**Chia-Ming Yang** received his BS degree in electric engineering form Chang Gung University, Tao-Yuan, Taiwan, in 1999; MS degree in electronic engineering form National Chiao Tung University, Hsin-Chu, Taiwan, in 2001; Ph.D degree in electronic engineering form Chang Gung University in 2006. He is currently the associate professor in the Institute of Electro-Optical Engineering in Chang Gung University after 5-year working in Inotera Technology Inc. for DRAM device and retention optimization as a department manager. His research interests include DRAM retention and VRT, VLSI and MEMS technology, biomedical and chemical sensors and nanotechnology. He holds 1 U.S. and 7 Taiwan patents and is author of more than 40 SCI journal and 120 conference papers.

**Journal Papers**

1. Y.-T. Lin, A. Purwidyantri, J.-D. Luo, C.-C. Chiou, **Chia-Ming Yang\*(共同通訊作者)**, C.-H. Lo, T.-L. Hwang, T.‐H. Yen, C.-S. Lai, “Programming a Nonvolatile Memory-like Sensor for KRAS Gene Sensing and Signal Enhancement”, Biosensors and Bioelectronics 79, 2016, 63-70, (EI/SCI, ISSN:0956-5663, IF=6.409, Ranking=1/28=4%)
2. Chang Ren, **Chia-Ming Yang\***,**[參考著作]** (共同第一作者、共同通訊作者) Chengang Lyu, Chin-Yuan Hsu, Tsung-Cheng Chen, Hau-Cheng Wang, Hao Yang, Wei-Tse Lin, Pi-Chun Juan, Chi-Hsien Huang, Dorota G. Pijanowska, Jer-Chyi Wang, and Jung-Ruey Tsai, ”Nitrogen ratio and RTA optimization on sputtered TiN/SiO2/Si electrolyte-insulator-semiconductor structure for pH sensing characteristics”, Vacuum 118 (2015) 113-117 (EI/SCI, ISSN: 0042-207X, IF=1.426, Ranking=119/251=43.8%, MATERIALS SCIENCE, MULTIDISCIPLINARY) , DOI: 10.1016/j.vacuum.2015.02.025
3. Anirban Das, **Chia-Ming Yang\***, (共同第一作者、共同通訊作者) Tsung-Cheng Chen, and Chao-Sung Lai, “Analog micromirror-LAPS for chemical imaging and zoom-in application”, Vacuum 118 (2015) 161-166 (EI/SCI, ISSN: 0042-207X, IF=1.426, Ranking=119/251=43.8%, MATERIALS SCIENCE, MULTIDISCIPLINARY), DOI: [10.1016/j.vacuum.2014.11.003](http://dx.doi.org/10.1016/j.vacuum.2014.11.003)
4. **Chia-Ming Yang\***,**[代表著作]**(第一作者、通訊作者) Tzu-Wen Chiang, Yu-Ting Yeh, Anirban Das , Yi-Ting Lin, and Tsung-Cheng Chen “Hydrogen-Ion Image of Niobium Oxide with Rapid Thermal Annealing in a Light-Addressable Potentiometric Sensor”, Sensors and Actuators B: Chemical 207, (2015) 858–864 (EI/SCI, ISSN: 0925-4005, IF=4.097, Ranking=2/57=4%, INSTRUMENTS & INSTRUMENTATION), DOI:10.1016/j.snb.2014.10.097
5. Pi-Chun Juan, Jyh-Liang Wang, Tsang-Yen Hsieh, Cheng-Li Lin, **Chia-Ming Yang**, Der-Chi Shye, and Shu-Chuan Liao, “Self-Assembly La-rich Nanocrystals in Metal-Gate MIS Structures for Non-Volatile Memories” Microelectronic Engineering 138, (2015) 27–30 (EI/SCI, ISSN: 0167-9317, IF=1.338, Ranking=110/248=43.8%, ENGINEERING, ELECTRICAL & ELECTRONIC), DOI: [10.1016/j.mee.2015.01.026](http://dx.doi.org/10.1016/j.mee.2015.01.026)
6. Pi-Chun Juan, Jyh-Liang Wang, Tsang-Yen Hsieh, Cheng-Li Lin, **Chia-Ming Yang**, and Der-Chi Shye, “The Physical and Electrical Characterizations of Cr-doped BiFeO3 Ferroelectric Thin Films for Nonvolatile Memory Applications” Microelectronic Engineering 138, (2014) pp. 86-90 (EI/SCI, ISSN: 0167-9317, IF=1.338, Ranking=110/248=43.8%, ENGINEERING, ELECTRICAL & ELECTRONIC) , DOI: dx.doi.org/10.1016/j.mee.2015.02.027
7. Anirban Das, Tsung-Cheng Chen, **Chia-Ming Yang\***(共同通訊作者)and Chao-Sung Lai, “High-speed and flexible-scanning chemical imaging system by Light addressable potentiometric sensor integrated with an analog micromirror”, Sensors and Actuators B: Chemical [198](http://www.sciencedirect.com/science/journal/09254005/198/supp/C) (2014) 225-232 (EI/SCI, ISSN: 0925-4005, IF=3.84, Ranking=2/57=4%, INSTRUMENTS & INSTRUMENTATION) , DOI:10.1016/j.snb.2014.03.028
8. **Chia-Ming Yang**,(第一作者) Tseng-Fu Lu, Kuan-I Ho, Jer-Chyi Wang, Dorota G. Pijanowska, Bohdan Jaroszewicz, and Chao-Sung Lai , “HfOxFy Based ISFETs with Reactive Fluorine Doping for K+ ion Detection”, International Journal of Electrochemical Science,9, (2014) 7069-7082 (EI/SCI, ISSN:1452-3981, IF=1.956, Ranking=16/27=59%, ELECTROCHEMISTRY) **Chia-Ming Yang**,(第一作者) Jer-Chyi Wang, Tzu-Wen Chiang, Yi-Ting Lin, Teng-Wei Juan, Tsung-Cheng Chen, Ming-Yang Shih, Cheng-En Lue, Chao-Sung Lai, “Hydrogen ion sensing characteristics of IGZO/Si electrode in EGFET”, International Journal of Nanotechnology Vol.11, No.1/2/3/4, (2014) pp.15-26 (SCI/EI, ISSN:1475-7435, IF=1.144, Ranking=149/251=59%, MATERIALS SCIENCE, MULTIDISCIPLINARY) , DOI: 10.1504/IJNT.2014.059806
9. **Chia-Ming Yang**,**[參考著作]** (第一作者) Chih-Yao Wang and Chao-Sung Lai, “Characterization on pH sensing performance and structural properties of Gadolinium oxide post-treated by nitrogen rapid thermal annealing”, Journal of Vacuum Science & Technology B 32 (3) (2014) 03D113-1~5 (SCI/EI, ISSN:1071-1023, IF= 1.358, Ranking=106/248=42.7%, ENGINEERING, ELECTRICAL & ELECTRONIC), DOI: 10.1116/1.4865479
10. Yi-Ting Lin, Chien-Shiang Huang, Lee Chow, Jyun-Ming Lan, **Chia-Ming Yang**, Liann-Be Chang, Chao-Sung Lai, “Light-immune pH sensor by SiC based electrolyte-insulator- semiconductor structure” Applied Physics Express 6 (2013) 127002 (SCI/EI, ISSN: 1882-0778, IF=2.73, Ranking= 28/136=21%, PHYSICS, APPLIED), DOI:10.7567/APEX.6.127002
11. **Chia-Ming Yang**,**[參考著作]** (第一作者) Jer-Chyi Wang, Wei-Ping Lee, Chien-Chi Lee, Chih-Hung Lin, Chung Yuan Lee, Jo-Hui Lin, Hsin-Huei Chen, Chih-Yuan Hsiao, Ruey-Dar Chang, Chao-Sung Lai,” Superior Improvements in GIDL and Retention by Fluorine Implantation in Saddle-Fin Array Devices for sub-40-nm DRAM Technology”, IEEE Electron Devices Letter 34 (9) (2013), art. no. 6553604 , (2013) pp. 1124-1126 (SCI/EI, ISSN: 0741-3106, IF=2.789, Ranking=29/248=11.7%, ENGINEERING, ELECTRICAL & ELECTRONIC), DOI: 10.1109/LED.2013.2271274
12. Yi-Ting Lin, Ji-Dung Luo, Chiuan-Chian Chiou, **Chia-Ming Yang**, Chung-Yih Wang, Chien Chou,and Chao-Sung Lai, “Detection of KRAS mutation by combination of polymerase chain reaction (PCR) sensors with new amine group functionalization”, Sensors and Actuators B: Chemical (2013) 374–379 (EI/SCI, ISSN: 0925-4005, IF=3.535, Ranking= 2/57=4%, INSTRUMENTS & INSTRUMENTATION), DOI: 10.1016/j.snb.2013.06.009
13. Chung-Yuan Lee, Chao-Sung Lai, Yaw-Wen Hu, Wun Wang, Hao-Jan Chen, Yun-Zong Tian, **Chia-Ming Yang**, and David H.-L. Wang, “In-Line Supemrapping of storage capacitor for advanced stack DRAM reliability”, IEEE Transactions on Device and Materials Reliability 13 (1) (2013) 81-86. (SCI/EI, ISSN:1530-4388, IF=1.516, Ranking= 95/248=38%, ENGINEERING, ELECTRICAL & ELECTRONIC), DOI: 10.1109/TDMR.2012.2211875
14. **楊家銘**(第一作者)、呂增富、呂承恩、王義舜、賴朝松, “原子層沉積之二氧化鉿感測薄膜於生醫感測器之應用”, 真空科技期刊, 26 (1), 2013, pp. 27-33.
15. 賴朝松、**楊家銘**、呂承恩、王義舜、呂增富, “於軟性塑膠基板建構氨氣電漿處理之低成本高效能尿素感測器”, 電子月刊 19 (3), 2013. pp. 172-181.
16. **Chia-Ming Yang**,**[參考著作]** (第一作者) I-Shun Wang, Yi-Ting Lin, Chi-Hsien Huang, Tseng-Fu Lu, Cheng-En Lue, Dorota G. Pijanowska, Mu-Yi Hua and Chao-Sung Lai, “Low Cost and Flexible Electrodes with NH3 Plasma Treatments in Extended Gate Field Effect Transistors for Urea Detection”, Sensors and Actuators B: Chemical 187 (2013) 274-279 (EI/SCI, ISSN: 0925-4005, IF=3.535, Ranking= 2/57=4%, INSTRUMENTS & INSTRUMENTATION), DOI: 10.1016/j.snb.2012.11.023
17. **Chia-Ming Yang**,**[參考著作]** (第一作者) Chung Yuan Lee, Yi-Chun Lin, Wei-Yao Wang, Jian-Shing Luo, San-Lin Liew, Ching-Shan Sung, Hsiao-Lung Chiang, Chih-Yuan Hsiao, Chao-Sung Lai, “Negative Bias Temperature Instability for Sputtering Modification in TiN Diffusion Barrier of p+ Poly-silicon Gate Stack in 50nm DRAM technology”, IEEE Transactions on Device and Materials Reliability (2013) (1), 13. no. 6275479 , pp. 81-86. (SCI/EI, ISSN:1530-4388, IF=1.516, Ranking=95/248=38%, ENGINEERING, ELECTRICAL & ELECTRONIC) DOI: 10.1109/TDMR.2012.2214035
18. Jung-Hsiang Yang, Tseng-Fu Lu, Jer-Chyi Wang, **Chia-Ming Yang**, Dorota G. Pijanowska, Chi-Hang Chin, Cheng-En Lue, and Chao-Sung Lai, “LAPS with nanoscaled and highly polarized HfO2 by CF4 plasma for NH4+ detection”, Sensors and Actuators B: Chemical, 180 (2012) 71-76. (EI/SCI, ISSN: 0925-4005, IF=3.535, Ranking=2/57=4%, INSTRUMENTS & INSTRUMENTATION), DOI: 10.1016/j.snb.2012.03.025
19. I-Shun Wang, Tseng-Fu Lu, Cheng-En Lu, Chi-Hsien Huang, Polung Yang, Yi-Ting Lin, Dorota G. Pijanowska, **Chia-Ming Yang**, Jer-Chi Wang, Jau-Song Yu, Yu-Sun Chang, and Chao-Sung Lai, “Immobilization of Enzyme and Antibody on ALD-HfO2 EIS structure by NH3 Plasma Treatment”, Nanoscale Research Letters 7, (2012) 179. (SCI/EI, ISSN:1556-276X, IF=2.726, Ranking=53/251=21%, MATERIALS SCIENCE, MULTIDISCIPLINARY), DOI: 10.1186/1556-276X-7-179
20. C.E. Lue, I. S. Wang, C.H. Huang, Y. T. Shiao, H. C. Wang, **Chia-Ming Yang**, S. H. Hsu, C. Y. Chang, W. Wang, and C.S. Lai, ”pH sensing reliability of flexible ITO/PET electrodes on EGFETs prepared by a roll-to-roll process”, Microelectronics Reliability, 52 (8) (2012) 1651-1654. (SCI/EI, ISSN:0026-2714, IF=1.167, Ranking= 124/248=50%, ENGINEERING, ELECTRICAL & ELECTRONIC), DOI: 10.1016/j.microrel.2011.10.026
21. Chung-Yuan Lee, Chao-Sung Lai, **Chia-Ming Yang**, and David HL Wang "Dependence of DRAM Device Performance on Passivation Annealing Position in Trench and Stack Structures for Manufacturing Optimization" IEEE Transactions on Semiconductor Manufacturing, vol. 25 no. 4 (2012) 657-663. (SCI/EI, ISSN:0894-6507, IF=0.722, Ranking= 148/248=60%, ENGINEERING, ELECTRICAL & ELECTRONIC), DOI: 10.1109/TSM.2012.2206062
22. Chung-Yuan Lee, Chao-Sung Lai, **Chia-Ming Yang**, Betty Lin, David HL Wang, Simon Lee, Chi- Hung Huang, and Chen Chang Wei, "Residual Clamping Force and DRAM Data Retention Improved by Gate Tungsten Etch Dechucking Condition in a Bipolar Electrostatic Chuck" Japanese Journal of Applied Physics (2012) 51 (8 PART 1) , art. no. 086502 (EI/SCI, ISSN: 0021-4922, IF=1.058, Ranking= 90/136=66%, PHYSICS, APPLIED), DOI: 10.1143/JJAP.51.086502
23. Chung-Yuan Lee, Chao-Sung Lai, **Chia-Ming Yang**, Betty Lin, and David HL Wang, “DRAM Data Retention and Cell Transistor Threshold Voltage Reliability Improved By Passivation Annealing Prior to the Deposition of Plasma Nitride Layer”, IEEE Transactions on Device and Materials Reliability, 12 (2) (2012) 406-412. (SCI/EI, ISSN:1530-4388 , IF=1.543, Ranking= 95/248=36%, ENGINEERING, ELECTRICAL & ELECTRONIC), DOI: 10.1109/TDMR.2012.2188895
24. Yi-Ting Lin, Yu-Hung Yu, Yu Chen, Guo-Jun Zhang, Shi-Yang Zhu, **Chia-Ming Yang**, and Chao- Sung Lai, “Vertical Silicon Nanowires with Atomic Layer Deposition with HfO2 Membrane for pH sensing application” , Journal of Mechanics in Medicine and Biology Vol. 11, No. 5 (2011) 959–966. (SCI, ISSN:0219-5194, IF=0.435, Ranking= 64/77=83%) DOI: 10.1142/S0219519411004897
25. Cheng-En Lue, Ting-Chun Yu, **Chia-Ming Yang** , Dorota G. Pijanowska, and Chao-Sung Lai, “Optimization of Urea-EnFET Based on Ta2O5 Layer with Post Annealing”, Sensors 11, (2011) 4562-4571. (SCI, ISSN: 1424-8220, IF=1.739, Ranking= 10/57=18%) DOI:10.3390/s110504562
26. T.F. Lu, **C.M. Yang**, J.C. Wang, K.I. Ho, C.H. Chin, D.G. Pijanowska, B. Jaroszewicz, and C.S. Lai, “Characterization of K+ and Na+-sensitive membrane fabricated by CF4 plasma treatment on hafnium oxide thin films on ISFET”, Journal of The Electrochemical Society, 158 (4), (2011) J91-J95. (EI/SCI, ISSN: 0013-4651, IF=2.590, Ranking= 1/18=6%) DOI: 10.1149/1.3543922
27. J.C. Wang, T.F. Lu, H.Y. Shih, **C.M. Yang**, C.S. Lai, C.H. Kao, and T.M. Pan, “Reference electrode-insulator-nitride-oxide-semiconductor structure with Sm2O3 sensing membrane for pH-sensor application”, Japanese Journal of Applied Physics, 50, (2011) 04DL09. (EI/SCI, ISSN: 0021-4922, IF=1.058, Ranking= 90/136=66%) DOI: 10.1143/JJAP.50.04DL09
28. Jer-Chyi Wang, Tseng-Fu Lu, Hui-Yu Shih, **Chia-Ming Yang**, Chao-Sung Lai, Chyuan-Haur Kao, and Tung-Ming Pan, “pH Sensing Characterization of Programmable Sm2O3/Si3N4/SiO2/Si Electrolyte–Insulator–Semiconductor Sensor with Rapid Thermal Annealing”, Japanese Journal of Applied Physics, 50, (2011) 10PG04. (EI/SCI, ISSN: 0021-4922, IF=1.058, Ranking= 90/136=66%) DOI: 10.1143/JJAP.50.04DL09
29. Tseng Fu Lu, Hao Chun Chuang, Jer Chyi Wang, **Chia Ming Yang**, Pei Chun Kuo, and Chao Sung Lai, “Effects of thickness effect and rapid thermal annealing on pH sensing characteristics of thin HfO2 films formed by atomic layer deposition” Japanese Journal of Applied Physics Volume 50, (2011) 10PG03. (EI/SCI, ISSN: 0021-4922, IF=1.058, Ranking= 90/136=66%) DOI: 10.1143/JJAP.50.10PG03
30. C.H. Chin, T.F. Lu, J.C. Wang, J.H. Yang, C.E. Lue, **C.M. Yang**, S.S. Li, and C.S. Lai, “Effects of CF4 plasma treatment on pH and pNa properties of light-addressable potentiometric sensor with a 2-nm-thick sensitive HfO2 layer grown by atomic layer deposition”, Japanese Journal of Applied Physics, 50, (2011) 04DL06. (EI/SCI, ISSN: 0021-4922, IF=1.058, Ranking= 90/136=66%) DOI: 10.1143/JJAP.50.04DL06
31. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, and Dorota G. Pijanowska, “Fluorine Incorporation and Thermal Treatment on Single and Stacked Si3N4 Membranes for ISFET/REFET Application”, Journal of Electrochemical Society 157, (2010) J8-J12. (EI/SCI, ISSN: 0013-4651, IF=2.241)
32. Cheng-En Lue, Chao-Sung Lai, Jer-Chyi Wang, Ching-Mie Wu, **Chia-Ming Yang**, “Differential Light Addressable Potentiometric Sensor with Poly(vinyl chloride) and HfO2 Membranes for pH Sensors”, Japanese Journal of Applied Physics 49 (2010), 04DL10. (EI/SCI, ISSN: 0021-4922, IF=1.309, Ranking= 90/136=66%)
33. Cheng-En Lue, Chao-Sung Lai, Hsin-Yu Chen, **Chia-Ming Yang**, “Light Addressable Potentiometric Sensor with Fluorine Terminated Hafnium Oxide Layer for Sodium Detection”, Japanese Journal of Applied Physics 49 (2010), 04DL05. (EI/SCI, ISSN: 0021-4922, IF=1.309, Ranking= 90/136=66%)
34. Cheng-En Lue, Jer-Chyi Wang, Dorota G. Pijanowska, **Chia-Ming Yang**, I-Shun Wang, Huang-Chia Lee, and Chao-Sung Lai, “Hysteresis Effect on Traps of Si3N4 Sensing Membranes for Difference pH Sensitivity”, Microelectronics Reliability 50 (2010), 738-741. (EI/SCI, ISSN: 0026-2714, IF=1.290, Ranking= 56/73=77%)
35. Tseng-Fu Lu, Jer-Chyi Wang, **Chia-Ming Yang**, Chung-Po Chang, Kuan-I Ho, Chi-Fong Ai, and Chao-Sung Lai, “Non-ideal effects improvement of sulfur hexafluoride plasma treated hafnium oxide film based on electrolyte-insulator-semiconductor structure for pH sensor application”, Microelectronics Reliability 50 (2010) 742-746. (EI/SCI, ISSN: 0026-2714, IF=1.290, Ranking= 56/73=77%)
36. Chao-Sung Lai, Tseng-Fu Lu, **Chia-Ming Yang**, Yen-Chih Lin, Dorota G. Pijanowska, and Bohdan Jaroszewicz, “Body Effect Minimization Using Single Layer Structure for pH-ISFET Applications”, Sensors and Actuators B: Chemical 143, (2010) 494-499. (EI/SCI, ISSN: 0925-4005, IF=3.083, Ranking= 2/57=4%)
37. Cheng-En Lue, Chao-Sung Lai, I-Shun Wang, and **Chia-Ming Yang**, “Sensitivity of Trapping Effect on Si3N4 Sensing Membrane for ISFET/REFET Pair Application”, Sensor Letters 8. (2010), 725-729 (EI/SCI, ISSN: 1546-198X, IF=1.160, Ranking= 27/27=100%)
38. Chao-Sung Lai, Yi-Ting Lin, Cheng-En Lue, and **Chia-Ming Yang**, “Characterization of a novel HfTaO membrane for pH sensing and applied to food industry”, Sensor Letters 8. (2010), 720-724 (EI/SCI, ISSN: 1546-198X, IF=1.160, Ranking= 27/27=100%)
39. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, Marek Dawgul, and Dorota G. Pijanowska, “Optimization of a PVC Membrane for Reference Field Effect Transistors”, Sensors 9, (2009) 2076-2087. (SCI, ISSN: 1424-8220, IF=1.903, Ranking= 10/57=18%)
40. **Chia-Ming Yang**, Chao-Sung Lai, Tseng-Fu Lu, Ti-Chuan Wang, and Dorota G. Pijanowska, ”Drift and Hysteresis Effects Improved by RTA Treatment on Hafnium Oxide in pH-Sensitive Applications”, Journal of The Electrochemical Society, 155 (11), (2008), J326-J330. (EI/SCI, ISSN: 0013-4651, IF=2.666, Ranking= 1/18=6%)
41. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, Jui-Hsiu Jao, and Chin-Chien Tai, “ New pH-sensitive TaOxNy membranes prepared by NH3 plasma surface treatment and nitrogen incorporated reactive sputtering”, Sensors and Actuators B: Chemical 130, (2008) 77-81. (EI/SCI, ISSN: 0925-4005, IF=3.242, Ranking= 2/57=4%)
42. Daniel Tomaszewski, **Chia-Ming Yang**, Bohdan Jaroszewicz, Michal Zaborowski, Piotr Grabiec, and Dorota G. Pijanowska, “ Electrical characterization of ISFETs”, Journal of Telecommunication and Information Technology, (2007) 55-59.
43. Chao-Sung Lai, **Chia-Ming Yang,**Chih-Yao Wang, Ti-Chuan Wang, and Dorota G. Pijanowska, “Chemical sensing properties of electrolyte/SiGe/SiO2/Si”, Japanese Journal of Applied Physics, 45 (8A) (2006) 6192-6195. (EI/SCI, ISSN: 0021-4922, IF=1.096, Ranking= 90/136=66%)
44. Chao-Sung Lai, **Chia-Ming Yang**, and Tseng-Fu Lu, ”Thickness Effects on pH response of HfO2 sensing dielectric”, Japanese Journal of Applied Physics, 45 (4B) (2006) 3807-3810. (EI/SCI, ISSN: 0021-4922, IF=1.096, Ranking= 90/136=66%)
45. Chao-Sung Lai, **Chia-Ming Yang**, and Tseng-Fu Lu, ”pH sensitivity improvement on 8nm-thick hafnium oxide by post deposition anneal”, Electrochemical and Solid-State Letters, 9 (3) (2006) G90-92. (EI/SCI, ISSN: 1099-0062, IF=2.149, Ranking= 12/27=44%)
46. **Chia-Ming Yang**, Chao-Sung Lai, Chih-Yao Wang, Cheng-En Lue, Jung-Chuan Chou, Wen-Yaw Chung, and Dorota G. Pijanowska, “The Characterization of stacked α-Si/SiGe/α-Si Sensing Membrane”, Microelectronic Engineering, 80, (2005) 46-49. (EI/SCI, ISSN: 0167-9317, IF=1.456, Ranking= 43/82=54%)

**Conference Papers:**

1. Cong-Cheng Chen, Ming-Che Hsiao, Le-Wen Wang, Hui-Ling Liu, **Chia-Ming Yang\***, Chao-Sung Lai, “NH3 sensing improvements of monolayer graphene by Ar plasma treatment”, Symposium on Engineering, Medicine, and Biology Applications, Taoyuan, Taiwan, Jan. 22-24, 2016.
2. Hao Yang, Yi-Shiuan Yu, Tzu-Li Liou, Chin-Yuan Hsu , Cong-Cheng Chen , **Chia-Ming Yang\***, “Characterization on sputtered TiN light-addressable potentiometric sensor”, TACT2015 International Thin Films Conference, Tainan, Taiwan, Nov.15–18, 2015.
3. Po-Lin Chiu, Chen-Ting Yeh, Cong-Cheng Chen, **Chia-Ming Yang\***, Shun-Fu Tseng, Tsung-Ru Wu, Hsin-Chih Lai, Chao-Sung Lai, “Single layer NbOx LAPS for LLC-PK1 cell culture monitor”, 2015 International Electron Devices and Materials Symposium (IEDMS 2015) , Tainan, Taiwan, Nov. 19-20, 2015.
4. Chun-Hui Chen, **Chia-Ming Yang\***, Liann-Be Chang, Jer-Chyi Wang, Chao-Sung Lai, “Characterization of sputtering IGZO active layer in light-addressable potentiometric sensor”, 2015 International Electron Devices and Materials Symposium (IEDMS 2015) , Tainan, Taiwan, Nov. 19-20, 2015
5. Hui-Ling Liu，Yi-Ming Chen, Chang Ren, Cong-Cheng Chen, **Chia-Ming Yang\***, Chen-Gang Lyu, and Chao-Sung Lai "Real-Time 2D pH Images by Fast Scanning Light-Addressable Potentiometric Sensor System Controlled by LabVIEW Program" IEEE sensors 2015, Busan, South Korea, Nov. 1-4, 2015
6. Wei-Yin Zeng, Cong-Cheng Chen, **Chia-Ming Yang\*** and Chao-Sung Lai, "High Photocurrent and High Frequency Response of Light-Addressable Potentiometric Sensor with Thin Si Substrate and Surface Roughness" IEEE sensors 2015, Busan, South Korea, Nov. 1-4, 2015
7. Yuan-Hui Liao, Chun-Hui Chen, Cong-Cheng Chen, **Chia-Ming Yang\***, and Chao-Sung Lai, “ P-I-N Amorphous Silicon Light-Addressable Potentiometric Sensors for High- photovoltage Chemical Image”, Eurosensors 2015, Sep. 6-9, 2015
8. Chun-Hui Chen, Chia-Ming Yang, Liann-Be Chang, Jer-Chyi Wang, **Chia-Ming Yang\***, “IGZO Substrate for pH Detection in LAPS with High Photo Response”, International Conference on Solid State Devices and Materials (SSDM2015), Sapporo, Japan, Sep. 27-30, 2015.
9. Chang Ren, Chengang Lyu, Hui-Ling Liu, Yi-Ming Chen, Yu-Chieh Hsu, **Chia-Ming Yang\***, Chao-Sung Lai, “A Friendly Portable 2D Chemical Imaging System”, International Conference on Solid State Devices and Materials (SSDM2015), Sapporo, Japan, Sep. 27-30, 2015.
10. Hui-Ling Liu, Chang Ren, Yi-Ming Chen, Cong-Cheng Chen,Wei-Yin Zeng, Chen-Gang Lyu, **Chia-Ming Yang\***, Chao-Sung Lai, “Enhancement of synchronization for all-in-one sensing system for 2D pH image”, 19th Nano Engineering and Microsystem Technology Conference, Taipei, Taiwan, Aug. 13-14, 2015
11. Chang Ren, Chengang Lyu, Hui-Ling Liu, Yi-Ming Chen, **Chia-Ming Yang\***, “FPGA-CONTROLLED ANALOG MIRROR SCANNING SYSTEM FOR LIGHT ADDRESSABLE POENTIOMETRIC SENSOR AND 2D CHEMICAL IMAGE”, 2015 International Symposium on Smart-Sensing Technology (2015 ISST) and 20th Symposium of Association for Chemical Sensors in Taiwan (20th SACST), Taoyuan,Taiwan. Jun. 5, 2015.**(口頭論文-特優獎)**
12. 蕭敏哲, 陳琮誠, 林瑋哲, 劉徽齡, 王樂文, **楊家銘\***, 賴朝松, "奈米微支柱結構石墨烯曲面之丙酮氣體感測特性探討", 國際智慧感測技術研討會暨第二十屆化學感測器協會研討會(ISST2015),台灣桃園, 6/5, 2015
13. 簡哲永, 葉宸廷, **楊家銘\***, 曾玄甫, 吳宗儒, 賴信志, 靳偉君, 羅志宏, 黃燦龍, 賴朝松,"以光定址電位感應器進行細胞活性的量測",國際智慧感測技術研討會暨第二十屆化學感測器協會研討會(ISST2015), 台灣桃園, 6/5, 2015**(口頭論文-佳作獎)**
14. 邱博霖,葉宸廷, **楊家銘\***, 曾玄甫, 吳宗儒, 賴信志, 賴朝松, 靳偉君, 羅志宏, 黃燦龍,"LLC-PK1細胞對奈米級材料二氧化鈦的毒性測試", 國際智慧感測技術研討會暨第二十屆化學感測器協會研討會(ISST2015), 台灣桃園, 6/5, 2015**(口頭論文-佳作獎)**
15. 李柏延, 葉宸廷, **楊家銘\***, 曾玄甫, 吳宗儒, 賴信志, 靳偉君, 羅志宏, 黃燦龍, 賴朝松, "跨上皮電阻測量法測試細胞在化療藥物下的反應", 國際智慧感測技術研討會暨第二十屆化學感測器協會研討會(ISST2015), 台灣桃園, 6/5, 2015
16. 曾瑋尹, 陳琮誠, **楊家銘\***, 賴朝松,"應用薄矽基板提升光定址電位感測器光電流與操作頻率",國際智慧感測技術研討會暨第二十屆化學感測器協會研討會(ISST2015), 台灣桃園, 6/5, 2015**(口頭論文-佳作獎)**
17. 王樂文, 陳琮誠, 林瑋哲, 劉徽齡, **楊家銘\***, 賴朝松, "指叉式電極間距對單層石墨烯之氨水蒸汽感測特性探討", 國際智慧感測技術研討會暨第二十屆化學感測器協會研討會(ISST2015), 台灣桃園, 6/5, 2015
18. Chang Ren, Hui-Ling Liu, Yi-Ming Chen, **楊家銘\***, Chao-Sung Lai, “Portable Synchronized 2-Dimentional Chemical Image Sensing System”, 第十三屆台塑關係企業應用技術研討會台灣桃園, 6/26, 2015 **(研發創意實務競賽-佳作)**
19. **Chia-Ming Yang\***, Anirban Das,Tsung-Cheng Chen, Yuan-Hui Liao, and Chao-Sung Lai, ” Real-time 2D chemical image for multi-ion detection”, International Conference on MEMS and Sensors 2014 (ICMEMSS 2014), Chennai, India, Dec. 18-20, 2014
20. Chia-Ming Yang, I.-Shun Wang, Yi-Ting Lin, Chi-Hsien Huang, Tseng-Fu Lu, Cheng-En Lue, Dorota G. Pijanowska, Mu-Yi Hua, Ji-Dung Luo, Chiuan-Chian Chiou, Chao-Sung Lai, “NH3 plasma treatment on field-effect sensor for enzyme, antibody and DNA detection”, BIT's 5th Annual World Gene Convention-2014 (WGC-2014), Haikuo, China, Nov. 13-16, 2014
21. Chen-Ting Yeh, **Chia-Ming Yang\***, Shun-Fu Tseng, Tsung-Ru Wu, Hsin-Chih Lai, Chao-Sung Lai, Wei-Chun Chin, Chih-Hong Lo, Tsann-Long Hwang, “NbOx-LAPS and TER for MDCK-E cell culture monitoring”, 2014 International Electron Devices and Materials Symposium (IEDMS 2014) , Hualien, Taiwan, Nov. 20-21, 2014
22. Chen-Ting Yeh, **Chia-Ming Yang\***, Shun-Fu Tseng, Tsung-Ru Wu, Hsin-Chih Lai, Chao-Sung Lai, Wei-Chun Chin, Chih-Hong Lo, Tsann-Long Hwang, “Ammonia sensing characterization on monolayer graphene/Au electrodes by thickness and spacing effect”, 2014 International Electron Devices and Materials Symposium (IEDMS 2014) , Hualien, Taiwan, Nov. 20-21, 2014
23. Chen-Ting Yeh, **Chia-Ming Yang\***, Shun-Fu Tseng, Tsung-Ru Wu, Hsin-Chih Lai, Chao-Sung La, Wei-Chun Chin, Chih-Hong Lo, Tsann-Long Hwang, “Interface effect of directly culture cell on light-addressable potentiometric sensor”, 2014 International Symposium of Materials on Regenerative Medicine(ISOMRM2014), Taoyuan, Taiwan, Aug. 27-29.
24. Wei-Tse Lin, **Chia-Ming Yang\***, Tsung-Cheng Chen, Hui-Ling Liu, Ming-Che Hsiao, Chao-Sung Lai, “Electrode spacing and density of sensing film effect on flake graphene for acetone gas sensors”, 2014 International Symposium of Materials on Regenerative Medicine(ISOMRM2014), Taoyuan, Taiwan, Aug. 27-29.
25. Yen-Po Chen, Yi-Ming Chen, Hui-Ling Liu, **Chia-Ming Yang**, "Development of Real-time Displaying Multi-channel Pressure Sensor Array", 2014 International Symposium of Materials on Regenerative Medicine (2014 ISOMRM), Taoyuan, Taiwan, Aug. 27-29
26. Hui-Ling Liu, Tsung-Cheng Chen, Wei-Tse Lin and **Chia-Ming Yang\***, “A Multi-channel Gas Sensor Detection System Based On Self-design Circuit and LabVIEW Program”, 2014 International Symposium of Materials on Regenerative Medicine(ISOMRM2014), Taoyuan, Taiwan, Aug. 27-29.
27. Chin-Yuan Hsu, Tsung-Cheng Chen, Hao Yang, Hau-Cheng Wang, Wei-Tse Lin, Pi-Chun Juan, **Chia-Ming Yang** and Chao-Sung Lai, “pH and pK sensing modification by cosputtered TiSiON/SiO2/Si electrolyte-insulator-semiconductor structure”, 2014 International Conference on Solid State Devices and Materials (SSDM2014), Tsukuba, Japan, Sep. 8-11
28. Tsung-Cheng Chen, Wei-Tse Lin, Tzu-Hao Hung, Hui-Ling Liu, Chin-Pao Cheng, Chun-Hu Cheng, Chung-Hung Chen, Kuan-I Ho, Meng-Chin Su, Ming-Yang Shih, **Chia-Ming Yang**, Chao-Sung Lai, “Electrode spacing effect on LPCVD monolayer graphene for ammonia and acetone gas sensors” 2014 Euro Sensor, Brescia, Italy, Sep. 7-10
29. Hui-Hsin Chang, Yi-Ting Lin, **Chai-Ming Yang\***, Ji-dung Luo, Chiuan-Chian Chiou and Chao-Sung Lai, “Characterization of body effect of Au-EGFET for KRAS gene detection”, 6th IEEE International Nanoelectronics Conference, IEEE INEC 2014, Sapporo, Japan, 28th - 31st July 2014.
30. Teng-Wei Juan, Ming-Yang Shih, **Chia-Ming Yang\***, Mu-Yi Hua, Chao-Sung Lai, “Wearable and flexible pH sensor with conductive polymer of nano PEDOT/PSS particle”, 6th IEEE International Nanoelectronics Conference, IEEE INEC 2014, Sapporo, Japan, 28th - 31st July 2014.
31. Tsung-Cheng Chen, Wei-Yin Zeng, Yuan-Hui Liao, Anirban Das, **Chia-Ming Yang\*** and Chao-Sung Lai, “High photocurrent and operation frequency for light-addressable potentiometric sensor by thinner Si substrate” 6th IEEE International Nanoelectronics Conference, IEEE INEC 2014, Sapporo, Japan, 28th - 31st July 2014.
32. Hau-Cheng Wang, Tsung-Cheng Chen, Hao Yang, Pi-Chun Juan, **Chia-Ming Yang\*** and Chao-Sung Lai “Extended titanium nitride gate field-effect transistor with PVC selective membrane for hydrogen and potassium ion detection”, 6th IEEE International Nanoelectronics Conference, IEEE INEC 2014, Sapporo, Japan, 28th - 31st July 2014.
33. Rajat Subhra Karmakar, Jer-Chyi Wang, Yu-Jen Lu, Hsiang-Yu Liu, **Chia-Ming Yang**, Chao-Sung Lai, Wei-Lun Zou, Mu-Yi Hua, Ming-Yih Lee, Chiung-Yin Huang, Kuo-Chen Wei, “ Characteristics of Nitrogen-Contained Plasma Treatment on PEDOT:PSS Piezoresistive Pressure Sensors”, 6th IEEE International Nanoelectronics Conference, IEEE INEC 2014, Sapporo, Japan, 28th - 31st July 2014.
34. Yi-Ting Lin, Chien-An Kao, **Chia-Ming Yang**, Hui-Hsin Chang, Ji-Dung Luo, Chiuan-Chian Chiou, Chao-Sung Lai “Detection of KRAS DNA using Au-extended gate field-effect transistors”, 3RD INTERNATIONAL SYMPOSIUM ON NEXT-GENERATION ELECTRONICS (ISNE 2014), Taoyuan, Taiwan, 2014 May 7-10.
35. Rajat Karmakar, Jer-Chyi Wang, Hsiang-Yu Liu, Yu-Jen Lu Lu, **Chia-Ming Yang**, Chao-Sung Lai, Wei-Lun Zou, Mu-Yi Hua, Ming-Yih Lee, Chiung-Yin Huang, Kuo-Chen Wei , “Piezoresistive Characteristics of PEDOT:PSS Pressure Sensor with Interdigitated and Cross-point Structure”, 3RD INTERNATIONAL SYMPOSIUM ON NEXT-GENERATION ELECTRONICS (ISNE 2014), Taoyuan, Taiwan, 2014 May 7-10.
36. Kai-Lun Chiang, Jen-Te Hsu, Chien-Chi Lee, Hsin Huei Chen, Chih-Yuan Hsiao, **Chia-Ming Yang**, Chao-Sung Lai, “BEOL Anneal Process Optimization for 30 nm DRAM NBTI Degradation”, 3RD INTERNATIONAL SYMPOSIUM ON NEXT-GENERATION ELECTRONICS (ISNE 2014), Taoyuan, Taiwan, 2014 May 7-10.
37. CHUN HSIANG CHIU, Yu-Ren Ye, Jer-Chyi Wang, **Chia-Ming Yang**, Chao-Sung Lai, “Performance Enhancement of Silver Conductive Bridge Random Access Memory with Stacked Chemical Vapor Deposition and Thermal Oxide Layers “, 3RD INTERNATIONAL SYMPOSIUM ON NEXT-GENERATION ELECTRONICS (ISNE 2014), Taoyuan, Taiwan, 2014 May 7-10.
38. Anirban Das, Tsung-Cheng Chen, **Chia-Ming Yang**, Chao-Sung Lai, “Analog micromirror-LAPS for chemical imaging and zoom-in application”, 3RD INTERNATIONAL SYMPOSIUM ON NEXT-GENERATION ELECTRONICS (ISNE 2014), Taoyuan, Taiwan, 2014 May 7-10. **(Best Student Poster Award)**
39. Hao Yang, **Chia-Ming Yang**, Chao-Sung Lai, Pi-chun Juan, Wei-Tse Lin, Hau-Cheng Wang, Tsung-Cheng Chen, Chin-Yuan Hsu, “Nitrogen ratio optimization on sputtered TiN/SiO2/Si electrolyte-insulator-semiconductor structure for pH sensing characteristics”, 3RD INTERNATIONAL SYMPOSIUM ON NEXT-GENERATION ELECTRONICS (ISNE 2014), Taoyuan, Taiwan, 2014 May 7-10.
40. 江資聞、葉昱廷、**楊家銘**、賴朝松, “氧化鈮經快速熱退火處理於不同氫離子濃度電解液之可靠度分析”, 2013 Taiwan ESD and Reliability Conference, Taiwan, Hsin-Chiu, 2013, Nov. 4-6.
41. Tzu-Wen Chiang, Yuan-Hui Liao, Anirban Das, Tsung-Cheng Chen, Wei-Yin Zeng, **Chia-Ming Yang**, Jer-Chyi Wang, Chao-Sung Lai, “Low Visible Light Disturbance in pH Sensing of NbOx/IGZO on ITO Glass” International Electron Devices and Materials Symposia 2013 (IEDMS 2013), Nantou, Taiwan, November 28-29, 85.
42. Hau-Cheng Wang, Hao Yang, **Chia-Ming Yang**, Kin Fong Lei, Ming-Yih Lee, Jer-Chyi Wang, Chao-Sung Lai, “Buffer Layer and Structure Characterization and Optimization on Commercial Resistive Pressure Sensors for Neurological Operation”, International Electron Devices and Materials Symposia 2013 (IEDMS 2013), Nantou, Taiwan, November 28-29, 155.
43. Yu-Ting Yeh, Yi-Ting Lin, Anirban Das, Tsung-Cheng Chen, **Chia-Ming Yang**, Chao-Sung Lai, “Chemical Image by Constant Bias in Ta2O5/Si3N4/SiO2/Si Light-addressable Potentiometric Sensor”, , International Electron Devices and Materials Symposia 2013 (IEDMS 2013), Nantou, Taiwan, November 28-29, 203.
44. Anirban Das, Tsung-Cheng Chen, Yi-Ting Lin, Yuan-Hui Liao, **Chia-Ming Yang**, Chao-Sung Lai, “Ultra-high scanning speed chemical image sensor based on light addressable potentiometric sensor with analog micro-mirror”, IEEE sensor 2013 Baltimore, U.S, Nov. 3-6.
45. Kai-Lun Chiang, Wei-Ping Lee, Chien-Chi Lee, Ching-Shan Sung, Chen-Kang Wei, **Chia-Ming Yang\*** , Jer-Chyi Wang, Ping Kao, Chung-Yuan Lee, Hsin-Huei Chen, Chih-Yuan Hsiao, and Chao-Sung Lai\*,“Fluorine ion implantation optimization in Saddle-Fin array devices for sub-40-nm DRAM technology”, International Conference on Solid State Devices and Materials (SSDM) Japan, 2013, Sep. 27-29.
46. Yi-Ting Lin, **Chia-Ming Yang**, Tai-Jui Wang, Wen-Ching Sun, Ming-Yang Shih, Chien-An Kao and Chao-Sung Lai, “Low temperature Ta2O5/X-doped Al2O3/SiO2/Si for pH sensing membrane by spray pyrolysis doped system”, International Conference on Solid State Devices and Materials (SSDM) Japan, 2013, Sep. 27-29.
47. Yu-Ting Yeh, Tzu Wen Chiang, Anirban Das, Yuan-Hui Liao, Xian-Zhong Zhuang, **Chia-Ming Yang**, Chao-Sung Lai, “Light source modulated and oxygen annealing NbOx/Si-LAPS for hydrogen ion image sensor” , International Conference on Solid State Devices and Materials (SSDM) Japan, 2013, Sep. 27-29.
48. 莊獻忠、江資聞、**楊家銘**、賴朝松,“FTO導電玻璃應用於EGFET之多離子感測研究”台灣化學感測器 Taipei, Jun. 1, 2013
49. 阮騰緯,史名揚,葉宸廷,楊皓,**楊家銘**,賴朝松,”微小化電阻式pH感測器應用於尿液偵測之研究”, The 11th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, Taoyuan, 2013, June 28.
50. 王昊丞,鄭家欣,**楊家銘**,賴朝松,“可穿戴式生醫感測器之訊號讀出與藍芽電路開發”, The 11th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, Taoyuan, 2013, June 28.
51. 江凱崙,**楊家銘**,陳昕輝,李建錡,高平,賴朝松,蕭智元,“氟離子佈植改善動態隨機存取記憶體之資料保存特性”, The 11th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, Taoyuan, 2013, June 28.
52. 徐仁德,**楊家銘**,李建錡,高平,賴朝松,王哲麒,蕭智元,李培煌,王韋堯,“熱退火改善動態隨機存取記憶體之使用年限”The 11th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, Taoyuan, 2013, June 28.
53. Jer-Chyi Wang, Hsiang-Yu Liu, Yu-Jen Lu, Rajat Subhra Karmakar, **Chia-Ming Yang**, Chao-Sung Lai, Wei-Lun Zou, Mu-Yi Hua, Chiung-Yin Huang, and Kuo-Chen Wei, “Piezoresistive Characteristics of PEDOT:PSSA Strain Sensor with Gold Nanoparticles on Flexible ITO/PET Substrate”8th International Symposium on Transparent Oxide and Related Materials for Electronics and Optics, Tokyo, Japan, May 13-15, 2013
54. **Chia-Ming Yang**, Jer-Chyi Wang, Tzu-Wen Chiang, Yi-Ting Lin, Teng-Wei Juan, Tsung-Cheng Chen, Ming-Yang Shih, Cheng-En Lue, Chao-Sung Lai "Nano IGZO layer for EGFET in pH sensing characteristics", 5th IEEE International Nanoelectronics Conference (INEC 2013), Singapore, Jan 2-4.
55. Teng-Wei Juan, **Chia-Ming Yang**, Mu-Yi Hua, Kuan-I Ho, Sheng-Kai Su, Shih-Liang Cheng, and Chao-Sung Lai “Characterization on Conductometric pH Sensor on A Flexible Substrate for Sweat Sensing Application”, International Electron Devices and Materials Symposia 2012 (IEDMS 2012), Kaohsiung, Taiwan, November 29-30.
56. **Chia-Ming Yang**, Tseng-Fu Lu, Cheng-En Lue, Yi-Ting Lin, Chao-Sung Lai, “Methods to modify ion sensitivity of EIS and ISFETs”, 126th Seminar in International Centre of Biocybernetics (ICB) series on “Micro and Nanosystems in Biochemical Analysis, Warsaw, Poland, 2012, Oct. 17-20.
57. Sheng-Kai Su, Mu-Yi Hua, Shih-Liang Cheng, Teng-Wei Juan, Ming-Yang Shih, **Chia-Ming Yang**, and Chao-Sung Lai, “PEDOT/PSS Membrane on Flexible Substrate for Conductometric pH Sensor Study”, International Conference on Solid State Devices and Materials (SSDM) 2012, Sep. 24-27, Japan, Kyoto, pp.1077-1078.
58. Tzu-Wen Chiang, Yi-Ting Lin, Ming-Yang Shih, Teng-Wei Juan, Tsung-Cheng Chen, Cheng-En Lue, Chao-Sung Lai, **Chia-Ming Yang**, “Hydrogen Ion Sensing Properties of Niobium Oxide by RTA and Thickness effect”, International Conference on Solid State Devices and Materials (SSDM) 2012, Sep. 24-27,Japan, Kyoto. pp.380-381
59. W. P. Lee, **Chia-Ming Yang**, Chien-Chi Lee, Ping Kao, Chao-Sung Lai, Jer-Chi Wang, Chih-Yuan Hsiao, P. H. Li, Wei-Yao Wang, “Gate oxide with ultra-high temperature annealing for data retention performance improvement in DRAM”, The 10th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, Taipei, 2012, June 21.
60. C.-C. Da, **C.-M. Yang**, C.P. Huang, Y.F. Huang, Chen-Kang Wei, S.L. Chiang, C.Y. Hsiao, W.Y. Wang, P.H. Li, J.-C. Wang, C.-S. Lai, “Characterization on ultra-thin dielectric for high-density capacitor in DRAM”, The 10th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, Taipei, 2012, June 21.
61. C.J. Ou, **Chia-Ming Yang**, Ping Kao, Chien-Chi Lee, M. H. Huang, Chih-Yuan Hsiao, C. H. Kao, Wei-Yao Wang, P.H. Li,“Contact resistance reduction in periphery circuit of DRAM by the optimization on silicide process”, The 10th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, Taipei, 2012, June 21.
62. I-Shun Wang, **Chia-Ming Yang**, Cheng-En Lue, Tseng-Fu Lu, Chi-Hsien Huang, Dorota G. Pijanowska, and Chao-Sung Lai, “Urea Biosensor Using NH3 Nitrided Amine Groups on Flexible Substrate”, International Meeting on Chemical Sensors (IMCS), Nuremberg, Germany, May 20-23, 2012.
63. Tseng-Fu Lu, I-Shun Wang, Wen-Yu Chung, Dorota G. Pijanowska, **Chia-Ming Yang**, Jer-Chyi Wang, and Chao-Sung Lai, “Atomic layer deposition hafnium oxide film on electrolyte-insulator-semiconductor structure for urea sensor application”, International Electron Devices and Materials Symposia 2011 (IEDMS 2011), Taipei, Taiwan, November 17-18. **–Best Paper Award.**
64. J.H. Yang, T.F. Lu, J.C. Wang, D.G. Pijanowska, C.H. Chin, C.E. Lue, **C.M. Yang**, and C.S. Lai, “Functionalization of nanoscaled 2nm-thick ALD-HfO2 layer by rapid thermal annealing and CF4 plasma for LAPS NH4+ detection”, The 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers), Beijing, China, Jun 5-9 (2011).
65. K.I. Ho, T.F. Lu, M.C. Su, J.C. Wang, **C.M. Yang**, and C.S. Lai, “Fluorinated-HfO2 layer for EIS structure sensitive to potassium ions”, The 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers), Beijing, China, Jun 5-9 (2011).
66. T.F. Lu, J.C. Wang, H.Y. Shih, **C.M. Yang**, C.H. Chuang, C.S. Lai, C.H. Kao, and T.M. Pan, “pH-sensing characterization of programmable Sm2O3/Si3N4/SiO2/Si EIS sensor with rapid thermal annealing”, 2011 International Workshop on Dielectric Thin Films For Future Electron Devices: Science and Technology (IWDTF), Tokyo, Japan, Jan 20-21 (2011).
67. H.C. Chuang, T.F. Lu, J.C. Wang, **C.M. Yang**, and C.S. Lai, “Thickness effect and rapid thermal annealing treatments of single atomic layer deposition HfO2 layer on EIS for pH sensor application”, 2011 International Workshop on Dielectric Thin Films For Future Electron Devices: Science and Technology (IWDTF), Tokyo, Japan, Jan 20-21 (2011).
68. J.C. Wang, T.F. Lu, C.Y. Liu, **C.M. Yang**, and C.S. Lai, “The super Nernst phenomena of hydrogen ion sensor with HfO2/Si3N4/SiO2 multiple sensing membranes”, 1st International Conference on Bioengineering (ICOB), Singapore, Jan 19 (2011).
69. C. H. Chin, J. H. Yang, T. F. Lu, C. E. Lue, **C. M. Yang** ,C. S. Lai, “Light-Addressable Potentiometric Sensors for Sodium Ion Detection by Fluorinated-Atomic Layer Deposition Hafnium Oxide Membrane”, International Conference on Solid State Devices and Materials (SSDM 2010), Tokyo, Japan, Sep 22-24.
70. Chao-Sung Lai, Wei-Cheng Lin, Yu-Jui Kao, I-Shun Wang, Cheng-En Lue and **Chia-Ming Yang**, “RTA dependent pH sensitivity and light effect on HfO2-EIS with different thickness”, International Electron Devices and Materials Symposium (IEDMS), Tao Yuan, Taiwan, 2010.
71. Cheng-En Lue, Chao-Sung Lai, I-Shun Wang, Huang-Chia Lee, Min-Hsien Wu, **Chia-Ming Yang** and Dorota G. Pijanowska, “Applications of Differential pH Sensors by Hysteresis Effect on the Traps of Si3N4 Sensing Membranes” International Electron Devices and Materials Symposium (IEDMS), TaoYuan, Taiwan, 2010.
72. W.Y. Chung, Tseng-Fu Lu, **Chia-Ming Yang**, Jyh-Ping Chen, Min-Hsien Wu and Chao-Sung Lai, “Comparison of urea detection by enzyme field-effect transistor (ENFET) based on entrapment and covalent bonding methods”, 7th Asian Conference on Electrochemistry (ACEC 2010), Kumamoto, Japan, May 18-22.
73. Chi-Hang Chin, Tseng-Fu Lu, **Chia-Ming Yang**, and Chao-Sung Lai, “Sodium ion sensing properties of EIS structures with fluorinated titanium oxide sensing film”, 7th Asian Conference on Electrochemistry (ACEC 2010), Kumamoto, Japan, May 18-22.
74. Pei-Chun Kuo, Tseng-Fu Lu, **Chia-Ming Yang**, and Chao-Sung Lai, “Comparison of the pH-sensing properties of HfO2 thin films fabricated by sputter and atomic layer deposition (ALD)”, 7th Asian Conference on Electrochemistry (ACEC 2010), Kumamoto, Japan, May 18-22.
75. Chieh-Yuan Liu, Tseng-Fu Lu, **Chia-Ming Yang**, and Chao-Sung Lai, “New Multiple Sensing Membranes Al2O3/Si3N4/SiO2/Si EIS Device for pH Detection”, 7th Asian Conference on Electrochemistry (ACEC 2010), Kumamoto, Japan, May 18-22.
76. Tseng-Fu Lu, Jer-Chyi Wang, Chao-Sung Lai, **Chia-Ming Yang**, Min-Hsien Wu, Chuan-Pu Liu, and Yu-Ching Fang, “A Novel Flash-Ion-Sensitive Field-Effect Transistor (FISFET) with HfO2/Gd2O3 Nano-crystal/SiO2 Sensing Membranes under Super Nernstian Phenomenon for pH and Urea Detection”, International Electron Device Meeting (IEDM 2009), Baltimore 2009, USA, Decemeber 7-9.603-607.
77. Chung-Po Chang, Tseng-Fu Lu, Kuan-I Ho, **Chia-Ming Yang** and Chao-Sung Lai, “Sensing characterization of sulfur hexafluoride plasma treated hafnium oxide film on Electrolyte-Insulator-Semiconductor structure for pH sensor application”, Presented in the International Electron Devices and Materials Symposia 2009 (IEDMS 2009), Taichung, Taiwan, November 19-20. **–Best Paper Award.**
78. K.I. Ho, T.F. Lu, C.P. Chang, **C.M. Yang**, and C.S. Lai, “Sodium and Potassium Ion Sensing Properties of EIS and ISFET Structures with Fluorinated Hafnium Oxide Sensing Film”, IEEE Sensors, Christchurch, New Zealand, 2009 October 25-28.
79. W.Y. Chuang, T.F. Lu, **C.M. Yang**, and C.S. Lai, “Development of an Inorganic pK Sensor Based on Electrolyte-Insulator-Semiconductor Structure with HfO2-WO3 Double-Oxide Thin Films”, IEEE Sensors, Christchurch, New Zealand, 2009 October 25-28
80. Chao-Sung Lai, Ching-Mie Wu, Cheng-En Lue, Tseng-Fu Lu, **Chia-Ming Yang**, Hsin-Yu Chen, “A Novel Differential LAPS with PVC and HfO2 Sensing Membranes for pH Sensors”, International Conference on Solid State Devices and Materials (SSDM) 2009, Japan, P-11-5.
81. Chao-Sung Lai, Szu-Chieh Wang, Cheng-En Lue, **Chia-Ming Yang** “Single Si3N4 Layer on Dual Substrate for pH Micro Sensor- A novel approach for inorganic ISFET/REFET system”, 2009 Sensors Applications Symposium, US.
82. Chao-Sung Lai, Cheng-En Lue, Yi-Tin Lin, Szu-Chieh Wang, **Chia-Ming Yang**, “Optimization of a novel HfTaO membrane for pH sensing and applied to food industry”, European Materials Research Society 2009 Fall Meeting, 14-18, September, 2009, Warsaw, Poland.
83. Chao-Sung Lai, Cheng-En Lue, Yi-Shun Wang, Huang-Chia Lee, Szu-Chieh Wang, **Chia-Ming Yang**, “Investigation of hysteresis dependent sensitivity on n and p type Si3N4-EIS structures”, European Materials Research Society 2009 Fall Meeting, 14-18, September, 2009, Warsaw, Poland.
84. Cheng-En Lue, Chao-Sung Lai, I-Shun Wang, Huang-Chia Lee, Min-Hsien Wu, **Chia-Ming Yang** and Dorota G. Pijanowska, “Applications of Differential pH Sensors by Hysteresis Effect on the Traps of Si3N4 Sensing Membranes”, 2009 International Electron Devices and Materials Symposia (IEDMS)
85. Cheng-En Lue, Chao-Sung Lai, Wei-Chung Lin, **Chia-Ming Yang**,”Frequency dependences of pH sensitivity and light immunity for single and stacked HfO2 EIS structures”, International Conference on Solid State Devices and Materials (SSDM) 2008, Japan.
86. Chao-Sung Lai, Tseng-Fu Lu, Kuan-I Ho, **Chia-Ming Yang**, and Dorota G. Pijanowska, “Ion selectivity investigation on ISFETs with Si3N4 and HfO2 membranes”, The 6th Asian Conference on Electrochemistry (ACEC), 2008, Taipei, Taiwan.
87. W.Y. Chuang, C.S. Lai, T.F. Lu, **C.M. Yang**, and Y.C. Chen, “Optimization on HfxWyOz Membrane by Co-Sputtering for High pH Sensitivity and Low Light-Induced Shift”, International Symposium on Biomedical Engineering, TaoYuan, Taiwan, 2008, December 12-13.
88. K.I. Ho, C.S. Lai, T.F. Lu, and **C.M. Yang**, “Inorganic Method for Improving the Sensitivity and Selectivity on Sodium and Potassium Ions Detection of Single Layer Hafnium Oxide ISFET”, International Symposium on Biomedical Engineering, Taoyuan, Taiwan, 2008, December 12-13.
89. Tseng-Fu Lu, Chao-Sung Lai, **Chia-Ming Yang**, and Kuan-I Ho, “CF4 Plasma Treatment on HfO2 ISFET for H+, Na+, K+ Ion Sensitivity Improvement”, International Electron Devices and Materials Symposia 2008 (IEDMS 2008), Taichung, Taiwan, November 28-29.
90. Chao-Sung Lai, Ti-Chuan Wang, Tseng-Fu Lu, Po-Ting Lin, and **Chia-Ming Yang**, “High pH sensitivity and low drift HfO2 membrane optimized by N2O plasma and RTA treatments”, The 12th International Meeting on Chemical Sensors, July 13-16, 2008, Columbus, USA.
91. Cheng-En Lue, Chao-Sung Lai, Wei-Chung Lin, and **Chia-Ming Yang**, ”Frequency dependences of pH sensitivity and light immunity for single and stacked HfO2 EIS structures”, International Conference on Solid State Devices and Materials (SSDM) 2008, Tasukaba, Japan.
92. Chao-Sung Lai, Szu-Chieh Wang, Chen-En Lue, **Chia-Ming Yang**, Yi-Ting Lin, “Chemical resistance evaluation on high dielectric constant pH sensing membrane”, The 7th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, 2009, AG02. **-Outstanding Thesis Awards.**
93. Tseng-Fu Lu, Yen-Chih Lin, **Chia-Ming Yang**, Chao-Sung Lai, Dorota. G. Pijanowska, and B. Jaroszewicz “pH Sensing Performance and Electrical Characterization on Hafnium Oxide Gate ISFETs with Single and Dual Stack Insulator by RF Sputtering”, 2007 International Conference on Solid State Devices and Materials (SSDM), Ibaraki, Japan, 2007, September 18-21.
94. T.C. Wang, T.F. Lu, C.H. Chin, C.E. Lue, **C.M. Yang**, Y.C. Fang, L. Hsu, H.C. Wang, and C.S. Lai, “Novel inorganic pH insensitive membrane prepared by post N2O plasma treatment on conventionalSi3N4/SiO2 stack layer for REFET application”, Presented in the International Conference on Solid State Devices and Materials (SSDM), Ibaraki, Japan, 2007, September 18-21.
95. Chao-Sung Lai, Cheng-En Lue, Han-Wei Lu, **Chia-Ming Yang**, and Dorota G. Pijanowska, “ The optimization of PVC membrane for reference electrode field effect transistor “, The 13th Symposium on Sensing Technology, Taiwan, May 26, 2007, 118-121. **-Outstanding Thesis Awards.**
96. Ti-Chuan Wang, Tseng-Fu Lu, Chi-Hang Chin, Cheng-En Lue, **Chia-Ming Yang**, and Chao-Sung Lai, “ Post N2O plasma treatment on silicon nitride membrane for pH-insensitive REFET application.” The 13th Symposium on Sensing Technology, Taiwan, May 26, 2007, 69-72.
97. Chao-Sung Lai, Tseng-Fu Lu, Yen-Chih Lin, **Chia-Ming Yang**, Dorota G. Pijanowska, and Bohdan Jaroszewicz, “Temperature Characteristics on hafnium oxide/silicon oxide gate ion-sensitive field-effect transistor devices”, The 13th Symposium on Sensing Technology, Kaohsiung, Taiwan, 2007, May 26. **-Outstanding Thesis Awards.**
98. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, and Han-Wei Lu,“The optimization of reference FET with organic membrane and inorganic process”, The 6th Annual Meeting of Formosa Group of Companies on Applied Engineering Technology, Taiwan, 2007, AG02. **-Outstanding Thesis Awards.**
99. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, Wei-Chung Lin, Han-Wei Lu , ”Si3N4 membranes for integrated ISFET and REFET application fabricated by thickness and RTA modification”, The 7th East Asian Conference on Chemical Sensors, EACCS 2007, December, 2007, Singapore.
100. Chao-Sung Lai, Tseng-Fu Lu, and **Chia-Ming Yang**, “Fluorine incorporation for improving pH sensitivity and linearity of thin hafnium dioxide sensing layer”, 12th Symposium on Sensing Technology, Taiwan, 2006.
101. Chao-Sung Lai, Ti-Chuan Wang, **Chia-Ming Yang**, and Tseng-Fu Lu, “The Multi-Channel Measurements for pH-Sensitivity and Drift Coefficient of Thin Hafnium Oxide with CF4 Plasma Treatment”, the International Electron Devices and Materials Symposia 2006 (IEDMS 2006), Tainan, Taiwan, December 7-8. **-Outstanding Thesis Awards.**
102. Chao-Sung Lai, **Chia-Ming Yang**, Ti-Chuan Wang, and Tseng-Fu Lu, “Drift and hysteresis behaviors in hafnium oxide with post deposition annealing”, The 11th International Meeting on Chemical Sensors, July 16-19, 2006, Bresica, Italy.
103. Chao-Sung Lai, **Chia-Ming Yang**, and Chih-Yao Wang, “Gadolinium oxide as a new pH sensing membrane and improved by rapid thermal anneal”, The 11th International Meeting on Chemical Sensors, July 16-19, 2006, Bresica, Italy.
104. Dorota G. Pijanowska, **Chia-Ming Yang**, Marek Dawgul, Chao-Sung Lai, and Cheng-En Lue, “The PVC membranes for REFET applications”, The 11th International Meeting on Chemical Sensors, July 16-19, 2006, Bresica, Italy.
105. Chao-Sung Lai, **Chia-Ming Yang**, and Tseng-Fu Lu, “The improvements on pH sensitivity and hysteresis for thin hafnium oxide by CF4 plasma treatment”, The 11th International Meeting on Chemical Sensors, July 16-19, 2006, Bresica, Italy.
106. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, Jui-Hsiu Jao, and Chin-Chien Tai, “ TaOxNy thin films for pH sensing application modified by NH3 plasma treatment and nitrogen incorporate reactive sputtering”, The 11th International Meeting on Chemical Sensors, July 16-19, 2006, Bresica, Italy.
107. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, and Jui-Hsiu Jao, ” Novel process techniques for ISFET/REFET micro chip based on common Si3N4 sensing membrane”, International Conference on Solid State Devices and Materials 2006, Yokohoma, Japan. 790-791.
108. Chao-Sung Lai, **Chia-Ming Yang**, and Tseng-Fu Lu, “The Characterization for HfO2 Sensing Membrane Directly on Silicon”, The 11th Symposium on Chemical Sensing Technology, Chia-Yi, Taiwan, May 28 2005, 5.1-5.3..
109. Chao-Sung Lai, **Chia-Ming Yang**, and Chih-Yao Wang, “The Thickness Effect on pH response fro Si3N4/SiO2 Stacked Sensing Membrane”, The 11th Symposium on Chemical Sensing Technology, Chia-Yi, Taiwan, May 28 2005, 5.4-5.6.
110. **Chia-Ming Yang**, Chao-Sung Lai, Chih-Yao Wang, Cheng-En Lue and Jung-Chuan Chou, Wen-Yaw Chung, and Dorota G. Pijanowska, “The Characterization of stacked α-Si/SiGe/α-Si Sensing Membrane”, Insulating Films on Semiconductors, June 22-24, 2005, Leuven, Belgium, 46-49.
111. Chao-Sung Lai, **Chia-Ming Yang**, and Tseng-Fu Lu, “Thickness Effects on pH response of HfO2 Sensing Dielectric Improved by Rapid Thermal Annealing”, International Conference on Solid State Devices and Materials 2005, Kobe, Japan,80-81.
112. Chao-Sung Lai, **Chia-Ming Yang**, Chih-Yao Wang, and Ti-Chuan Wang,“Ion Polarity Dependent Voltage Shifts of SiGe Membrane for pH Sensor”, International Conference on Solid State Devices and Materials 2005, Kobe, Japan, 824-825.
113. Chao-Sung Lai, **Chia-Ming Yang**, Hung-Pin Ko, Cheng-En Lue, T.F. Lue, and Chih-Yao Wang , “A Novel Approach for the Drift Mechanisms of EGFET by Post-Baking Treatments”, The 10th International Meeting on Chemical Sensors, July 11-14, 2004, Tsukuba, Japan, 840-841, NSC92-2218-E-182-008
114. Chao-Sung Lai, **Chia-Ming Yang**, Chih-Yao Wang, Cheng-En Lue, Hung-Pin Ko, T.F. Lue, and T.M. Wang, “The Surface Site De-hydration Mechanism for Si3N4 Sensing Membrane by Post-Baking Treatment”, 2004 International Conference on Semiconductor Electronics, December 7-9, 2004, Kuala Lumpur, 298-301.
115. Chao-Sung Lai, **Chia-Ming Yang**, Cheng-En Lue, Hung-Pin Ko, Chih-Yao Wang, T.F. Lue, and T.M. Wang, “Nitrogen Effects on the Sensitivity of Tantalum Nitride (TaxN) for Ion Sensing Devices”, 2004 International Conference on Semiconductor Electronics, December 7-9, 2004, Kuala Lumpur, 302-305.
116. Chao-Sung Lai, **Chia-Ming Yang**, T.F. Lue, Hung-Pin Ko, Cheng-En Lue, Chih-Yao Wang, and T.M. Wang, “Ion Sensing Improvements of Hafnium Oxide by Nitrogen Incorporation”, 2004 International Conference on Semiconductor Electronics, December 7-9, 2004, Kuala Lumpur, 569-572.
117. Chao-Sung Lai, **Chia-Ming Yang**, Zhe-Yi Wang, Woei-Cherng Wu, and Cheng-En Lue, “Study on the Area and Anneal Characteristics of Tin Oxide in EIS and EGFET”, The 9th Symposium on Chemical Sensing Technology, CGU, Tao-Yuan, Taiwan, May 2 2003, 43-46, NSC91-2215-E-182-003
118. Chao-Sung Lai, **Chia-Ming Yang**, Zhe-Yi Wang, Woei-Cherng Wu, and Cheng-En Lue, “The Ion Sensitive Property of Hafnium Oxide”, The 9th Symposium on Chemical Sensing Technology, CGU, Tao-Yuan, Taiwan, May 2 2003, 39-42, NSC91-2215-E-182-003
119. **Chia-Ming Yang**, Chao-Sung Lai, Zhe-Yi Wang, Woei-Cherng Wu, and Cheng-En Lue, “A New Ion Sensing Measurement Holder for Solid-state Devices”, The 10th Symposium on Nano Device Technology (SNDT2003), NCTU, Hsin-Chu, Taiwan, May14-15 2003, NSC 91-2215-E-182-003
120. Huang Ping-Zou, Huang Yu-Chung, and **Chia-Ming Yang**, “A new approach to anisotropic etch”, Microsystems Technology 2001, NSC89-2218-E-009-007

**Patent  
ROC Patent中華民國發明獲證**

1. **楊家銘**、蕭智元，” 監控深溝槽型動態隨機存取記憶體之閘極與深溝槽相對距離變異之結構及其方法”，中華民國專利發明第I373102號，華亞科技，(20120921~ 20280708)
2. 賴朝松、呂承恩、**楊家銘**、王思婕，”感測場效電晶體裝置”，中華民國專利發明 第I414787號 ，，(20131111~20290525)
3. 賴朝松、吳清美、呂承恩、**楊家銘**，”具有雙膜差動結構之場效型離子感測裝置”，中華民國專利發明第I452290號，，(20140911~20291125)
4. **楊家銘**、王耀賢、魏振剛、李建錡、嚴子明、莊弋緯、江孝龍、廖鴻昌、李中元、趙明琪，” 具有摻質停止層的動態隨機存取記憶體及其製作方法”，中華民國專利發明第I455248 號，華亞科技，(20141001~20310505)
5. 辜亞敏、何瑞克、達塔達文西庫馬爾、周健華、**楊家銘**、李建錡、余瑞德，”動態隨機存取記憶體的淺溝槽隔絕結構及其製造方法，中華民國專利發明第I447859 號，華亞科技，(20141001~20310505)
6. 賴朝松、華沐怡、蘇聖凱、陳世亮、**楊家銘**、王哲麒、阮騰緯，” 離子感測裝置及其製作方法“，中華民國專利發明第I479146號， (20150401~20330312)
7. 賴朝松、**楊家銘**、Anirban Das、陳琮誠，”光定址電位感測器“，中華民國專利發明第I487902 號，(20150611~20331023)

**US patent美國專利獲證**

1. Chao-Sung Lai, Cheng-En Lue, **Chia-Ming Yang**, Szu-Chieh Wang, “Sensitive Field Effect Transistor Apparatus” US. Patent.US 8410530B2 (20130402~)

**中華民國發明申請中**

1. 李建錡、**楊家銘**、李偉平、陳昕輝、蕭智元、高平、江凱崙、賴朝松、王哲麒，”具有凹入式閘極結構之記憶體單元及其製作方法“，中華民國專利發明審查中(公開號: 201442078)
2. 何瑞克、**楊家銘**、崔振遠，” 晶圓及用此結構的晶圓鍍膜的方法“，中華民國專利發明審查中(公開號: 201435982)
3. 賴朝松、**楊家銘**、陳琮誠、林瑋哲、劉徽齡，”氣體感測器“，中華民國專利發明審查中(申請號: 104101646)
4. 賴朝松、**楊家銘**、廖元暉、陳琮誠，” 光定址電位感測器“，中華民國專利發明審查中(申請號: 104101645)
5. 賴朝松、**楊家銘**、陳軍暉、陳琮誠，” 光定址電位感測元件“，中華民國專利發明審查中(申請號:104142537)