**Publication List**

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**Total Citations > 1414 H-index: 21 i10-index: 35**

***SCI Journal***

1. Chun-Pin Huang, Muzafar Ahmad Rather, Chien-Ting Wu, Ravi Loganathan, Ying-Hao Ju, Kun-Lin Lin, Jen-Inn Chyi, and **Kun-Yu Lai\***, “[Crystal Transformation of Cubic BN Nanoislands to Rhombohedral BN Sheets on AlN for Deep-UV Light-Emitting Diodes](https://pubs.acs.org/doi/full/10.1021/acsanm.0c00681)”,  *ACS Appl. Nano Mater.* **3**, 5285 (2020).
2. Chun-Pin Huang, Kapil Gupta, Chuan-Pu Liu, and **Kun-Yu Lai\***, “[Ultra-flat AlN grown with a pulsed H2 etching condition](http://iopscience.iop.org/article/10.7567/1882-0786/aaf5c2)”, *Appl. Phys. Express* **12**, 015509(2019). (SCI 2018 IF: 2.772, 46/148 in PHYSICS, APPLIED)
3. Fan-Ching Chien, Jen-Long Lo, Xingwang Zhang, Ertugrul Cubukcu, Yu-Tang Luo, Kai-Lin Huang, Xiaofang Tang|, Chien-Sheng Chen, Chii-Chang Chen, and **Kun-Yu Lai\***, “[Nitride-based microarray biochips: A new route of plasmonic imaging](https://pubs.acs.org/doi/10.1021/acsami.8b14962)”, *ACS Appl. Mater. Interfaces* **10**, 39898 (2018). (SCI 2018 IF: 8.456, 27/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
4. Meng-Cheng Chou, Chia-Yi Lin, Bo-Lin Lin, Chang-Han Wang, Shih-Hui Chang, Wei-Chih Lai, **Kun-Yu Lai**, and Yun-Chorng Chang\*, “[Polarization-Selecting III-Nitride Elliptical Nanorod Light-Emitting Diodes Fabricated with Nanospherical-Lens Lithography](https://cdn-pubs.acs.org/doi/10.1021/acsnano.8b04933)”, *ACS Nano* **12**, 8748 (2018) (SCI 2018 IF: 13.903, 18/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)

1. Tsung-Hsun Yang, Shin-Mei Wu, Ching-Cherng Sun\*, Benoit Glorieux, Ching-Yi Chen, Yu-Yu Chang, Xuan-Hao Lee, Yeh-Wei Yu, Te-Yuan Chung, and **Kun-Yu Lai**, “[Stabilizing CCT in pcW-LEDs by self-compensation between excitation efficiency and conversion efficiency of phosphors](https://www.osapublishing.org/oe/abstract.cfm?uri=oe-25-23-29287)”, *Optics Express* **25**, 29287 (2017) (SCI 2018 IF: 3.561, 20/95 in Optics)
2. Ming-Jui Lee, Wei-Ting Lin, Chun-Pin Huang, Sheng-Hui Chen, and **Kun-Yu Lai\***, “[Self-assembly semipolar AlN nanopyramids grown on powder-compressed AlN substrates](http://onlinelibrary.wiley.com/doi/10.1002/pssa.201700127/abstract)”, *Phys. Status Solidi A* **214** 1700127 (2017) (SCI 2018 IF = 1.606, 199/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
3. Chun-Pin Huang, Kapil Gupta, Chao-Hung Wang, Chuan-Pu Liu, and **Kun-Yu Lai\***, “[High-quality AlN grown with a single substrate temperature below 1200 ºC](https://www.nature.com/articles/s41598-017-07616-8)”, *Scientific Reports* **7**, 7135 (2017) (SCI 2018 IF: 4.011, 15/69 in MULTIDISCIPLINARY SCIENCES)
4. Chuan-Pei Lee, **Kun-Yu Lai**, Chin-An Lin, Chun-Ting Li, Kuo-Chuan Ho, Chih-I Wu, Shu-Ping Lau, Jr-Hau He\*, “[A paper-based electrode using a graphene dot/PEDOT:PSS composite for flexible solar cells](http://www.sciencedirect.com/science/article/pii/S221128551730246X)”, *Nano Energy* **36**, 260 (2017) (SCI 2018 IF: 15.548, 16/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
5. Li-Ko Yeh, Wei-Cheng Tian, **Kun-Yu Lai\*** and Jr-Hau He\*, “[Exceptionally omnidirectional broadband light harvesting scheme for multi-junction concentratorsolar cells achieved *via* ZnO nanoneedles](http://www.nature.com/articles/srep39134)”, *Scientific Reports* **6**, 39134 (2016) (SCI 2018 IF: 4.011, 15/69 in MULTIDISCIPLINARY SCIENCES)
6. Yu-Lin Tsai, **Kun-Yu Lai\***, Ming-Jui Lee, Yu-Kuang Liao, Boon S. Ooi\*, Hao-Chung Kuo\* and Jr-Hau He\*, “[Photon management of GaN-based optoelectronic devices *via* nanoscaled phenomenon](http://www.sciencedirect.com/science/article/pii/S0079672716300167)”, *Progress in Quantum Electronics* **49**, 1 (2016) (SCI 2018 IF: 5.105, 34/266 in ENGINEERING, ELECTRICAL & ELECTRONIC)
7. Amal M. Al-Amri, Po-Han Fu, **Kun-Yu Lai\***, Hsin-Ping Wang, Lain-Jong Li\* and Jr-Hau He\*, “[Efficiency Enhancement of InGaN-Based Solar Cells via Stacking Layers of Light-Harvesting Nanospheres](http://www.nature.com/articles/srep28671)”, *Scientific Reports* **6**, 28671 (2016) (SCI 2018 IF: 4.011, 15/69 in MULTIDISCIPLINARY SCIENCES)
8. Chin-An Lin, Meng-Lin Tsai, Wan-Rou Wei, **Kun-Yu Lai\*** and Jr-Hau He\*, “[Packaging Glass with a Hierarchically Nanostructured Surface: A Universal Method to Achieve Self-Cleaning Omnidirectional Solar Cells](http://pubs.acs.org/doi/full/10.1021/acsnano.5b05564)”, *ACS Nano* **10**, 549 (2016) (SCI 2018 IF: 13.903, 18/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY) (Reported by *Nature Nanotechnology*, *ScienceDaily*, *The Daily Californian*, etc.)
9. Chao‐Hung Wang, **Kun‐Yu Lai**, Yi‐Chang Li, Yen‐Chih Chen and Chuan‐Pu Liu\*, “[Ultrasensitive Thin‐Film‐Based AlxGa1−xN Piezotronic Strain Sensors *via* Alloying‐Enhanced Piezoelectric Potential](http://onlinelibrary.wiley.com/wol1/doi/10.1002/adma.201502314/abstract)”, *Advanced Materials* **27**, 6289 (2015) (SCI 2018 IF: 25.809, 5/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
10. Jui-Wei Hus, Chien-Chia Chen, Ming-Jui Lee, Hsueh-Hsing Liu, Jen-Inn Chyi, Michael R. S. Huang, Chuan-Pu Liu, Tzu-Chiao Wei, Jr-Hau He and **Kun-Yu Lai**\*, “[Bottom-Up Nano-heteroepitaxy of Wafer-Scale Semipolar GaN on (001) Si](http://onlinelibrary.wiley.com/wol1/doi/10.1002/adma.201501538/abstract)”, *Advanced Materials* **27**, 4845 (2015) (SCI 2018 IF: 25.809, 5/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
11. Guan-Jhong Lin, Tien-Jung Chen\*, Ming-Jui Lee, Jin-Jei Wu, **Kun-Yu Lai** and Ying-Jay Yang, “[Effect of Crosslinking Polymer Networks on the Molecular Reorientation and Electro-Optical Performance of In-Plane Switching Vertically Aligned Liquid Crystal Devices](http://onlinelibrary.wiley.com/doi/10.1002/polb.23744/abstract)”, *J. Polym. Sci. B* **53**, 1123 (2015) (SCI 2018 IF: 2.596, 29/87 in Polymer Science)
12. Jen-Hsiung Liao, Hsiao-Wei Huang, Lung-Chieh Cheng, Hsueh-Hsing Liu, Jen-Inn Chyi, Dong-Po Cai, Chii-Chang Chenand **Kun-Yu Lai\***, “[Yellow-emitting Si-doped GaN: Favorable characteristics for intermediate band solar cells](http://www.sciencedirect.com/science/article/pii/S092702481400539X)”, *Sol. Ener. Mater. Sol. Cells* **132**, 544 (2015) (SCI 2018 IF: 6.019, 48/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
13. **K. Y. Lai**, G. J. Lin, Yuh-Renn Wu, Meng-Lun Tsai and Jr-Hau He\*, “[Efficiency dip observed with InGaN-based multiple quantum well solar cells](http://www.opticsinfobase.org/oe/fulltext.cfm?uri=oe-22-S7-A1753&id=303533)”, *Optics Express* **22**, A1753 (2014) (SCI 2018 IF: 3.561, 20/95 in Optics)
14. Ren-Jei Chung\*, Zih-Cian Lina, Chin-An Lin and **Kun-Yu Lai**, “[Study of an antireflection surface constructed of controlled ZnO nanostructures](http://www.sciencedirect.com/science/article/pii/S0040609014001710)”, *Thin Solid Films* **570**, 504 (2014) (SCI 2018 IF: 1.888, 174/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
15. Po-Han Fu, Guan-Jhong Lin, Hsin-Ping Wang, **Kun-Yu Lai**\* and Jr-Hau He\*, “[Enhanced light extraction of light-emitting diodes *via* nano-honeycomb photonic crystals](http://www.sciencedirect.com/science/article/pii/S2211285514000822)”, *Nano Energy* **8**, 78 (2014) (SCI 2018 IF: 15.548, 16/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
16. Hsin-Ping Wang, Der-Hsien Lien, Meng-Lin Tsai, Chin-An Lin, Hung-Chih Chang, **Kun-Yu Lai** and Jr-Hau He\*, “[Photon management in nanostructured solar cells](http://pubs.rsc.org/en/content/articlelanding/2014/tc/c3tc32067g#!divAbstract)”, *J. Mater. Chem. C,* **2**, 3144 (2014) (SCI 2018 IF: 6.641, 44/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
17. G.J. Lin, H.P. Wang, D.H. Lien, P.H. Fu, H.C. Chang, C.H. Ho, C.A. Lin, **K.Y. Lai** and Jr-Hau He\*, “[A broadband and omnidirectional light-harvesting scheme employing nanospheres on Si solar cells](http://www.sciencedirect.com/science/article/pii/S2211285514000330)”, *Nano Energy* **6**, 36 (2014) (SCI 2018 IF: 15.548, 16/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
18. Meng-Lun Tsai and **Kun-Yu Lai\***, “[Ceramic-based thin-film blue LEDs with high operation voltage and unsaturated output power at 1800W/cm2](http://iopscience.iop.org/1882-0786/7/2/022103)”, *Appl. Phys. Express* **7**, 022103 (2014) (SCI 2018 IF: 2.772, 46/148 in PHYSICS, APPLIED) (Reported by *Semiconductor-Today*.)
19. C.H. Ho, Y.H. Hsiao, D.H. Lien, M. S. Tsai, D. Chang, **K.Y. Lai**, C.C. Sun and J.H. He\*, “[Enhanced light-extraction from hierarchical surfaces consisting of p-GaN microdomes and SiO2 nanorods for GaN-based light-emitting diodes](http://scitation.aip.org/content/aip/journal/apl/103/16/10.1063/1.4824848)”, *Appl. Phys. Lett.* **103**, 161104 (2013) (SCI 2018 IF: 3.521, 31/148 in PHYSICS, APPLIED)
20. M. L. Tsai, J. H. Liao, J. H. Yeh, T. C. Hsu, S. J. Hon, T. Y. Chung and **K. Y. Lai\***, “[High-voltage thin-film GaN LEDs fabricated on ceramic substrates: the alleviated droop effect at 670 W/cm2](http://www.opticsinfobase.org/oe/abstract.cfm?uri=oe-21-22-27102)”, *Optics Express* **21**, 27102 (2013) (SCI 2018 IF: 3.561, 20/95 in Optics)
21. Yen-Ju Wu, Yen-Shuo Liu, Chih-Yi Hsieh, Po-Ming Lee, Yu-Shan Wei, You-Hsien Chang, **Kun-Yu Lai** and Cheng-Yi Liu\*, “[Light extraction enhancement of vertical LED by growing ZnO nano-rods on tips of pyramids](http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6573355)”, *IEEE Photonics Technol. Lett.* **25**, 1774 (2013) (SCI 2018 IF: 2.553, 119/266 in ENGINEERING, ELECTRICAL & ELECTRONIC)
22. Ren-Jei Chung\*, Zih-Cian Lin, Po-Kang Yang, **Kun-Yu Lai**, Shou-Feng Jen and Po-Wen Chiu, “[Hybrid ZnO NR/graphene structures as advanced optoelectronic devices with high transmittance](http://link.springer.com/article/10.1186%2F1556-276X-8-350#page-1)”, *Nanoscale Research Letters* **8**, 350 (2013) (SCI 2018 IF: 3.125, 95/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
23. C. Y. Liu, C. C. Lai, J. H. Liao, L. C. Cheng, H. H. Liu, C. C. Chang, G. Y. Lee, J.-I. Chyi, L. K. Yeh, J. H. He, T. Y. Chung, L. C. Huangand **K. Y. Lai\***, “[Nitride-based concentrator solar cells grown on Si substrates](http://www.sciencedirect.com/science/article/pii/S0927024813002262)”, *Sol. Ener. Mater. Sol. Cells* **117**, 54 (2013) (SCI 2018 IF: 6.019, 48/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
24. Cheng-Han Ho, Der-Hsien Lien, Hung-Chih Chang, Chin-An Lin, Chen-Fang Kang, Meng-Kai Hsing, **Kun-Yu Lai** and Jr-Hau He\*, “[Hierarchical Structures Consisting of SiO2 Nanorods and p-GaN Microdomes for Efficiently Harvesting Solar Energy for InGaN Quantum Well Photovoltaic Cells](http://pubs.rsc.org/en/content/articlelanding/2012/nr/c2nr32746e#!divAbstract)”, *Nanoscale* **4**, 7346 (2012) (SCI 2018 IF: 6.970, 41/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
25. C.A. Lin, **K.Y. Lai**, W.C. Lien and J.H. He\*, “[An efficient broadband and omnidirectional light-harvesting scheme employing the hierarchical structure based on ZnO nanorod/Si3N4-coated Si microgroove on 5-inch single crystalline Si solar cells](http://pubs.rsc.org/en/content/articlelanding/2012/nr/c2nr32358c#!divAbstract)”, *Nanoscale* **4**, 6520 (2012) (SCI 2018 IF: 6.970, 23/275 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
26. C. H. Ho, **K. Y. Lai**, C. A. Lin, M. K. Hsing and J. H. He\*, “[Microdome InGaN-based multiple quantum well solar cells](http://scitation.aip.org/content/aip/journal/apl/101/2/10.1063/1.4734380)”, *Appl. Phys. Lett.* **101**, 023902 (2012) (SCI 2018 IF: 3.521, 31/148 in PHYSICS, APPLIED)
27. C. H. Ho, G. J. Lin, P. H. Fu, C. A. Lin, P. C. Yang, **K. Y. Lai** and J. H. He\*, “[An efficient light-harvesting scheme using SiO2 nanorods for InGaN multiple quantum well solar cells](http://www.sciencedirect.com/science/article/pii/S0927024812001638)”, *Sol. Ener. Mater. Sol. Cells* **103**, 194 (2012) (SCI 2018 IF: 6.019, 48/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
28. **Kun-Yu Lai**, Hung-Chih Chang, Yu-An Dai and Jr-Hau He\*, “[Photon management with core-shell nanowire structures](http://www.opticsinfobase.org/oe/abstract.cfm?uri=oe-20-s2-a255)”, *Optics Express* **20**, A255 (2012) (SCI 2018 IF: 3.561, 20/95 in Optics)
29. Cheng-Ying Chen, Jun-Han Huang, **Kun-Yu Lai**, Yi-Jun Jen, Chuan-Pu Liu and Jr-Hau He\*, “[Giant optical anisotropy of oblique-aligned ZnO nanowire arrays](http://www.opticsinfobase.org/oe/abstract.cfm?uri=oe-20-3-2015)”, *Optics Express* **20**, 2015 (2012) (SCI 2018 IF: 3.561, 20/95 in Optics)
30. P. H. Fu, G. J. Lin, C. H. Ho, C. A. Lin, C. F. Kang, Y. L. Lai, **K. Y. Lai** and J. H. He\*, “[Efficiency enhancement of InGaN multi-quantum-well solar cells via light-harvesting SiO2 nano-honeycombs](http://scitation.aip.org/content/aip/journal/apl/100/1/10.1063/1.3673838)”, *Appl. Phys. Lett.* **100**, 013105 (2012) (SCI 2018 IF: 3.521, 31/148 in PHYSICS, APPLIED) (Reported by the January 16, 2012 issue of Virtual Journal of Nanoscale Science & Technology)
31. G. J. Lin, **K. Y. Lai**, C. A. Lin and J. H. He\*, “[Solar energy harvesting scheme using syringe-like ZnO nanorod arrays for InGaN/GaN multiple quantum well solar cells](http://www.opticsinfobase.org/ol/abstract.cfm?uri=ol-37-1-61)”, *Optics Lett.* **37**, 61 (2012)(SCI 2018 IF = 3.866, 16/95 in OPTICS)
32. H. P. Wang, K. T. Tsai, **K. Y. Lai**, T. C. Wei, Y. L. Wang and J. H. He\*, “[Periodic Si Nanowire Arrays by Anodic Aluminum Oxide Template and Catalytic Etching for Broadband Omnidirectional Light Harvesting](http://www.opticsinfobase.org/oe/abstract.cfm?uri=oe-20-S1-A94)”, *Optics Express* **20**, A94 (2012) (SCI 2018 IF: 3.561, 20/95 in Optics)
33. **K. Y. Lai\***, T. Paskova, V. D. Wheeler, T. Y. Chung, J. A. Grenko, M. A. L. Johnson, K. Udwary, E. A. Preble and K. R. Evans, “[Indium incorporation in InGaN/GaN quantum wells grown on m-plane GaN substrate and c-plane sapphire](http://onlinelibrary.wiley.com/doi/10.1002/pssa.201127345/abstract)”, *Phys. Status Solidi A* **209***,* 559 (2012). (SCI 2018 IF = 1.606, 199/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
34. Cheng-Ying Chen, **Kun-Yu Lai**, Jian-Wei Lo, Chin-An Lin, Shu-Hsien Chiu, Yen-Chun Chao and Jr-Hau He\*, “[Electronic Structures of Well-Aligned Er-Doped ZnO Nanorod Arrays](http://www.ingentaconnect.com/content/asp/jnn/2011/00000011/00000012/art00061?token=004319460d7fdbf847e2a46762c6b792148703f707b232b6d2d673f582f47b99a61)”, *J. Nanosci. Nanotechnol.* **11**, 10615 (2011) (SCI 2018 IF: 1.093, 245/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
35. G. J. Lin, **K. Y. Lai**, C. A. Lin, Y.-L. Lai and J. H. He\*, “[Efficiency enhancement of InGaN-based multiple quantum well solar cells employing antireflective ZnO nanorod arrays](http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5930323&tag=1)”, *IEEE Electron Device Lett.,* **32**, 1104 (2011). (SCI 2018 IF = 3.753, 62/266 in ENGINEERING, ELECTRICAL & ELECTRONIC)
36. L. K. Yeh, **K. Y. Lai**, G. J. Lin, P. H. Fu, H.-C. Chang, C. A. Lin and J. H. He\*, “[Giant efficiency enhancement of GaAs solar cells with graded antireflection layers based on syringe-like ZnO nanorod arrays](http://onlinelibrary.wiley.com/doi/10.1002/aenm.201190019/abstract)”, *Adv. Energy Mater.* **1**, 506 (2011). (SCI 2018 IF = 24.884, 6/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
37. Hung-Chih Chang, **Kun-Yu Lai**, Yu-An Dai, Hsin-Hua Wang, Chin-An Lin and Jr-Hau He\*, “[Nanowire Arrays with Controlled Structure Profiles for Maximizing Optical Collection Efficiency](http://pubs.rsc.org/en/content/articlelanding/2011/ee/c0ee00595a#!divAbstract)”, *Energy Environ. Sci.*, **4**, 2863 (2011). (SCI 2018 IF = 33.250, 1/251 in ENVIRONMENTAL SCIENCES)
38. **K. Y. Lai**, G. J. Lin, C.-Y. Chen, Y.-L. Lai and J. H. He\*, “[Origin of Hot Carriers in InGaN-based Quantum Well Solar Cells](http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=5671457)”, *IEEE Electron Device Lett.* **32**, 179 (2011). (SCI 2018 IF = 3.753, 62/266 in ENGINEERING, ELECTRICAL & ELECTRONIC)
39. **K. Y. Lai**, Y.-R. Lin, H.-P. Wang and J.H. He\*, “[Synthesis of Antireflective and Hydrophobic Si Nanorod Arrays by Colloidal Lithography and Reactive Ion Etching](http://pubs.rsc.org/en/content/articlelanding/2011/ce/c0ce00168f#!divAbstract)”, *CrystEngComm* **13**, 1014 (2011). (SCI 2018 IF = 3.382, 59/172 in CHEMISTRY, MULTIDISCIPLINARY)
40. Yu-An Dai, Hung-Jr Chang, **Kun-Yu Lai**, Chin-An Lin, Gong-Ru Lin and Jr-Hau He\*, “[Subwavelength Si Nanowire Arrays for Self-Cleaning Antireflection Coatings](http://pubs.rsc.org/en/Content/ArticleLanding/2010/JM/c0jm00524j#!divAbstract)”, *J. Mater. Chem.* **20**, 10924 (2010). (SCI 2013 IF = 6.626, 22/251 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
41. Y.-R. Lin, **K. Y. Lai**, H.-P. Wang and J. H. He\*, “[Slope-Tunable Si Nanorod Arrays with Enhanced Antireflection and Self-Cleaning Properties](http://pubs.rsc.org/en/content/articlelanding/2010/nr/c0nr00402b#!divAbstract)”, *Nanoscale* **2**, 2765 (2010). (SCI 2018 IF: 6.970, 41/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
42. H. P. Wang, **K. Y. Lai**, Y. R. Lin, C. A. Lin and J. H. He\*, “[Periodic Si Nanopillar Arrays Fabricated by Colloidal Lithography and Catalytic Etching for Broadband and Omnidirectional Elimination of Fresnel Reflection](http://pubs.acs.org/doi/abs/10.1021/la1012507)”, *Langmuir* **26**, 12855 (2010). (SCI 2018 IF = 3.683, 76/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
43. **K. Y. Lai**, G. J. Lin, Y.-L. Lai, Y. F. Chen and J. H. He\*, “[Effect of indium fluctuation on the photovoltaic characteristics of InGaN/GaN multiple quantum well solar cells](http://scitation.aip.org/content/aip/journal/apl/96/8/10.1063/1.3327331)”, *Appl. Phys. Lett.* **96**, 081103 (2010). (SCI 2018 IF: 3.521, 31/148 in PHYSICS, APPLIED in PHYSICS, APPLIED)
44. **K. Y. Lai\***, T. Paskova, V. D. Wheeler, J. A. Grenko, M. A. L. Johnson, K. Udwary, E. A. Preble and K. R. Evans, “[Effect of m-plane GaN substrate miscut on InGaN/GaN quantum well growth](http://www.sciencedirect.com/science/article/pii/S0022024810000345)” *J. Crystal Growth* **312**, 902 (2010). (SCI 2018 IF = 1.573, 203/293 in MATERIALS SCIENCE, MULTIDISCIPLINARY)
45. **K. Y. Lai\***, T. Paskova, V. D. Wheeler, J. A. Grenko, M. A. L. Johnson, D. W. Barlage, K. Udwary, E. A. Preble and K. R. Evans, “[Excitation current dependent cathodoluminescence study of InGaN/GaN quantum wells grown on m-plane and c-plane GaN substrates](http://scitation.aip.org/content/aip/journal/jap/106/11/10.1063/1.3264729)”, *J. Appl. Phys.* **106***,* 113104 (2009). (SCI 2018 IF = 2.328, 59/148 in PHYSICS, APPLIED)

***International Conference***

1. Fan-Ching Chien, Jen-Long Lo, Xingwang Zhang, Ertugrul Cubukcu, Yu-Tang Luo, Kai-Lin Huang, Xiaofang Tang|, Chien-Sheng Chen, Chii-Chang Chen, and **Kun-Yu Lai\***, “A plasmonic biosensor built with InGaN quantum wells”, *International Workshop on Nitride Semiconductors, Kanazawa, Japan, 2018.*
2. Chun-Pin Huang, Kapil Gupta, Chuan-Pu Liu, and **Kun-Yu Lai\***, “Crystal Quality of AlN Film Improved by Low-Temperature Annealing at H2 and NH3 Atmosphere”, *International Workshop on Nitride Semiconductors, Kanazawa, Japan, 2018.*
3. **K. Y. Lai\***, “Nitride-based Surface Plasmon Resonance Biosensors”, *MRS Spring Meeting, Phoenix, USA, 2017.*
4. **K. Y. Lai\***, “Label-Free Biosensors Built with Nitride-based Surface Plasmon Resonance”, *Materials Science-2016, Dubai, UAE, 2016.* **(Invited Speech)**
5. Cheng Han Wu and **K. Y. Lai\***, “P-type GaN Achieved *via* Zn Diffusion from the ZnO Buffer Layer on Si Substrates”, *The 11th International Conference on Nitride Semiconductors, Beijing, China, 2015.*
6. Ming-Jui Lee, **Kun-Yu Lai\***, Wei-Ting Lin, Sheng-Hui Chen, Sung-Cheng Hu, Wan-Xuan Peng, Yung-Tien Lu, “Epitaxial Growth of AlN Nano-pyramids on Powder AlN Substrates”, *The 11th International Conference on Nitride Semiconductors, Beijing, China, 2015.*
7. Chun-Pin Huang, Ko-Chen Li, Bo-Rong Lin, Yi-Keng Fu, Jen-Inn Chyi and **Kun-Yu Lai\***, “N-type and P-type AlGaN Epitaxial Layers for Ultraviolet LEDs”, *The 11th International Conference on Nitride Semiconductors, Beijing, China, 2015.*
8. **K. Y. Lai\*** “Bottom-up nanoheteroepitaxy of GaN on Si”, *The Collaborative Conference on Crystal Growth, Phuket, Thailand, 2014.* **(Invited Speech)**
9. M. L. Tsai, J. H. Yeh, T. C. Hsu and **K. Y. Lai\*** “Optimization of high-voltage thin-film GaN LEDs on ceramic substrates”, *The 14th International Symposium on the Science and Technology of Lighting, Spazio Como, Italy, 2014.*
10. Jen-Hsiung Liao, **Kun-Yu Lai\***, Lung-Chieh Cheng, Hsueh-Hsing Liu, Jen-Inn Chyi, Hsiao-Wei Huang, “GaN-based intermediate band solar cells realized via the yellow-emitting impurity level”, *International Conference of Nitride Semiconductors, Washington – DC, USA, 2013.*
11. **K. Y. Lai\*,** C. Y. Liu, H. H. Liu, C. C. Chang, L. C. Cheng, G. Y. Lee, J.-I. Chyi, L. K. Yeh, J. H. He, T. Y. Chung, J. H. Liao, C. C. Lai and L. C. Huang, “InGaN quantum-well solar cells grown on Si substrate”, *International Workshop on Nitride Semiconductors, Sapporo, Japan, 2012.*
12. **K. Y. Lai\***, “InGaN Quantum-Well Solar Cells Grown on Si Substrate”, *Annual Seminar of* *Asia-Pacific Academy of Materials, Novosibirsk, Russia, 2012.* **(Invited Speech)**
13. **K. Y. Lai\*,** H. C. Chang, H. P. Wang, C. A. Lin, L. K. Yeh and Jr-Hau He, “Antireflective Nanostructures for Maximizing Optical Collection Efficiency of Photovoltaic Devices”, *2nd Nano Today Conference, Hawaii, USA, 2011.*
14. **K. Y. Lai\***, M. A. L. Johnson, T. Paskova, A. D. Hanser, K. Udwary, E. A. Preble and K. R. Evans, “Cathodoluminescence evaluation of subsurface damage in GaN substrate after polishing”, *Phys. Stat. Sol. (c)* **6**, S325 (2009). *International Workshop on Nitride Semiconductors, Montreux, Switzerland, 2008.*
15. **K. Y. Lai\***, V. D. Wheeler, J. A. Grenko, M. A. L. Johnson, A. D. Hanser, E. A. Preble, L. Liu, T. Paskova and K. R. Evans, “Enlargement of bulk non-polar GaN substrates by HVPE regrowth”, *Phys. Stat. Sol. (c)* **5**, 1886 (2008). *International Conference of Nitride Semiconductors, Las Vegas, USA, 2007.*
16. **Kun-Yu Lai**, Judith A. Grenko, V. D. Wheeler, Mark Johnson, E. A. Preble, N. Mark Williams and A. D. Hanser, “Characterization of Non-Polar Surfaces in HVPE Grown Gallium Nitride”, *Mater. Res. Soc. Symp. Proc.* **955**, 0955-I09-05 (2007). *MRS Fall Meeting, Boston, USA, 2006.*

***Book chapters and others***

1. **賴昆佑**, 何志浩, “電子材料導論” 第9章 LED元件材料 高立圖書 (2013) ISBN: 978-986-412-927-0
2. J.R.D. Retamal, C.Y. Chen, **K.Y. Lai** and J.H. He, "ZnO-based nanostructures," Chapter 4 in Handbook of Zinc Oxide and Related Materials: Volume Two, Devices and Nano-Engineering, Taylor & Francis Group (2012) ISBN: 978-143-985-574-4
3. **賴昆佑**, 林冠中, 何政翰, 傅伯翰, 何志浩, “氮化物太陽能電池” 電子資訊 第17卷第1期 (2011)

***Patents***

1. United States Patent 9,261,627, **“Zinc oxide anti-reflection layer having a syringe-like structure and method for fabricating the same”**, May 23, 2013
2. United States Patent 7,157,293, **“Method for making a semiconductor light emitting device”**, February 23, 2005
3. **中華民國發明專利 第I234301號**¸“**發光二極體之製程**”, June 11, 2005
4. **中華民國發明專利 第I233222號**¸ “**發光二極體之製程**”, May 21, 2005