuan Shih, Tzu-Yi Yang, Ying-Chun Shen, Yu-Chieh Hsu, Chun-Hsiu Chiang, Yi-Chung Wang, Bi-Hsuan Lin, Xioa-Yun Li, Shao-Chin Tseng, Mau-Tsu Tang, Faliang Cheng, Zhiming M Wang\*, **Yu-Lun Chueh**\*, "In Situ Current-Accelerated Phase Cycling with Metallic and Semiconducting Switching in Copper Nanobelts at Room Temperature", ***ACS Nano***, **2021**, 15 (3), 4789–4801.
9. Yu-Shan Zhang, Bin-Mei Zhang, Yu-Xia Hu, Jun Li, Chun Lu, Ming-Jin Liu, Kuangye Wang, Ling-Bin Kong, Chen-Zi Zhao, Wen-Jun Niu, Wen-Wu Liu, Kun Zhao, Mao-Cheng Liu and **Yu-Lun Chueh**\*, "Diamine Molecules Double Lock-Link Structured Graphene Oxide Sheets for High-Performance Sodium Ions Storage", ***Energy Storage Materials***, **2021**, 34, 45-52.
10. Guojing Hu, Yuanmin Zhu, Junxiang Xiang, Tzu-Yi Yang, Meng Huang, Zhe Wang, Zhi Wang, Ping Liu, Ying Zhang, Chao Feng, Dazhi Hou, Wenguang Zhu, Meng Gu, Yalin Lu, Chia-Hsiu Hsu, Feng-Chuan Chuang, Bin Xiang\* and **Yu-Lun Chueh**\*, "Antisymmetric Magnetoresistance in a Van der Waals Antiferromagnetic/Ferromagnetic layered MnPS<sub>3</sub>/Fe<sub>3</sub>GeTe<sub>2</sub> Stacking Heterostructure", ***ACS NANO***, 2020, 14, 9, 12037-12044. DOI: 10.1021/acsnano.0c05252.
11. Shin-Yi Tang, Chun-Chuan Yang, Teng-Yu Su, Tzu-Yi Yang, Shu-Chi Wu, Yu-Chieh Hsu<sup>a</sup>, Yu-Ze Chen, Tzu-Neng Lin, Ji-Lin Shen, Heh-Nan Lin, Po-Wen Chiu, Hao-Chung Kuo, **Yu-Lun Chueh**\*, "Design of Core-Shell Quantum Dots-3D WS<sub>2</sub> Nanowalls Hybrid Nanostructures with High-Performance Bifunctional Sensing Applications", ***ACS NANO*** **2020**, DOI:10.1021/acsnano.0c01264.
12. Yuanfei Ai, Shu-Chi Wu, Kuangye Wang, Tzu-Yi Yang, Mingjin Liu, Hsiang-Ju Liao, Jiachen Sun, Jyun-Hong Chen, Shin-Yi Tang, Ding Chou Wu, Teng-Yu Su, Yi-Chung Wang, Hsuan-Chu Chen, Shan Zhang, Wen-Wu Liu, Yu-Ze Chen, Ling Lee, Jr-Hau He, Zhiming M. Wang and **Yu-Lun Chueh**\*, "Three-Dimensional Molybdenum Diselenide Helical Nanorod Arrays for High-Performance Aluminum-Ion Batteries" ***ACS NANO***, **2020**, 14, 7, 8539–8550
13. Pavithra Sriram, Arumugam Manikandan, Feng-Chuan Chuang, **Yu-Lun Chueh**\*, "Hybridizing Plasmonic Materials with 2D-Transition Metal Dichalcogenides Toward Functional Applications", Invited review paper, ***Small***, **2020**, 1904271.
14. Yu-Ze Chen, Shao-Hsin Lee, Teng-Yu Su, Shu-Chi Wu, Pin-Jung Chen and **Yu-Lun Chueh**\*, "Plasma-Engineered 1T/2H Phases in 3D-Hierarchical WSe<sub>2</sub> Nanoscrews as High Performance NO Gas Sensors with ppb-level Detection Limit" ***Journal of Materials Chemistry A***, **2019**, 7, 22314-22322.
15. Arumugam Manikandan, Yu-Ze Chen, Chih-Chiang Shen, Chin-Wei Sher, Hao-Chung Kuo, and **Yu-Lun Chueh**\*, "A Critical Review on Two-Dimensional Quantum Dots (2D QDs): From Synthesis Toward Applications in Energy and Optoelectronics", ***Progress in Quantum Electronics***, **2019**, 100226.
16. Cuo Wu, Jing Zhang, Xin Tong, Peng Yu, Jing-Yin Xu, Jiang Wu, Zhiming Wang\*, Jun Lou\* and **Yu-Lun Chueh**\*, "A Critical Review on Enhancement of Photocatalytic Hydrogen Production by Molybdenum Disulfide: From Growth to Interfacial Activities", ***Small***, **2019**, 2019, 1900578.
17. Shin-Yi Tang, Henry Medina, Yu-Ting Yen, Chia-Wei Chen, Tzu-Yi Yang, Kung-Hwa Wei and **Yu-Lun Chueh**\*, "Enhanced Photo-Carrier Generation with Selectable Wavelengths by M-decorated-CuInS<sub>2</sub> nanocrystals (M=Au and Pt) Synthesized in A Single Surfactant Process on MoS<sub>2</sub> bilayers", ***Small***, **2019**, 1803529.
18. P. Sriram, D.-S. Su, A. Manikandan, S.-W. Wang, **Yu. Lun. Chueh**, Ta-Jen Yen, "Hybridizing Strong Quadrupole Gap Plasmons using Optimized Nanoantennas with Bilayer MoS<sub>2</sub> for Excellent Photoelectrochemical Hydrogen Evolution", ***Advanced Energy Materials***, **2018**, 1801184
19. James Bullock, Matin Amani, Joy Cho, Yu-Ze Chen, Geun Ho Ahn, Valerio Adinolfi, Vivek Raj Shrestha, Yang Gao, Kenneth B Crozier, **Yu-Lun Chueh**, Ali Javey, "Polarization-resolved black phosphorus/molybdenum disulfide mid-wave infrared photodiodes with high detectivity at room temperature", ***Nature Photonics***, **2018**, 1.
20. Arumugam Manikandan, P. Robert Ilango, Chia-Wei Chen, Yi-Chung Wang, Yu-Chuan Shih, Ling Lee, Zhiming M. Wang, Hyunhyub Ko and **Yu-Lun Chueh**\*, "Superior Dye Adsorbent towards Hydrogen Evolution Reaction Combining Active Sites and Phase-Engineering of (1T/2H) MoS<sub>2</sub>/α-MoO<sub>3</sub> Hybrid Heterostructured Nanoflowers" ***Journal of Materials Chemistry A***, **2018**, 6, 15320-15329, 2018.
21. Yu-Ze Chen, Sheng-Wen Wang, Teng-Yu Su, Shao-Hsin Lee, Chia-Wei Chen, Chen-Hua Yang, Kuangye Wang, Hao-Chung Kuo, and **Yu-Lun Chueh**\*, "Phase-Engineered Type-II Multi-Metal-Selenide Heterostructures Toward Low-Power-Consumption, Flexible, Transparent and Wide-Spectrum Photoresponse Photodetectors" ***Small***, 14(22):1704052, 2018.

22. Teng-Yu Su, Henry Medina, Yu-Ze Chen, Sheng-Wen Wang, Shao-Shin Lee, Yu-Chuan Shih, Chia-Wei Chen, Hao-Chung Kuo and **Yu-Lun Chueh\***, "Phase-Engineered PtSe<sub>2</sub> Layered Films by A Plasma-Assisted Selenization Process Toward All PtSe<sub>2</sub>-Based Field Effect Transistor to Highly Sensitive, Flexible and Wide-Spectrum Photoresponse Photodetectors", ***Small***, 14(19):1800032, 2018.
  23. Yan Wang, Zexiang Chen, Tao Lei, Yuanfei Ai, Zhenkai Peng, Xinyu Yan, Hai Li, Jijun Zhang, Zhiming M. Wang and **Yu-Lun Chueh\***, "Hollow NiCo<sub>2</sub>S<sub>4</sub> nanospheres hybridized with three dimensional hierarchical porous rGO/Fe<sub>2</sub>O<sub>3</sub> composites toward highly performance energy storage device", ***Advanced Energy Materials***, 8, 1703453, 2018. **(Selected as insider front cover)**
  24. Ling Lee, Chia-Wei Chen, Arumugam Manikandan, Shao-Hsin Lee, Zhiming M. Wang, and **Yu-Lun Chueh\***, "Phase-Engineered SnSe<sub>x</sub> Toward SnSe<sub>2</sub>/SnSe Heterostructure with Improved Thermal Conductance by a Low-Temperature Plasma-assisted Chemical Vapor Reaction", ***Nano Energy***, 44, 419-429, 2018.
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