

## PUBLICATION LIST

*Klaus Yung-Jane Hsu*

### A. Journal Papers

1. Yu-Yang Tsai, Chun-Yu Kuo, Bo-Chang Li, Po-Wen Chiu, and Klaus Y. J. Hsu, 2020, "A Graphene/Polycrystalline Silicon Photodiode and Its Integration in a Photodiode-Oxide-Semiconductor Field Effect Transistor", *Micromachines* 11, No. 6, 596.
2. Klaus Y.-J. Hsu, Ken S.-H. Shen, and Ya-Sen Chang, 2016, "Enhancing the Photoresponsivity of Bipolar Phototransistors for Near-IR Detection", *Applied Physics Letters* 108, No. 3, 031112, 5 pages.
3. S. S. Tan, C. Y. Liu, L. K. Yeh, Y. H. Chiu, Michael S.-C. Lu, and Klaus Y. J. Hsu, 2011, "An Integrated Low-Noise Sensing Circuit with Offset Compensation and Bias Stabilization for CMOS MEMS Capacitive Accelerometers", *IEEE Transactions on Circuits and Systems – I: Regular Papers* 58, No. 11, pp. 2661-2672. (Times cited: 26)
4. S. S. Tan, C. Y. Liu, L. K. Yeh, Y. H. Chiu and Klaus Y. J. Hsu, 2011, "A new process for CMOS MEMS capacitive sensors with high sensitivity and thermal stability", *Journal of Micromechanics and Microengineering* 21, 035005, 10 pages. (Times cited: 4)
5. S. S. Tan, C. Y. Liu, Yeu-Long Jiang, Der-Yu Lin, and Klaus Y. J. Hsu, 2009, "Spectral Response Design of a-Si:H p-i-n Diodes for Ambient Light Sensing", *Appl. Phys. Lett.* 94, No. 17, 171103, 3 pages.
6. Ji-Chen Huang, Kuang-Sheng Lai, and Klaus Y.-J. Hsu, 2009, "A 10.5 Gb/s Transimpedance Amplifier Using Capacitive Emitter Degeneration Technique", *Solid-State Electronics* 53, pp. 916-919. (Times cited: 4)
7. Ji-Chen Huang, Yu-Sheng Lai, and Klaus Y.-J. Hsu, 2009, "A 10 Gbit/s Optical Receiver Analog Front-End with Input Parasitic Capacitance Immunization Technique", *Japanese J. Appl. Phys.* 48, No. 4, 04C072, 5 pages.
8. Ji-Chen Huang, Kuang-Sheng Lai, and Klaus Y.-J. Hsu, 2008, "A Fully Integrated SiGe Optical Receiver Using Differential Active Miller Capacitor for 4.25 Gb/s Fiber Channel Application", *Japanese J. Appl. Phys.* 47, No. 4, pp. 2752-2755. (Times cited: 2)
9. Kuang-Sheng Lai, Ji-Chen Huang, and Klaus Y.-J. Hsu, 2008, "A High Performance Photodetector Suitable for Visible Light and Near IR Applications", *Japanese J. Appl.*

Phys. 47, No. 4, pp. 2968-2971. (Times cited: 1)

10. Kuang-Sheng Lai, Ji-Chen Huang, and Klaus Y.-J. Hsu, 2008, "Design and Properties of Phototransistor Photodetector in Standard 0.35 $\mu$ m SiGe BiCMOS Technology", IEEE Transactions on Electron Devices 55, pp. 774-781. (Times cited: 9)
11. Kuang-Sheng Lai, Ji-Chen Huang, and Klaus Y.-J. Hsu, 2007, "High Responsivity Photodetector in Standard SiGe BiCMOS Technology", IEEE Electron Device Letters 28, pp. 800-802. (Times cited: 13)
12. Ming Hsiang Chiou and Klaus Y. J. Hsu, 2004, "Wideband Modeling Technique for Deep Sub-micron MOSFET's", Solid-State Electronics 48, pp. 1891-1896. (Times cited: 1)
13. Ming Hsiang Chiou and Klaus Y. J. Hsu, 2004, "A New Wideband Modeling Technique for Spiral Inductors", IEE Proceedings - Microwaves, Antennas & Propagation 151, pp. 115-120. (Times cited: 8)
14. Li-Zen Chen and Klaus Y.-J. Hsu, 1999, "Observation of Current Polarity Effect in Stressing As-formed Sub-micron Al-Si-Cu/TiW/TiSi<sub>2</sub> Contacts", Solid State Electronics 43, pp. 1031-1037. (Times cited: 7)
15. Jia-Yi Shung, Klaus Y.-J. Hsu, Yeu-Long Jiang, and Cho-Jen Tsai, 1999, "Design Issues of Two-dimensional Amorphous Silicon Position-sensitive Detectors", Thin Solid Films 337, pp. 226-231. (Times cited: 6)
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20. C.H. Lee. C.C. Yeh, and Klaus Y.J. Hsu, 1996, "Formation of Bottom Oxides in Porous Silicon Films by Anodic Oxidation", Appl. Surf. Sci. 92, pp.621-625.

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29. C.C. Yeh, Klaus Y.J. Hsu, P.C. Chen, and H.L. Hwang, 1993, "A Study on the Current-Voltage Characteristics of Porous Silicon", *Appl. Surface Science* 65-6, pp. 415-422. (Times cited: 2)
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## B. Conference Papers

1. Hung-Chou Mai and Klaus Yung-Jane Hsu, 2021, “An Efficient and Stable CMOS Relaxation Oscillator”, The 32<sup>nd</sup> VLSI Design/CAD Symposium, p. PA21.
2. Klaus Yung-Jane Hsu, Bo-Chang Li, Chun-Yu Kuo, and Po-Wen Chiu, 2019, “Graphene/Amorphous-Silicon Photodiode Integrated with Silicon MOSFET for Wide Input Dynamic Range Optical Detection”, Proc. 2019 European-MRS Spring Meeting, Symposium U, p. U.3.9.
3. Klaus Y.-J. Hsu and Ya-Sen Chang, 2017, “Responsive Bipolar Phototransistors with Body-Strapping in Standard SiGe BiCMOS Process for Near-IR Applications”, Proc. 2017 European-MRS Spring Meeting, Symposium P, p. P.14.5.
4. Klaus Y. J. Hsu, Chun-Yu Kuo, and Yu-Yang Tsai, 2017, “High-Responsivity Graphene Photodiode-Oxide-Semiconductor Field Effect Transistor for Wide-Dynamic Range Optical Detection”, EMN Optoelectronics Meeting 2017, A06, invited.
5. Klaus Yung-Jane Hsu and Yu-Yang Tsai, 2016, “PDOSFET -- A New Field-Effect Transistor Integrated with a Poly-Si/Graphene Photodiode on the Gate Oxide”, Proc. 2016 European-MRS Spring Meeting, Symposium Y, p. Y.16.2.
6. Klaus Y. J. Hsu and Ken S. H. Shen, 2015, “High Responsivity Phototransistor in Standard SiGe BiCMOS Technology for Near-IR Applications”, Proc. 2015 European-MRS Spring Meeting, Symposium K, p. K.6-5.
7. Klaus Y. J. Hsu and Tsu-Wei Chuang, 2015, “An Input Buffer with Monolithic JFET in Standard BCD Technology for Sensor Applications”, Proc. 2015 IEEE Conference on Electron Devices and Solid-State Circuits (EDSSC 2015), pp. 780-783.
8. Klaus Y. J. Hsu and Brett W. C. Liao, 2013, “High Responsivity Phototransistor with Body-strapped Base in Standard SiGe BiCMOS Technology”, Proc. 2013 IEEE International Conference on Electron Devices and Solid-State Circuits (EDSSC'13), p. W7-1, 2 pages.
9. Klaus Y.-J. Hsu and Siew Seong Tan, 2012, “Method for Achieving CMOS MEMS Accelerometers with Excellent Built-in Thermal Stability and Reduced Charge Damage”, Proc. 2011 MRS Fall Meeting, Symp. TT: Microelectromechanical Systems—Materials and Devices V, pp. 53-58.
10. Ho-Hsin Yeh, Ji-Chen Huang, Yu-Chen Kuo, and Klaus Y.-J. Hsu, 2011, ” Design of Low-power Receiver Front-end IC for Low-frequency Wireless Time Signal Broadcast System”, Proc. 2011 International SoC Design Conference (ISOC 2011), pp. 401-404.

11. Ho-Hsin Yeh, Ji-Chen Huang, Yu-Chen Kuo, and Klaus Y.-J. Hsu, 2011, "A Receiver in SiGe BiCMOS Technology for Wireless Low Frequency Time Signal Broadcast System", Proc. 2011 International Symposium on VLSI Design, Automation and Test (2011 VLSI-DAT), pp. 311-314.
12. S. S. Tan, C. Y. Liu, L. K. Yeh, Y. H. Chiu and Klaus Y. J. Hsu, 2011, "A New Process for Thermally Stable CMOS MEMS Capacitive Sensors", Proc. 6th IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS 2011), pp. 337-340.
13. S. S. Tan, C. Y. Liu, L. K. Yeh, Y. H. Chiu, Michael S.-C. Lu, and Klaus Y. J. Hsu, 2010, "Design of Low-noise CMOS MEMS Accelerometer with Techniques for Thermal Stability and Stable DC Biasing", Proc. 2010 IEEE Custom Integrated Circuits Conference (2010 CICC), p. M-2, 4 pages. (Times cited: 5)
14. Liang-Huan Lei, Ji-Chen Huang, and Klaus Y.-J. Hsu, 2010, "A New Pixel Design in SiGe BiCMOS Technology for Sensitive and Wide Dynamic Range Image Sensing", Proc. 21st VLSI Design/CAD Symposium (VLSICAD 2010), pp. 454-457.
15. Klaus Y. J. Hsu, Yu-Shen Lai, Stanley C. Lin, and Ji-Chen Huang, 2008, "Photodetectors in Standard SiGe BiCMOS Technology for Optoelectronic IC Applications", Proc. 2008 International Electron Devices & Materials Symposia (IEDMS2008), Session D-3, invited.
16. Ji-Chen Huang, Yu-Sheng Lai, and Klaus Y.-J. Hsu, 2008, "A 10 Gbit/s Optical Receiver Analog Front-End with Input Parasitic Capacitance Immunization Technique", Proc. 2008 International Conference on Solid State Devices and Materials (SSDM 2008), pp. 78-79, selected as a highlighted paper.
17. J. C. Huang, Y. S. Lai, and K. Y. J. Hsu, 2008, "Broadband Transimpedance Amplifier in 0.35- $\mu\text{m}$  SiGe BCMOS Technology for 10-Gb/s Optical Receiver Analog Front-End Application", Proc. 2008 IEEE Custom Integrated Circuits Conference (2008 CICC), pp. 245-248. (Times cited: 4)
18. Ji-Chen Huang, Kuang-Sheng Lai, and Klaus Y.-J. Hsu, 2008, "A 10.5 Gb/s Transimpedance Amplifier Using Capacitive Emitter Degeneration Technique", Proc. 4<sup>th</sup> International SiGe Technology and Device Meeting (ISTDM 2008), pp 133-134.
19. Tuo-Hsin Chien and Klaus Y.-J. Hsu, 2008, "A Gate-Controllable High-Voltage SCR Device with High Performance in ESD Protection and Latch-up Immunity", Proc. 2008 IEEE International Symposium on Power Semiconductors & ICs (IPSPD 2008), pp. 131-132.
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22. Kuang-Sheng Lai, Ji-Chen Huang, and Klaus Y.-J. Hsu, 2007, "High Performance Photodetector in Standard SiGe BiCMOS Process with Spectrum Peak in Visible Light Range", Proc. 2007 International Electron Devices and Materials Symposium (2007 IEDMS), in CD-ROM.
23. Ji-Chen Huang, Kuang-Sheng Lai, and Klaus Y.-J. Hsu, 2007, "A Fully Integrated SiGe Optical Receiver Using Differential Active Miller Capacitor for 4.25 Gb/s Fiber Channel Application", Proc. 2007 International Conference on Solid State Devices and Materials (SSDM 2007), pp. 1072-1073.
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36. Jia-Wei Wu, Ming-Hsiang Chiou, Klaus Yung-Jane Hsu, Tze-Liang Lee and Mon-Song Liang, 2001, "Critical Examination on Interconnect Scaling - Challenge to SIA Roadmap on Interconnect in Deep Sub-micron VLSI Technology", Proc. IEEE Conference - SCORed 2001, No 138.
37. Jia-Wei Wu, Klaus Yung-Jane Hsu, Tze-Liang Lee, and Mon-Song Liang, 2000, "Critical Examination on Interconnect Scaling - Challenge to SIA Roadmap on Interconnect in Deep Sub-micron VLSI Technology", Proc. 2000 International Electron Devices and Materials Symposium (2000 IEDMS).
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39. J.H. Conan Zhan and Klaus Y.J. Hsu, 1997, "Design and Analysis of an Insulated Gate Bipolar Transistor (IGBT) with Enhanced Reverse Blocking Capability", (Invited), Proc. Ninth International Workshop on Physics of semiconductor Devices (IWPSD-97).
40. Klaus Y.J. Hsu and S.M. Huang, 1997, "The Profile Design of Strained SiGe-channel

P-type Modulation Doped FET", MRS Symp. Proc. 450, pp.445-450.

41. Klaus Y.J. Hsu, C.H. Lee, and C.C. Yeh, 1997, "Polycrystalline Silicon Grown on Porous Silicon-on-Insulator Substrates", MRS Symp. Proc.452, pp. 1007-1012.
42. Klaus Y.J. Hsu and S.M. Huang, 1996, "Profile Design of Si/SiGe p-MODFET", Proc. 1996 International Electron Devices and Materials Symp. D, pp. 393-396.
43. P.C. Chen, Klaus Y.J. Hsu, J.J. Loferski, and H.L. Hwang, 1995, "Characterizations of Ultra-thin Dielectrics Grown by Microwave Afterglow O<sub>2</sub>/N<sub>2</sub>O plasma Oxidation at Low Temperature with Rapid Thermal Annealing", MRS Symp. Proc. 387, pp.271-276. (Times cited: 1)
44. C.C. Yeh, K.Y.J. Hsu, P.C. Chen, and H.L. Hwang, 1994, "Study on The Photoconductivity Characteristics of Porous Si", Proc. 21<sup>st</sup> Int. Conf. Phys. Semicond., p. 1467.
45. C.J. Lin, H.H. Chen, G. Hong, K.Y.-J. Hsu, L.S. Lu, and C.C.-H. Hsu, 1994, "Enhanced Tunneling Characteristics in Silicon-Rich-Oxide Films Deposited Using PECVD for Flash EEPROM", IUMRS-ICEM '94 Symp. Proc. 1, pp. 327-332.
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47. D.L. Hareme, J.M.C. Stock, B..S. Meyerson, K.Y.-J. Hsu, J. Cotte, K.A. Jenkins, J.D. Cressler, P.Restle, E.F. Crabbe, S. Subbanna, T.E. Tice, B.W. Scharf, and J.A. Yasaitis, 1993, "Optimization of SiGe HBT Technology for High Speed Analog and Mixed-Signal Applications", 1993 IEDM Tech. Dig., pp. 71-74. (Times cited: 59)
48. C.C. Yeh, Klaus Y.J. Hsu, P.C. Chen, and H.L. Hwang, 1993, "Study on the Photoconductive Effect from A P/N Junction Structure Incorporated with Porous Silicon", MRS Symp. Proc. 283, pp.401-404.
49. D.H. Hareme, J.H. Comfort, E.F. Crabbe, J.D. Cressler, J.D. Warnock, B.S. Meyerson, K.Y.J. Hsu, J. Cotte, C.L. Stanis, J.M.C. Stork, J.Y.C. Sun, D.A. Danner and P.D. Agnello, 1993, "A SiGe-base PNP ECL Circuit Technology", Tech. Dig. 1993 Symp. VLSI Technology, pp. 61-62. (Times cited: 3)
50. P.C. Chen, J.Y. Lin, Y.J. Hsu, and H.L. Hwang, 1993, "Atomic Oxidation of Ultra Thin SiGe Using Afterglow Oxygen Plasma" MRS Symp. Proc. 281, pp.485-489.
51. P.C. Chen, J.Y. Lin, Y.J. Hsu, and H.L. Hwang, 1992, "Some Properties of Ultra-thin Oxides Grown in Afterglow Oxygen Plasma" MRS Symp. Proc. 268, pp. 157-160.
52. Y.J. Hsu, L.K. Samanta, K.C. Wang, P.C. Chen, and H.L. Hwang, 1992,

"Current-Voltage Characteristics of Porous Silicon Made from a P/N Junction Structure", MRS Symp. Proc. 256, pp.95-100.

53. Y.J. Hsu and H.L. Hwang, 1991, "The Electronic Structure of Phosphorus Interstitials in Phosphorus-implanted Cadmium Telluride", Proc. EDMS, p.609.
54. Y.J. Hsu and H.L. Hwang, 1989, "On the P-type Doping of CdTe", (Invited), Proc. EDMS, pp. 424-429.
55. Y.J. Hsu, H.L. Hwang and H.Y. Ueng, 1989, "Studies on Implantation and the Annealing of Cadmium Telluride Copper Indium Disulfide", MRS Symp. Proc. 147, pp.351-356.
56. Y.J. Hsu and H.L. Hwang, 1988, "On the P-Type Conduction of Cadmium Telluride Single Crystals", Proc. 20th IEEE Photovoltaic Specialists Conf., pp.1491-1494. (EI)
57. Y.J. Hsu and H.L. Hwang, 1987, "An Analysis on Pulsed Electron Beam Annealing of Phosphorus-implanted Cadmium Telluride", Proc. EDMS, pp. 365-370.

### C. Patents

1. 「改良的互補式金氧半(MOS)製程」, ROC, 發明第067088號.
2. 「可透視式光位置感應裝置及其應用」, ROC, 發明第103223號.
3. 「自偏壓微波低雜訊放大器」, ROC, 發明第167722號.
4. 「交談式電子白板」, ROC, 新型第181471號.
5. “Fabrication of Amorphous Silicon/Amorphous Silicon Germanium  $\text{Ni}_1\text{P}_1\text{L}_2\text{N}$  Integrated Position Detectors”, USA, US6680478.
6. 「一種非晶矽/非晶矽鍺 $\text{Ni}_1\text{P}_1\text{L}_2\text{N}$ 結構及紅外光位置偵測器」, ROC, 發明第170607號.
7. 「一種筆式輸入系統及其輸入方法」, ROC, 發明第197891號.
8. 「光度監測器」, ROC, 新型第M250141號.
9. 「具有負電導電路的差動放大器及其應用」, ROC, 發明第205167號.
10. 「元件寬頻模型化方法」, ROC, 發明第I228177號.
11. 「單元件光偵測器」, ROC, 發明第I255348號.
12. 「智慧型LED燈具」, ROC, 新型第M284176號; PRC, 851051.
13. “Method and System for Wideband Device Measurement and Modeling”, USA, US7171325.
14. 「傳輸線電感量測與模型化方法及系統」, ROC, 發明第I284206號.
15. 「元件寬頻量測與模型化方法及系統」, ROC, 發明第I287100號.
16. 「光偵測器及其製法」, ROC, 發明第I288475號.
17. “Wideband Device Modeling Method”, USA, US7268560.
18. 「照明管理系統」, ROC, 新型第M320028號; PRC, 1103097.
19. “Optical Output System with Auto Power Control for Optical Mouse”, USA, US7279694.
20. 「用於光學滑鼠之具有自動光功率控制之光學輸出系統」, ROC, 發明第I301583號.
21. “Amplifier”, USA, US7560993.
22. 「放大器」, ROC, 發明第I336165號.
23. “Integrated Low-Noise Sensing Circuit with Efficient Bias Stabilization”, USA, US8810262.
24. 「光感測器及其製造方法」, ROC, 發明第I539615號.
25. 「光感測器及光感測模組」, ROC, 發明第I603463號.
26. “Photosensing device with graphene”, USA, US9812603
27. “Photosensing device with graphene”, USA, US9812604
28. “Phototransistor with Body-Strapped Base”, USA, US10553633

#### D. Other Publications

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