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A: Refereed Journal Papers

1. Yun-Wen Chen and **C. W. Liu**, "Relative stabilities and physical parameters of rhombohedral distorted HfO_2 crystalline phases," Accepted by Journal of Physics D: Applied Physics.

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B1: Refereed International Conference Papers

1. Avishek Das, Kuan-Wei Lu, Gwangjin Bak, Sakshi Dubey, Yang-En Hu, and **C. W. Liu**, "Optimization of Dual-Contact Ge PIN Photodetectors with an Bandwidth of 303 GHz", ***2026 IEEE Silicon Photonics Conference (SiPhotonics), Ottawa, Canada, April 13-15, 2026.***
2. (invited) **C. W. Liu**, "Nanosheets/CFET and Beyond," Taiwan-Europe Chip Innovation Forum (TECIF), Dresden, Germany, Nov. 27-28, 2025.
3. Chun-Yi Cheng, Bo-Wei Huang, Xin-Yuan Lin, and **C. W. Liu**, "Monolithic 3-Tier Nanosheet Transistor Stacking Featuring Split Gate and Half SRAM Functionalities," ***56th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 10-13, 2025.***
4. Jhih-Yuan Liang, Yu-Rui Chen, Guan-Hua Chen, Yun-Wen Chen, Min-Hsuan Tsai, Kuan-Heng Lin, Bo-Hui Yu, Yan-Jyun Chen, Yu-An Chen, and **C. W. Liu**, "Water-Quenched AFE-Like/FE HZO with TiN Top Electrodes Enabling 0.75V V_{op} and Endurance > 7E12," ***56th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 10-13, 2025.***
5. (**Highlight Paper**, Link) Tao Chou, Hsin-Cheng Lin, Ching-Wang Yao, Yu-Sheng Lai, Fang-Yu Chang, Chia-Wei Tseng, Tzu-An Chang, He-Wen Shen, and **C. W. Liu**, "Transistor-to-Package Thermal Simulation with Hotspot Mitigation by Decoupling", accepted by ***International Electron Devices Meeting (IEDM), Dec. 6-10, 2025.***
6. Yu-Shan Wu, Rong-Wei Ma, Yuan-Ming Liu, Johannes Gracia, Chuan-Wei Kuo, Hsien-Ming Sung, Hidenari Fujiwara, Ting-Chang Chang, and **C. W. Liu**, "First Demonstration of Fluorine Supercritical Fluid Passivated 2-floor GAA In_2O_3 Nanosheets Achieving Positive 0.7 V V_T, 67 mV/dec SS, 1309 μA/μm $I_{D,max}$, Record 47 mV PBS, and Negligible NBS", accepted by ***International Electron Devices Meeting (IEDM), Dec. 6-10, 2025.***
7. Yu-Tsung Liao, Jhih-Yuan Liang, Tao Chou, Guan-Hua Chen, Yun-Wen Chen, Yu-Rui Chen, Wei-Jen Chen, Min-Kuan Lin, Yan-Jyun Chen, Yu-An Chen, Bo-Hui Yu, Hidenari Fujiwara, Ming-Chang Liu, Kuan-Heng Lin, Dai-Ying Lee, Ming-Hsiu Lee, and **C. W. Liu**, "HZO MFM with Record 45μC/cm^2 $2P_r$ @ ≤3nm, Record 60 $2P_r/V_{op}$, and Record >8E12 Endurance by β-W Electrodes and Initial Solid Phase Epitaxy with 1.2V NVSRAM Applications", accepted by ***International Electron Devices Meeting (IEDM), Dec. 6-10, 2025.***
8. Min-Kuan Lin, Ding-Wei Lin, Jui-Yu Hsu, Guan-Hua Chen, Bo-Hui Yu, Wei-Jen Chen, Bo-Wei Huang, Tao Chou, Yi-Chun Liu, Yu-Rui Chen, Hong-Yi Tu, Ting-Chang Chang, and C. W. Liu, "O/H Supercritical Fluid Passivation on Stacked $Ge_{0.95}Si_{0.05}$ Nanosheet nFETs," IEEE Silicon Nanoelectronics Workshop (SNW), Jun. 8 - 9, 2025.
9. Ching-Wang Yao, Tzu-Yun Liu, Tao Chou, Hsin-Cheng Lin, and C. W. Liu, "Modeling and Simulation of Intrinsic Gate Capacitance in Ultrathin Body Nanosheets Including Quantum Effects," 2025 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), April 21-24, 2025.
10. Avishek Das, Logeshwaran Venkatesapandian, Gwangjin Bak, and C. W. Liu, "Design and Optimization of Ge PINIP Photodetectors for Enhanced Responsivity and Bandwidth in Ultrafast Photonic Applications", 2025 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), April 21-24, 2025.
11. Yuan-Ming Liu, Hsien-Ming Sung, Yu-Shan Wu, Rong-Wei Ma, Johannes Gracia, Hidenari Fujiwara, Tsang-Long Chen, Cheng-Hsu Chou, and C. W. Liu, "Reliability Study of Self-Aligned Top-Gated a-IGZO TFTs by N2 and N2O Plasma Treatment," 2025 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), April 21-24, 2025.
12. Bo-Wei Huang, Ying-Qi Liu, Ching-Wang Yao, Wei-Jen Chen, Min Kuan Lin, Xin-Yuan Lin, Chun-Yi Cheng, Yi

Huang, Ding-Wei Lin, Chih-Hsuan Lu, Tsung-Han Tsai, and **C. W. Liu**, "First Demonstration of Monolithic 3-Tier Nanosheet Transistor Stacking with Split Gate Featuring Tri-State Inverter/Half SRAM Functionalities," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 8-12, 2025.***

13. Tao Chou, He-Wen Shen, Yu-Sheng Lai, Chia-Wei Tseng, Fang-Yu Chang, Hsin-Cheng Lin, Ching-Wang Yao, and **C. W. Liu**, "Unified Physics-Based CFET Thermal SPICE considering BEOL, Substrate, and BSPDN using Adiabatic Cones," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 8-12, 2025.***
14. Yu-Shan Wu, Yuan-Ming Liu, Hsien-Ming Sung, Rong-Wei Ma, Johannes Gracia, Hidenari Fujiwara, Kuan-Wei Lu, and **C. W. Liu**, "First Demonstration of 2-floor GAA In_2O_3 Nanosheet FET Enabled by TiN Sacrificial Layers and Fluorine Passivation," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 8-12, 2025.***
15. Jhih-Yuan Liang, Yu-Rui Chen, Guan-Hua Chen, Yun-Wen Chen, Yu-An Chen, Bo-Hui Yu, Yan-Jyun Chen, and **C. W. Liu**, "Stacked AFE-Like/FE HZO (4.5nm) to Achieve 0.75V Operating Voltage and Record Endurance Exceeding 7E12 Using Water Quenching and TiN Top Electrodes," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 8-12, 2025.***
16. (invited) Chun-Yi Cheng and **C. W. Liu**, "Nanosheet Extensions and CFETs to Boost PPA Gain," ***2025 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), 2025.***
17. Bo-Wei Huang, Wei-Jen Chen, Yu-Rui Chen, and **C. W. Liu**, "Enhanced Breakdown Voltage and Photo Response of Ultrathin Body Nanosheets," ***55th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 11-14, 2024.***
18. Yu-Tsung Liao, Zefu Zhao, Yu-Rui Chen, Yun-Wen Chen, Wan-Hsuan Hsieh, Jer-Fu Wang, Yu-An Chen, Hao-Yi Lu, Wei-Teng Hsu, and **C. W. Liu**, "C-axis Oriented $Hf_{0.5}Zr_{0.5}O_2$ on Flat TiN Achieving High Remanent Polarization, High Breakdown Field, and Endurance > 4E12," ***55th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 11-14, 2024.***
19. Yu-Shan Wu, Chuan-Wei Kuo, Yuan-Ming Liu, Jih-Chao Chiu, Johannes Gracia, Rong-Wei Ma, Hidenari Fujiwara, Yu-Cheng Fan, Hsien-Ming Sung, Ting-Chang Chang, and **C. W. Liu**, "Performance Enhancement of PEALD-In_2O_3 BCE TFTs and GAA Nanosheet FETs by Oxygen Supercritical Fluid Passivation," ***55th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 11-14, 2024.***
20. Bo-Wei Huang, Chun-Yi Cheng, Wan-Hsuan Hsieh, Yu-Rui Chen, Wei-Jen Chen, Yi-Chun Liu, Min-Kuan Lin, Ying-Qi Liu, Hao-Yi Lu, Yi Huang, Ding-Wei Lin, and **C. W. Liu**, "WN_xC_y V_T Tuning of Split Gate Nanosheet CFET with Dual Work Function Metals Achieving 0.93 V_T Match/ Improved 0.24V Noise Margin/ Record Gain of 61V/V," ***International Electron Devices Meeting (IEDM), Dec. 7-11, 2024.***
21. **(Highlight Paper**, Link**)** Guan-Hua Chen, Yu-Tsung Liao, Zefu Zhao, Yu-Rui Chen, Yun-Wen Chen, Wei-Jen Chen, Wei-Teng Hsu, Hao-Yi Lu, Ming-Chang Liu, Yu-An Chen, and **C. W. Liu**, "Uniform and Fatigue-Free Ferroelectric HZO with Record E_{BD} of 6.3MV/cm and Record Final $2P_r$ of 64μC/cm^2 at Record 5E12 Endurance Using Low Lattice Misfit (2.9%) β-W," ***International Electron Devices Meeting (IEDM), Dec. 7-11, 2024.***
22. C.-H. Liu, K.-Y. Hsiang, F.-S. Chang, Y.-T. Chang, **C. W. Liu**, and M. H. Lee, "Energy Material for Extreme Environment: Unveiling Novel Self-Resilience of $Hf_{1-x}Zr_xO_2$ for Electrostatic Energy Storage (EES) and Pyroelectric Energy Harvesting (PEH)," accepted by ***International Electron Devices Meeting (IEDM), Dec. 7-11, 2024.***
23. Hsin-Cheng Lin, Chia-Wei Tseng, Yu-Ying Chen, Ho-Ming Tong, and **C. W. Liu**, "High-thermal-conductivity Dummy Die and Finned Lid for Enhanced Liquid Cooling of 2.5D ICs," accepted by *IEEE Electronics Packaging Technology Conference (EPTC), 2024.*
24. Bo-Wei Huang, Yu-Rui Chen, Tao Chou, Hsin-Cheng Lin, Chien-Te Tu, Yi-Chun Liu, Wan-Hsuan Hsieh, Wei-Jen

Chen, Min-Kuan Lin, Ying-Qi Liu, Li-Kai Wang, Hung-Chun Chou, Yi Huang, Ding-Wei Lin, and **C. W. Liu**, "**Enhanced Electrical Performance of Ultrathin Body Nanosheets**," ***IEEE Silicon Nanoelectronics Workshop (SNW), Jun. 15 - 16, 2024.***

25. Zefu Zhao, Yu-Rui Chen, Yu-Tsung Liao, Yun-Wen Chen, Wan-Hsuan Hsieh, Jer-Fu Wang, Yu-An Chen, Hao-Yi Lu, Wei-Teng Hsu, Dai-Ying Lee, Ming-Hsiu Lee, and **C. W. Liu**, "Engineering HZO by Flat Amorphous TiN with 0.3nm Roughness Achieving Uniform c-axis Alignment, Record High Breakdown Field (~10nm HZO), and Record Final $2P_r$ of 56 $\mu C/cm^2$ with Endurance > 4E12," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 16-20, 2024.***
26. (invited) **C. W. Liu**, "Nanosheets and CFETs Enabled by Epi Doping," 24th International Conference on Ion Implantation Technology 2024 (24th IIT 2024), Toyama, Japan, September 23-26, 2024.
27. (invited) **C. W. Liu**, "Nanosheets and CFETs," *XIX International Small-Angle Scattering Conference (SAS2024)*, Taipei, Taiwan, Nov., 2024.
28. Yun-Wen Chen and **C. W. Liu**, "Ferroelectric Properties of HZO Orthorhombic ($Pca2_1$, $Pmn2_1$) Phases under Shear Strain -A Theoretical Study," 2024 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), April 22-25, 2024.
29. Yu-Chieh Lee, Avishek Das, Yi Huang, Logeshwaran Venkatesapandian, and **C. W. Liu**, "Enhanced Charge Transfer Efficiency Using Ring Vertical Transfer Gates in Backside Illuminated CMOS Image Sensor", 2024 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), April 22-25, 2024.
30. **(Best Poster Award)** Avishek Das, Hsin-Cheng Lin, and **C. W. Liu**, "BEOL Layout Optimization to Improve RF Performance of 40nm Node Technology for High-Frequency Applications", 2024 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), April 22-25, 2024.
31. Yuan-Ming Liu, Eknath Sarkar, Yu-Rui Chen, Jih-Chao Chiu, Zefu Zhao, Yu-Ciao Chen, Yu-Cheng Fan, Rong-Wei Ma, and **C. W. Liu**, "Large Memory Window of 2.7 V and High Endurance > 10^{11} Cycles in Self-Aligned Top-Gated a-InGaZnO Ferroelectric FET by Incorporating ZnO-Rich," ***54th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 13-16, 2023.***
32. Jih-Chao Chiu, Eknath Sarkar, Yuan-Ming Liu, Yu-Ciao Chen, Yu-Cheng Fan, Rong-Wei Ma, and **C. W. Liu**, "Demonstration of a-InGaZnO Gate-all-around Nanosheet FETs," ***54th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 13-16, 2023.***
33. Yi-Chun Liu, Yu-Rui Chen, Yun-Wen Chen, Wei-Jen Chen, Chien-Te Tu, and **C. W. Liu**, "High-κ (47) $Hf_{0.2}Zr_{0.8}O_2$ Gate Stacks Integrated into 8 Stacked $Ge_{0.95}Si_{0.05}$ Nanowire and Nanosheet nFETs to Significantly Enhance I_{ON}," ***54th IEEE Semiconductor Interface Specialists Conference (SISC), Dec. 13-16, 2023.***
34. Chien-Te Tu, Wan-Hsuan Hsieh, Yu-Rui Chen, Bo-Wei Huang, Yu-Tsung Liao, Wei-Jen Chen, Yi-Chun Liu, Chun-Yi Cheng, Hung-Chun Chou, Hao-Yi Lu, Cheng-Hsien Hsin, Geng-Min He, Dong Soo Woo, Shee-Jier Chueh, and **C. W. Liu**, "First Demonstration of Monolithic Self-aligned Heterogeneous Nanosheet Channel Complementary FETs with Matched V_T by Band Alignments of Individual Channels," ***International Electron Devices Meeting (IEDM), Dec. 9-13, 2023.***
35. Asim Senapati, Zhao-Feng Lou, Fu-Sheng Chang, Yu-Rui Chen, Yi-Pin Chen, Shih-Yin Huang, Siddheswar Maikap, **Chee-Wee Liu**, and Min-Hung Lee, "A Thin TiN_x Layer on Pt Electrode Based $Hf_{0.33}Zr_{0.66}O_2$ Ferroelectric Memory", ***2023 International Conference on Solid State Devices and Materials (SSDM2023) in Nagoya, Japan.***
36. Abhijit Aich, Asim Senapati, Zhao-Feng Lou, Fu-Sheng Chang, Yu-Rui Chen, Yi-Pin Chen, Shih-Yin Huang,

Siddheswar Maikap, **Chee-Wee Liu**, and Min-Hung Lee, "Novel WN_x/C Interfacial Layer on $Hf_{0.5}Zr_{0.5}O_2$ Ferroelectric Memory", ***2023 International Conference on Solid State Devices and Materials (SSDM2023) in Nagoya, Japan.***

37. K.-Y. Hsiang, J.-Y. Lee, F.-S. Chang, Z.-F. Lou, Z.-X. Li, Z.-H. Li, J.-H. Chen, **C. W. Liu**, T.-H. Hou, and M. H. Lee, "FeRAM Recovery up to 200 Periods with Accumulated Endurance 10^{12} Cycles and an Applicable Array Circuit toward Unlimited eNVM Operations," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 11-16, 2023.***
38. J.-Y. Lee, F.-S. Chang, K.-Y. Hsiang, P.-H. Chen, Z.-F. Luo, Z.-X. Li, J.-H. Tsai, **C. W. Liu**, and M. H. Lee, "3D Stackable Vertical Ferroelectric Tunneling Junction (V-FTJ) with on/off Ratio 1500x, Applicable Cell Current, Self-Rectifying Ratio 1000x, Robust Endurance of 10^9 Cycles, Multilevel and Demonstrated Macro Operation Toward High-Density BEOL NVMs." ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 11-16, 2023.***
39. Yi-Chun Liu, Yu-Rui Chen, Yun-Wen Chen, Hsin-Cheng Lin, Wan-Hsuan Hsieh, Chien-Te Tu, Bo-Wei Huang, Wei-Jen Chen, Chun-Yi Cheng, Shee-Jier Chueh, and **C. W. Liu**, "Extremely High-κ $Hf_{0.2}Zr_{0.8}O_2$ Gate Stacks Integrated into $Ge_{0.95}Si_{0.05}$ Nanowire and Nanosheet nFETs Featuring Respective Record I_{ON} per Footprint of 9200μA/μm and Record I_{ON} per Stack of 360μA at V_{OV}=V_{DS}=0.5V," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 11-16, 2023.***
40. Yu-Rui Chen, Yi-Chun Liu, Zefu Zhao, Wan-Hsuan Hsieh, Jia-Yang Lee, Chien-Te Tu, Bo-Wei Huang, Jer-Fu Wang, Shee-Jier Chueh, Yifan Xing, Guan-Hua Chen, Hung-Chun Chou, Dong Soo Woo, M. H. Lee, and **C. W. Liu**, "First Stacked Nanosheet FeFET Featuring Memory Window of 1.8V at Record Low Write Voltage of 2V and Endurance >1E11 Cycles," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 11-16, 2023.***
41. Zefu Zhao, Yu-Rui Chen, Yun-Wen Chen, Wan-Hsuan Hsieh, Jer-Fu Wang, Jia-Yang Lee, Yifan Xing, Guan-Hua Chen, and **C. W. Liu**, "Towards Epitaxial Ferroelectric HZO on n^+-Si/Ge Substrates Achieving Record $2P_r$ = 84 μC/cm^2 and Endurance > 1E11," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 11-16, 2023.***
42. Jih-Chao Chiu, Eknath Sarkar, Yuan-Ming Liu, Yu-Ciao Chen, Yu-Cheng Fan, and **C. W. Liu**, "First Demonstration of a-IGZO GAA Nanosheet FETs Featuring Achievable SS=61 mV/dec, I_{off}<10^{-7}μA/μm, DIBL=44 mV/V, Positive V_T, and Process Temp. of 300 ºC," ***Symposium on VLSI Technology and Circuits (VLSI), JUNE 11-16, 2023.***
43. (invited) Yi-Chun Liu, Chien-Te Tu, Wan-Hsuan Hsieh, Yu-Rui Chen, Bo-Wei Huang, Chun-Yi Cheng, and **C. W. Liu**, "Stacking High Mobility Channels," 244th ECS Meeting, Gothenburg, Sweden, October 8-12, 2023.
44. (invited) Chien-Te Tu, Wan-Hsuan Hsieh, Yi-Chun Liu, Yu-Rui Chen, Bo-Wei Huang, Chun-Yi Cheng, and **C. W. Liu**, "Channel and Transistor Stacking of Nanosheets," International Conference on Solid State Devices and Materials (SSDM), Nagoya, Japan, September 5-8, 2023.
45. (invited) Chien-Te Tu, Yi-Chun Liu, Yu-Rui Chen, Bo-Wei Huang, Chun-Yi Cheng, and **C. W. Liu**, "Nanosheet Extensions and Beyond," 2023 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), 2023.
46. K.-Y. Hsiang, J.-Y. Lee, Z.-F. Lou, F.-S. Chang, Z.-X. Li, **C. W. Liu**, T.-H. Hou, P. Su, and M. H. Lee, "Cryogenic Endurance of Anti-ferroelectric and Ferroelectric $Hf_{1-x}Zr_xO_2$ for Quantum Computing Applications," International Reliability Physics Symposium (IRPS), 2023.
47. **(Best Poster Award)** Eknath Sarkar, Yichen Ma, Yu-Chieh Lee, and **C. W. Liu**, "Effects of Deep Trench Isolation Shape and Microlens Radius of Curvature on Optical and Electrical crosstalk in Backside Illuminated CMOS Image Sensors," 2023 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), 2023.
48. Hsin-Cheng Lin, Kuan-Ying Chiu, Ching-Wang Yao, Tao Chou, Tsai-Yu Chung, and **C. W. Liu**, "BEOL Design and

RF Performance of Stacked Si Nanosheets and Nanowires," 2023 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), 2023.

49. **(Best Student Paper Award)** Yu-Rui Chen, Chien-Te Tu, Zefu Zhao, Yi-Chun Liu, Bo-Wei Huang, Yifan Xing, Guan-Hua Chen, and **C. W. Liu** "Stacked Two $Ge_{0.98}Si_{0.02}$ Nanowire nFETs with High-κ Dielectrics Featuring High I_{ON} per Footprint of 4800 μA/μm at V_{OV}=V_{DS}=0.5V," 2023 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), 2023.
50. Chien-Te Tu, Yi-Chun Liu, Bo-Wei Huang, Yu-Rui Chen, Wan-Hsuan Hsieh, Chung-En Tsai, Shee-Jier Chueh, Chun-Yi Cheng, Yichen Ma, and **C. W. Liu**, "First Demonstration of Monolithic 3D Self-aligned GeSi Channel and Common Gate Complementary FETs by CVD Epitaxy Using Multiple P/N Junction Isolation," *pp. 479-482*, ***International Electron Devices Meeting (IEDM), 2022***.
51. C.-Y. Liao, Z.-F. Lou, C.-Y. Lin, A. Senapati, R. Karmakar, K.-Y. Hsiang, Z.-X. Li, W.-C. Ray, J.-Y. Lee, P.-H. Chen, F.-S. Chang, H.-H. Tseng, C.-C. Wang, J.-H. Tsai, Y.-T. Tang, S. T. Chang, **C. W. Liu**, S. Maikap, and M. H. Lee, "Superlattice HfO_2-ZrO_2 based Ferro-Stack $HfZrO_2$ FeFETs: Homogeneous-Domain Merits Ultra-Low Error, Low Programming Voltage 4 V and Robust Endurance 10^9 cycles for Multibit NVM," ***International Electron Devices Meeting (IEDM), 2022***.
52. K.-Y. Hsiang, Y.-C. Chen, F.-S. Chang, C.-Y. Lin, C.-Y. Liao, Z.-F. Lou, J.-Y. Lee, W.-C. Ray, Z.-X. Li, C.-C. Wang, H.-C. Tseng, P.-H. Chen, J.-H. Tsai, M. H. Liao, T.-H. Hou, **C. W. Liu**, P.-T. Huang, P. Su, and M. H. Lee, "Novel Opposite Polarity Cycling Recovery (OPCR) of $HfZrO_2$ Antiferroelectric-RAM with an Access Scheme Toward Unlimited Endurance," ***International Electron Devices Meeting (IEDM), 2022***.
53. Yun-Wen Chen, Yu-Rui Chen, Zefu Zhao, Yifan Xing, Guan-Hua Chen, and **C. W. Liu**, "Enhanced Ferroelectricity in $Hf_{0.5}Zr_{0.5}O_2$ Thin Film with Amorphous Underlayer," **53rd IEEE Semiconductor Interface Specialists Conference (SISC 2022).**
54. Yu-Rui Chen, Zefu Zhao, Yun-Wen Chen, Yifan Xing, Yuxuan Lin, Guan-Hua Chen, and **C. W. Liu**, "Optimizing Oxygen Vacancy and Interface Energy Achieving High Remnant Polarization and Dielectric Constants of Respective $Hf_{0.5}Zr_{0.5}O_2$ Superlattice and Alloy Structure," **53rd IEEE Semiconductor Interface Specialists Conference (SISC 2022).**
55. Zefu Zhao, Yu-Rui Chen, Yun-Wen Chen, Yifan Xing, Guan-Hua Chen, and **C. W. Liu**, "Engineering $Hf_{0.5}Zr_{0.5}O_2$ Ferroelectricity with Amorphous WO_x Bottom Electrodes Achieving High Remnant Polarization," **53rd IEEE Semiconductor Interface Specialists Conference (SISC 2022).**
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62. Wan-Hsuan Hsieh, Yi-Chun Liu, Chung-En Tsai, and **C. W. Liu**, "Diffusion and Segregation in Highly Stacked $Ge_{0.9}Sn_{0.1}$/Ge:B and $Ge_{0.95}Si_{0.05}$/Ge:P Epilayers," 241st ECS Meeting, Vancouver, BC, Canada, May 29 – June 2, 2022.
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65. Hsin-Cheng Lin, Tao Chou, Kung-Ying Chiu, Chia-Che Chung, Chia-Jung Tsen, and **C. W. Liu**, "RF Performance Optimization of Stacked Si Nanosheet nFETs," 2022 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA), 2022.
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I_{ON} = 110 μA (4100 μA/μm) at V_{OV}=V_{DS}=0.5V and High $G_{m,max}$ = 340 μS (13000 μS/μm) at V_{DS}=0.5V by Wet Etching," ***Symposia on VLSI Technology and Circuits (VLSI), 2021.***

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B2: Refereed Local Conference Papers

1. Avishek Das, Kuan-Wei Lu, Ying-Jung Chen, Gwangjin Bak, Logeshwaran Venkatesapandian, and **C. W. Liu**, "Design and Optimization of a Si-contacted Ge PIN Photodetector with an Optical -3dB Bandwidth of 250 GHz," *5th Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 27-28, 2025.
2. Min-Kuan Lin, Ding-Wei Lin, Jui-Yu Hsu, Guan-Hua Chen, Bo-Hui Yu, Wei-Jen Chen, Bo-Wei Huang, Tao Chou, Yi-Chun Liu, Yu-Rui Chen, Hong-Yi Tu, Ting-Chang Chang, and **C. W. Liu**, "First O/H Supercritical Fluid Passivation on Stacked $Ge_{0.95}Si_{0.05}$ Nanosheet nFETs Featuring Record I_{ON} per Floor of 73μA at VOV=VDS=0.5V," *5th Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 27-28, 2025.
3. Rachit Dobhal, Yuan-Ming Liu, Jih-Chao Chiu, Hsien-Ming Sung, Yu-Shan Wu, Yu-Cheng Fan, Johannes Gracia, Rong-Wei Ma, Hidenari Fujiwara and **C. W. Liu**, "FeFET Mimicry in Amorphous Indium Oxide by Interface Dipoles," *5th Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 27-28, 2025.
4. Hsien-Ming Sung, Yu-Shan Wu, Yuan-Ming Liu, Rong-Wei Ma, Johannes Gracia, Hidenari Fujiwara, Tsang-Long Chen, Cheng-Hsu Chou, and **C. W. Liu**, "Mobility Enhancement of BCE-Type Amorphous InGaZnO TFTs by Multi-layer Channel Structure," *5th Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 27-28, 2025.
5. (keynote) Bo-Wei Huang and **C. W. Liu**, "CFETs and beyond," *5th Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 27-28, 2025.
6. Guan-Hua Chen, Yu-Rui Chen, Yu-Tsung Liao, Yu-An Chen, Bo-Hui Yu, Yan-Jyun Chen, Chun-Yen Tseng, and **C. W. Liu**, "$Hf_{0.5}Zr_{0.5}O_2$ Orthorhombic Phase Identification by X-Ray Absorption Spectroscopy and Nano-Beam Electron Diffraction," National Synchrotron Radiation Research Center 30th Users' Meeting & Workshops, Hsinchu, Taiwan, Oct. 31-Nov. 2, 2024.
7. Avishek Das, Logeshwaran Venkatesapandian, and **C. W, Liu**, "Optimization of a Ge Lateral PIN Photodetector with an Optical -3dB Bandwidth of 207 GHz for Ultrafast Photonics Applications", *4th Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Taichung, Taiwan, Aug. 19-21, 2024.
8. Avishek Das, Yu-Chieh Lee, and **C. W, Liu**, "Performance Optimization of Backside Illuminated CMOS Image Sensor Using Surrounded Vertical Transfer Gates", *2024 International Electron Devices and Materials Symposium (IEDMS)*, Taichung, Taiwan, Aug. 19-21, 2024
9. Yu-Tsung Liao, Yu-Rui Chen, Zefu Zhao, Wan-Hsuan Hsieh, Guan-Hua Chen, Yu-An Chen, and **C. W. Liu**, "Stacked $Ge_{0.95}Si_{0.05}$ Nanosheet Gate-All-Around FeFETs", *2024 International Electron Devices and Materials Symposium (IEDMS)*, Taichung, Taiwan, Aug. 19-21, 2024.
10. Johannes Gracia, Yuan-Ming Liu, Yu-Rui Chen, Jih-Chao Chiu, Yu-Shan Wu, Zefu Zhao, Yu-Cheng Fan, Rong-Wei Ma, and **C. W. Liu**, "Achieving 2.1V Memory Window and High Reliability in ZnO-Rich a-InGaZnO Ferroelectric FET with Self-Aligned Top-Gate Structure", *2024 International Electron Devices and Materials Symposium (IEDMS)*, Taichung, Taiwan, Aug. 19-21, 2024.
11. Rong-Wei Ma, Yuan-Ming Liu, Yu-Shan Wu, Jih-Chao Chiu, Yu-Cheng Fan, Chia-Chun Yen, Tsang-Long Chen, Cheng-Hsu Chou, and **C. W. Liu**, "Enhanced Electrical Properties and Positive Bias Stress of Self-Aligned Top-Gate a-IGZO TFTs by Hydrogen Incorporation," *4th Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Taichung, Taiwan, Aug. 19-21, 2024.
12. Rachit Dobhal, Yifan Xing, Yu-Rui Chen, Jer-Fu Wang, Zefu Zhao, Yun-Wen Chen, and **C. W. Liu,** "Cryogenic Phase Transition of $Hf_{0.5}Zr_{0.5}O_2$ for Enhanced Ferroelectricity", *2023 International Electron Devices and Materials*

Symposium (IEDMS), Kaohsiung, Taiwan, Oct. 19-20, 2023.

13. Chun-Yi Cheng, Chien-Te Tu, Yi-Chun Liu, Bo-Wei Huang, Wan-Hsuan Hsieh, Hung-Chun Chou, Hao-Yi Lu, Min-Kuan Lin, Ding-Wei Lin, and **C. W. Liu**, "Monolithic 3D Self-aligned GeSi Channel Complementary FETs", *2023 International Electron Devices and Materials Symposium (IEDMS)*, Kaohsiung, Taiwan, Oct. 19-20, 2023.
14. Wei-Teng Hsu, Avishek Das, Hsin-Cheng Lin, Chin-Yu Liu, Ching-Wang Yao, Tao Chou, Tsai-Yu Chung, and **C. W. Liu**, "6G RF Performance Benchmark of FinFET/Nanosheets/Nanowires", *2023 International Electron Devices and Materials Symposium (IEDMS)*, Kaohsiung, Taiwan, Oct. 19-20, 2023.
15. Yu-Chieh Lee, Yi Huang, and **C.W. Liu**, "Improvement of Optical Efficiency and Quantum Efficiency using Cuboid and Central Ring Scattering Technology in Backside Illuminated CMOS Image Sensors", *2023 International Electron Devices and Materials Symposium (IEDMS)*, Kaohsiung, Taiwan, Oct. 19-20, 2023.
16. Wei-Jen Chen, Chin-Yu Liu, Geng-Min He, Cheng-Hsien Hsin, and **C. W. Liu**, "Current and Energy Reduction of Spin-Orbit Torque Switching with Spin-Transfer Torque by Micromagnetic Simulation", *2023 International Electron Devices and Materials Symposium (IEDMS)*, Kaohsiung, Taiwan, Oct. 19-20, 2023.
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18. Tao Chou, Li-Kai Wang, Tsai-Yu Chung, Ching-Wang Yao, Hsin-Cheng Lin, and **C. W. Liu**, "Architecture and Optimization of Sequential Heterogeneous 3D Stacked 6T SRAM," *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023
19. Jih-Chao Chiu, Eknath Sarkar, Yuan-Ming Liu, Yu-Ciao Chen, Yu-Cheng Fan, and **C. W. Liu**," Short Channel Backend a-IGZO Transistors: Planar and GAAFET," *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023
20. Yuan-Ming Liu, Jih-Chao Chiu, Eknath Sarkar, Yu-Ciao Chen, Yu-Cheng Fan, Chia-Chun Yen, Tsang-Long Chen, Cheng-Hsu Chou, and **C. W. Liu**, "Temperature Dependence on Electrical Properties of Double-Layer a-IGZO TFTs with a Top Barrier," *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023
21. Eknath Sarkar, Yu-Rui Chen, Jih-Chao Chiu, Zefu Zhao, Yuan-Ming Liu, Yu-Ciao Chen, Yu-Cheng Fan and **C. W. Liu**, "Memory Window Enlargement by ZnO Incorporation in Top-Gated Self-Aligned a-InGaZnO FeFETs with High Endurance >1E11 Cycles" *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023.
22. Eknath Sarkar, Yu-Chieh Lee, Yichen Ma, Yi-Huang and **C. W. Liu**, "Enhancement of Optical and Quantum Efficiency using Central Ring/Cuboid Scattering Technology in Backside Illuminated CMOS Image Sensors" 3rd Symposium on Nano-Device Circuits and Technologies (SNDCT), Hsinchu, Taiwan, May 18-19, 2023.
23. Wan-Hsuan Hsieh, Chien-Te Tu, Yi-Chun Liu, and **C. W. Liu,** "Reduce Boron Pile-up Effect in Ge:B/Ge:P Multi-layer Structures for CFET Isolation," *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023.
24. Guan-Hua Chen, Yifan Xing, Yu-Rui Chen, Zefu Zhao, Yun-Wen Chen, and **C. W. Liu,** "$Hf_{0.5}Zr_{0.5}O_2$ Orthorhombic Phase Formation by Temperature Optimization" *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023.

25. Yu-Rui Chen, Zefu Zhao, Yun-Wen Chen, and **C. W. Liu,** "Enhanced Ferroelectric / Anti-ferroelectric Characteristics of $Hf_{0.5}Zr_{0.5}O_2$ with Superlattice / Alloy by Oxygen Vacancy Optimization," *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023.
26. Bo-Wei Huang, Chung-En Tsai, Yi-Chun Liu, Chien-Te Tu, and **C. W. Liu,** "$Ge_{0.9}Sn_{0.1}$ Ultrathin Bodies with Nearly Ideal Subthreshold Swing and Delay Reduction" *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023.
27. Chien-Te Tu, Yi-Chun Liu, Bo-Wei Huang, Yu-Rui Chen, Wan-Hsuan Hsieh, Chun-Yi Cheng, and **C. W. Liu**, "Monolithic 3D Self-aligned $Ge_{0.75}Si_{0.25}$ Channel and Common Gate Complementary FETs by CVD Epitaxy Using Multiple P/N Junction Isolation and Highly Selective Wet Etching," *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023 (Silver Award).
28. Yi-Chun Liu, Wan-Hsuan Hsieh, Bo-Wei Huang, Chun-Yi Cheng, Chien-Te Tu, and **C. W. Liu**, "10 Stacked $Ge_{0.95}Si_{0.05}$ Nanowire nFETs Featuring High I_{ON}=140μA (6500μA/μm) at $V_{OV}=V_{DS}$=0.5V by CVD Epitaxy and Wet Etching," *3rd Symposium on Nano-Device Circuits and Technologies (SNDCT)*, Hsinchu, Taiwan, May 18-19, 2023 (Silver Award).
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C: 評論論文與書本章節 (Review Articles and Book Chapter)

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D: 榮譽 (Honor)

國內外重要獎項：曾獲國內外學術獎及其他學術榮譽。

1. 2025 MRS-T Wah Lee Material Innovation Gorden Award ((First demonstration of two-floor In_2O_3 nanosheet transistors Using TiN sacrificial layers and fluorine passivation) /華立創新材料大賽 金質獎(首創氮化鈦犧牲層及氟鈍化技術來增強氧化銦雙層奈米片電晶體)
2. 2025-2028 Garmin Chair Professor /Garmin 講座
3. 2025 Keynote, the 5th Symposium on Nano-Device Circuits and Technologies, SNDCT /第五屆「奈米元件電路與技術研討會」
4. 2024 Y.Z. Hsu Chair Professor/ 第 22 屆有庠科技講座
5. 2024 MRS-T Wah Lee Material Innovation Silver Award (Towards Epitaxial HZO Ferroelectrics with GAA nanosheet FeFET Applications) /華立創新材料大賽 銀質獎(邁向鐵電氧化鉿鋯磊晶與環繞式鐵電電晶體的應用)
6. 2024 VLSI-TSA (International Symposium on VLSI Technology, Systems and Application) Best Poster Paper Award (advisor)
7. 2023 TSPE Research Project and Paper Competition: Gold Prize/台灣精密工程學會研究論金獎
8. 2023 MRS-T Wah Lee Material Innovation Golden Award (First demonstration of IGZO gate-all-around nanosheet transistors)/華立創新材料大賽 金質獎(世界首創之銦鎵鋅氧閘極環繞式奈米片電晶體)
9. 2023 FutureTeck Award (nanosheet extensions for beyond 2 nm nodes) 未來科技獎
10. 2023 VLSI-TSA (International Symposium on VLSI Technology, Systems and Application) Best Poster Paper Award (advisor)
11. 2023 VLSI-TSA (International Symposium on VLSI Technology, Systems and Application) Best Student Paper Award (advisor)
12. 2022 MRS-T Wah Lee Material Innovation Golden Award (Vertically stacked 8 GeSn channel pFETs with ultrathin bodies)/華立創新材料大賽 金質獎(八層垂直堆疊鍺錫極薄通道 P 型電晶體)
13. 2022 TECO Award/ 東元獎 (電資/資訊/通訊科技)
14. 2022 FutureTeck Award (High mobility channel/process/stacked channel/thermal modeling)/未來科技獎 (高遷移率材料、製程、多層疊元件及熱電路模型)
15. 2022 FutureTeck Award (Advanced stacked Chips)/ 未來科技獎(前瞻單晶片三維多層級堆疊之高密度積體電路關鍵技術)
16. 2022 VLSI-TSA (*International Symposium on VLSI Technology, Systems and Application*) Best Student Paper Award (advisor)
17. 2021 International Electron Device Meeting (IEDM) Roger A. Haken Best Student Paper Award (advisor) IEDM Roger A. Haken Best Student Paper Award — IEDM (ieee-iedm.org)
18. 2021 Pan Wen Yuan Foundation Outstanding Research Award (潘文淵文教基金會研究傑出獎)
19. 2021 Best Paper Advisor Award, 1th SNDCT (*Symposium on Nano-Device Circuits and Technologies*)/傑出論文指導教授獎

20. 2018 IEEE Fellow
21. 2018 Macronix Chair Professor /旺宏講座
22. 2018 NTU Distinguished Professor/國立台灣大學特聘教授
23. 2017 Micron Chair Professor /美光科技講座
24. 2016-now, Associate Editor of IEEE Transactions on Nanotechnology (T-NANO)
25. 2012-now, Editor of IEEE Transactions on Device and Materials Reliability (T-DMR)
26. 2018-2020 ISTDM/ICSI International Advisory Committee
27. 2016 Outstanding Research Award, Ministry of Science and Technology, Taiwan /科技部傑出研究獎
28. 2015 International Association of Advanced Materials Scientist Award 2015 (IAAMSA-2015), Sweden.
29. Guest Editor, MRS Bulletin: August 2014 - New Materials for Post-Si Computing
30. 2012, Outstanding Research Award, College of Electrical Engineering and Computer Science, National Taiwan University /國立台灣大學電資學院學術貢獻獎
31. 2008-2011 Outstanding Primary Investigator Grant, National Science Council, Taiwan/ 國科會傑出學者研究計畫
32. 2003-2005 Outstanding Research Award, National Science Council, Taiwan /國科會傑出研究獎
33. 2003, 2004 Outstanding Research Award, ERSO/ITRI, Taiwan
34. Outstanding Research Award, National Taiwan University 2003
35. 2002 Semiconductor Research Corporation Cross-discipline Semiconductor Research Award (CMOS photonics)
36. 2001 Outstanding young engineer, Chinese Electrical Engineering Society
37. Six-time recipients of research award, National Science Council, Taiwan (1995-2000)
38. Technical Program Chair, ISTDM (International SiGe technology and device meeting), 2008
39. Organizer: NARLabs-NST (Taiwan-Korea) bilateral workshop, Hsinchu, Taiwan, 2016; EU-Taiwan 450 mm workshop, Taipei, Taiwan, 2009, 2013; Nano/Microelectronics and Embedded System, Pilani, India, 2010; TW-Russia workshop, Taiwan, 2010; NSC-JST nano device workshop, Taipei, Taiwan, 2008, 2009; Organizer of Taiwan 1st SiGe workshop, 2002.
40. Technical program Chair, SNDT (Symposium of Nano Device Technologies), 2007, 2011.
41. IEDM Solid State and nanoelectronics subcommittee Chair 2010
42. International Photovoltaic Science and Engineering Conference (PVSEC 23) subcommittee chair, Taiwan, 2013
43. (sub)committee member:
    IEEE: IEDM 2008-2010 (SSN chair 2010), 2018-2019; SISC (Semiconductor Interface Specialists Conference), 2015-2016, 2023-2025; ISNE 2014-2016; NMDC,2013; VLSI/TSA 2003-2019, 2020-2022(AP subcommittee chair); Nanotechnology council, TPC on Nano-optoelectronics and Nano-photonics, 2006; IEEE International Nano Electronics Conference (INEC), 2011.
    Non-IEEE:
    VASSCAA-12, 2024; 4th International Conference on Silicon Photovoltaics, Netherlands, 2014; ECS (SiGe: materials, processing, and devices) 2006, 2008, 2010, 2012, 2014, 2018, 2020, 2022; ICSI (International Conference on Silicon Epitaxy and Heterostructures) 2005, 2007, 2009, 2011, 2013; ISTDM (International SiGe Technology and Device Meeting) 2003, 2004, 2006, 2008, 2010, 2012, 2014, 2016; ISTDM/ICSI 2018, 2019, 2023, 2025; ICSICT 2010, China; ISCSI (International Symposium on Control of Semiconductor Interface)-2007, 2013, 2019, 2021, 2022, Japan; SNDT 2005, 2006, Taiwan; 7th Vacuum and Surface Sciences Conference of Asia and Australia VASSCAA-7, Taiwan, 2014; IIT 2004; SSDM 2004; SMTW 2002, 2003, 2004; IEDMS, Taiwan, 2009, 2010, 2011, 2013, 2018-2022; OPTIC, Taiwan, Solar cell subcommittee chair, 2012.
44. C. W. Liu, Y. D. Tseng, and M. Y. Chern, "Asymmetrical x-ray reflection of SiGeC/Si Heterostructures," Vol. 69(1-3), pp. 274-277, Materials Chemistry and Physics, Jan., 2001. (Best Paper Award)
45. Best student paper award, Electronic Material Conference, 1992 with P. Schwartz.

國際研討會邀請演講(*Plenary lecture or Invited lecture*)

1. (invited) Chun-Yi Cheng and **C. W. Liu**, "Nanosheet Extensions and CFETs to Boost PPA again," *2025 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA)*, 2025.
2. (invited) **C. W. Liu**, "Nanosheets and CFETs," *XIX International Small-Angle Scattering Conference (SAS2024)*, Taipei, Taiwan, Nov., 2024.
3. (invited) Yi-Chun Liu, Chien-Te Tu, Wan-Hsuan Hsieh, Yu-Rui Chen, Bo-Wei Huang, Chun-Yi Cheng, and **C. W.**

Liu, "Stacking High Mobility Channels," *244th ECS Meeting*, Gothenburg, Sweden, October 8-12, 2023.

4. (invited) Chien-Te Tu, Wan-Hsuan Hsieh, Yi-Chun Liu, Yu-Rui Chen, Bo-Wei Huang, Chun-Yi Cheng, and **C. W. Liu**, "Channel and Transistor Stacking of Nanosheets," *International Conference on Solid State Devices and Materials (SSDM)*, Nagoya, Japan, September 5-8, 2023.
5. (invited) Chien-Te Tu, Yi-Chun Liu, Yu-Rui Chen, Bo-Wei Huang, Chun-Yi Cheng, and **C. W. Liu**, "Nanosheet Extensions and Beyond," *2023 International Symposium on VLSI Technology, Systems and Application (VLSI-TSA)*, 2023.
6. (invited) **C. W. Liu**, Chien-Te Tu, Bo-Wei Huang, and Chun-Yi Cheng, "Stacked Nanosheet FETs and Beyond," *242nd ECS Meeting*, Atlanta, GA, USA, October 9-13, 2022.
7. (invited) Chien-Te Tu, Bo-Wei Huang, Chung-En Tsai, Yi-Chun Liu, and **C. W. Liu**, "GeSn/GeSi Stacked Channel Transistors," *International Conference on Solid State Devices and Materials (SSDM)*, Sept. 2021.
8. (invited) **C. W. Liu**, Chien-Te Tu, Yi-Chun Liu, and Shih-Ya Lin, "Vertically Stacked High Mobility GeSi nGAAFETs," *PRiME 2020 (ECS, ECSJ, & KECS Joint Meeting)*, Honolulu, Hawaii, Oct. 4-9, 2020.
9. (invited) **C. W. Liu**, Yu-Shiang Huang, Fang-Liang Lu, Yi-Chun Liu and Hung-Yu Ye, "Stacked high mobility channel transistors" *China Semiconductor Technology International Conference (CSTIC) 2020*, Shanghai, China, (Virtual Conference), June 26 - July 17, 2020.
10. (invited) **C. W. Liu**, Yi-Chun Liu, Yu-Shiang Huang, Fang-Liang Lu, and Hung-Yu Ye, "Vertical Stacked High Mobility Channel Transistor," *International Workshop on the Physics of Semiconductor Devices*, Kolkata, India, Dec. 17-20, 2019.
11. (invited) **C. W. Liu**, Chung-En Tsai, Yu-Shiang Huang, Fang-Liang Lu, and Hung-Yu Ye, "GeSn CVD epitaxy and transistors," 8th *International Symposium on Control of Semiconductor Interfaces (ISCSI-VIII)*, Sendai, Japan, Nov. 27-30, 2019.
12. (invited) **C. W. Liu**, Yu-Shiang Huang, Fang-Liang Lu, Hung-Yu Ye, "Vertically stacked n channel and p channel transistors," Electrochemical Society Fall meeting 2019, Atlanta, Georgia, USA, October 13-17, 2019.
13. (invited) Chia-Che Chung and **C. W. Liu**, "FinFET Thermal Modeling and Circuit Thermal Simulation," JST-MOST Joint Workshop, Kyoto, Japan, Jun. 14, 2019.
14. (invited) **C. W. Liu**, Yu-Shiang Huang, Fang-Liang Lu, Hung-Yu Ye, "Vertically stacked GeSi/GeSn channel transistors," 2nd Joint ISTDM / ICSI 2019 Conference, Madison, WI, USA, June 2-6, 2019.
15. (invited) **C. W. Liu**, Yu-Shiang Huang, Fang-Liang Lu, and Hung-Yu Ye "Ge/GeSn processes and transistor applications," Americas International Meeting on Electrochemistry and Solid State Science (AiMES), Cancun, Mexico, Sep. 30-Oct. 4, 2018.
16. (invited) **C. W. Liu**, I-Hsieh Wong, Fang-Liang Lu and Yu-Shiang Huang, "Epitaxial Ge/GeSn high mobility channel transistors," 232nd Meeting of Electrochemical Society, National Harbor, MD, Oct. 1-6, 2017.
17. (invited) **C. W. Liu**, Fang-Liang Lu, Yu-Shiang Huang, I-Hsieh Wong, "High Performance Ge and GeSn Epi Channels," materials research society (MRS) spring meeting & exhibit, Phoenix, Arizona, Apr. 17-21, 2017.
18. (invited) **C. W. Liu**, Jhih-Yang Yan, and Sun-Rong Jan, "Modeling and Simulation of TSV Induced Keep-out Zone Using Silicon Data," 13th International Conference on Solid-State Integrated Circuit & Technology (ICSICT 2016), Hangzhou, China, Oct. 25-28, 2016.
19. (invited) **C. W. Liu**, F.-L. Lu, S.-H. Huang, "Heavily Phosphorus-doped Si and Ge by Chemical Vapor Deposition," 21st International Conference on Ion Implantation Technology, Tainan, Taiwan, Sept. 26-30, 2016.
20. (invited) **C. W. Liu**, Shih-Hsien Huang, and I-Hsieh Wong, "High mobility Si and Ge" SemiconNano, Hsinchu, Taiwan, Sep. 7, 2015.

21. (invited) **C. W. Liu**, I-Hsieh Wong, Yen-Ting Chen and Shu-Han Hsu, "High Mobility Ge Channel Transistors," Advanced Materials World Congress, Stockholm, Sweden, Aug. 23-26, 2015.
22. (invited) **C. W. Liu**, I-Hsieh Wong, Shih-Hsien Huang and Chih-Hsiung Huang, "3D Ge nanowire transistors," IEEE Nanotechnology Materials and Devices Conference (NMDC), Anchorage, Alaska, Sep. 13-16, 2015.
23. (invited) **C.W. Liu**, I.-H. Wong, S.-H. Huang, C.-H. Huang and S.-H. Hsu, "Advanced Germanium Channel Transistors," 11th International Conference on ASIC (ASICON 2015), Chengdu, China, Nov. 3-6, 2015.
24. (invited) **C. W. Liu,** Y.-T Chen, and S.-H Hsu "Gate-all-around Ge FETs" 226th *Meeting of Electrochemical Society*, Cancun, Mexico, Oct. 5-10, 2014.
25. (invited) **C. W. Liu,** "High Mobility Ge Channel Transistors" ISMEN (International Symposium on Materials for Enabling Nanodevices), Tainan, Taiwan, Sep 5, 2014
26. (invited) **C. W. Liu,** "SiGe/Ge epi films with photonic and electrical applications." Science & Applications of Thin Films, Conference & Exhibition (SATF 2014), Turkey, September 15-19, 2014.
27. (invited) **C. W. Liu**, I-Hsieh Wong, Yen-Ting Chen, Wen-Hsien Tu, Shih-Hsien Huang, and Shu-Han Hsu, "Ge Gate-All-Around FETs on Si," IEEE 12th International Conference on Solid-State and Integrated Circuit Technology (IEEE-ICSICT), Guilin, China, Oct. 2014.
28. (invited) **C. W. Liu,** Hung-Chih Chang, Yen-Ting Chen, Wen-Hsien Tu, I-Hsieh Wong, Shu-Han Hsu, and Chun-Lin Chu, "3D Ge transistors," *IEEE Nanotechnology Materials and Devices Conference (IEEE-NMDC)*, Tainan, Taiwan, Oct. 2013.
29. (invited) **C. W. Liu,** Hung-Chih Chang, Cheng-Ming Lin, and Yen-Ting Chen, "Planar and 3D Ge FETs," *11th International Conference on Solid-State and Integrated-Circuit Technology (ICSICT)*, Xi'an, China, Oct. 29-Nov.1, 2012.
30. (invited) **C. W. Liu**, H.-S. Lan, and Y.-T. Chen, "Electron scattering in Ge metal-oxide-semiconductor field-effect transistors and mobility strain response," CSTIC, Shanghai, China, Mar. 19, 2012
31. (invited) **C. W. Liu** "N-type Mono Si cells," *IEDMS*, Taipei, Taiwan, Nov. 2011
32. (invited) **C. W. Liu**, T. -H. Cheng, Y. –Y. Chen, S. -R. Jan, C. -Y. Chen, S. T. Chan, Y. –H. Nien, Yuji Yamamoto, and Bernd Tillack, "Direct and indirect radiative recombination from Ge," 7th International Conference on Silicon Epitaxy and Heterostructures (ICSI-7), Leuven, Belgium, Aug 28 - Sep 1, 2011.
33. (invited) **C. W Liu**, "high mobility channels," 2011 International Workshop on Exploratory Research for Semiconductor Devices and VLSI Packaging, Beijing, China, Mar. 16, 2011
34. (invited) **C. W. Liu**, "high mobility materials for technologies and physics." 5th International Workshop on High k dielectrics on high carrier mobility semiconductors, Hsinchu, Taiwan, 2011.
35. (invited) **C. W. Liu**, T. -H. Cheng , C. -Y. Chen , and S. T. Chan "Photoluminescence and Electroluminescence from Ge " symposium on Si-based materials and devices, Xiamen, China, May 27-29, 2011
36. (invited) **C. W. Liu**, "high mobility for physics and devices," Nanoforum, Moscow, Russia, 2010.
37. (Invited) **C. W. Liu**, "High mobility for physics and technologies" the III Nanotechnology International Forum, Moscow, November 1-3, 2010.
38. (invited) T. M. Lu, C. -H. Lee, D. C. Tsui, and **C. W. Liu**, "High mobility two-dimensional electron gas in strained Si," *5th International SiGe Technology and Device Meeting (ISTDM),* Stockholm, Sweden, May24-26, 2010.
39. (Invited) C.-F. Huang, Y.-T. Chen, H.-C. Sun, **C. W. Liu**, Y.-C. Hsu, C.-C. Shih, K.-C. Lin, and J.-S. Chen, "Comprehensive Study of Bias Temperature Instability on Polycrystalline Silicon Thin-Film Transistors," *9th International Conference on Solid-State and Integrated-Circuit Technology (ICSICT)*, Beijing, China, Oct. 20-23,

2008.

40. (Invited) C.-H. Lin and **C. W. Liu*** (2006), "MOS Si/Ge photodetectors," Optoelectronic Devices: Physics, Fabrication, and Application III" SPIE Symposium, October, Boston, USA
41. (Invited) **C. W. Liu***, and F. Yuan (2006), "Mobility enhancement technologies," 8th International Conference on Solid-state and Integrated Circuit Technology (ICSICT-06), October, Shanghai, China.
42. (Invited) M. H. Liao, C.-H. Lin, C.-H. Lee, T.-H. Cheng, T.-H. Guo, and **C. W. Liu*** (2006), "Electroluminescence from SiGe based metal-oxide-semiconductor Tunneling Diodes," 210th Meeting of Electrochemical Society, October, Mexico.
43. (Invited) P. S. Chen, M. H. Lee, S. W. Lee, **C. W. Liu**, and M. -J. Tsai, "Strained CMOS technology with Ge," 207th Meeting of Electrochemical Society, Quebec City, Canada, May 15-20, 2005.
44. (Invited) **C. W. Liu**, F. Yuan, Z. Pei, and J.-W. Shi, "Si/SiGe heterojunction phototransistor: physics and modeling," Second International Symposium on Integrated Optoelectronics, 206th Meeting of Electrochemical Society, Honolulu, Hawaii, Oct. 3-8, 2004.
45. (Invited) **C. W. Liu**, S. Maikap, M.-H. Liao and F. Yuan., "BiCMOS devices under mechanical strain," M2 SiGe: Materials, Processing, and Devices Symposium, 206th Meeting of Electrochemical Society, Honolulu, Hawaii, Oct. 3-8, 2004.
46. (Invited) **C. W. Liu** and B.-C. Hsu, "CMOS optoelectronics," Advance Short-time Thermal Processing for Si-Based CMOS Devices II, 205th Meeting of Electrochemical Society, San Antonio, Texas, May 9-14, 2004.
47. (Invited) M. H. Lee, P. S. Chen, W.-C. Hua, C.-Y. Yu, Y.-C. Lee, S. Maikap, Y. M. Hsu, **C. W. Liu**, S. C. Lu, W.-Y. Hsieh, and M.-J. Tsai, "The Noise Characteristics in Strained-Si MOSFETs," 2nd International SiGe Technology and Device Meeting (ISTDM), Frankfurt (Oder), Germany, May 16-19, 2004.
48. (Invited) J.-W. Shi, Z. Pei, Y.-M. Hsu, F. Yuan, C.-S. Liang, Y.-T. Tseng, P.-S. Chen, **C. W. Liu**, S.-C. Lu, M.-J, Tsai, "Si/SiGe Heterojunction Phototransistor," *International Topical Meeting on Microwave Photonics*, Budapest, Hungary, Sep., 2003.

Student Awards: (in Chinese and English)

2025

- 指導學生吳宇珊(Yu-Shan Wu)、劉原銘(Yuan-Ming Liu)、馬榕蔚(Rong-Wei Ma)獲得 MRS-T 2025 華立創新材料大賽(Wah Lee Innovative Materials Competition) 金質獎
- 指導學生黃頤獲得中國電機工程學會 114 年青年論文獎佳作
- 指導學生林鑫成(Hsin-Cheng Lin) 獲得 114 學年度國立臺灣大學科林論文獎(2020 Lam Ph.D Thesis Award) 博士論文頭等獎
- 指導學生陳宇音 (Yu-Ying Chen)、曾嘉煒 (Chia-Wei Tseng)獲得 114 學年度國立臺灣大學科林傑出科技獎學金(Lam Outstanding Student Scholarship)
- 指導學生林鑫成(Hsin-Cheng Lin)獲得 113 學年度臺大校長獎 (NTU President Award)
- 指導學生達艾維(Avishek Das)獲得 2025 SNDCT (Symposium on Nano-Device Circuits and Technologies) 光電與矽光子技術學生論文獎特優獎(SNDCT 2025 Gold Award)
- 指導學生林旻寬(Min-Kuan Lin)獲得 2025 SNDCT (Symposium on Nano-Device Circuits and Technologies) 先進邏輯與記憶體技術學生論文獎特優獎(SNDCT 2025 Gold Award)
- 指導學生宋先敏(Hsien-Ming Sung)獲得 2025 SNDCT (Symposium on Nano-Device Circuits and Technologies) 先進邏輯與記憶體技術學生論文獎佳作獎(SNDCT 2025 Bronze Award)

- 指導學生馬榕蔚(Rong-Wei Ma)、朱宗韓(Johannes Gracia)獲得 113 學年度國立臺灣大學科林傑出科技獎學金(Lam Outstanding Student Scholarship)
- 指導學生陳昱叡(Yu-Jui Chen)、劉亦浚(Yi-Chun Liu)、陳韋任(Wei-Jen Chen) 獲得 114 年臺大 1975 級電機系系友科技研究創新獎
- 指導學生姚慶旺(Ching-Wang Yao)、賴玉盛(Yu-Sheng Lai)、張芳瑜(Fang-Yu Chang)、曾嘉煒(Chia-Wei Tseng)獲得 2025 美光半導體創新應用競賽(Mimory Awards)金美獎
- 指導學生廖宇聰(Yu-Tsung Liao)、陳昱安(Yu-An Chen)、陳彥均(Yan-Jyun Chen)、余柏輝(Bo-Hui Yu)獲得 2025 美光半導體創新應用競賽(Mimory Awards)優秀獎
- 指導學生梁誌元(Jhih-Yuan Liang) 獲得國立臺灣大學重點科技研究學院 (GSAT) 113 學年第二學期菁英博士生獎學金
- 指導學生梁誌元(Jhih-Yuan Liang)榮獲 2025 年國科會博士獎學金
- 指導學生黃柏崴(Bo-Wei Huang)獲得 2025 TSIA(PhD student award)博士研究生半導體獎
- 指導學生邱日照(Jih-Chao Chiu)、劉原銘(Yuan-Ming Liu)、吳宇珊(Yu-Shan Wu)、宋先敏(Hsien-Ming Sung)、范淯城(Yu-Cheng Fan)、馬榕蔚(Rong-Wei Ma)、Johannes Gracia、藤原秀成(Hidenari Fujiwara)獲得 2024 力晶積成電子製造股份有限公司「最佳海報論文獎」
- 指導學生杜建德(Chien-Te Tu)獲得 112 學年度電子所年度最佳博士論文獎 (GIEE Best PhD Dissertation Award)
- 指導學生 Rachit Dobhal 獲得國立臺灣大學重點科技研究學院 (GSAT) 114 學年第一學期菁英博士生獎學金
- 指導學生 Avishek Das 獲得國立臺灣大學重點科技研究學院 (GSAT) 114 學年第一學期菁英博士生獎學金
- 指導學生周韜(Tao Chou)獲得國立臺灣大學重點科技研究學院 (GSAT) 114 學年第一學期菁英博士生獎學金
- 指導學生姚慶旺(Ching-Wang Yao)獲得國立臺灣大學重點科技研究學院 (GSAT) 114 學年第一學期菁英博士生獎學金
- 指導學生林旻寬(Min-Kuan Lin)獲得國立臺灣大學重點科技研究學院 (GSAT) 114 學年第一學期菁英博士生獎學金
- 指導學生林辛源(Xin-Yuan Lin)獲得國立臺灣大學重點科技研究學院 (GSAT) 114 學年第一學期菁英博士生獎學金
- 指導學生梁誌元(Jhih-Yuan Liang)榮獲 2025 年台積電博士獎學金(tsmc PhD Scholarship 2025)
- 指導學生林辛源(Xin-Yuan Lin)榮獲 2025 年台積電博士獎學金(tsmc PhD Scholarship 2025)
- 指導學生林辛源(Xin-Yuan Lin)獲得 2025 年國科會博士獎學金
- 指導學生林旻寬(Min-Kuan Lin)獲得 114 學年度教育部博士獎學金

2024

- 指導學生姚慶旺(Ching-Wang Yao) 獲得國立臺灣大學重點科技研究學院 (GSAT) 112 學年第二學期菁英博士生獎學金
- 指導學生 Rachit Dobhal 獲得國立臺灣大學重點科技研究學院 (GSAT) 113 學年第一學期菁英博士生獎學金
- 指導學生 Avishek Das 獲得國立臺灣大學重點科技研究學院 (GSAT) 113 學年第一學期菁英博士生獎學金
- 指導學生周韜(Tao Chou)獲得國立臺灣大學重點科技研究學院 (GSAT) 113 學年第一學期菁英博士生獎學金
- 指導學生姚慶旺(Ching-Wang Yao) 獲得國立臺灣大學重點科技研究學院 (GSAT) 113 學年第一學期菁英博士生獎學金

- 指導學生林旻寬(Min-Kuan Lin) 獲得國立臺灣大學重點科技研究學院 (GSAT) 113 學年第一學期菁英博士生獎學金
- 指導學生李嘉洋(Jia-Yang Lee) 獲得國立臺灣大學重點科技研究學院 (GSAT) 113 學年第一學期菁英博士生獎學金
- 指導學生黃柏崴(Bo-Wei Huang) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生廖宇聰(Yu-Tsung Liao) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生趙澤夫(Zefu Zhao) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生廖宇聰(Yu-Tsung Liao)、劉原銘(Yuan-Ming Liu)獲得 2024 年度台積電—臺灣大學博士組研究助理獎助學金
- 指導學生陳彥均(Yan-Jyun Chen)、賴玉盛(Yu-Sheng Lai)、張芳瑜(Fang-Yu Chang)獲得 2024 年度台積電—臺灣大學碩士組研究助理獎助學金
- 指導學生周弘濬獲得中國電機工程學會 113 年青年論文獎
- 指導學生吳宇珊(Yu-Shan Wu) 獲得 113 學年度教育部博士獎學金
- 指導學生周韜(Tao Chou) 獲得 113 學年度教育部博士獎學金
- 指導學生姚慶旺(Ching-Wang Yao) 獲得 113 學年度教育部博士獎學金
- 指導學生陳韋任(Wei-Jen Chen)、陳昱叡(Yu-Rui Chen)、劉亦浚(Yi-Chun Liu)獲得 2024 台灣材料科學微結構影像美學競賽 銀質獎
- 指導學生陳昱叡(Yu-Rui Chen)、廖宇聰(Yu-Tsung Liao)、陳昱安(Yu-An Chen)獲得 MRS-T 2024 華立創新材料大賽(Wah Lee Innovative Materials Competition) 銀質獎
- 指導學生藤原秀成 Hidenari Fujiwara 獲得 2024 台北東海ロータリークラブ獎學金。
- 指導學生宋先敏(Hsien-Ming Sung)、邱日照(Jih-Chao Chiu)、吳宇珊(Yu-Shan Wu)、劉原銘(Yuan-Ming Liu)、范洧城(Yu-Cheng Fan)獲得 2024 台灣薄膜電晶體研討會最佳海報獎(BEST POSTER)
- 指導學生 Logeshwaran Venkatesapandian、盧智璿、曾嘉煒、林冠亨、劉英頎，於電子所 x 瑞鼎羽球交流賽，獲得「電子所學生組冠軍」、「表現傑出獎」以及「總比賽殿軍」。
- 指導學生周弘濬(Hung-Chun Chou)獲得 2024 年臺大校長獎 (NTU President Award)
- 指導學生馬榕蔚(Rong-Wei Ma)獲得 2024 IEDMS (International Electron Devices & Materials Symposium) & SNDCT (Symposium on Nano-Device Circuits and Technologies) SNDCT 金獎(SNDCT Gold Award)
- 指導學生 Avishek Das 獲得 2024 IEDMS (International Electron Devices & Materials Symposium) & SNDCT (Symposium on Nano-Device Circuits and Technologies) SNDCT 銀獎(SNDCT Silver Award)
- 指導學生朱宗韓(Johannes Gracia)獲得 2024 IEDMS (International Electron Devices & Materials Symposium) & SNDCT (Symposium on Nano-Device Circuits and Technologies) IEDMS 優良海報佳作獎(IEDMS Outstanding Poster Award)
- 指導學生杜建德(Chien-Te Tu)、謝宛軒(Wan-Hsuan Hsieh)、陳昱叡(Yu-Rui Chen) 獲得 113 年「臺大 1975 級電機系系友科技研究創新獎」
- 指導學生陳昱叡(Yu-Rui Chen)、劉亦浚(Yi-Chun Liu)、趙澤夫(Zefu Zhao) 獲得 113 年「臺大 1975 級電機系系友科技研究創新獎」
- 指導學生邱日照(Jih-Chao Chiu)、吳宇珊(Yu-Shan Wu)、馬榕蔚(Rong-Wei Ma)、Johannes Gracia 獲得美光半導體創新應用競賽(Mimory Awards)金美獎
- 指導學生陳昱叡(Yu-Rui Chen)、徐葳騰(Wei-Teng Hsu)、陳昱安(Yu-An Chen)、趙澤夫(Zefu Zhao)獲得美光半導體創新應用競賽(Mimory Awards)優秀獎

- 指導學生黃柏崴(Bo-Wei Huang)、林旻寬(Min-Kuan Lin)、黃頤(Yi Huang)、林定緯(Ding-Wei Lin)獲得美光半導體創新應用競賽(Mimory Awards)優秀獎
- 指導學生劉亦浚(Yi-Chun Liu)獲得 2024 TSIA(PhD student award)博士研究生半導體獎
- 指導學生劉英頎(Ying-Qi Liu)榮獲 2024 年國科會博士獎學金
- 指導學生吳宇珊(Yu-Shan Wu)榮獲 2024 年台積電博士獎學金(tsmc PhD Scholarship 2024)
- 指導學生劉英頎(Ying-Qi Liu)榮獲 2024 年台積電博士獎學金(tsmc PhD Scholarship 2024)
- 指導學生林旻寬(Min-Kuan Lin)榮獲 2024 年台積電博士獎學金(tsmc PhD Scholarship 2024)

2023

- 指導學生姚慶旺(Ching-Wang Yao) 獲得國立臺灣大學重點科技研究學院 (GSAT) 111 學年第二學期菁英博士生獎學金
- 指導學生 Rachit Dobhal 獲得國立臺灣大學重點科技研究學院 (GSAT) 112 學年第一學期菁英博士生獎學金
- 指導學生周韜(Tao Chou)獲得國立臺灣大學重點科技研究學院 (GSAT) 112 學年第一學期菁英博士生獎學金
- 指導學生李嘉洋(Jia-Yang Lee) 獲得國立臺灣大學重點科技研究學院 (GSAT) 112 學年第一學期菁英博士生獎學金
- 指導學生陳昱叡(Yu-Rui Chen)、吳宇珊(Yu-Shan Wu)榮獲 2023 年度台積電—臺灣大學博士組研究助理獎助學金
- 指導學生馬榕蔚(Rong-Wei Ma)、黃頤(Yi Huang)、沈荷汶(He-Wen Shen)、林定緯(Ding-Wei Lin)、楊仁葳(Jen-Wei Yang)榮獲 2023 年度台積電—臺灣大學碩士組研究助理獎助學金
- 指導學生劉英頎(Ying-Qi Liu)、鄭承瑞、曾國碩榮獲 2023 年度台積電—臺灣大學大學組研究助理獎助學金
- 指導學生趙澤夫(Zefu Zhao) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生陳昱叡(Yu-Rui Chen) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生劉亦浚(Yi-Chun Liu) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生杜建德(Chien-Te Tu) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生邱日照(Jih-Chao Chiu) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生林鑫成(Hsin-Cheng Lin)獲得 2023 南亞科技未來之星獎學金 (NANYA Technology Corporation Future Star Scholarship) 博士組 金質獎
- 指導學生吳宇珊(Yu-Shan Wu)獲得 2023 南亞科技未來之星獎學金 (NANYA Technology Corporation Future Star Scholarship) 博士組 入圍獎
- 指導學生李宥頡(Yu-Chieh Lee)、鍾采妤(Tsai-Yu Chung)獲得 2023 南亞科技未來之星獎學金 (NANYA Technology Corporation Future Star Scholarship) 碩士組 入圍獎
- 指導學生李宥頡(Yu-Chieh Lee)、鍾采妤(Tsai-Yu Chung)獲得 112 年度科林傑出科技獎學金(Lam Outstanding Student Scholarship)
- 指導學生鄭群議(Chun-Yi Cheng)、謝宛軒(Wan-Hsuan Hsieh)、陳韋任(Wei-Jen Chen)獲得 2023 台灣精密工程學會 XG2C 聯盟精密工程專題與論文獎(TSPE Research Project and Paper Competition)研究論文獎「金獎」(Research Paper Competition Gold Prize)
- 指導學生邱日照(Jih-Chao Chiu)獲得 MRS-T 2023 華立創新材料大賽(Wah Lee Innovative Materials Competition) 金質獎
- 指導學生鄭群議(Chun-Yi Cheng)獲得 2023 IEDMS (International Electron Devices & Materials Symposium) 最佳論文獎(Best Oral Paper Award)

- 指導學生徐葳騰(Wei-Teng Hsu)獲得 2023 IEDMS (International Electron Devices & Materials Symposium) 優秀論文獎(Excellent Oral Paper Award)
- 指導學生李宥頡(Yu-Chieh Lee)獲得 2023 IEDMS (International Electron Devices & Materials Symposium) 優秀論文獎(Excellent Oral Paper Award)
- 指導學生陳韋任(Wei-Jen Chen)獲得 2023 IEDMS (International Electron Devices & Materials Symposium) 最佳海報獎(Best Poster Paper Award)
- 指導學生范淯城(Yu-Cheng Fan)獲得 2023 IEDMS (International Electron Devices & Materials Symposium) 最佳海報獎(Best Poster Paper Award)
- 2023 年未來科技獎(FutureTech Award)：極高介電係數閘極堆疊整合於高層數堆疊通道電晶體；堆疊奈米片鐵電場效電晶體；銦鎵鋅氧閘極環繞式奈米片電晶體(Highly stacked channels with extremely high-k gate stacks; Stacked nanosheet FeFET; IGZO GAA nanosheet)，由國立台灣大學：劉致為特聘/講座教授(Prof. Chee Wee Liu)、陳敏璋教授(Prof. Miin-Jang Chen)、學生劉亦浚(Yi-Chun Liu)、學生陳昱叡(Yu-Rui Chen)、學生邱日照(Jih-Chao Chiu)、博士後陳韻文(Yun-Wen Chen)、學生趙澤夫(Zefu Zhao)、學生卡伊納(Eknath Sarkar)、學生林鑫成(Hsin-Cheng Lin)、學生謝宛軒(Wan-Hsuan Hsieh)。
- 指導學生陳昱叡(Yu-Rui Chen)獲得 2023 VLSI-TSA (International Symposium on VLSI Technology, Systems and Application) 最佳學生論文獎(Best Student Paper Award)
- 指導學生 Eknath Sarkar 獲得 2023 VLSI-TSA (International Symposium on VLSI Technology, Systems and Application)最佳海報獎(Best poster award)
- 指導學生杜建德(Chien-Te Tu)獲得 2023 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽佳作獎(Silver Award)
- 指導學生劉亦浚(Yi-Chun Liu)獲得 2023 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽佳作獎(Silver Award)
- 指導學生林鑫成(Hsin-Cheng Lin)獲得 2023 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽特優獎(Platinum Award)
- 指導學生蔡仲恩(Chung-En Tsai)獲得 110 學年度國立臺灣大學最佳博士論文獎 (GIEE Best PhD Dissertation Award)
- 指導學生岑家榮(Chia-Jung Tsen)獲得 110 學年度國立臺灣大學最佳碩士論文獎 (GIEE Best Master Thesis Award)
- 指導學生林鑫成(Hsin-Cheng Lin)獲得 2023 TSIA(PhD student award)博士研究生半導體獎
- 指導學生陳昱叡(Yu-Rui Chen)、趙澤夫(Zefu Zhao)、杜建德(Chien-Te Tu) 獲得 112 年「臺大 1975 級電機系系友科技研究創新獎」
- 指導學生蔡仲恩(Chung-En Tsai)、謝宛軒(Wan-Hsuan Hsieh)、黃柏崴(Bo-Wei Huang) 獲得 112 年「臺大 1975 級電機系系友科技研究創新獎」
- 指導學生姚慶旺(Ching-Wang Yao) 獲得台積電 2023 年博士獎學金

2022

- 指導學生蔡仲恩(Chung-En Tsai)獲得 2022 年度國際電機電子工程師學會中華民國分會(IEEE Taipei Section)博士論文獎
- 指導學生鄒亞叡(Ya-Jui Tsou)獲得 2022 年度國際電機電子工程師學會中華民國分會(IEEE Taipei Section)博士論文獎
- 指導學生黃柏崴(Bo-Wei Huang)獲得 MRS-T 2022 華立創新材料大賽(Wah Lee Innovative Materials

Competition) 金質獎

- 指導學生蔡仲恩(Chung-En Tsai) 獲得 111 學年度國立臺灣大學科林論文獎(2022 Lam Ph.D Thesis Award)
- 指導學生闕世杰(Shee-Jier Chueh)獲得 2022 IEDMS (International Electron Devices & Materials Symposium)傑出論文獎(Best Paper Award)
- 2022 年未來科技獎(FutureTech Award)：高遷移率材料、製程、多層疊元件及熱電路模型；鐵電鉿基氧化物之負電容特性研究及相關應用;先進原子層材料與模組技術(High mobility materials, process, stacked channels, and thermal circuit simulation; Ferroelectric X:HfO2 for Negative Capacitance and POC(Proof-of-Concept) Applications; Atomic layer technologies for advanced materials and modules)，由國立台灣大學：劉致為教授(Prof. Chee Wee Liu)、陳敏璋教授、學生劉亦浚(Yi-Chun Liu)、杜建德(Chien-Te Tu)、鍾嘉哲(Chia-Che Chung)、林鑫成(Hsin-Cheng Lin)、謝宛軒(Wan-Hsuan Hsieh)；國立台灣師範大學光電科技研究所：李敏鴻教授、學生廖俊宇、向國瑜獲得。
- 2022 年未來科技獎(FutureTech Award)：前瞻單晶片三維多層級堆疊之高密度積體電路關鍵技術(Development for Advacned High-Density Monolithic Three Dimensional Integrated Circuits with Multi-Stacked Transistor Layers) ，由國立陽明交通大學： 劉柏村教授、盧志文教授、學生蔣宗哲、李振豪；國立台灣大學： 劉致為教授(Prof. Chee Wee Liu)、學生邱日照(Jih-Chao Chiu)；國立清華大學：吳永俊教授獲得。
- 指導學生鄭群議(Chun-Yi Cheng) 獲得台積電 2022 年博士獎學金
- 指導學生李嘉洋(Jia-Yang Lee) 獲得國立臺灣大學重點科技研究學院 (GSAT) 111 學年第一學期菁英博士生獎學金
- 指導學生 Rachit Dobhal 獲得國立臺灣大學重點科技研究學院 (GSAT) 111 學年第一學期菁英博士生獎學金
- 指導學生周韜(Tao Chou) 獲得國立臺灣大學重點科技研究學院 (GSAT) 111 學年第一學期菁英博士生獎學金
- 指導學生周韜(Tao Chou) 獲得台積電 2022 年博士獎學金
- 指導學生鄭群議(Chun-Yi Cheng)獲得 2022 VLSI-TSA (International Symposium on VLSI Technology, Systems and Application) 最佳學生論文獎(Best Student Paper Award)
- 指導學生劉亦浚(Yi-Chun Liu)獲得 2022 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽特優獎
- 指導學生鄒亞叡(Ya-Jui Tsou)獲得 2022 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽特優獎
- 指導學生蔡仲恩(Chung-En Tsai)獲得 2022 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽優等獎
- 指導學生杜建德(Chien-Te Tu)獲得 2022 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽優等獎
- 指導學生邱日照(Jih-Chao Chiu)獲得 2022 SNDCT (Symposium on Nano-Device Circuits and Technologies) 學生論文競賽入圍獎
- 指導學生蔡仲恩(Chung-En Tsai) 獲得 110 學年度 Dialog 戴樂格半導體獎勵學生優良研究成果獎
- 指導學生鍾嘉哲(Chia-Che Chung) 獲得 110 學年度 Dialog 戴樂格半導體獎勵學生優良研究成果獎
- 指導學生杜建德(Chien-Te Tu) 獲得 110 學年度 Dialog 戴樂格半導體獎勵學生優良研究成果獎
- 指導學生林鑫成(Hsin-Cheng Lin) 獲得 110 學年度 Dialog 戴樂格半導體獎勵學生優良研究成果獎
- 指導學生陳韋任(Wei-Jen Chen) 獲得 110 學年度 Dialog 戴樂格半導體獎勵學生優良研究成果獎
- 指導學生黃柏崴(Bo-Wei Huang) 獲得 110 學年度 Dialog 戴樂格半導體獎勵學生優良研究成果獎

- 指導學生杜建德(Chien-Te Tu)獲得 2022 TSIA(PhD student award)博士研究生半導體獎
- 指導學生葉俊宏(Chun-Hung Yeh)、李承澤(Cheng-Tse Lee) 獲得 111 年「臺大 1975 級電機系系友科技研究創新獎」
- 指導學生劉亦浚(Yi-Chun Liu)、鄭群議(Chun-Yi Cheng)、謝宛軒(Wan-Hsuan Hsieh) 獲得 111 年「臺大 1975 級電機系系友科技研究創新獎」
- 指導學生蔡仲恩(Chung-En Tsai)、鄭群議(Chun-Yi Cheng)、黃柏崴(Bo-Wei Huang) 獲得 111 年「臺大 1975 級電機系系友科技研究創新獎」

2021

- 指導學生蔡仲恩(Chung-En Tsai) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生鄒亞叡(Ya-Jui Tsou) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生劉亦浚(Yi-Chun Liu) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生蔡仲恩(Chung-En Tsai) 獲得 2021 IEDM (International Electron Devices Meeting)最佳學生論文獎(Roger A. Haken Best Student Paper Award)
- 指導學生邱日照(Jih-Chao Chiu)獲得 2021 IEDMS (International Electron Devices & Materials Symposium)最佳論文獎(Best Paper Award)
- 指導學生林詩雅(Shih-Ya Lin)獲得 1th SNDCT (Symposium on Nano-Device Circuits and Technologies)學生口頭論文簡報獎特優獎
- 指導學生鄒亞叡(Ya-Jui Tsou)獲得 1th SNDCT (Symposium on Nano-Device Circuits and Technologies)學生口頭論文簡報獎入圍獎
- 指導學生邱日照(Jih-Chao Chiu)獲得 1th SNDCT (Symposium on Nano-Device Circuits and Technologies)學生論文海報競賽獎入圍獎
- 指導學生林鑫成(Hsin-Cheng Lin) 獲得台積電 2021 年博士獎學金
- 指導學生陳韋任(Wei-Jen Chen) 獲得台積電 2021 年博士獎學金
- 指導學生黃柏崴(Bo-Wei Huang) 獲得台積電 2021 年博士獎學金
- 指導學生鍾嘉哲(Chia-Che Chung)獲得台積電 2021 實習競賽總決賽第三名(TSMC 2021 Intern Final Competition, 3rd place)。
- 指導學生鍾嘉哲(Chia-Che Chung)通過台積電 2021 DTP 部門實習競賽決賽(Top 7)。
- 指導學生林鑫成(Hsin-Cheng Lin)通過台積電 2021 DTP 部門實習競賽決賽(Top 7)。
- 指導學生李明軒(Ming-Xuan Lee)晉級台積電 2021 PID 部門實習競賽複賽
- 指導學生陳韋任(Wei-Jen Chen) 獲得臺大 110 年學士班學生論文優良獎 (NTU Bachelor Thesis Award)
- 指導學生黃柏崴(Bo-Wei Huang) 獲得臺大 110 年學士班學生論文院長獎 (NTU Bachelor Thesis Award)
- 指導學生黃柏崴(Bo-Wei Huang) 獲得 2021 臺大電機系大學部精專獎參獎(NTUEE Undergraduate Innovation Award, 3rd place)
- 指導學生鄒亞叡(Ya-Jui Tsou)獲得 2021 TSIA(PhD student award)博士研究生半導體獎
- 指導學生蔡仲恩(Chung-En Tsai)獲得 2021 TSIA(PhD student award)博士研究生半導體獎
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得 108 學年度電子所最佳博士論文獎(Best Ph.D. thesis award)
- 指導學生鄒亞叡(Ya-Jui Tsou) 獲得 110 年「臺大 1975 級電機系系友科技研究創新獎」

2020

- 指導學生黃郁翔(Yu-Shiang Huang) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生呂芳諒(Fang-Liang Lu) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)

- 指導學生鍾嘉哲(Chia-Che Chung) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得 2020 年度國際電機電子工程師學會中華民國分會(IEEE Taipei Section)博士論文獎
- 指導學生呂芳諒(Fang-Liang Lu) 獲得 2020 年度國際電機電子工程師學會中華民國分會(IEEE Taipei Section)博士論文獎
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得 109 年「臺大 1975 級電機系系友科技研究創新獎」
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得 109 學年度國立臺灣大學科林論文獎(2020 Lam Ph.D Thesis Award)博士論文頭等獎
- 指導學生呂芳諒(Fang-Liang Lu) 獲得 109 學年度國立臺灣大學科林論文獎(2020 Lam Ph.D Thesis Award)博士論文優等獎
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得 2020 年臺灣電機電子工程學會(TIEEE)第 10 屆最佳博碩士論文獎博士論文優等獎
- 指導學生呂芳諒(Fang-Liang Lu) 獲得 2020 年臺灣電機電子工程學會(TIEEE)第 10 屆最佳博碩士論文獎博士論文佳作獎
- 指導學生葉泓佑(Hum-You Ye)獲得 2020 年臺灣電機電子工程學會(TIEEE)第 10 屆最佳博碩士論文獎博士論文佳作獎
- 指導學生杜建德(Chien-Te Tu)獲得台積電 2020 年博士獎學金
- 指導學生邱日照(Jih-Chao Chiu)獲得台積電 2020 年博士獎學金
- 指導學生劉亦浚(Yi-Chun Liu)獲得台積電 2020 年博士獎學金
- 指導學生呂芳諒(Fang-Liang Lu)獲得 2020 TSIA(PhD student award)博士研究生半導體獎
- 指導學生鍾嘉哲(Chia-Che Chung)獲得 2020 TSIA(PhD student award)博士研究生半導體獎
- 指導學生劉宜軒(I-Hsuan Liu) 獲得臺大 109 年學士班學生論文優良獎 (NTU Bachelor Thesis Award)
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得 109 年「臺大 1975 級電機系系友科技研究創新獎」(NTUEE 1975 Alumni Award)

2019

- 指導學生黃智雄(Chih-Hsiung Huang)獲得 108 學年度國立台灣大學科林博士論文獎(2019 Lam Ph.D. Thesis Award)博士班組頭等獎
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生呂芳諒(Fang-Liang Lu) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生杜建德(Chien-Te Tu) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生林鑫成(Hsin-Cheng Lin)獲得 2019 臺大電機系大學部精專獎第三名(NTUEE Undergraduate Innovation Award, 3rd place)
- 指導學生黃智雄(Chih-Hsiung Huang)獲得 107 學年度電子所最佳博士論文獎(Best Ph.D. thesis award)

2018

- 指導學生顏智洋(Jhih-Yang Yan)獲得 107 學年度國立台灣大學科林博士論文獎(2018 Lam Ph. D. Thesis Award)博士班組優等獎
- 指導學生黃郁翔(Yu-Shiang Huang)獲得 2018 TSIA(PhD student award)博士研究生半導體獎

2017

- 指導學生黃郁翔(Yu-Shiang Huang) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生鍾嘉哲(Chia-Che Chung)獲得台積電台大大學部「專題競賽」第一名(tsmc-NTU undergraduate

competition award, First Price)

- 指導學生鍾嘉哲(Chia-Che Chung)獲得台積電四校聯合研發中心大學部「專題競賽」第二名(tsmc-top 4 university research award the 2nd price)
- 指導學生鍾嘉哲(Chia-Che Chung)獲得第十五屆台大創新競賽特別獎"可行性獎" (NTU innovation award)
- 指導學生顏智洋(Jhih-Yang Yan)獲得 2017 TSIA(PhD Student Award)博士研究生半導體獎

2016

- 指導學生翁翊軒(I-Hsieh Wong) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生顏智洋(Jhih-Yang Yan) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生黃郁翔(Yu-Shiang Huang) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生樊聖亭(Sheng-Ting Fan) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生羅傑(Roger)論文「高載子遷移率及穩定度改善之非晶相銦鎵鋅氧化物薄膜電晶體」獲得中國電機工程學會青年論文獎第三名 (The 3rd Place Winner of The Chinese Institute of Electrical Engineering (CIEE) Paper Award)
- 指導學生羅傑(Roger)獲得 105 學年度國立台灣大學科林論文獎(2016 Lam Master Thesis Award)碩士班組優等獎
- 指導學生高名彥(Ming-Yen Kao)獲得 First place in tsmc top 4 university research competition
- 指導學生高名彥(Ming-Yen Kao)獲得國立台灣大學精專獎第三名(NTUEE Undergraduate Innovation Award, 3rd place)
- 指導學生黃仕賢(Shih-Hsien Huang)獲得 2016 TSIA(PhD Student Award) 博士研究生半導體獎

2015

- 指導學生呂芳諒(Fang-Liang Lu)獲得 22nd SNDT (Symposium on Nano Device Technology)學生論文獎頭等獎 (best student paper)
- 指導學生黃郁翔(Yu-Shiang Huang)獲得國立台灣大學 104 學年度第一學期逕行修讀博士學位學生研究提升計畫補助金
- 指導學生呂芳諒(Fang-Liang Lu)獲得國立台灣大學 104 學年度第一學期逕行修讀博士學位學生研究提升計畫補助金
- 指導學生葉泓佑(Hum-You Ye)獲得國立台灣大學 104 學年度第一學期逕行修讀博士學位學生研究提升計畫補助金
- 指導學生黃奕中(Yi-Chung Huang)獲得 104 學年度國立台灣大學科林論文獎(2015 Lam Master Thesis Award)碩士班組優等獎
- 指導學生張達智(Da-Zhi Chang)「Band alignment of GeSn based heterostructure」獲得 2015 台積電四校聯合研發中心大學部「專題競賽」第一名
- 指導學生廖宇鴻(Yu-Hung Liao)「Hysteresis Reduction of Negative Capacitance Field Effect Transistors by Fixed Charges and Enhanced Subthreshold Slope by Overlap Capacitancne」獲得 2015 台積電台大大學部「專題競賽」第一名(tsmc-NTU Bachelor award, 1st price)
- 指導學生翁翊軒(I-Hsieh Wong) 獲得 2015 TSIA(PhD Student Award)博士研究生半導體獎

2014

- 指導學生翁翊軒(I-Hsieh Wong) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生黃仕賢(Shih-Hsien Huang)論文「Record High Mobility of 2 × 106 cm2/V s in Strained Si by Optimized SiGe/Si/SiGe Structures」獲得 2014 年中華民國尖端材料科技協會學生論文獎佳作

- 指導學生藍偟翔(Huang-Siang Lan)獲得科技部 103 年度「博士後研究人員學術著作獎」(MOST Best Postdoc Award)。
- 指導學生陳彥廷(Yen-Ting Chen) 獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生陳彥廷(Yen-Ting Chen)獲得 103 學年度國立台灣大學科林論文獎(2014 Lam Ph.D Thesis Award)博士班組頭等獎
- 指導學生魯珺地(Chun-Ti Lu)獲得 21st SNDT (Symposium on Nano Device Technology)學生論文獎特優獎(best student paper)
- 指導學生呂芳諒(Fang-Liang Lu)獲得台積電大聯盟論文首獎 (best student paper at 1st place, tsmc-NTU research center)

2013

- 指導學生陳彥瑜(Yen-Yu Chen)獲得 20th SNDT (Symposium on Nano Device Technology)學生論文獎特優獎(best student paper award)
- 指導學生林政明(Cheng-Ming Lin)獲得 102 學年度國立台灣大學科林論文獎(2013 Lam Ph. D. Thesis Award)博士班組優等獎
- 指導學生蔡明亨(Ming-Heng Tsai)獲得 102 學年度國立台灣大學科林論文獎(2013 Lam Master Thesis Award)碩士班組優等獎

2012

- 指導學生詹孫戎(Sun-Rong Jan)獲得 101 學年度國立台灣大學科林論文獎(2012 Lam Ph.D. Thesis Award)博士班組頭等獎
- 指導學生陳柏翰 (Bo-Han Chen)獲得臺灣積體電路製造股份有限公司贊助臺大電子所固態奈米電子博士班研究生獎學金 (TSMC scholarship)
- 指導學生許文瑋(Wen-Wei Hsu)獲得 19th SNDT (Symposium on Nano Device Technology)學生論文獎頭等獎(Best student paper award 1st place)
- 指導學生張弘志(Hung-Chih Chang)獲得 6th tsmc Outstanding Student Research Award-commendation
- 指導學生林政明(Cheng-Ming Lin)獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生林政明(Cheng-Ming Lin)獲得 101 學年度電子所最佳博士論文獎(Best Ph.D. thesis award)

2011

- 指導學生程子桓 (Tzu-Huan Cheng) 獲得中華民國物理學會 博士論文獎佳作 (outstanding Ph.D. dissertation award, Chines Physics Society)
- 指導學生許文瑋(Wen-Wei Hsu)獲得 5th tsmc Outstanding Student Research Award-commendation
- 指導學生李承翰(Cheng-Hang Lee)獲得 100 學年度國立台灣大學科林論文獎 (2011 Lam Thesis Award)博士班組頭等獎
- 指導學生詹琇婷(Shiu-Ting Chan)獲得 99 學年度聯相光電股份有限公司獎學金(2011 Nexpower scholarship)
- 指導學生何偉碩(Wei-Shuo Ho)獲得 99 學年度聯相光電股份有限公司獎學金(2011 Nexpower scholarship)
- 指導學生孫宏彰(Hung-Chang Sun)獲得 99 學年度聯相光電股份有限公司獎學金(2011 Nexpower scholarship)
- 指導學生陳彥瑜(Yen-Yu Chen)獲得 99 學年度聯相光電股份有限公司獎學金(2011 Nexpower scholarship)
- 指導學生許文瑋(Wen-Wei Hsu)獲得 18th SNDT (Symposium on Nano Device Technology) Student Award
- 指導學生陳彥廷(Yen-Ting Chen)獲得 18th SNDT (Symposium on Nano Device Technology) Student Award
- 指導學生李承翰(Cheng-Hang Lee)獲得 18th SNDT (Symposium on Nano Device Technology) Student Award

2010

- 指導學生陳彥廷(Yen-Ting Chen)獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生程子桓(Tzu-Huan Cheng)獲得臺灣大學 100 年度優秀青年(2011 Outstanding youth of National Taiwan University)
- 指導學生彭成毅(Cheng-Yi Peng)論文「應變矽鍺金氧半元件及電荷儲存式記憶體之研究探討」獲得台灣大學電子所 98 學年度最佳博士論文獎(98th Best Ph.D. Dissertation Award of GIEE)
- 指導學生程子桓(Tzu-Huan Cheng)獲得中技社 99 年度科技獎學金(2010 CTCI Foundation Scholarship)
- 指導學生徐正一(Ching-Yi Hsu)論文「可撓式單晶鍺薄膜電晶體與高遷移率鍺金氧半場效電晶體之應電研究」獲得中國電機工程學會青年論文獎第一名 (The 1st Place Winner of The Chinese Institute of Electrical Engineering (CIEE) Paper Award)
- 指導學生周典霈(Tein-Pei Chou)獲得 2010 TSMC 3DIC Camp golden award
- 指導學生徐正一(Ching-Yi Hsu)獲得 4th tsmc Outstanding Student Research Award- the 2nd place
- 指導學生許文瑋(Wen-Wei Hsu)獲得 4th tsmc Outstanding Student Research Award-the 4th place

2009

- 指導學生李承翰(Cheng-Hang Lee)獲得 16th SNDT (Symposium on Nano Device Technology) Student Award

2008

- 指導學生彭成毅(Cheng-Yi Peng)獲得 3rd tsmc Outstanding Student Research Award-the first place 奈米元件材料物理/化學類別第一名
- 指導學生李承翰(Cheng-Hang Lee)獲得 3rd tsmc Outstanding Student Research Award-the third place 奈米元件材料物理/化學類別第三名
- 指導學生何偉碩(Wei-Shuo Ho)獲得 4th ISTDM (International SiGe Technology and Device Meeting) Best Student Paper Award
- 指導學生黃靖方(Ching-Fang Huang)獲得 15th SNDT (Symposium on Nano Device Technology) Award of Merit
- 指導學生孫宏彰(Hung-Chang Sun)獲得 1st GIEE Technical English Presentation Contest-the second place
- 指導學生黃靖方(Ching-Fang Huang)獲得 1st GIEE Technical English Presentation Contest-the third place

2007

- 指導學生黃靖方(Ching-Fang Huang)獲得 2nd tsmc Outstanding Student Research Award-the third place 電子元件/製程技術類別第三名
- 指導學生何偉碩(Wei-Shuo Ho)獲得 2nd tsmc Outstanding Student Research Award 專題研究類別佳作
- 指導學生郭平昇(Ping-Sheng Kuo)獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生廖洺漢(Ming-Han Liao)論文「矽鍺金屬氧化半導體發光元件與應變矽技術」獲得 96 年度中華民國物理學會博士論文(2007 Ph.D. Dissertation Award of The Physical Society of Republic of China)佳作獎
- 指導學生廖洺漢(Ming-Han Liao)論文「矽鍺金屬氧化半導體發光元件與應變矽技術」獲得 96 年度國立台灣大學科林論文獎 (2007 Lam Thesis Award)博士班組頭等獎
- 指導學生廖洺漢(Ming-Han Liao)論文「矽鍺金屬氧化半導體發光元件與應變矽技術」獲得 96 年度光學工程學會學生論文獎(2007 Student Paper Award of Taiwan Photonics Society)
- 指導學生李政霆(Cheng-Ting Lee)論文「鍺金氧半發光元件」獲得台灣大學電子所 95 學年度最佳碩士論文獎(2007 Best Master Student Paper Award of GIEE)
- 指導學生江彥德(Yen-Te Chiang)論文「絕緣層上鍺晶圓製程及其特性」獲得 96 年度國立台灣大學科林論文獎(2007 Lam Thesis Award)碩士班組優等獎
- 指導學生程子桓(Tzu-Huan Cheng)獲得 14th SNDT (Symposium on Nano Device Technology) NDL Superior

Award

- 指導學生李承翰(Cheng-Hang Lee)獲得 14th SNDT (Symposium on Nano Device Technology) NDL Superior Award

2006

- 指導學生余承曄(Cheng-Ya Yu)獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)

2005

- 指導學生袁鋒(Feng Yuan)獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生余承曄(Cheng-Ya Yu)參與「免除矽鍺緩衝層之在矽上壓縮應變鍺且利用矽表層保護 P 型場效電晶體」案獲得 94 年工研院電子所「卓越研究創新獎」(2006 Outstanding Research Award of ITRI)

2004

- 指導學生華偉君(Wei-Chun Hua)及余承曄(Cheng-Ya Yu)參與「高效能之形變矽異質結構互補式金氧半場效電晶體」案獲得 93 年工研院電子所「傑出創新獎」(2004 Outstanding Research Award of ITRI)
- 指導學生袁鋒(Feng Yuan)獲得 2004 年度 SRC Fellowship
- 指導學生郭平昇(Ping-Sheng Kuo)論文「金氧半光偵測器」獲得 93 年度國立台灣大學科林論文獎(2004 Lam Thesis Award)碩士班組優等獎
- 指導學生詹孫戎(Sun-Rong Jan)論文「應變矽技術與晶圓鍵合」獲得中國電機工程學會青年論文獎第二名(The 2nd Place Winner of The Chinese Institute of Electrical Engineering (CIEE) Paper Award)

2003

- 指導學生華偉君(Wei-Chun Hua)獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生張書通(Shu-Tong Chang)論文「創新矽基材料與元件之物理與應用」獲得 92 年度國立台灣大學科林論文獎(2003 Lam Thesis Award)博士班組優等獎

2002

- 指導學生許博欽(Bo-Chin Hsu)獲得電子所學生傑出研究獎(Outstanding Research Award of GIEE)
- 指導學生陳冠復(Guan-Fu Chen)論文「利用氧化層的粗糙度增強金氧半元件的光電可靠度特性之研究」獲得中國電機工程學會青年論文獎第三名(The 3rd Place Winner of The Chinese Institute of Electrical Engineering (CIEE) Paper Award)

2001

- 指導學生張書通(Shu-Tong Chang)及許博欽(Bo-Chin Hsu)獲得 UMC Scholarship
- 指導學生李敏鴻(Min-Hung Lee)及林崇勳(Chung-Hsun Lin)獲得 Applied Materials at Taiwan (AMT) Semiconductor Technology Cultivation Scholarship
- 指導學生林崇勳(Chung-Hsun Lin)論文「超薄氧化層電性分析與增強可靠度之氘製程研究」獲得 90 年度國立台灣大學科林論文獎(2001 Lam Thesis Award)碩士班組頭等獎
- 指導學生劉岳修(Yue-Xiu Liu)論文「超高真空快熱機台之製造及其成長之超薄氧化層、多晶矽、矽鍺之特性研究」獲得 90 年度國立台灣大學科林論文獎(2001 Lam Thesis Award)碩士班組優等獎
- 指導學生林崇勳(Chung-Hsun Lin)論文「超薄氧化層電性分析與增強可靠度之氘製程研究」獲得中國電機工程學會青年論文獎第一名(The 1st Place Winner of The Chinese Institute of Electrical Engineering (CIEE) Paper Award)
- 指導學生林崇勳(Chung-Hsun Lin)論文「超薄氧化層電性分析與增強可靠度之氘製程研究」獲得國科會 90 年度碩士論文獎(2001 Best Student Paper Award of National Science Council (NSC))
- 指導學生林崇勳(Chung-Hsun Lin)　2001 ISDRS (International Semiconductor Device Research Symposium) 1st

place winner of Best Student Paper Award

- 指導學生林崇勳(Chung-Hsun Lin)獲得 8th SNDT (Symposium on Nano Device Technology) Best Student Paper Award
- 指導學生曾揚玳(Yang-Dai Tzeng)獲得中國材料科學學會 90 年度傑出論文獎(2001 Outstanding Paper Award of Materials Research Society-Taiwan(MRS-T))

2000

- 指導學生林奕成(Yi-Cheng Lin)論文「金氧半穿隧發光二極體之製作與特性量測」獲得中國電機工程學會青年論文獎第三名(The 3rd Place Winner of The Chinese Institute of Electrical Engineering (CIEE) Paper Award)
- 指導學生劉威廷(Wei-Ting Liu)論文「MOS 穿透二極體電流傳導機制之詳細研究並應用於光偵測器及 LDMOS 之模擬」獲得第一屆力瑋創新論文入圍獎(Weili best student paper award)

1999

- 指導學生曾揚玳(Yang-Dai Tzeng)論文「快熱製程機台製作與矽鍺碳模組技術」獲得 88 年度國立台灣大學科林論文獎(Lam Master Thesis Award)碩士班組優等獎

◆ 2001 榮獲中國電機工程學會之「優秀青年電機工程師獎」。

◆ 中華民國台灣半導體產業協會半導體學生委員會委員。

E: 專利

US Patent (Issued Patents)

No.	Title	Patent Number	Inventors	Assignee	Issued Date
109	Memory device and formation method thereof	US 12,451,175 B2	Jih-Chao Chiu, Ya-Jui Tsou, Wei-Jen Chen, **Chee-Wee Liu**, Shao-Yu Lin, Chih-Lin Wang,	TSMC/ NTU	2025/10/21
108	Source and drain epitaxial layers	US 12,446,268 B2	Wen-Hsien Tu, **Chee-Wee Liu**, Fang-Liang Lu	TSMC	2025/10/14
107	Capacitor and method for forming the same	US 12,432,941 B2	Hsin-Cheng Lin, Chia-Che Chung, **Chee-Wee Liu**	TSMC/ NYCU	2025/09/30
106	Semiconductor device and manufacturing method thereof	US 12,389,635 B2	Chien-Te Tu, **Chee-Wee Liu**	TSMC/ NTU	2025/08/12
105	Fin field effect transistors (FINFET) device including a plurality of recessed regions alternating with unrecessed regions in channel stack	US 12,349,425 B2	Hung-Yu Ye, Yu-Shiang Huang, Chien-Te Tu, **Chee-Wee Liu**	TSMC/ NTU	2025/07/01
104	Semiconductor device with oxide-based semiconductor channel	US 12,349,413 B2	Jih-Chao Chiu, Song-Ling Li, **Chee-Wee Liu**	TSMC/ NTU	2025/07/01
103	Integrated circuit structure and fabrication thereof	US 12,336,190 B2	Chia-Che Chung, Chun-Yi Cheng, **Chee-Wee Liu**	TSMC/ NTU	2025/06/17
102	Magnetoresistive memory device and manufacturing method thereof	US 12,315,541 B2	Zong-You Luo, Ya-Jui Tsou, **Chee-Wee Liu**, Shao-Yu Lin, Liang-Chor Chung, Chih-Lin Wang	TSMC/ NTU	2025/05/27
101	Photosensor having a scattering structure comprises circular ring and peripheral patterns	US 12,310,138 B2	Eknath Sarkar, Yichen Ma, Yu-Chieh Lee, **Chee-Wee Liu**	PSMC	2025/05/20

100	Method for non-resist nanolithography	US 12,308,368 B2	Miin-Jang Chen, Kuen-Yu Tsai, **Chee-Wee Liu**	TSMC/ NTU	2025/05/20
99	Semiconductor device and method for forming the same	US 12,272,734 B2	Yu-Shiang Huang, **Chee-Wee Liu**	TSMC/ NTU	2025/4/8
98	Integrated circuit structure and method for forming and operating the same	US 12,254,915 B1	Dai-Ying Lee, Teng-Hao Yeh, Wei-Chen Chen, Rachit Dobhal, Zefu Zhao, **Chee-Wee Liu**	MACRO NIX	2025/3/18
97	Write assist circuit for memory device	US 12,249,367 B2	Chia-Che Chung, Hsin-cheng Lin, **Chee-Wee Liu**	TSMC/ NTU	2025/3/11
96	Gate-all-around transistor with strained channels	US 12,211,897 B2	Chung-en Tsai, Chia-che Chung, **Chee-wee Liu**, Fang-liang Lu, Yu-shiang Huang, Hung-yu Yeh, Chien-te Tu, Yi-chun Liu	TSMC/ NTU	2025/1/28
95	Method of manufacturing heat dissipation substrate with high thermal conductivity for semiconductor device	US 12,191,226 B2	Ming-Tzong Yang, Hsien-Hsin Lin, Wen-Kai Wan, Chia-Che Chung, **Chee-Wee Liu**	MEDIA TEK/ NTU	2025/1/7
94	Semiconductor Device And Formation Method Thereof	US 12,191,145 B2	Chia-Che Chung, Chia-Jung Tsen, **Chee-Wee Liu**	TSMC/ NTU	2025/1/7
93	Stacked semiconductor device with nanostructure channels	US 12,170,227 B2	Chien-te Tu, Hsin-cheng Lin, **Chee-wee Liu**	TSMC/ NTU	2024/12/17
92	Germanium tin gate-all-around device	US 12,154,951 B2	Shahaji B. More, Cheng-Han Lee, Shih-Chieh Chang, Shih-Ya Lin, Chung-En Tsai, **Chee-Wee Liu**	TSMC	2024/11/26
	Magnetic tunnel junction structures and	pending	Zong-You Luo,	TSMC/	

	related methods		Ya-Jui Tsou, I-Cheng Tung, **Cheewee Liu**	NTU	
	Integrated circuit device and manufacturing method thereof	pending	Jih-Chao CHIU, Chien-Te TU, Yuan-Ming Liu, Eknath Sarkar, **Chee-Wee Liu**	TSMC/ NTU	
	Memory device	pending	Tao Chou, Hsin-cheng Lin, Jih-Chao CHIU, **Chee-Wee Liu**	TSMC/ NTU	
	Semiconductor structure and manufacturing method thereof	pending	Tao Chou, Hsin-cheng Lin, Ching-Wang YAO, Li-Kai Wang, **Chee-Wee Liu**, Chenming Hu	TSMC/ NTU	
91	Nanowire stack GAA device with selectable numbers of channel strips	US 12,100,737 B2	Ya-Jui Tsou, Zong-You Luo, Wen Hung Huang, Jhih-Yang Yan, **Chee-Wee Liu**	TSMC/ NTU	2024/09/24
90	Method for manufacturing memory device	US 12,069,965 B2	Ya-Jui Tsou, Zong-You Luo, **Chee-Wee Liu,** Shao-Yu Lin, Liang-Chor Chung, Chih-Lin Wang	TSMC/ NTU	2024/08/20
89	Memory device and forming method thereof	US 12,062,713 B2	Ya-Jui Tsou, Wei-Jen Chen, Pang-Chun Liu, **Chee-Wee Liu**, Shao-Yu Lin, Chih-Lin Wang	TSMC/ NTU	2024/08/13
88	Memory structure and formation method thereof	US 12,052,934 B2	Wei-Jen Chen, Ya-Jui Tsou, **Chee-Wee Liu**, Shao-Yu Lin, Chih-Lin Wang,	TSMC/ NTU	2024/07/30

87	Physically unclonable function cell and operation method of same	US 11,967,351 B2	Chia-Che Chung, Chia-Jung Tsen, Ya-Jui Tsou, **Chee-Wee Liu**	TSMC/ NTU	2024/04/23
	Additional Sacrificial Layer (SL) to Achieve Truly Wrap-around Contact for Back-side Contact Applications	pending	林鑫成, 杜建德 劉晉佑, 鄭群議, 劉致為	TSMC/ NTU	
	A Structure of Barrier-all-around Channel for Oxide Semiconductor (e.g. IGZO) GAA Nanowire/Nanosheet FET	pending	Rachit Dobhal(杜瑞奇), 邱日照, 劉原銘, 吳宇珊, 劉致為	TSMC/ NTU	
86	Stacked semiconductor device with nanostructure channels and manufacturing method thereof	US 11,955,384 B2	Chien-Te Tu, Hsin-Cheng Lin, **Chee-Wee Liu**	TSMC/ NTU	2024/4/9
85	Semiconductor device and formation method	US 11,908,892 B2	Hung-Yu Ye, Yu-Shiang Huang, Chien-Te Tu, Chee-Wee Liu	TSMC/ NTU	2024/2/20
84	Memory device and SRAM cell	US 11,864,369 B2	Hung-Yu Ye, Chung-Yi Lin, Yun-Ju Pan, **Chee-Wee Liu**	TSMC/ NTU	2024/1/2
83	Semiconductor device and manufacturing method thereof	US 11,791,410 B2	Fang-Liang Lu, I-Hsieh Wong, Shih-Ya Lin, CheeWee Liu, Samuel C. Pan	TSMC/ NTU	2023/10/17
82	Semiconductor device having doped work function metal layer	US 11,791,338 B2	Chih-Hsiung Huang, Chung-En Tsai, **Chee-Wee Liu**, Kun-Wa Kuok, Yi-Hsiu Hsiao	TSMC/ NTU	2023/10/17
81	Memory device	US 11,778,923 B2	Ya-Jui Tsou, Zong-You Luo, **Chee-Wee Liu**, Shao-Yu Lin, Liang-Chor Chung, Chih-Lin Wang,	TSMC/ NTU	2023/10/3
80	Gate-all-around device	US 11,776,998 B2	Chung-En Tsai, Chia-Che Chung, **Chee-Wee Liu**,	TSMC/ NTU	2023/10/3

			Fang-Liang Lu, Yu-Shiang Huang, Hung-Yu Yeh, Chien-Te Tu, Yi-Chun Liu,		
79	Magnetoresistive memory device and manufacturing method thereof	US 11,749,328 B2	Zong-You Luo, Ya-Jui Tsou, **Chee-Wee Liu**, Shao-Yu Lin, Liang-Chor Chung, Chih-Lin Wang,	TSMC/ NTU	2023/9/5
78	Nanowire stack GAA device with selectable numbers of channel strips	US 11,742,388 B2	Ya-Jui Tsou, Zong-You Luo, Wen Hung Huang, Jhih-Yang Yan, **Chee-Wee Liu**	TSMC/ NTU	2023/8/29
77	Semiconductor device and method	US 11,664,218 B2	Sheng-Ting Fan, Pin-Shiang Chen, **Chee Wee Liu**, Chi-Wen Liu	TSMC/ NTU	2023/5/30
76	Semiconductor device and method of manufacturing thereof	US 11,631,768 B2	Huang-Siang Lan, **CheeWee Liu**, Chi-Wen Liu, Shih-Hsien Huang, I-Hsieh Wong, Hung-Yu Yeh, Chung-En TSAI	TSMC/ NTU	2023/4/18
75	Magnetic tunnel junction structures and related methods	US 11,605,670	Zong-you Luo, Ya-jui Tsou, I-cheng Tung, **Cheewee Liu**	TSMC/ NTU	2023/3/14
74	Semiconductor device	US 11,551,992 B2	Jhih - Yang Yan, Fang - Liang Lu, **Chee - Wee Liu**	TSMC/ NTU	2023/1/10
73	Method for non-resist nanolithography	US 11,532,729 B2	Miin-Jang Chen, Kuen-Yu Tsai, **Chee-Wee Liu**	TSMC/ NTU	2022/12/20
72	Nanowire stack GAA device with selectable numbers of channel strips	US 11,411,082 B2	Ya-Jui Tsou, Zong-You Luo, Wen Hung Huang,	TSMC/ NTU	2022/8/9

			Jhih-Yang Yan, **CheeWee Liu**		
71	Magnetoresistive memory device and manufacturing method thereof	US 11,410,714 B2	Zong-You Luo, Ya-Jui Tsou, **Chee-Wee Liu**, Shao-Yu LIN, Liang-Chor Chung, Chih-Lin Wang	TSMC/ NTU	2022/8/9
70	Semiconductor device and formation thereof	US 11,404,284 B2	Yen-Ting Chen, I-Hsieh Wong, **Chee-Wee Liu**	TSMC/ NTU	2022/8/2
69	Method for forming semiconductor device having boron-doped germanium tin epitaxy structure	US 11,374,115 B2	Chung-En Tsai, Fang-Liang Lu, Pin-Shiang Chen, **C. W. Liu**	TSMC/ NTU	2022/6/28
68	Memory device, SRAM cell, and manufacturing method thereof	USP 11,282,843	Hung-Yu Ye, Chung-Yi Lin, Yun-Ju Pan, **C. W. Liu**	TSMC/ NTU	2022/3/22
67	Semiconductor device and manufacturing method thereof	USP 11,244,945	Chih-Hsiung Huang, Chung-En Tsai, **Chee-Wee Liu**, Kun-Wa Kuok, Yi-Hsiu Hsiao	TSMC/ NTU	2022/2/8
66	Semiconductor device and manufacturing method thereof	USP 11,233,120	Chung-En TSAI, Chia-Che CHUNG, **Chee-Wee LIU**, Fang-Liang LU, Yu-Shiang HUANG, Hung-Yu YEH, Chien-Te TU, Yi-Chun LIU	TSMC/ NTU	2022/1/25
65	Memory device and manufacturing method thereof	USP 11,177,430	Ya-Jui Tsou, Zong-You Luo, **Chee-Wee Liu**, Shao-Yu Lin, Liang-Chor Chung, Chih-Lin Wang	TSMC/ NTU	2021/11/16
64	Semiconductor device and manufacturing method thereof	USP 11,063,149	Fang-Liang Lu, I-Hsieh Wong, Shih-Ya Lin, **C. W. Liu**,	TSMC/ NTU	2021/7/13

			Samuel C. Pan		
63	Semiconductor device and method	USP 11,043,376	Sheng-Ting Fan, Pin-Shiang Chen, **C. W. Liu**, Chi-Wen Liu	TSMC/ NTU	2021/6/22
62	Semiconductor device and manufacturing method thereof	USP 11,031,470	Fang-Liang Lu, Chia-Che Chung, Yu-Jiun Peng, **C. W. Liu**	TSMC/ NTU	2021/6/8
61	Semiconductor device and manufacturing method thereof	USP 11,018,239	Pin-Shiang Chen, Sheng-Ting Fan, **C. W. Liu**	TSMC/ NCTU	2021/5/25
60	Semiconductor device and manufacturing method thereof	USP 10,957,784	I-Hsieh Wong, Samuel C. Pan, **C. W. Liu**, Huang-Siang Lan, Chung-En Tsai, Fang-Liang Lu	TSMC/ NTU	2021/3/23
59	Multi-channel field effect transistors using 2D-material	USP 10,879,404	Pin-Shiang Chen, Hung-Chih Chang, **C. W. Liu**, Samuel C. PAN	TSMC/ NTU	2020/12/29
58	Laser anneal process	USP 10,867,809	Chun-Ti Lu, Meng-Chin Lee, Fang-Liang Lu, **C. W. Liu**	TSMC/ NTU	2020/12/15
57	Semiconductor device and method for manufacturing the same	USP 10,804,180	Jhih-Yang Yan, Fang-Liang Lu, **C. W. Liu**	TSMC/ NTU	2020/10/13
56	Semiconductor device having boron-doped germanium tin epitaxy structure and method for forming the same	USP 10,777,663	Chung-En Tsai, Fang-Liang Lu, Pin-Shiang Chen, **C. W. Liu**	TSMC/ NTU	2020/9/15
55	Semiconductor device and formation thereof	USP 10,777,426	Yen-Ting Chen, I-Hsieh Wong, **C. W. Liu**	TSMC/ NTU	2020/9/15
54	Stacked vertically isolated MOSFET structure and method of forming the same	USP 10,748,935	Yu-Shiang Huang, Hung-Yu Yeh, Wen Hung Huang, **C. W. Liu**	TSMC/ NTU	2020/8/18

53	Semiconductor device and manufacturing methods thereof	USP 10,686,072	Yu-Hung Liao, Samuel C. Pan, Sheng-Ting Fan, Min-Hung Lee, **C. W. Liu**	TSMC/ NTU	2020/6/16
52	Method for non-resist nanolithography	USP 10,665,696	Miin-Jang Chen, Kuen-Yu Tsai, **C. W. Liu**	TSMC/ NTU	2020/5/26
51	Semiconductor device and method	USP 10,636,651	Sheng-Ting Fan, Pin-Shiang Chen, **C. W. Liu**, Chi-Wen Liu	TSMC/ NTU	2020/4/28
50	Semiconductor device and manufacturing method thereof	USP 10,535,737	Fang-Liang Lu, Chia-Che Chung, Yu-Jiun Peng, **C. W. Liu**	TSMC/ NTU	2020/1/14
49	Semiconductor device and manufacturing method thereof	USP 10,510,888	Fang-Liang Lu, I-Hsieh Wong, Shih-Ya Lin, **C. W. Liu**, Samuel C. Pan	TSMC/ NTU	2019/12/17
48	Semiconductor device having stressor layer	US 10,340,383	Huang-Siang Lan, **C. W. Liu**, Chi-Wen Liu, Shih-Hsien Huang, I-Hsieh Wong, Hung-Yu Yeh, Chung-En Tsai	TSMC/ NTU	2019/07/02
47	Semiconductor device and manufacturing method thereof	US 10,332,985	I-Hsieh WONG, Samuel C. PAN, **C. W. Liu**, Huang-Siang Lan, Chung-En Tsai, Fang-Liang LU	TSMC/ NTU	2019/06/25
46	Field effect transistors and methods of forming same	USP 10,290,708	Pin-Shiang Chen, Samuel C. Pan, **C. W. Liu**, Sheng-Ting Fan	TSMC/ NTU	2019/5/14
45	Multi-channel field effect transistors using 2D-material	US 10,269,981	Pin-Shiang Chen, Hung-Chih Chang,	TSMC/ NTU	2019/04/23

			C. W. Liu, Samuel C. PAN		
44	Semiconductor device and method	US 10,109,477	Sheng-Ting Fan, Pin-Shiang Chen, **C. W. Liu**, Chi-Wen Liu	TSMC/ NTU	2018/10/23
43	Semiconductor device including field effect transistor and a method for fabricating the same	USP 10,068,995	Fang-Liang Lu, **C. W. Liu**, Chi-Wen Liu, Shih-Hsien Huang, I-Hsieh Wong	TSMC/ NTU	2018/9/4
42	Through silicon via layout pattern	USP 10,002,820	Sun-Rong Jan, Che-Yu Yeh, **C. W. Liu**, Chien-Hua Huang, Bing J. Sheu	TSMC	2018/6/19
41	Negative capacitance field effect transistor with charged dielectric material	USP 9,978,868	Der-Chuan Lai, Samuel C. Pan, Yu-Cheng Shen, Min-Hung Lee, **C. W. Liu**	TSMC/ NTU	2018/5/22
40	Method for non-resist nanolithography	USP 9,972,702	Miin-Jang Chen, Kuen-Yu Tsai, **C. W. Liu**	TSMC/ NTU	2018/5/15
39	Field effect transistors and methods of forming same	USP 9,923,093	**C. W. Liu**, Samuel C. Pan, I-Hsieh Wong, Hung-Yu Yeh	TSMC/ NTU	2018/3/20
38	Semiconductor device and formation thereof	US 9,847,233	Yen-Ting Chen, I-Hsieh Wong, **C. W. Liu**	TSMC/ NTU	2017/12/19
37	Three-dimensional transistor and methods of manufacturing thereof	USP 9,812,558	Jhih-Yang Yan, Samuel C. Pan, **C. W. Liu**, Hung-Yu Yeh, Da-Zhi Zhang	TSMC/ NTU	2017/11/7
36	Transistor with wurtzite channel	USP 9,679,961	Hung-Chih Chang, Pin-Shiang Chen, **C. W. Liu**, Samuel C. Pan	TSMC/ NTU	2017/6/13

35	Semiconductor device and transistor	US 9,679,893	Jhih-Yang Yan, **C. W. Liu**, Der-Chuan Lai	TSMC/ NTU	2017/6/13
34	3D UTB transistor using 2D-material channels	USP 9,660,056	Hung-Chih Chang, Pin-Shiang Chen, **C. W. Liu**	TSMC/ NTU	2017/5/23
33	Semiconductor devices and manufacturing methods thereof	USP 9,646,994	**C. W. Liu**, Hung-Chih Chang, Cheng-Yi Peng, Chih-Sheng Chang	TSMC	2017/5/9
32	Three-dimensional transistor and methods of manufacturing thereof	US 9,627,411	Jhih-Yang Yan, Samuel C. Pan, **C. W. Liu**, Hung-Yu Yeh, Da-zhi Zhang	TSMC/ NTU	2017/4/18
31	Semiconductor structure with interfacial layer and method for manufacturing the same	US 9,595,593	Wei-Fan Lee, **C. W. Liu**, Chin-Kun Wang, Yuh-Ta FAN, Chih-Hsiung Huang, Tzu-Yao Lin	TSMC	2017/3/14
30	Field effect transistors and methods of forming same	US 9,559,209	**C. W. Liu**, Samuel C. Pan, I-Hsieh Wong, Hung-Yu Yeh	TSMC/ NTU	2017/1/31
29	Field effect transistors and methods of forming same	US 9,559,168	Der-Chuan Lai, Pin-Shiang Chen, Hung-Chih Chang, **C. W. Liu**, Samuel C. Pan	TSMC/ NTU	2017/1/31
28	Field effect transistors and methods of forming same	US 9,490,430	Pin-Shiang Chen, Samuel C. Pan, **C. W. Liu**, Sheng-Ting Fan	TSMC/ NTU	2016/11/08
27	Transistor with wurtzite channel	US 9,425,250	Hung-Chih Chang, Pin-Shiang Chen, **C. W. Liu**, Samuel C. Pan	TSMC/ NTU	2016/08/23
26	Semiconductor devices and manufacturing methods thereof	USP 9,406,697	**C. W. Liu**, Hung-Chih Chang, Cheng-Yi Peng, Chih-Sheng Chang	TSMC	2016/8/2

25	Method and structure for finFET devices	USP 9,391,078	**C. W. Liu**, Wen-Hsien Tu, Shih-Hsien Huang, Cheng-Yi Peng, Chih-Sheng Chang, Yee-Chia Yeo	TSMC	2016/7/12
24	Semiconductor device having a charged insulating layer	US 9,263,542	**C. W. Liu**, Yen-Yu Chen, Hsuan-Yi Lin, Cheng-Yi Peng	TSMC/ NTU	2016/02/16
23	3D UTB transistor using 2D material channels	US 9,240,478	Hung-Chih Chang, Pin-Shiang Chen, **C. W. Liu**	TSMC/ NTU	2016/01/19
22	Semiconductor Structure	US 9,105,481 B2	**C. W. Liu**, Y. T. Chen	NDL	2015/08/11
21	MOSFET device	USP 9,018,638	**C. W. Liu**, Hui-Hsuan Wang	ITRI	2015/4/28
20	BRIDGE STRUCTURE	US 8,975,674	Chun-Lin Chu, Shu-Han Hsu, Guang-Li Luo, **C. W. Liu**	NDL	2015/03/10
19	Structure and method of solar cell efficiency improvement by strain technology	US 8,664,516 B2	Jyun-Jhe Tsai, Ying-Jhe Yang, **C. W. Liu**	NTU	2014/03/04
18	Solar cell defect passivation method	US 8,062,964	W.-F. Tsai, J.-F. Liao, Y.-Y. Chen, **C. W. Liu**, C.-F. Ai	AEC	2011/11/22
17	Memory formed by using defects	US 8,009,479	Y. T. Chen, C.-F. Huang, H.-C. Sun, **C. W. Liu**	NTU	2011/08/30
16	Manufacturing process for a photodetector	US 7,906,360	**C. W. Liu**, C.-H. Lin, Y.-T. Chiang, C.-C. Hsu	NTU	2011/03/15
15	Method for photo-detecting and apparatus for the same	US 7,579,668	**C. W. Liu**, C.-H. Lai, M.-K. Chen, W.-H. Ho	NTU	2009/08/25
14	Strained silicon forming method with reduction of threading dislocation density	US 7,498,224	P.-S. Chen, S. W. Lee, L. J. Chen, **C. W. Liu**	ITRI	2009/03/03
13	Method for fabricating semiconductor device	US 7,371,628	C.-H. Lin, Z. Pei, **C. W. Liu**	ITRI	2008/05/13
12	Method with mechanically strained silicon for enhancing speed of integrated circuits	US 7,307,004	C.-Y. Yu, S.-R. Jan, S.-T. Chang, **C. W. Liu**	NTU	2007/12/11

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11	Fabrication methods for compressive strained-silicon and transistors using the same	US 7,282,414	M. H. Lee, C.-Y. Yu, S.-C. Lu, **C. W. Liu**	ITRI	2007/10/16
10	Construction of thin strain-relaxed SiGe layers and method for fabricating the same	US 7,202,512	P.-S. Chen, S. W. Lee, K.-F. Liao, L. J. Chen **C. W. Liu**	ITRI	2007/04/10
9	Strained silicon forming method with reduction of threading dislocation density	US 7,102,153	P.-S. Chen, S. W. Lee, L. J. Chen, **C. W. Liu**	ITRI	2006/09/05
8	Strained silicon carbon alloy MOSFET structure and fabrication method thereof	US 7,091,522	M. H. Lee, S. T. Chang, S.-C. Lu, **C. W. Liu**	ITRI	2006/08/15
7	Avalanche photo-detector with high saturation power and high gain-bandwidth product	US 6,963,089	J.-W. Shi, **C. W. Liu**	ITRI	2005/11/08
6	Method for fabricating multiple thickness insulator layers	US 6,916,674	P.-S. Chen, B.-C. Hsu, **C. W. Liu**	ITRI	2005/07/12
5	System and method for characterizing the quality of the interface between a silicon and a gate insulator in a MOS device	US 6,812,729	M.-J. Chen, C.-F. Lin, **C. W. Liu**, M. H. Lee, S. T. Chang	NTU	2004/11/02
4	Method for utilizing rough insulator to enhance metal-insulator-semiconductor reliability	US 6,794,309	**C. W. Liu**, F. Yuan, C.-H. Lin	NTU	2004/09/21
3	Semiconductor phototransistor	US 6,759,694	Y.-M. Hsu, J.-W. Shi, Z. Pei, F. Yuan, **C. W. Liu**	ITRI	2004/07/06
2	Reflector structure for improving irradiation uniformity of linear lamp array	US 6,385,396	**C. W. Liu**, M. H. Lee	NSC	2002/05/07
1	Photodetector	US 6,268,615	**C. W. Liu**, M. H. Lee, I. C. Chen	NSC	2001/07/31

Taiwan Patent

No.	專利名稱	公告/公開號	發明人	專利權人	公告日期
78	半導體結構及其製造方法	I901162	李岱螢 李明修 趙澤夫 徐葳騰 劉致為	MACRONIX	2025/10/11
77	靜態隨機存取記憶體單元及其形成方法	I897204	林鑫成 周韜 邱冠穎 劉致為	TSMC/ NTU	2025/09/11
76	半導體裝置及其形成方法	I896035	林鑫成 姚慶旺 邱冠穎 劉致為	TSMC/ NYCU	2025/09/01
75	半導體裝置及其形成方法	I892524	邱日照 卡伊納 劉原銘 劉致為	TSMC/ NTU	2025/08/01
74	半導體裝置及其形成方法	I892511	黃柏崴 杜建德 劉致為	TSMC/ NYCU	2025/08/01
73	半導體裝置及其製造方法	I892210	杜建德 劉致為	TSMC/ NYCU	2025/08/01
72	鐵電電容器結構	I889298	徐葳騰 陳昱叡 陳韋任 劉致為	PSMC	2025/07/01
71	非揮發性記憶體單元與其製作方法，以及記憶體單元陣列	I888961	李岱螢 李明修 趙澤夫 劉致為	MACRONIX	2025/07/01
70	半導體裝置與形成半導體裝置的方法	I888924	林鑫成 姚慶旺 邱冠穎 劉致為	TSMC/ NTU	2025/07/01
69	半導體裝置及其製造方法	I883802	林鑫成 邱冠穎 劉致為	TSMC/ NYCU	2025/05/11
68	半導體結構	I874195	邱日照 吳宇珊 劉原銘 劉致為	PSMC	2025/02/21
67	記憶體裝置及其操作方法	I873542	鍾嘉哲 林鑫成 劉致為	TSMC/ NTU	2025/02/21
66	積體電路結構及其形成與操作方法	I872673	李岱螢 葉騰豪 陳威臣 杜瑞奇 趙澤夫 劉致為	MACRONIX	2025/02/11
65	半導體裝置及其製造方法	I872516	杜建德 劉致為	TSMC/ NTU	2025/02/11
64	半導體裝置以及其製作方法	I868706	杜建德 劉致為	TSMC/ NTU	2025/01/01
63	積體電路結構及其製造方法	I867683	林鑫成 劉亦浚 邱冠穎 劉致為	TSMC/ NYCU	2024/12/21
62	半導體結構及其製造方法	I866634	鍾嘉哲 岑家榮 劉致為	TSMC/ NTU	2024/12/11

61	積體電路及其形成方法	I866459	林鑫成 鄭群議 姚慶旺 劉致為	TSMC/ NTU	2024/12/11
60	半導體結構及其形成方法	I854221	摩爾沙哈吉B 李承翰 張世杰 謝宛軒 蔡仲恩 劉致為	TSMC	2024/09/01
59	記憶體元件及其形成方法	I843531	林鑫成 周韜 劉致為	TSMC/ NTU	2024/05/21
58	積體電路結構及其製造方法	I843098	鍾嘉哲 鄭群議 劉致為	TSMC/ NTU	2024/05/21
57	記憶體元件及其形成方法	I830298	邱日照 鄒亞叡 陳韋任 劉致為 林劭昱 王智麟	TSMC/ NTU	2024/01/21
56	半導體結構及其製造方法	I829141	摩爾沙哈吉B 李承翰 張世杰 謝宛軒 劉亦浚 劉致為	TSMC	2024/01/11
55	高頻電晶體	I826190	林鑫成 達艾維 邱冠穎 劉致為	PSMC	2023/12/11
54	光感測器	I822483	卡伊納 馬翊宸 李宥頡 劉致為	PSMC	2023/11/11
53	記憶體裝置及其形成方法	I817845	鄒亞叡 陳韋任 劉邦均 劉致為 林劭昱 王智麟	TSMC/ NTU	2023/10/01
52	半導體裝置及其操作方法	I815554	鍾嘉哲 岑家榮 鄒亞叡 劉致為	TSMC/ NTU	2023/09/11
51	半導體裝置及其形成方法	I809822	林詩雅 杜建德 蔡仲恩 劉致為	TSMC/ NTU	2023/07/21
50	半導體裝置及形成半導體裝置的方法	I799955	楊明宗 林憲信 萬文愷 鍾嘉哲 劉致為	MEDIATEK/ NTU	2023/04/21
49	半導體裝置及其形成方法	I788031	葉泓佑 黃郁翔 杜建德 劉致為	TSMC/ NTU	2022/12/21
48	半導體元件及其製造方法	I757373	呂芳諒 翁翊軒 林詩雅 劉致為 潘正聖	TSMC/ NTU	2022/03/11
47	半導體元件與其製造方法	I757272	藍偟翔 劉致為 劉繼文 黃仕賢 翁翊軒 葉泓佑	TSMC/ NTU	2022/03/11

			蔡仲恩		
46	半導體結構與其製作方法	I754420	杜文仙 劉致為 呂芳諒	TSMC	2021/02/01
45	半導體裝置	I717528	廖宇鴻 潘正聖 樊聖亭 李敏鴻 劉致為	TSMC/ NTU	2021/02/01
44	製造半導體裝置的方法	I681463	翁翊軒 潘正聖 劉致為 藍偟翔 蔡仲恩 呂芳諒	TSMC/ NTU	2020/01/01
43	太陽能電池	I667797	尹相偉 蔡政剛 葉雲傑 魯珺地 江奇詠 劉致為	AUO	2019/08/01
42	半導體裝置及其製造方法	I637429	樊聖亭 陳品翔 劉致為 劉繼文	TSMC/ NTU	2018/10/01
41	半導體結構及其形成方法	I580045	李暐凡 劉致爲 王錦焜 范彧達 黃智雄 林子堯	TSMC	2017/04/21
40	電晶體結構	I574414	杜文仙 劉致為	NDL	2017/03/11
39	半導體結構	I531059	劉致為 陳彥廷	NDL	2016/04/21
38	半導體元件的裝置及三維積體電路	I478301	詹孫戎 葉哲宇 劉致為 黃建華 許炳堅	TSMC	2015/03/21
37	浮橋結構及其製造方法	I451494	朱俊霖 許舒涵 羅廣禮 劉致為	NDL	2014/09/01
36	薄膜型太陽能電池及其製作方法	I445192	楊英哲 曾名輝; 畢建中 劉致為	NEXPW	2014/07/11
35	鈍化修補太陽能電池缺陷之方法	I402898	蔡文發 廖炯峰 陳彥瑜 劉致為 艾啟峰	核研所	2013/07/21
34	光偵測器的製造方法	I360232	劉致為 林楚軒 江彥德 徐正璋	NTU	2012/03/11
33	P-N 二極體光波感測之方法及裝置	I346393	劉致為 賴俊宏 陳盟坤 何偉碩	NTU	2011/08/01
32	雷射結構及其製造方法	I340513	程子桓 李政霆 許文瑋 劉致為	NTU	2011/04/11
31	可撓式電子裝置及其製程	I335046	劉致為 江彥德 李敏鴻 鄧鈺	NTU	2010/12/21
30	利用應變技術改變薄膜電晶體遷移率之方法	I319211	黃靖方 劉志祥 劉致為	NTU	2010/01/01

29	應變矽碳場效電晶體	I270986	李敏鴻 張書通 劉致為 陸新起	ITRI	2007/01/11
28	應變鬆弛之薄矽鍺磊晶層之結構及其製造方法	I263709	陳邦旭 李勝偉 廖高鋒 陳力俊 劉致為	ITRI	2006/10/11
27	矽/鍺異質結構的長波長矽金屬氧化半導體發光元件	I264138	廖洺漢 余承曄 劉致為	NTU	2006/10/11
26	利用粗糙絕緣層增強金絕半元件穩定度之方法	I262533	劉致為 袁鋒 林崇勳	NTU	2006/09/21
25	半導體裝置之製造方法	I259534	林哲歆 裴靜偉 劉致為	ITRI	2006/08/01
24	具選擇性成長之應變鍺層的電晶體裝置及其製造方法	I258172	李敏鴻 余承曄 劉致為	ITRI	2006/07/11
23	應變鍺場效電晶體及其製造方法	I252514	李敏鴻 余承曄 劉致為	ITRI	2006/04/01
22	二維皺曲量子井的製造方法	I247348	劉致為 余承曄 陳博文	NTU	2006/01/11
21	一種應變鬆弛矽鍺磊晶層之製造方法及其結構	I242237	陳邦旭 曾揚玳 劉致為	ITRI	2005/10/21
20	利用離子佈植製造壓縮應變矽的方法及使用該方法所製成之電晶體	I239105	李敏鴻 余承曄 陸新起 劉致為	ITRI	2005/09/01
19	一種減少穿遂缺陷密度之應變矽製造方法	I237908	陳邦旭 李勝偉 陳力俊 劉致為	ITRI	2005/08/11
18	利用機械應變矽增加積體電路或元件速度的方法	I237397	余承曄 詹孫戎 張書通 劉致為	NTU	2005/08/01
17	應變矽鰭形場效電晶體	I231994	張書通 黃仕澔 劉致為	NTU	2005/05/01
16	利用特殊佈局方向之互補型金氧半場效電晶體製造方法	I228293	袁鋒　黃靖方 劉致為	NTU	2005/02/21
15	高飽和輸出功率及高增益-頻寬乘積之累增崩潰光偵測器	I228320	許晉瑋 劉致為	ITRI	2005/02/21
14	超薄基極矽/矽鍺異質結構雙載子電晶體的製作方法	I223446	賴理學 陳邦旭 陸新起 劉致為	ITRI	2004/11/01
13	半導體光電晶體	I222219	許裕民 許晉瑋 裴靜偉 袁　鋒 劉致為	ITRI	2004/10/11
12	多重厚度絕緣層製作方法及結構	I222134	陳邦旭 許博欽 劉致為	ITRI	2004/10/11
11	在快熱製程中利用氣體切換以提高絕緣	I221319	劉致為 李敏鴻	NTU	2004/09/21

	層穩定度的方法				
10	紅外光光偵測器	I220790	許博欽 張書通 黃仕澔 劉致為	NTU	2004/09/01
9	利用機械應變矽增加積體電路速度的方法	00557484	張書通 黃仕澔 劉致為	NTU	2003/10/11
8	改善閘極氧化層可靠度之方法	00511164	史望澄 丁文琪 劉致為 李敏鴻 林崇勳	TSMC	2002/11/21
7	金氧半導體元件中矽半導體與閘極絕緣層介面品質檢測系統與方法	00508714	陳敏璋 林清富 劉致為 李敏鴻 張書通	NTU	2002/11/01
6	含濕式化學處理步驟之發光二極體製造方法	00497125	劉致為 李敏鴻 劉岳修	NTU	2002/08/01
5	利用氘氣高溫預烤以增加氧化層穩定度之方法	00471110	劉致為 林崇勳 李敏鴻 林清富	NSC	2002/01/01
4	快速加熱製程中提昇降溫速率之方法與裝置	00457593	劉致為 李敏鴻	NSC	2001/10/01
3	金氧矽發光二極體	00456057	林清富 劉致為		2001/09/24
2	光偵測器	00414930	李敏鴻 林奕成 劉致為	NSC	2000/12/11
1	一種改良線性燈管照射均勻度的反射體結構 (新型)	00411033	李敏鴻 劉致為	NSC	2000/11/01

中國專利 (China patent)

No.	專利名稱	公告/公開號	發明人	專利權人	公告日期
20	半導體裝置	CN222424604U	林鑫成 姚慶旺 邱冠穎 劉致為	TSMC	2025/01/28
19	半導體結構	CN222281990U	劉致為 鍾嘉哲 岑家榮	TSMC	2024/12/31
18	半導體結構及其形成方法	CN112687730B	杜文仙 劉致為 呂芳諒	TSMC	2024/11/12
17	集成電路	CN221947160U	林鑫成 鄭群議 姚慶旺 劉致為	TSMC	2024/11/01
16	記憶體元件	CN221861275U	林鑫成 周韜 劉致為	TSMC	2024/10/18
15	半導體裝置	CN220821569U	杜建德 劉致為	TSMC	2024/04/19
14	半導體裝置	CN219800858U	杜建德 劉致為	TSMC	2023/10/03
13	記憶體元件	CN217719653U	邱日照 鄒亞叡 陳韋任 劉致為 林劭昱 王智麟	TSMC	2022/11/01
12	半導體裝置	CN108231873B	廖宇鴻 潘正聖 樊聖亭 李敏鴻 劉致為	TSMC	2022/10/25
11	半導體器件及其製造方法	CN107230729B	藍偟翔 劉致為 劉繼文 黃仕賢 翁翊軒 葉泓佑 蔡仲恩	TSMC	2022/04/19
10	製造半導體裝置的方法	CN109427593B	翁翊軒 潘正聖 劉致為 藍偟翔 蔡仲恩 呂芳諒	TSMC	2021/11/02
9	半導體元件及其製造方法	CN108122754B	呂芳諒 翁翊軒 林詩雅 劉致為 潘正聖	TSMC	2021/09/14
8	半導體裝置及其製造方法	CN107039280B	樊聖亭 陳品翔 劉致為 劉繼文	TSMC	2020/05/12

7	太陽能電池	CN108565298B	尹相偉 蔡政剛 葉雲傑 魯珺地 江奇詠 劉致為	TSMC	2020/04/14
6	半導體結構及其形成方法	CN106298885B	李暐凡 劉致為 王錦焜 范彧達 黃智雄 林子堯	TSMC	2019/11/05
5	半導體器件和電晶體	CN106158934B	顏智洋 劉致為 賴德全 丁媛文	TSMC	2019/08/09
4	半導體器件及其製造方法	CN106206732B	劉致為 張弘志 彭成毅 張智勝	TSMC	2019/07/16
3	用於 FinFET 器件的方法和結構	CN106206577B	劉致為 杜文仙 黃仕賢 彭成毅 張智勝 楊育佳	TSMC	2019/04/23
2	太陽能電池及其製作方法	CN102064211B	劉致為 何偉碩 陳彥瑜 古俊源 吳振誠 梁碩瑋 陳人杰 賴忠威 陳宗保	AUO	2013/10/09
1	太陽電池	CN101866969B	劉致為 何偉碩 陳彥瑜 古俊源 陳建任 林漢涂 梁碩瑋	AUO	2012/09/19

The Ph. D/Master Work

A: 學術期刊論文 (Refereed Journal Papers)

1. **C. W. Liu**, S. L. Chen, J. P. Lay, S. C. Lee, and H. H. Lin, "Characteristics of Si-doped GaAs Epilayers Grown by Metalorganic Chemical Vapor Deposition using a silane source," *Appl. Phys. Lett.*, Vol. 51, No. 20, pp. 1634-1636, 1987.

2. X. Xiao, **C. W. Liu**, J. C. Sturm, L. C. Lenchyshyn, and M. L. W Thewalt, "Photoluminescence form Electron-hole Plasma Confined in $Si/Si_{1-x-y}Ge_xC_y/Si$ Quantum Wells," *Appl. Phys. Lett.*, Vol. 60, No. 14, pp. 1720-1722, 1992.

3. X. Xiao, **C. W. Liu**, J. C. Sturm, L. C. Lenchyshyn, M. L. W Thewalt, R. B. Gregory, and P. Fejes, "Quantum Confinement Effects in Strained Silicon-Germanium Alloy Quantum Wells," *Appl. Phys. Lett.*, Vol. 60, No. 17, pp. 2135-2137, 1992.

4. **"Invited"** J. C. Sturm, X. Xiao, P. V. Schwartz, **C. W. Liu**, L. C. Lenchyshyn, and M. L. W Thewalt, "Band-edge Exciton Luminescence from Si/strained $Si_{1-x}Ge_x/Si$," *Journal of Vacuum Science and Technology B*, Vol. 10, No.4, pp. 1998-2001, 1992.

5. Ž. Matutinović-Krstelj, **C. W. Liu**, X. Xiao and J. C. Sturm, "Electron Si/SiGe Resonant Tunneling Diode Grown by RTCVD," *Journal of Vacuum Science and Technology B*, Vol. 11, No. 3, pp. 1145-1148, 1993.

6. V. Venkataraman, **C. W. Liu** and J. C. Sturm, "High Mobility Electron Gases with Very Low Sheet Resistivities and MODFETs Fabricated in $Si/Si_{1-x}Ge_x$," *Journal of Vacuum Science and Technology B*, Vol. 11, No. 3, pp. 1176-1178, 1993.

7. Ž. Matutinović-Krstelj, **C. W. Liu**, X. Xiao and J. C. Sturm, "Symmetric $Si/Si_{1-x}Ge_x$ Electron Resonant Tunneling Diodes with Anomalous Temperature Behavior," *Appl. Phys. Lett.*, Vol. 62, No. 6, pp. 603-605, 1993.

8. P. V. Schwartz, **C. W. Liu**, and J. C. Sturm, "Semi-insulating Crystalline Silicon Formed by Oxygen Doping during Low-temperature Chemical Vapor Deposition," *Appl. Phys. Lett.*, Vol. 62, No. 10, pp. 1102-1104, 1993.

9. V. Venkataraman, **C. W. Liu** and J. C. Sturm, "Alloy Scattering Limited Transport of Two-Dimensional Carriers in Strained $Si/Si_{1-x}Ge_x$ Quantum Wells," *Appl. Phys. Lett.*, Vol. 63, No. 20, pp. 2795-2797, 1993.

10. J. C. Sturm, X. Xiao, Q. Mi, **C. W. Liu**, A. St. Amour, Ž. Matutinović-Krstelj, L. C. Lenchyshyn, and M. L. W Thewalt, "Photoluminescence and Electroluminescence process in $Si/Si_{1-x}Ge_x$ Heterojunction Grown by Chemical Vapor Deposition," *Material Science Engineering,* Vol. B21, pp. 307-311, 1993.

11. **C. W. Liu**, J. C. Sturm, Y. Lacroix, M. L. W Thewalt, and D. D. Perovic, "Growth and Band-gap of Strained (110) $Si/Si_{1-x}Ge_x$ Layers on Silicon Substrates by Chemical Vapor Deposition," *Appl. Phys. Lett.*, Vol. 65, No. 1, pp. 76-78, 1994.

B: 學術會議論文 (Referred International Conference Papers)

1. Ž. Matutinović-Krstelj, **C. W. Liu**, X. Xiao, and J. C. Sturm, "Electron Si/SiGe Resonant Tunneling Diode Grown by RTCVD," *39th National Symposium of the American Vacuum Society*, Chicago, 1992.

2. V. Venkataraman, **C. W. Liu** and J. C. Sturm, "High Mobility Electron Gases with Very Low Sheet Resistivities and MODFETs Fabricated in $Si/Si_{1-x}Ge_x$ by Rapid Thermal Chemical Vapor Deposition," *39th National Symposium of the American Vacuum Society*, Chicago, 1992.

3. P. V. Schwartz, **C. W. Liu**, and J. C. Sturm, "Oxygen-doped Semi-insulating Epitaxial Silicon Grown by Low-Temperature Thermal Chemical Vapor Deposition," *Technical Program, 23rd IEEE Semiconductor Interface Specialist Conference*, San Diego, CA, 1992.

4. ***(Best Student Paper Award)*** P. V. Schwartz, **C. W. Liu**, J. C. Sturm, T. Gong and P. M. Fauchet, "Current Transport Properties of Semi-Insulating Oxygen-Doped Silicon Films for Use in High Speed Photoconductive Switch," *Electronic Materials Conference*, Boston, MA, 1992.

5. **C. W. Liu**, J. C. Sturm, P. V. Schwartz and E. A. Fitzgerald, "Misfit Dislocation Nucleation Sites and Metastability Enhancement of Selective $Si_{1-x}Ge_x$ Grown by Rapid Thermal Chemical Vapor Deposition," *Material Research Society*, 1991; MRS Proceedings Vol. 238, pp. 85-90, 1991.

6. V. Venkataraman, **C. W. Liu** and J. C. Sturm, "Effect of Alloy Scattering on Low Temperature Motilities of Two-dimensional Holes and Electrons in $Si/Si_{1-x}Ge_x$ Heterostructures," *Electronic Materials Conference*, Santa Barbara CA, 1993; *J. of Electronic Material*, Vol. 22 (7A), pp. A19, 1993.

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