

# Publication List

## I. International Journal Papers:

1. A.-S. Sadhu, **L.-Y. Chen\***, Y.-H. Pai, C.-A. Hsieh, H.-W. Lin, C.-W. Chow, H.-C. Kuo\*. High-Speed Visible Light Communication Using Phenothiazine/Dimesitylborane Derivatives as Color Conversion Materials in Semipolar Micro-LED-Based White-Light Systems. *ACS Photonics*, 11, 2, 489-497 (2024)
2. P.-W. Ho, C.-H. Cheng, Y.-S. Liao, Y.-C. Chi, A.-S. Sadhu, A. Matsumoto, K. Akahane, **L.-Y. Chen**, H.-C. Kuo, G.-R. Lin\*. Blue micro-LED with a red/green blended polymer film for 3.5-Gbps visible light communication employing adaptive SNR-Flattening Algorithm. *Next Nanotechnology*, 5, 100043 (2024)
3. C.-A. Hsieh, G.-H. Tan, Y.-T. Chuang, H.-C. Lin, P.-T. Lai, P.-E. Jan, B.-H. Chen, C.-H. Lu, S.-D. Yang, K.-Y. Hsiao, M.-Y. Lu, **L.-Y. Chen\***, H.-W. Lin\*. Vacuum-deposited inorganic perovskite light-emitting diodes with external quantum efficiency exceeding 10% via composition and crystallinity manipulation of emission layer under high vacuum. *Advanced Science*, 2206076 (2023)
4. A.-S. Sadhu, Y.-H. Pai, **L.-Y. Chen\***, C.-A. Hsieh, H.-W. Lin, H.-C. Kuo\*. High bandwidth semipolar (20-21) micro-LED-based white light-emitting diodes utilizing perovskite quantum dots and organic emitters in color-conversion layers for visible light communication and solid-state lighting applications. *Nanoscale*. (2023)
5. L.-J. Kuo, L.-Y. I, Y.-C. Chang, T.-K. Lin, H.-C. Chang, Y.-C. Shieh, S.-W. Chen, J.-M. Shieh, **L.-Y. Chen**, P. Yu\*, Y.-C. Chao\*, H.-F. Meng\*. Stable and efficient hole selective contacts for silicon photovoltaics via solution-processed luminescent small molecules. *J. of Electron. Mater.* (2023)
6. G.-H. Tan, Y.-N. Chen, Y.-T. Chunag, H.-C. Lin, C.-A. Hsieh, Y.-S. Chen, T.-Y. Lee, W.-C. Miao, H.-C. Kuo, **L.-Y. Chen**, K.-T. Wong\*, H.-W. Lin\*, (2022, Dec). Highly luminescent earth-benign organometallic manganese halide crystals with ultrahigh thermal stability of emission from 4 to 623 K. *Small* 2022, 2205981 (2022)
7. B. Chang, Y.-C. Lin, S. Tan, C.-H. Chen, H.-W. Cheng, Y. Zhao, H.-C. Wang, Q. Xing, **L.-Y. Chen**, C.-A. Hsieh, C.-Y. Hsiao, Y. Yang, K.-H. Wei\* (2022, Oct). High-efficiency semitransparent organic photovoltaics containing vertical multiheterojunctions. *ACS Applied Energy Materials*, 5, 13763
8. T.-Y. Lee, **L.-Y. Chen\***, Y.-Y. Lo, S.-S. Swayamprabha, A. Kumar, Y.-M. Huang, S.-C. Chen, H.-W. Zan, F.-C. Chen\*, R.-H. Horng\*, H.-C. Kuo\*. Technology and applications of micro-LEDs: their characteristics, fabrication, advancement, and challenges. *ACS Photonics*, 9, 2905 (2022)
9. H.-C. Lin, Y.-C. Lee, C.-C. Lin, Y.-L. Ho\*, D. Xing, M.-H. Chen, B.-W. Lin, **L.-Y. Chen**, C.-W. Chen, J.-J. Delaunay\*(2022, Jun). Integration of on-chip perovskite nanocrystal laser and long-range surface plasmon polariton waveguide with etching-free process. *Nanoscale*, 14, 10075
10. W.-L. Chang, I.-M. Sun, J.-A. Tsai, H.-F. Meng\*, H.-W. Zan\*, **L.-Y. Chen\***, C.-J. Luc. Rapid quality test for drinking water by vertical-channel organic semiconductor gas sensor. *Analytica Chimica Acta*, 1206, 339729 (2022)
11. B.-X. Chen, **L.-Y. Chen\***, H.-W. Zan, H.-F. Meng, C.-A. Hsieh, J.-B. Yang, M.-H. Chen, Y.-H. Cheng. Enhancement in operational current of PTB7 based ammonia gas sensor utilizing F4-TCNQ as P-type dopant. *Sensors and Actuators: B. Chemical*, 361, 131723 (2022)
12. C.-H. Liu, Y.-N. Nguyen Pham, Y.-M. Sun, H.-F. Meng\*, H.-W. Zan\*, **L.-Y. Chen\***, Z.-H. Huang, Y.-C. Tian, C.-S. Lai. Using light-emitting complex Ir(mppy)<sub>3</sub> to detect acetone from 0.5 to 100 ppm by vertical-channel gas sensor. *Organic Electronics*, 106, 106507 (2022)
13. A. S. Sadhu, Y.-M. Huang, **L.-Y. Chen\***, H.-C. Kuo, C.-C. Lin. Recent advances in colloidal quantum dots or perovskite quantum dots as a luminescent downshifting layer embedded on solar cells,

14. G. Madhaiyan\*, A.-T. Sun, H.-W. Zan, H.-F. Meng, S.-F. Horng, **L.-Y. Chen\***, H.-W. Hung, “Solution-processed chloroaluminum phthalocyanine (ClAlPc) ammonia gas sensor with vertical organic porous diodes”, *Sensors*, 21, 5783 (2021)
15. H.-C. Lin, **L.-Y. Chen\***, C.-C. Lu, J.-Y. Lai, Y.-C. Chen\*, Y.-J. Hung, “Ambipolar carrier transport properties of triphenylamine/dibenzofulvene derivative and its application for efficient n-i-p perovskite solar cells”, *Org. Electron.*, 95, 106200 (2021)
16. Y.-C. Chen\*, J.-H. Yen, Y.-J. Wang, C.-A. Hsieh, **L.-Y. Chen\***, “Light extraction enhancement in organic light-emitting diodes through polyimide/porous silica hybrid films”, *Org. Electron.*, 95, 106213 (2021)
17. J. Lade, N.-Y. Lee, B. Patil, Y. Y. Deshpande, B. Pownthurai, C.-A. Hsieh, S. S. Pingale, **L.-Y. Chen\***, A. Chaskar\*, “Novel benzothiadiazine 1,1-dioxide based bipolar host materials for efficient red phosphorescent organic light emitting diodes”, *Org. Electron.*, 92, 106104 (2021)
18. H. C. Wang, P. Cheng, S. Tan, C.-H. Chen, B. Chang, C.-S. Tsao, **L.-Y. Chen**, C.-A. Hsieh, Y.-C. Lin, H.-W. Cheng, Y. Yang, K.-H. Wei\*, “Sequential deposition of donor and acceptor provides high performance semitransparent organic photovoltaics having a pseudo p-i-n active layer Structure”, *Adv. Ener. Mater.*, 11, 2003576 (2021)
19. H.-C. Lin, **L.-Y. Chen\***, T.-H. Lin, “Improving hysteresis of roomtemperature air-quenching MAPbI<sub>3-x</sub>Cl<sub>x</sub> solar cells by using mixed-lead halide precursor”, *Mater. Chem. Phys.*, 259, 124032 (2021)
20. **L.-Y. Chen\***, K.-M. Hsieh, Y.-J. Wu, C.-A. Hsieh, J.-K. Chang, D.-H. Liu, H.-W. Hung, S.-Y. Ho, C.-H. Chang, “Novel scattering and color converting substrates for simple-structured white organic light-emitting diodes”, *Org. Electron.*, 89, 106045 (2021)
21. C.-Y. Su, Y.-C. Wu, C.-H. Cheng, W.-C. Wang, H.-Y. Wang, **L.-Y. Chen**, H.-C. Kuo, G.-R. Lin\*, “Color-converting violet laser diode with ultrafast BEHP-PPV+MEH-PPV polymer blend for high-speed white lighting data link”, *ACS Appl. Electron. Mater.*, 2, 3017-3027 (2020)
22. H.-H. Ho, A.-T. Nguyen, Y.-C. Chen, **L.-Y. Chen**, H.-P. Dang, M.-J. Tsai, H. Cheng, S.-F. Horng\*, C.-S. Huang, H.-W. Zan\*, H.-F. Meng\*, “A cylindrical ion sensor with diameter 1.5 mm for potentially invasive medical application”. *ACS Omega*, 5, 23021-23027 (2020)
23. R.-H. Yi, C.-M. Shao, C.-H. Lin, Y.-C. Fang, H.-L. Shen, C.-W. Lu\*, K.-Y. Wang, C.-H. Chang\*, **L.-Y. Chen\***, Y.-H. Chang, “Dicyano-imidazole based host materials possessing balanced bipolar nature to realize efficient OLEDs with extremely high luminance”, *J. of Phys. Chem. Part C*, 124, 20410-20423 (2020)
24. J.-H. Yen, Y.-J. Wang, C.-A. Hsieh, Y.-C. Chen\*, **L.-Y. Chen\***, “Enhanced light extraction from organic light-emitting devices through non-covalent or covalent polyimide-silica light scattering hybrid films”, *J. of Mater. Chem. C*, 8, 4102-4111 (2020)
25. **L.-Y. Chen\***, Y.-J. Shiu, Y.-J. Wu, W.-Y. Huang, “Simple structured color tunable white organic light-emitting diodes utilizing an ambipolar anthracene derivative with low-lying LUMO”, *Org. Electron.*, 76, 105454 (2020)
26. Y.-F. Huang, Y.-C. Chi, C.-H. Cheng, C.-T. Tsai, W.-C. Wang, D.-W. Huang, **L.-Y. Chen**, G.-R. Lin\*, “LuAG:Ce/CASN:Eu phosphor enhanced high-CRI R/G/B LD lighting fidelity”, *J. Mater. Chem. C*, 7, 9556-9563 (2019).
27. K. S. Vadagaonkar, C.-J. Yang, W.-H. Zeng, J.-H. Chen, B. N. Patil, P. Chetti, **L.-Y. Chen\***, A. C. Chaskar\*, “Triazolopyridine hybrids as bipolar host materials for green phosphorescent organic light-emitting diodes”, *Dyes Pigm.*, 160, 301-314 (2019).

28. T.-C. Wu, Y.-C. Chi, H.-Y. Wang, C.-T. Tsai, C.-H. Cheng, J.-K. Chang, **L.-Y. Chen**, W.-H. Cheng, G.-R. Lin\*, “White-lighting communication with Lu<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>:Ce<sup>3+</sup>/CaAlSiN<sub>3</sub>:Eu<sup>2+</sup> glass covered 450-nm InGa<sub>N</sub> laser diode”, *J. Light. Technol.*, 36, 1634-1643 (2018).
29. Y.-C. Chi, Y.-F. Huang, T.-C. Wu, C.-T. Tsai, **L.-Y. Chen**, H.-C. Kuo, G.-R. Lin\*, “Violet laser diode enables lighting communication”, *Sci. Rep.*, 7, 10469 (2017).
30. A.-K. Chu, W.-C. Tien, S.-W. Lai, H.-L. Tsai, R.-Y. Bai, X.-Z. Lin, **L.-Y. Chen**\*, “High-resistivity sol-gel ITO thin film as an interfacial buffer layer for bulk heterojunction organic solar cells”, *Org. Electron.*, 46, 99-106 (2017).
31. I. C.-Y. Hou, V. Shetti, S.-L. Huang, K.-L. Liu, C.-Y. Chao, S.-C. Lin, Y.-J. Lin, **L.-Y. Chen**, T.-Y. Luh\*, “Poly[2(6)-aminoazulene]: synthesis, photophysical properties, and proton conductivity”, *Org. Chem. Front.*, 4, 773-778 (2017).
32. Y.-P. Chang, J.-K. Chang, W.-C. Cheng, Y.-Y. Kuo, C.-N. Liu, **L.-Y. Chen**, W.-H. Cheng\*, “A new scheme of high-reliable glass-based color wheel for next-generation laser light engine”, *Opt. Mater. Express*, 7, 1029-1034 (2017).
33. Y.-J. Cheng, S.-Y. Yu, S.-C. Lin, J. T. Lin\*, **L.-Y. Chen**\*, D.-S. Hsiu\*, Y. S. Wen, M. M. Lee, S.-S. Sun, “A phenothiazine/dimesitylborane hybrid material as a bipolar transport host of red phosphor”, *J. Mater. Chem. C*, 40, 9499-9508 (2016).
34. D. Gudeika, D. Volyniuk, J. V. Grazulevicius\*, E. Skuodis, S.-Y. Yu, W.-T. Liou, **L.-Y. Chen**\*, Y.-J. Shiu, “Derivative of oxygafluorene and di-tertbutylcarbazole as the host with very high hole mobility for high-efficiency blue phosphorescent organic light-emitting diodes”, *Dyes Pigm.*, 130, 298-305 (2016).
35. Y.-W. Tsai, J.-S. Ni, F.-L. Wu, M.-C. P. Yeh\*, Y.-J. Cheng, L.-Z. Tsai, S.-Y. Yu, S.-Y. Ting, **L.-Y. Chen**\*, Y. S. Wen, M. M. Lee, J. T. Lin\*, “Bipolar transport materials for electroluminescence applications”, *Org. Electron.*, 30, 265-274 (2016).
36. W. C. Tien, **L.Y. Chen**, Y. W. Zeng, K. W. Chang, A. K. Chu\*, “Narrow-band emitting microcavity OLED with ITO DBR electrode for sensing applications”, *Electron. Lett*, 51, 2034-2035 (2015).
37. **L.-Y. Chen**\*, J.-K. Chang, W.-C. Cheng, J.-C. Huang, Y.-C. Huang, W.-H. Cheng, “Chromaticity tailorable glass-based phosphor-converted white light-emitting diodes with high color rendering index”, *Opt. Express*, 23, A1024-A1029 (2015).
38. W. C. Tien, **L.Y. Chen**, M. J. Chung, A. K. Chu\*, “Aging of ITO anodes treated by supercritical CO<sub>2</sub>/H<sub>2</sub>O<sub>2</sub> fluids for OLEDs”, *J. Mater. Sci.: Mater. Electron*, 26, 9139-9145 (2015).
39. **L.-Y. Chen**, S.-H. Chen, S.-J. Dai, C.-T. Kuo, H.-C. Wang\*, “Spectral design and evaluation of OLEDs as light sources”, *Org. Electron.*, 15, 2194-2209 (2014).
40. **L.-Y. Chen**, W.-C. Cheng, C.-C. Tsai, J.-K. Chang, Y.-C. Huang, J.-C. Huang, W.-H. Cheng\*, “Novel broadband glass phosphors for high CRI WLEDs”, *Opt. Express*, 22, A671-A678 (2014).
41. R. Muangpaisal, W.-I Hung, J. T. Lin\*, S.-Y. Ting, **L.-Y. Chen**\*, “Arylamine/benzimidazole hybrid incorporating binaphthyl-bridged bipolar transport for high-efficiency blue electroluminescence”, *Tetrahedron*, 70, 2992-2998 (2014).
42. **L.-Y. Chen**, W.-C. Cheng, C.-C. Tsai, Y.-C. Huang, Y.-S. Lin, W.-H. Cheng\*, “High-performance glass phosphor for white-light-emitting diodes via reduction of Si-Ce<sup>3+</sup>:YAG inter-diffusion”, *Opt. Mater. Express*, 4, 121-128 (2014).
43. Y.-T. Tsai, C.-Y. Chen, **L.-Y. Chen**, S.-H. Liu, C.-C. Wu\*, Y. Chi, S. H. Chen, H.-F. Hsu, J.-J. Lee, “Analyzing nanostructures in mesogenic host-guest systems for polarized phosphorescence”. *Org. Electron*, 15, 311-321 (2014).
44. R. Muangpaisal, M.-C. Ho, T.-H. Huang, C.-H. Chen, J.-Y. Shen, J.-S. Ni, J. T. Lin\*, T.-H. Ke, **L.-**

- Y. Chen**, C.-C. Wu\*, C. Tsai\*, “Tetrasubstituted-pyrene derivatives for electroluminescent application”, *Org. Electron*, 15, 2148-2157 (2014).
45. Y.-S. Chen, C.-H. Liao, Y.-L. Chueh, C.-C. Lai, **L.-Y. Chen**, A.-K. Chu, C.-T. Kuo, H.-C. Wang, “High performance Cu<sub>2</sub>O/ZnO core-shell nanorod arrays synthesized using a nanoimprint GaN template by hydrothermal growth technique”, *Opt. Mater. Express*, 4, 1473-1486 (2014).
46. W.-H. Cheng, **L.-Y. Chen**, W.-C. Cheng, “Thermally stable white LEDs”, SPIE Newsroom, 10 July (2014). (Invited report)
47. **L.-Y. Chen\***, F.-H. Chien, Y.-W. Liu, W. Zheng, C.-Y. Chiang, C.-Y. Hwang, C.-W. Ong, Y.-K. Lan, H. C. Yang, “Ambipolar carrier transport properties in a built-in donor–acceptor discogen”, *Org. Electron*, 14, 2065-2070 (2013).
48. W.-C. Lin, W.-C. Huang, M.-H. Huang, C.-C. Fan, H. W. Lin\*, **L.-Y. Chen**, Y.-W. Liu, J.-S. Lin, T.-C. Chao, M.-R. Tseng, “A bipolar host containing carbazole/dibenzothiophene for efficient solution-processed blue and white phosphorescent OLEDs”, *J. of Mater. Chem. C*, 1, 6835-6841 (2013).
49. **L.-Y. Chen\***, J.-K. Chang, Y.-R. Wu, W.-C. Cheng, J.-H. Chen, C.-C. Tsai, W.-H. Cheng, “Optical model for novel glass-based phosphor-converted white light-emitting diodes”, *J. of Disp. Technol.*, 9, 441-446 (2013).
50. C.-C. Tsai, W.-C. Cheng, J.-K. Chang, **L.-Y. Chen**, J.-H. Chen, and W.-H. Cheng\*, “Ultra-high thermal-stable glass phosphor layer for phosphor-converted white light-emitting diodes”, *J. of Disp. Technol.*, 9, 427- 432 (2013).
51. **L.-Y. Chen\***, S.-H. Liu, C.-C. Wu, Y. Chi , S. H. Chen, H.-F. Hsu, “Toward more efficient liquid crystal displays”, SPIE Newsroom, 10 April (2012). (Invited report)
52. S.-H. Liu, M.-S. Lin, **L.-Y. Chen**, Y.-H. Hong, C.-H. Tsai, C.-C. Wu\*, A. Poloek, Y. Chi, C.-A. Chen, S.-H. Chen, H.-F. Hsu “Polarized phosphorescent organic light-emitting devices adopting mesogenic host–guest systems”, *Org. Electron*, 12, 15-21 (2011).
53. D.-Y. Chen, C.-L. Chen, Y.-M. Cheng, C.-H. Lai, J.-Y. Yu, B.-S. Chen, C.-C. Hsieh, H.-C. Chen, **L.-Y. Chen**, C.-Y. Wei, C.-C. Wu, P.-T. Chou\*, “Design and synthesis of trithiophene-bound excited-State intramolecular proton transfer dye: enhancement on the performance of bulk heterojunction solar cells”, *ACS Appl. Mater. & Interfaces*, 2, 1621-1629 (2010).
54. Y. Park, J.-H. Lee, D.-H. Jung, S.-H. Liu, Y.-H. Lin, **L.-Y. Chen**, C.-C. Wu, J. Park\*, “An aromatic imine group enhances the EL efficiency and carrier transport properties of highly efficient blue emitter for OLEDs”, *J. of Mater. Chem.*, 20, 5930-5936 (2010).
55. C.-H. Chen, W.-S. Huang, M.-Y. Lai, W.-C. Tsao, J.-T. Lin\*, Y.-H. Wu, T.-H. Ke, **L.-Y. Chen**, C.-C. Wu\*, “Versatile, benzimidazole/amine-based ambipolar compounds for electroluminescent applications: single-layer, blue, fluorescent OLEDs, hosts for single-layer, phosphorescent OLEDs”, *Adv. Funct. Mater.*, 19, 2661-2670 (2009).
56. R. Chaudhuri, M.-Y. Hsu, C.-W. Li, C.-I Wang, C.-J. Chen, C. K. Lai, **L.-Y. Chen**, S.-H. Liu, C.-C. Wu, R.-S. Liu\*, “Functionalized dibenzo[g,p]chrysenes: variable photophysical and electronic properties and liquid crystal chemistry”, *Org. Lett.*, 10, 3053-3056 (2008).
57. F. Camerel\*, J. Barberá, J. Otsuki, T. Tokimoto, **L.-Y. Chen**, S.-H. Liu, M.-S. Lin, C.-C. Wu, R. Ziessel\*, “Solution processable liquid crystals of luminescent aluminum(8-hydroxyquinoline-5-sulfonato) complexes”, *Adv. Mater.*, 20, 3462-3467 (2008).
58. M.-Y. Lai , C.-H. Chen, W.-S. Huang, J. -T. Lin\*, T.-H. Ke , **L.-Y. Chen**, M.-H. Tsai, C.-C. Wu\*, “Benzimidazole/amine-based compounds capable of ambipolar transport for application in single-layer blue-emitting OLEDs and as hosts for phosphorescent emitters”, *Ang. Chem. Int. Ed.*, 47, 581-585 (2008).

59. **L.-Y. Chen**, T.-H. Ke, C.-C. Wu\*, T.-C. Chao, K.-T. Wong, C.-C. Chang, “Anisotropic ambipolar carrier transport and high bipolar mobilities up to 0.1 cm<sup>2</sup>V<sup>-1</sup>s<sup>-1</sup> in aligned liquid-crystal glass films of oligofluorene”, *Appl. Phys. Lett.*, 91, 163509-1-163509-3 (2007).
60. J.-Y. Shen, X.-L. Yang, T.-H. Huang, J.-T. Lin\*, T.-H. Ke, **L.-Y. Chen**, C.-C. Wu\*, M.-C. P. Yeh\*, “Ambipolar conductive 2,7-carbazole derivatives for electroluminescent devices”, *Adv. Funct. Mater.*, 17, 983-995 (2007).
61. T.-H. Huang, W.-T. Whang, J. Y. Shen, Y.-S. Wen, J. T. Lin\*, T.-H. Ke, **L.-Y. Chen**, C.-C. Wu\*, “New dibenzothiophene/oxide and quinoxaline/pyrazine derivatives serving as electron transporting materials”, *Adv. Funct. Mater.*, 16, 1449-1456 (2006).
62. T.-H. Huang, J.-T. Lin\*, **L.-Y. Chen**, Y.-T. Lin, C.-C. Wu\*, “Dipolar dibenzothiophene s,s-dioxide derivatives containing diarylamine: materials for single-layer OLED devices”, *Adv. Mater.*, 18, 602-606 (2006).
63. **L.-Y. Chen**, W.-Y. Hung, Y.-T. Lin, C.-C. Wu\*, T.-C. Chao, T.-H. Hung, K.-T. Wong\*, “Enhancement of bipolar carrier transport in oligofluorene films through alignment in the liquid crystalline phase”, *Appl. Phys. Lett.*, 87, 112103-1-112103-3 (2005).

## II. Invited International Conference Papers

1. **L.-Y. Chen\***, Enhancing operational current in organic semiconductor-based gas sensors through doping strategy, *Baltic Polymer Symposium 2024*, Birštonas, Lithuania
2. **L.-Y. Chen\***, Innovations in organic semiconductor-based gas sensors, *25th International Conference-School "Advanced Materials and Technologies 2022"*, Palanga, Lithuania
3. **L.-Y. Chen\***, Toward highly sensitive and low hardware requirement ammonia gas detection based on organic semiconductors, *Asian Conference on Organic Electronics 2022*, Macau, China
4. **L.-Y. Chen\***, Highly sensitive gas sensors based on organic semiconductors, *24th International Conference-School "Advanced Materials and Technologies 2022"*, Palanga, Lithuania
5. **L.-Y. Chen\***, “Phosphor embedded glass substrates for OLED lightings”, *SPIE Optics+Photonics 2019*, San Diego, USA
6. H.-L. Tsai, L.-Y. Chen\*, “Improvement of Bodipy-based bulk heterojunction Solar Cell Using 1,8-diodooctane”, *Progress In Electromagnetics Research Symposium 2016*, Shanghai, China.
7. **L.-Y. Chen\***, W.-J. Kuo, Y.-Y. Chuang, “Deep-blue emitting and ambipolar carrier transporting boron-containing carbazoles for OLED applications”, *Asian Conference on Organic Electronics 2015*, China
8. Y.-J. Wu, **L.-Y. Chen\***, “Balanced charge transport organic semiconductors for highly efficient organic light-emitting diodes”, *Progress In Electromagnetics Research Symposium 2014*, Guangzhou, China.
9. **L.-Y. Chen\***, “Balanced ambipolar charge transport in a discogen with a wide mesophase range”, *The 5th Asian Conference on Organic Electronics*, Pohang, Korea.
10. **L.-Y. Chen\***, C.-A. Hsieh, “Highly durable dye-sensitized solar cells utilizing bio-compatible and photo-crosslinkable acrylic-based hydrogel”, *Baltic Polymer Symposium 2013*, Trakai, Lithuania.
11. **L.-Y. Chen**, W.-H. Cheng\*, “Packaging of high-thermal stability and high-humid resistance phosphor-converted white-light-emitting diode modules employing novel Ce:YAG-doped glass”, *10th Mediterranean Workshop and Topical Meeting “Novel Optical Materials and Applications”*, Cetraro, Italy.

### III. International Conference Papers:

1. **L.-Y. Chen\***, “Highly sensitive ammonia gas sensing up to ppb-region based on a carbazoletriazine derivative”, SPIE Optics + Photonics 2024, USA.
2. **L.-Y. Chen\***, Z.-P. Wang, J.-V. Grazulevicius, V.- Andrulevičienė “Highly Sensitive Room Temperature Ammonia Gas Sensor based on Fluorenone/Triphenylamine Derivatives”, 2024 Spring Meeting of the European Materials Research Society (E-MRS), France.
3. **L.-Y. Chen\***, E. Bellers, C.-A. Hsieh, S. S.-J. Liu, Y.-L. Jiang, J. Janssen, H.-Y. Shih, “Optimizing TV Gamma and Correlated Color Temperature Settings for Enhanced Viewer Satisfaction: A Comprehensive Study on Backlight Brightness and Color Gamut Influences”, SID Display Week 2023, USA.
4. Y.-C. Lu, **L.-Y. Chen\***, “Developing Ultra-Sensitive Gas Sensors for Nitrogen Oxides Utilizing Hole-Transporting Organic Semiconductors”, Asian Conference on Organic electronics 2023, Taiwan
5. A.-S. Sadhu, Y.-H. Pai, **L.-Y. Chen\***, C.-A. Hsieh, H.-W. Lin\*, H.-C. Kuo\*, “High-Bandwidth White-Light Emitting Diodes Combining a Semipolar (20–21) Blue Micro-LED with Perovskite Quantum Dots and Organic Emitters for Solid-State Lighting and Visible Light Communication”, Asian Conference on Organic electronics 2023, Taiwan
6. Z.-P. Wang, **L.-Y. Chen\***, “Comparative Analysis of the Gas Sensing Performance of Fluorene-Based Derivatives at Different Annealing Temperatures”, Asian Conference on Organic electronics 2023, Taiwan
7. Y.-C. Lu, **L.-Y. Chen\***, “Highly Sensitive Nitrogen Oxide Gas Sensors Utilizing Hole-Transporting Organic Semiconductors”, Optics & Photonics Taiwan International Conference 2023, Taiwan
8. Z.-P. Wang, **L.-Y. Chen\***, “A Comparative Study of the Gas Sensing Behavior of Fluorene-Based Derivatives with Various Annealing”, Optics & Photonics Taiwan International Conference 2023, Taiwan
9. C.-A. Hsieh, G.-H. Tan, H.-C. Lin, K.-Y. Hsiao, M.-Y. Lu, **L.-Y. Chen\***, H.-W. Lin\*, “High-performance vacuum-deposited perovskite light-emitting diodes with the assistance of small-molecule hole-transport materials”, SPIE Photonic West 2023, San Francisco, USA
10. C.-C. Lung, **L.-Y. Chen\***, “Investigate the effect of pixel crosstalk on LED display quality”, International Dental Materials Congress 2022, Taiwan
11. C.-A. Hsieh, Y.-J. Wang, R.-H. Yan, Y.-C. Chen, **L.-Y. Chen\***, “Organic Light-Emitting Diodes integrated with Polyimide/porous silica hybrid films for out-coupling enhancement”, International Dental Materials Congress 2022, Taiwan
12. P.-P. Huang, **L.-Y. Chen\***, H.-F. Meng, “The effect of tip structures on the efficiency of hydrogel-based optical fiber sensor for zinc detection”, Optics & Photonics Taiwan International Conference 2022, Taiwan
13. C.-A. Hsieh, B.-X. Chen, **L.-Y. Chen\***, H.-W. Zan, H.-F. Meng, “Enhancing the carrier mobility of PTB7 thin film through p-type doping for gas sensor application”, Materials Research Society-Taiwan International Conference 2021, Taiwan
14. Y. S. Lu, **L.-Y. Chen\***, “The cylindrical solid-state sensor used for the detection of zinc ion in clinical applications”, Optics & Photonics Taiwan International Conference 2021, Taiwan
15. C.-C. Lung, **L.-Y. Chen\***, “Reduced viewing distance of LED displays by increasing effective emitting area of LED through light diffuser films”, Optics & Photonics Taiwan International

Conference 2021, Taiwan

16. C.-A. Hsieh, B.-X. Chen, **L.-Y. Chen\***, H.-W. Zan, H.-F. Meng, “Investigation of Current Enhancement in Ammonia Gas Sensor by P-type Doping”, Optics & Photonics Taiwan International Conference 2021, Taiwan
17. C.-A. Hsieh, **L.-Y. Chen\***, J.-H. Yen, Y.-C. Chen, Y.-J. Wang, “Light extraction enhancement in OLEDs by covalent polyimide-silica hybrid layers”, SPIE Optics+Photonics 2020, Online Forum (due to covid-19)
18. J.-T. Hsiao, Z.-F. Cao, **L.-Y. Chen**, H.-W. Zan\*, H.-F. Meng\*, Hydrogel-based pH sensor tips for urinary urea detection in cats, Optics & Photonics Taiwan International Conference 2020, Taiwan
19. Y.-H. Chang, **L.-Y. Chen\***, “Balanced ambipolar charge transport dicyano-imidazole-based materials for highly efficient organic light-emitting diodes”, Optics & Photonics Taiwan International Conference 2020, Taiwan
20. C.-A. Hsieh, Y.-J. Wang, R.-H. Yan, Y.-C. Chen, **L.-Y. Chen\***, “Enhanced out-coupling in organic light-emitting diodes via polyimide/SiO<sub>2</sub> composite films”, Optics & Photonics Taiwan International Conference 2019, Taiwan
21. H.-C. Lin, **L.-Y. Chen\***, “The perovskite thin film enhanced by air quenching method and application in inverted-type perovskite solar cell”, Optics & Photonics Taiwan International Conference 2019, Taiwan
22. **L.-Y. Chen\***, Phosphor embedded glass substrates for OLED lightings, SPIE Optics+Photonics 2019, San Diego, USA.
23. C.-Y. Su, W.-C. Wang, H.-Y. Wang, **L.-Y. Chen**, G.-R. Lin, “Violet laser diode based 25-Gbps point-to-point and 12-Gbps MEH/BBEHP converted white lighting QAM-OFDM link”, Optical Fiber Communication Conference 2019, San Diego, USA.
24. C.-A. Hsieh, Y.-J. Wang, R.-H. Yan, Y.-C. Chen, **L.-Y. Chen**, “Light extraction from substrate mode in organic light-emitting diodes with polyimide/SiO<sub>2</sub> composite film”, Asian Conference on Organic Electronics 2019, Taiwan.
25. Y.-J. Wu, **L.-Y. Chen\***, “Defocused optical system for analyzing dust defects in imaging capturing module”, 2018 SPIE Optics + Photonics, San Diego, USA.
26. Y. -J. Wang, R.-H. Yan, Y.-C. Chen, **L.-Y. Chen\***, “Enhanced light-outcoupling in Organic Light-emitting Diodes”, 2018 Optics & Photonics Taiwan, the International Conference, Taiwan.
27. D.-H. Liu, **L.-Y. Chen\***, “Fluorescent substrates for white organic light-emitting diodes”, 2018 Optics & Photonics Taiwan, the International Conference, Taiwan.
28. W.-H. Zeng, **L.-Y. Chen\***, A. C. Chaskar, “The photophysical properties of triazolopyridine hybrids with bipolar carrier transporting capability for organic light-emitting diodes”, 2017 Optics & Photonics Taiwan, the International Conference, Taiwan.
29. K.-M. Hsieh, **L.-Y. Chen\***, “Optical properties of flexible substrates for white organic light-emitting diodes”, 2017 Optics & Photonics Taiwan, the International Conference, Taiwan.
30. H.-T. Lin, **L.-Y. Chen\***, C.-T. Yuan, “Eco-friendly carbon quantum dots films for down-conversion in organic photovoltaics”, 2017 Optics & Photonics Taiwan, the International Conference, Taiwan.
31. R.-Y. Bai, X.-Z. Lin, **L.-Y. Chen\***, “Bulk heterojunction organic photovoltaic devices with sol-gel ITO thin film as an interfacial buffer layer”, 2017 International Conference on Science, Engineering, Vocational Education and Novelty, China.
32. Y.-J. Wu, **L.-Y. Chen\***, M.-J. Lu, “Optical inspection algorithm for dust defect of compact camera module”, 2016 SPIE Optics + Photonics, San Diego, USA.
33. Y.-P. Chang, J.-K. Chang, W.-C. Cheng, C.-N. Liu, **L.-Y. Chen**, W.-H. Cheng\*, “Next-generation

- high-reliability laser light engine by glass phosphor-converted layer”, 2016 International Society for Optics and Photonics, USA.
34. J.-H. Chen, **L.-Y. Chen\***, “Carrier transport properties of carbazole–pyridine derivatives”, 2016 Optics & Photonics Taiwan, the International Conference, Taiwan.
  35. J.-K. Chang, Y.-Y. Kuo, D. Wu, W.-H. Cheng, **L.-Y. Chen\***, “Luminous enhancement of laser excited glass phosphors by MgF<sub>2</sub> anti-reflection coating”, 2016 Optics & Photonics Taiwan, the International Conference, Taiwan.
  36. Y.-H. Su, W.-J. Kuo, H.-C. Chou, S.-Y. Ting, **L.-Y. Chen\***, “Ambipolar carrier transporting carbazoles derivatives for efficient OLEDs”, 2015 9th International Conference on Advanced Materials and Devices, Korea.
  37. J.-K. Chang, W.-C. Cheng, Y.-P. Chang, Y.-Y. Kuo, C.-C. Tsai, Y.-C. Huang, **L.-Y. Chen**, W.-H. Cheng\*, “Next-generation glass-based phosphor-converted laser light engine”, 2015 14th International Conference on Solid State Lighting and LED-based Illumination Systems, USA.
  38. Y.-J. Wu, **L.-Y. Chen\***, “General method for freeform lens design in white light-emitting diodes”, 2015 Optics & Photonics Taiwan, International Conference, Taichung, Taiwan.
  39. J.-K. Chang, **L.-Y. Chen**, W.-C. Cheng, J.-C. Huang, Y.-Y. Kuo, W.-H. Cheng\*, “High thermal-stable glass-based phosphors for high-power white light-emitting diodes”, 2014 International Electron Devices and Materials Symposium, Hualien, Taiwan.
  40. Y.-J. Lin, S.-Y. Ting, **L.-Y. Chen\***, “Carrier mobility measurement in thin-filmed organic semiconductors with assistance of numerical analysis”, 2014 International Electron Devices and Materials Symposium, Hualien, Taiwan.
  41. W.-C. Tien, **L.-Y. Chen**, Y.-W. Zeng, K.-W. Chang, A.-K. Chu\*, “Microcavity organic light emitting diodes with ITO DBR electrodes”, 2014 8th International Conference on Advanced Materials Processing, Gold Coast, Australia.
  42. W.-J. Kuo\*, P.-C. Chen, Y.-H. Su, O.-R. Wang, **L.-Y. Chen**, R.-J. J. L.-H. Chan, “Deep blue light emitting fluorophores with ambipolar characteristics”, 2013 15th International Symposium on Novel Aromatic Compounds, Taipei, Taiwan.
  43. **L.-Y. Chen\***, Y.-R. Wu, J.-K. Chang, “Glass-based color conversion multilayer for white light-emitting-diodes and its angular color performance”, 2013 Display Week Society for Information Display, Vancouver, Canada.
  44. S.-H. Huang, **L.-Y. Chen\***, “Dye-sensitized solar cells utilizing biocompatible acrylic gel”, 2012 Asian Conference of Organic Electronics, Yonezawa, Japan.
  45. Y.-R. Wu, J.-K. Chang, **L.-Y. Chen\***, W.-C. Cheng, J.-H. Chen, C.-C. Tsai, W.-H. Cheng, “The angular dependence of chromaticity coordinate and correlated color temperature in glass-based phosphor-converted white LEDs”, 2012 Optics & Photonics Taiwan, International Conference, Taipei, Taiwan.
  46. W.-J. Kuo\*, P.-C. Chen, Y.-H. Su, **L.-Y. Chen**, “Tuning the electron-transporting properties of pyrrole-based host materials for efficient blue phosphorescent organic light-emitting diodes”, 2012 13th Tetrahedron Symposium Asia Edition, Taipei, Taiwan.
  47. **L.-Y. Chen\***, F.-S. Chien, C.-Y. Chiang, W.-J. Zheng, C. W. Ong, “Nondispersive bipolar carrier transport properties in multidomained discotic liquid crystal”, 2012 24th International Liquid Crystal Conference, Mainz, Germany.
  48. W.-H. Cheng\*, C.-C. Tsai, W.-C. Cheng, J.-K. Chang, J.-H. Chen, S.-S. Hu, **L.-Y. Chen**, M.-C. Lin, C.-J. Pan, “High-temperature (350°C) glass phosphor layer for converted white light-emitting diodes”, 2012 12th International Conference on Solid State Lighting and Fourth International Conference on

White LEDs and Solid State Lighting, San Diego, USA.

49. **L.-Y. Chen\***, J.-K. Chang, Y.-R. Wu, W.-C. Cheng, J.-H. Chen, C.-C. Tsai, W.-H. Cheng, “Influences of package geometry on color rendering properties of phosphor-converted glass based white light emitting diodes”, 2012 17th OptoElectronics and Communications Conference, Busan, Korea.
50. F.-H. Chien, **L.-Y. Chen\***, “Restrain the crystallization of a disk-like molecule by thermal annealing treatment”, 2011 Asian Conference on Organic Electronics, Taipei, Taiwan.
51. Y.-T. Tsai, S.-H. Liu, M.-S. Lin, **L.-Y. Chen**, C.-H. Tsai, Y.-H. Lin, C.-C. Wu\*, H.-H. Yeh, Y. Chi, C.-A. Chen, S. H. Chen, H.-F. Hsu, J.-J. Lee, C.-Y. Cheng, “Analyzing nanostructure of mesogenic host-guest systems for polarized phosphorescence”, 2011 Asian Conference on Organic Electronics, Taipei, Taiwan.
52. **L.-Y. Chen\***, “Polarization-sensitized amplified spontaneous emission of a fluorene-based liquid-crystalline semiconductor”, 2011 10th Mediterranean Workshop and Topical Meeting “Novel Optical Materials and Applications”, Cetraro, Italy.
53. S.-H. Liu, Y.-T. Tsai, M.-S. Lin, **L.-Y. Chen**, Y.-H. Hong, C.-H. Tsai, A. Poloek, Y. Chi, C.-A. Chen, S. H. Chen, H.-F. Hsu, C.-C. Wu\*, “Polarized phosphorescent organic light-emitting devices adopting mesogenic host-guest systems”, 2011 Materials Research Society Spring Meeting and Exhibit, San Francisco, USA.
54. Y.-P. Jhan, **L.-Y. Chen\***, “Enhanced carrier concentration utilizing MoO<sub>3</sub> interlayer for mobility measurement of 2,2',7,7'-tetrakis-(N,Ndi-4-Methoxyphenylamino)-9,9'-Spirobifluorene”, 2011 Asian Conference on Organic Electronics, Taipei, Taiwan.
55. **L.-Y. Chen\***, T.-H. Ke, C.-C. Wu, T.-C. Chao, K.-T. Wong, “Microscopic insight of carrier transport of tetra fluorene in different morphology”, 2010 Asian Conference on Organic Electronics, Seoul, Korea.
56. **L.-Y. Chen**, C.-C. Wu\*, K.-T. Wong, “Enhancement of bipolar carrier transport in oligofluorene films by mesophase-mediated molecular alignment”, 2006 6th International Conference on Electroluminescence of Molecular Materials and Related Phenomena, Hong Kong, China.
57. C.-C. Wu\*, **L.-Y. Chen**, W.-Y. Hung, T.-L. Liu, W.-G. Liu, Y.-T. Lin, T.-H. Ke, H.-W. Lin, T.-C. Chao, T.-H. Hung, R.-T. Chen, Y.-Y. Chien, K.-T. Wong, “Efficient bipolar carrier transport in oligofluorenes”, 2005 SPIE Optics + Photonics, San Diego, California, USA.
58. C.-C. Wu\*, W.-Y. Hung, H.-W. Lin, **L.-Y. Chen**, Y.-T. Lin, W.-G. Liu, T.-H. Ke, K.-T. Wong, “Structure and morphology dependent optical and electrical properties of oligofluorenes”, 2005 International Conference on Electroluminescence of Molecular Materials and Related Phenomena, Phoenix, Arizona, USA.

#### **IV. Domestic Conference Papers:**

1. C.-A. Hsieh, J.-H. Yen, Y.-C. Chen, **Li-Yin Chen\***, “Polyimide-Silica Hybrid film for Light Outcoupling of Organic Light-emitting Diodes”, 2020 Taiwan Vacuum Society Annual Symposium, Taiwan.
2. P.-Y. Lin, **Li-Yin Chen\***, C.-W. Lu, “The Photophysical properties of dimethyl acridin/spiro[fluorene-9,9'-phenanthren] derivative”, 2018 Taiwan Vacuum Society Annual Symposium, Taiwan.
3. J.-Y. Lai, **L.-Y. Chen\***, M.-J. Wu, P.-H. Liu, “Photophysical property of benzoxazole-based derivatives”, 2018 Taiwan Vacuum Society Annual Symposium, Taiwan.

4. C.-C. Lu, **L.-Y. Chen\***, Y.-C. Chen, “Investigation of transport properties in a fluorene/diphenylamine derivative using time-of-flight photocurrent Measurements”, 2018 Taiwan Vacuum Society Annual Symposium, Taiwan.
5. J.-K. Chang, D. Wu, W.-C. Tien, **L.-Y. Chen\***, “Highly simplified white organic light- emitting diodes utilizing color-conversion substrates”, 2016 14th conference on microelectronics technology & application, Taiwan.
6. C.-C. Wu\*, Y.-T. Tsai, S.-H. Liu, M.-S. Lin, **L.-Y. Chen**, C.-H. Tsai, Y.-H. Lin, H.-H. Yeh, Y. Chi, C.-A. Chen, S. H. Chen, H.-F. Hsu, J.-J. Lee, C.-Y. Cheng, “Analyzing nanostructure of mesogenic host-guest systems for polarized phosphorescence”, 17th NSRRC Users’ Meeting & Workshop, Hsinchu, Taiwan.
7. **L.-Y. Chen**, W.-Y. Hung, Y.-T. Lin , C.-C. Wu\* , K.-T. Wong, “Enhanced bipolar carrier transport properties of oligofluorene through nematic liquid-crystalline alignment”, 2004 Optics and Photonics Taiwan, Chung-Li, Taiwan.
8. **L.-Y. Chen**, C.-C. Wu\*, K.-T. Wong, “Liquid crystalline characteristics in an emitting and carrier-transport material of OLEDs”, 2003 Optics and Photonics Taiwan, Taipei, Taiwan.

## V. Patents:

1. 陳俐吟，張晉凱。具有玻璃螢光體導電基板之光電元件及玻璃螢光體導電基板。中華民國專利 I545825，2016 年。
2. 鄭木海，張永朋，陳俐吟，蔡俊欽，黃翊中，鄭韋治，張晉凱。製造低溫玻璃螢光體透鏡之方法及以此方法製成之透鏡。中華民國專利 I498599，2015 年。
3. 鄭木海，陳信安，陳俐吟，蔡俊欽，黃翊中，鄭韋治，張晉凱。多波段之玻璃螢光體色轉換片及其製造方法。中華民國專利 I498601，2015 年。
4. 郭文章，陳俐吟，鄭如忠，詹立行，陳柏志。經含吡啶基之芳香基取代的吡咯化合物。中華民國專利 I469976，2014 年。
5. Li-Yin Chen, Chun-Ta Lin, Yi-Tsung Cheng. Portable electronic devices and auto-focus control methods for cameras therein. US 20120268645; CN102752506B; TW I451756; DE1020121000395.
6. Li-Yin Chen, Wen-Yueh Su, Chun-Ta Lin, Wei-Feng Chien. Electronic apparatus and backlight brightness control method thereof. US20110134091; TW I428891.