

Fang-Chung Chen

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Vice Chairman
Department of Photonics
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CURRICULUM VITAE

Education

Ph.D. *Sep. 2003*

Materials Science & Engineering, Major in Electronic Materials and Devices
University of California, Los Angeles, USA

Advisor: Prof. Yang Yang

Thesis Title: High Performance Polymer Light-Emitting and Light-Harvesting Devices

M.S. *Jun. 1998*

Chemistry, National Taiwan University, Taiwan

Advisor: Prof. Yuhlong Oliver Su

Thesis Title: Electrochemical and Spectral Characterization of High-Valent Metal-Porphyrins

B.S. *Jun. 1996*

Chemistry, National Taiwan University, Taiwan

Work Experience

Professor (Aug. 2012 - present)

Vice Chairman of Department of Photonics (Aug. 2018 - present)

Associate Professor (Aug. 2008 – July 2012)

Assistant Professor (Feb. 2004 – July 2008)

Department of Photonics and Display Institute
National Chiao Tung University

Research focuses are: (a) Organic-Inorganic hybrid perovskite electronics, including photovoltaic devices, light-emitting devices, lasers and others. (b) Polymer LEDs with emphasis on triplet emitters, polarized emission, flexible LEDs and related device physics, photochemistry and photophysics. (c) Organic FETs. (d) Photovoltaic devices and related green energy technologies. (e) Polymer Photosensors with emphasis on near-infrared photodetections. (f) Polymer microlens fabrication and applications. (g) other flexible electronics, such as flexible waveguiding photovoltaics and luminescent solar cells.

Chairman (Aug. 2009 – July 2011)

Vice Chairman (Feb. 2009 – Aug. 2009)

Degree Program of Flat Panel Display Technology, National Chiao Tung University

Post Doctoral Follower

Organic Electronic Materials and Devices (Oct. 2003 - Dec. 2003)

University of California, Los Angeles,

Department of Materials Science & Engineering

Major Achievements:

- (a) improved the efficiency of plastic photovoltaic cells;
- (b) demonstrated high performance organic thin-film transistors with nano-composition dielectrics;
- (c) demonstrated polymer temperature sensor integrated with Reconfigurable Fabric.

Graduate Student Researcher

Organic Electronic Materials and Devices (Nov. 1999 – Sep. 2003)

University of California, Los Angeles,

Department of Materials Science & Engineering

Research focus on organic electronics and displays with emphasis on high performance OLEDs and solar cells.

Major Achievements:

- (a) initiated a research project of polymer photovoltaic devices in Yang's lab;
- (b) demonstrated highly efficient plastic photovoltaic cells;
- (c) demonstrated the first phosphorescent light-emitting electrochemical cell;
- (d) demonstrated highly efficient phosphorescent PLEDs (among the highest efficient polymer devices);
- (e) synthesis of very high purity semiconducting polymer and organic molecules;
- (f) setup organic electronics lab, including device fabrication and characterization instruments.

Visiting Graduate Student

Organic Molecular Electronics (Feb. 2002)

Prof. Kido's lab, Yamagata University, Japan

- (a) synthesis and purification of molecules and polymers;
- (b) deposition of small molecular thin films;
- (c) characterization of organic electronics;
- (d) encapsulation of organic devices.

Teaching Assistant (Aug 1998 – July 1999)

National Taiwan University, Department of Chemistry, Taiwan

- (a) instructed students in analytical and organic synthesis laboratory of chemistry;
- (b) successful demonstration of the first stable electrogenerated chemiluminescence of organic compounds in water.

Graduate Research Assistant, (Aug 1996 – Jun 1998)

National Taiwan University, Department of Chemistry, Taiwan

Research focus on the electrochemistry and spectroelectrochemistry of organic compounds. Achievements include,

- (a) successful characterization of the first stable Mn(V) porphyrins by electrochemical methods;
- (b) observation of the solvent effect on V=O vibration mode of porphyrins by Raman spectroscopy;
- (c) synthesis high quality water-soluble metal-porphyrins

Professional Activities

Award

1. 2020 Y. Z. Hsu Scientific Paper Award
2. 2020 The Most Potential IoT Innovation Award, Pen Wen Yuan Foundation
3. 2019 Volunteer Service Awards - The EITA Hall of Fame
4. 2008 Academic Sinica : Award for Junior Research Investigators
5. The UCLA Henry Samueli School of Engineering and Applied Science 2002-2003 Awards: Outstanding Doctor of Philosophy in Materials Science and Engineering.

Invited Talks

International Conference/Workshop

1. International Conference on Emergent Functional Matter Science 2019, (Hsinchu, Taiwan, Dec. 2019).
2. Optics & Photonics Taiwan, International Conference (OPTIC 2019), (Taichung, Taiwan, Dec. 2019).
3. The 5th International Conference on Advanced Electromaterials (ICAE 2019), (Jeju, Korea, Nov. 2019).
4. The 7th RIKEN-NCTU Symposium on Physical and Chemical Sciences, (Hsinchu, Taiwan, Oct. 2019).
5. 2019 Collaborative Conference on Materials Research (CCMR), (Gyeonggi Goyang/Seoul, South Korea, June 2019).
6. 14th IUPAC International Conference on Novel Materials and their Synthesis (NMS-XIV) (Guangzhou, China, Oct. 2018)
7. Taiwan-Japan-US Joint Workshop on Energy Materials for Sustainable Development (Sep. 2018)
8. The 27th International Conference on Amorphous and Nanocrystalline Semiconductors (Seoul, Korea, Aug. 2017).
9. The EITA Conference on New Materials, Nanotechnology and New Energy 2017, (Ann Arbor, MI, USA, July 2017)
10. 12th Pacific Rim Conference on Ceramic and Glass Technology (PACRIM 12), (Hawaii, USA, May 2017)
11. The 7th Asian Conference on Organic Electronics (A-COE 2015) (Beijing, Oct. 2015).
12. International Photonics and OptoElectronics Meetings 2015 (POEM 2015) (Wuhan Photonics Week) (Wuhan, China, June 2015)
13. Materials Challenges in Alternative & Renewable Energy (MCARE 2015) (Jeju, Korea, Feb. 2015).
14. International Conference on New Materials, Nanotechnology and New Green Energy 2014 (EITA–New Materials 2014)
15. Graphene 2014 International Conference (Nov. 2014)
16. International Symposium on Organic Photovoltaic (OPV-2014), (Sep. 2014)
17. 9th World Congress of Chemical Engineering (Seoul, Korea, Aug. 2013)
18. The 12th Emerging Information & Technology Conference “Research, Innovation, and Commercialization” (Toronto, Canada, Aug. 2012)

19. International Conference on Functional Organic Materials and Related Devices (June 2012)
20. 4th International Conference Smart Materials, Structures and Systems (Italy, June 2012)
21. Science Conference on Materials for Green energy and Forum on Material Characteristics Using Synchrotron Radiation (2011 APAM) (Aug., 2011)
22. 16th Opto-Electronics and Communications Conference (OECC 2011) (July, 2011)
23. OSA-IEEE Topical Conference, Advanced in Optoelectronics and Micro/nano-optics (AOM 2010) (Dec., 2010)
24. The International Conference on Flexible and Printed Electronics (Oct., 2010)
25. Plastic Electronics Asia 2009 (June, 2009)
26. The 3rd International conference in Solar Taiwan 2009 (OPTO 2009) (June, 2009)
27. Printed Electronics Asia, Japan (Oct., 2008)
28. 2008 International Symposium on Flexible Electronics and Displays (ISFED) (Nov., 2008)
29. The 5th International OLED and PLED Workshop in Taipei (April/2007)

Conference Chairman/Committee

1. Technical Program Committee, 2020 International Electron Devices & Materials Symposium (IEDMS 2020), (Taoyuan, Oct. 2020).
2. Program Committee, Optics & Photonics Taiwan, International Conference (OPTIC 2019), (Taichung, Dec. 2019).
3. Section Chair, The 5th International Conference on Advanced Electromaterials (ICAE 2019), (Jeju, Korea, Nov. 2019).
4. Technical Program Committee and Section Chair, 2019 The International Conference on Flexible and Printed Electronics (ICFPE), (Taipei, Oct. 2019).
5. Conference Chair, The 2019 EITA Conference on New Materials, Nanotechnology, Healthcare, New Energy and Sustainable Smart Manufacturing (EITA–New Materials 2019) (EITA–New Materials 2019), (Hsinchu, Sep. 2019).
6. International Advisory Committee, Materials Challenges in Alternative & Renewable Energy 2019 (MCARE 2019), (Jeju, Korea, Aug. 2019).
7. Program Committee, Optics & Photonics Taiwan, International Conference (OPTIC 2018), (Tainan, Dec. 2018).
8. Invited section chairman, 14th IUPAC International Conference on Novel Materials and their Synthesis (NMS-XIV) (Guangzhou, China, Oct. 2018)
9. Technical Program Committee Member, 6th Annual International Conference on Material Science and Engineering (Suzhou, China, June 2018)
10. Section Chair, Taiwan Solid State Lighting (2018 tSSL), (April 2018)
11. Section Chair, The 27th International Conference on Amorphous and Nanocrystalline Semiconductors (Seoul, Korea, Aug. 2017).
12. Program Steering Committee and Section Chair , The EITA Conference on New Materials, Nanotechnology and New Energy 2017, (Ann Arbor, MI, USA, July 2017)
13. Invited section chairman , 12th Pacific Rim Conference on Ceramic and Glass Technology (PACRIM 12), (Hawaii, USA, May 2017)
14. International Advisory Committee , Materials Challenges in Alternative & Renewable Energy (MCARE 2017), (Jeju, Korea, Feb. 2017).
15. Invited section chairman , Optics & Photonics Taiwan, International Conference (OPTIC 2016), (Taipei, Dec. 2016)
16. Invited section chairman , Display Innovation Taiwan Conference 2016 (Taipei, Aug. 2016)
17. Section Chair , The 10th Taiwan Solid State Lighting (2016 tSSL), (April 2016)

18. Session Committee (Photovoltaic Technology), Optics & Photonics Taiwan, International Conference (OPTIC 2015), (Dec. 2015)
19. Section Chair and Technical Program Committee , The International Conference on Flexible and Printed Electronics (2015 ICFPE), (Oct. 2015)
20. Program Steering Committee and Workshop Track Co-Chair , International Conference on New Materials, Nanotechnology and New Green Energy 2014 (EITA–New Materials 2014)
21. Presiding , International Symposium on Organic Photovoltaic (OPV-2014), (Sep. 2014)
22. Program Section Co-Chair and Section Chair , Photovoltaic Science and Engineering Conference (PVSEC-23), (Nov. 2013)
23. Invited section chairman , 9th World Congress of Chemical Engineering (Seoul, Korea, Aug. 2013)
24. Invited section chairman , Display Taiwan 2013 , Section of AMOLED Panel & Microdisplay (Taipei, June 2013)
25. Invited chairman , 4th International Conference Smart Materials, Structures and Systems (Italy, June 2012)
26. Invited chairman and program committee , Taiwan Display Conference (2012)
27. International Photonics conference (IPC 2011) (Dec. 2011), Program Committee
28. Section Chair, OECC 2011, 16th Opto-Electronics and Communications Conference (July, 2011)
29. OSA-IEEE Topical Conference, Advanced in Optoelectronics and Micro/nano-optics (AOM 2010), (Dec. 2010) International Technical Program Committee.
30. 2010 International Conference on Optics and Photonics in Taiwan (OPT10) (Dec. 2010), Program Committee.
31. Section Program Committee , Optics and Photonics Taiwan (2009)
32. Invited chairman , Plastic Electronics Asia 2009
33. Local Organizer and section chairman, International Symposium on Solar Cell Technologies (ISSCT/OPT) 2008.
34. Invited chairman , OPTO 2008 , The 2nd International conference in Solar Taiwan 2008
35. Invited co-chairman , International Display Manufacturing Conference (IDMC) (2007)
36. Invited chairman , Taiwan Display Conference(2006)
37. Invited chairman , The 4th Asian Photochemistry Conference (2005)
38. Invited co-chairman , International Display Manufacturing Conference (IDMC) (2005)

Journal Editor or Editorial Board

1. Encyclopedia of Modern Optics, edition II, Elsevier (Section Editor: Organic Optoelectronics)
2. Current Smart Materials (Editorial Board)
3. Active and Passive Electronic Components (Editorial Board, 2012-2016)
4. Electronic Monthly (Guest Editor, 2008)

External reviewer

1. 2014 Work Programme, the French National Research Agency ANR Project Proposal
2. Global Research Network Program 2014, National Research Foundation of Korea
3. 2012 *New University Researchers Start-up Program* of the Fonds de recherche du Québec
4. Chilean Government Commission for Scientific and Technological Development (CONICYT) 2010 Regular Research Funding Competition
5. Work Programme, the French National Research Agency ANR Project Proposal

Publication List

Journal papers (H-index:38)

1. Ming-Kai Chuang, Chun-Hao Lin, Fang-Chung Chen*, “Accumulated plasmonic effects of gold nanoparticle decorated PEGylated graphene oxides in organic light-emitting diodes” *Dyes Pigm.* 180, 108412 (2020). **(IF: 4.613)**
2. Chien-Lun Huang, Gautham Kumar, Ganesh D. Sharma, Fang-Chung Chen*, “Plasmonic Effects of Copper Nanoparticles in Polymer Photovoltaic Devices for Outdoor and Indoor Applications” *Appl. Phys. Lett.* 116, 253302 (2020). **(IF: 3.597)**
3. Hsin-Hung Sung, Chien-Chen Kuo, Hung-Sheng Chiang, Hong-Lin Yue, Fang-Chung Chen*, “Differential Space-Limited Crystallization of Mixed-Cation Lead Iodide Single-Crystal Micro-Plates Enhances the Performance of Perovskite Solar Cells” *Solar RRL*, 3, 1900130 (2019). **(IF:7.527)**
4. Ming-Ju Wu, Chien-Chen Kuo, Lu-Syuan Jhuang, Po-Han Chen, Yi-Fong Lai, and Fang-Chung Chen*, “Bandgap Engineering Enhances the Performance of Mixed-Cation Perovskite Materials for Indoor Photovoltaic Applications” *Adv. Energy Mater.* 9, 1901863 (2019). (Inside Front Cover) **(IF:25.245)**
5. Yu-Chi Wang, Heng Li, Yu-Heng Hong, Kuo-Bin Hong, Fang-Chung Chen, Chia-Hung Hsu, Ray-Kuang Lee, Claudio Conti, Tsung Sheng Kao,* and Tien-Chang Lu* “Flexible Organometal–Halide Perovskite Lasers for Speckle Reduction in Imaging Projection” *ACS Nano*, 13, 5421-5429 (2019). **(IF:14.588)**
6. Fang-Chung Chen*, “Virtual Screening of Conjugated Polymers for Organic Photovoltaic Devices Using Support Vector Machines and Ensemble Learning” *Int. J. Polym. Sci.*, 2019, 4538514 (2019). **(IF:1.718)**
7. Ming-Chuan Hsiao, Ping-Cheng Chien, Lu-Syuan Jhuang and Fang-Chung Chen* “Bidentate Chelating Ligands as Effective Passivating Materials for Perovskite Light-Emitting Diodes”, *Phys. Chem. Chem. Phys.*, 21, 7867-7831 (2019). **(IF:3.721)**
8. Fang-Chung Chen*, “Emerging Organic and Organic/Inorganic Hybrid Photovoltaic Devices for Specialty Applications: Low-Level-Lighting Energy Conversion and Biomedical Treatment”, *Adv. Opt. Mater.*, 7, 1800662 (2019). **(Times Cited:1) (IF:7.430)**
9. M. L. Keshtov, S. A. Kuklin, I.O. Konstantinov, Fang-Chung Chen, Zhi-yuan Xie, G. D Sharma, “New iridium-containing conjugated polymers for polymer solar cell applications”, *New J. Chem*, 42, 17296-17302 (2018). **(IF:3.201)**
10. Hong-Lin Yue, Hsin-Hung Sung and Fang-Chung Chen*, “Seeded Space-Limited Crystallization of CH₃NH₃PbI₃ Single-Crystal Plates for Perovskite Solar Cells”, *Adv. Electron. Mater.*, 4 (issue 7), 1700655, (2018). **(Times Cited:1) (IF:5.466)**
11. Nai-Wei Teng, Shun-Shing Yang, and Fang-Chung Chen*, “Plasmonic-enhanced organic photovoltaic devices for low-power light applications”, *IEEE J. Photovolt.*, 8, 752-756 (2018).

(Times Cited:4) (IF:3.075)

12. Shun-Shing Yang, Zong-Chun Hsieh, Muchamed L. Keshtov, Ganesh D. Sharma, and Fang-Chung Chen*, “Toward High-Performance Polymer Photovoltaic Devices for Low-Power Indoor Applications”, **Solar RRL**, 1, 1700174 (2017). **(Times Cited:9) (selected as the front cover)**
13. Soon Yie Kok, Zong-Chun Hsieh, Chun-Hsien Chou, Shun-Shing Yang, Ming-Kai Chuang, Yu-Tung Lin, Seong Shan Yap, Teck Yong Tou and Fang-Chung Chen* “Plasmonic effects on bulk heterojunction polymer solar cells : a transient photovoltage and differential charging study” **Sci. Adv. Mater.** 9, 1435-1439 (2017). **(Times Cited:2) (IF:1.318)**
14. M.L. Keshtov, S. A. Kuklin, A.R. Khokhlo, S.N. Osipov, N.A. Radychev, D.Y. Godovskiy, I.O. Konstantinov , F. C. Chen, E.N. Koukaras, Ganesh D. Sharma “Polymer solar cells based low bandgap A1-D-A2-D terpolymer based on fluorinated thiadiazoloquinoline and benzothiadiazole acceptors with energy loss less than 0.5 eV” **Org. Electron.** 46, 192-202 (2017) **(Times Cited:3) (IF:3.680)**
15. Wai-Chen Lin, Ming-Kai Chuang, Muchamed L. Keshtov, Ganesh D. Sharma, and Fang-Chung Chen* “Photoexfoliation of Two-Dimensional Materials through Continuous UV Irradiation” **Nanotechnology** 28, 125604 (2017). **(Times Cited:1) (IF:3.401)**
16. Mukhamed L. Keshtov*, Alexei R. Khokhlov, Serge A. Kuklin, Fang-Chung Chen, Emmanuel N. Koukaras, and Ganesh D. Sharma* “New D-A1–D-A2-Type Regular Terpolymers Containing Benzothiadiazole and Benzotrithiophene Acceptor Units for Photovoltaic Application” **ACS Appl. Mater. Interfaces** 8(48), pp 32998–33009 (2016). **(Times Cited:5) (IF:8.097)**
17. Tsung Sheng Kao, Yu-Hsun Chou, Kuo-Bin Hong, Jiong-Fu Huang, Chun-Hsien Chou, Hao-Chung Kuo, Fang-Chung Chen* and Tien-Chang Lu*, “Controllable lasing performance in solution-processed organicoorganic hybrid perovskites” **Nanoscale** 8, 18483-18488 (2016) **(Times Cited:4) (IF:7.233)**.
18. Yuvraj Patil, Rajneesh Misra, Mukhamed Lostambievich Keshtov, Fang-Chung Chen and Ganesh D Sharma* “Symmetrical and Unsymmetrical Triphenylamine based Diketopyrrolopyrroles and their use as Donor for Solution Processed Bulk Heterojunction Organic Solar Cells” **RSC Adv.** 6, 99685-99694 (2016) **(Times Cited:7) (IF:2.936)**.
19. M. L. Keshtov*, S. A. Kuklina, I. E. Ostapov, Fang-Chung Chen, and A. R. Khokhlov “Novel Regular D–A-Conjugated Polymers Based on 2,6-Bis (6-fluoro-2-hexyl-2*H*-benzotriazol-4-yl)-4,4-bis(2-ethylhexyl)-4*H*-silolo[3,2-*b*:4,5-*b'*] dithiophene Derivatives: Synthesis, Optoelectronic, and Electrochemical Properties” **Doklady Chem.** 470, 274-278 (2016) **(Times Cited:2) (IF:0.580)**.
20. Chiung-Fu Huang, M. L. Keshtov and Fang-Chung Chen*, ”Cross-Linkable Hole-Transport Materials Improve the Device Performance of Perovskite Light-Emitting Diodes” **ACS Appl. Mater. Interfaces** 8, 27006-27011 (2016). **(Times Cited:12) (IF:8.097)**
21. Yuvraj Patil, Rajneesh Misra,* F. C. Chen, and Ganesh D. Sharma* “Small molecule based N-phenyl carbazole substituted diketopyrrolopyrroles as donors for solution-processed bulk

heterojunction organic solar cells” **Phys. Chem. Chem. Phys.** 18, 22999-23005 (2016) (**Times Cited:9**) (**IF:3.906**).

22. Tsung Sheng Kao, Kuo-Bin Hong, Yu-Hsun Chou, Jiong-Fu Huang, Fang-Chung Chen*, and Tien-Chang Lu* “Localized surface plasmon for enhanced lasing performance in solution-processed perovskites” **Opt. Express**, 24, 20696-20702 (2016) (**Times Cited:8**) (**IF:3.589**).
23. M. L. Keshtov,* A. R. Khokhlov, S. A. Kuklin, F. C. Chen, A. Y. Nikolaev, E. N. Koukaras and G. D. Sharma* “Synthesis of alternating D–A1–D–A2 terpolymers comprising two electron-deficient moieties, quinoxaline and benzothiadiazole units for photovoltaic applications” **Polym. Chem.** 7, 4025 (2016). (**Times Cited:7**) (**IF:4.927**)
24. Yu-Sheng Hsiao*, Yan-Hao Liao, Huan-Lin Chen, Peilin Chen and Fang-Chung Chen*, “Organic photovoltaics and bioelectrodes providing electrical stimulation for PC12 cell differentiation and neurite outgrowth” **ACS Appl. Mater. Interfaces** 8, 9275 (2016). (**Times Cited:11**) (**IF:8.097**)
25. M. L. Keshtov*, S. A. Kuklin, D. Y. Godovsky, A. R. Khokhlov, R. Kurchania, F. C. Chen, Emmanuel N. Koukaras, G. D. Sharma* “New Alternating D–A1–D–A2 Copolymer Containing Two Electron-Deficient Moieties Based on Benzothiadiazole and 9-(2-Octyldodecyl)-8H-pyrrolo[3,4-b]bisthieno[2,3-f:3',2'-h]quinoxaline-8,10(9H)-dione for Efficient Polymer Solar Cells” **J. Polym. Sci. Part A: Polym. Chem.** 54, 155-168 (2016). (**Times Cited:4**) (**IF:2.588**)
26. Ming-Kai Chuang, Shun-Shing Yang and Fang-Chung Chen*, “Metal Nanoparticle-Decorated Two-Dimensional Molybdenum Sulfide for Plasmonic-Enhanced Polymer Photovoltaic Devices” **Materials** 8, 5414-5425 (2015). (**Times Cited:5**) (**IF:2.467**)
27. M. L. Keshtov*, S.A. Kuklin, F. C. Chen, A. R. Khokhlov, Rajnish Kurchania and G. D. Sharma* “A new D-A conjugated polymer P(PTQD-BDT) with PTQD acceptor and BDT donor units for BHJ polymer solar cells application” **J. Polym. Sci. Part A: Polym. Chem.** 53, 2390-2398 (2015). (**Times Cited:8**) (**IF:2.588**)
28. Chung-Lei Chen, Ming-Kai Chuang, Chyong-Hua Chen, Chih-Wei Chu, Muchamed L. Keshtov, and Fang-Chung Chen*, “Efficient and stable polymer solar cells prepared with plasmonic graphene oxides as the anode buffers” **Semicond. Sci. Tech.** 30, 085013 (2015) (**Times Cited:1**) (**IF:2.280**)
29. Chun-Hsien Chou, Min-Hung Hsu and Fang-Chung Chen*, “Flexible luminescent waveguiding photovoltaics exhibiting strong scattering effects from the dye aggregation” **Nano Energy** 15, 729-736 (2015) (**Times Cited:8**) (**IF:13.120**)
30. M. L. Keshtov*, G. D. Sharma*, S. A. Kuklin, I. E. Ostapov, D. Yu. Godovsky, A. R. Khokhlov, and F. C. Chen, “Synthesis and characterization of two new benzothiadiazole- and fused bithiophene based low band-gap D-A copolymers: application as donor bulk heterojunction polymer solar cells” **Polymer** 65, 193 (2015) (**Times Cited:5**) (**IF:3.483**)
31. Ming-Kai Chuang, and Fang-Chung Chen*, “Synergistic plasmonic effects of metal nanoparticle-decorated PEGylated graphene oxides in polymer solar cells” **ACS Appl. Mater. Interfaces** 7, 7397–7405 (2015) (**Times Cited:30**) (**IF:8.097**).

32. M. L. Keshtov*, D. Yu. Godovsky, F. C. Chen, A. R. Khokhlov, S. A. Siddiqui, and G. D. Sharma* “Synthesis and characterization of -conjugated copolymers with thieno-imidazole units in the main chain: application for bulk heterojunction polymer solar cells” **Phys. Chem. Chem. Phys.** 17, 7888 (2015) **(Times Cited:3) (IF:3.906)**
33. M. L. Keshtov, D. Y. Godovsky, S. A. Kuline, Y. Zou, Fang-Chung Chen, and A. R. Khokhlov “New Thienofluoroanthenes as Building Blocks for Optoelectronic Applications” **Doklady Chem.** 461, 75 (2015) **(IF:0.580)**.
34. Tsung Sheng Kao, Yu-Hsun Chou, Chun-Hsien Chou, Fang-Chung Chen*, and Tien-Chang Lu* “Lasing behaviors upon phase transition in solution-processed perovskite thin films” **Appl. Phys. Lett.** 105, 231108 (2014) **(Times Cited:39) (IF:3.495)**
35. An-Kai Ling, Chun-Hao Lin, Hsun Liang, and Fang-Chung Chen* “Tunable microcavities in organic light-emitting diodes by way of low-refractive-index polymer doping” **Org. Electron.** 15, 3648 (2014) **(IF:3.680)**
36. Ming-Kai Chuang, Fang-Chung Chen*, and Chain-Shu Hsu “Gold nanoparticle–graphene oxide nanocomposites that enhance the device performance of polymer solar cells” **J. Nanomater.** 2014, 736879 (2014) **(Times Cited:1) (IF:2.207)**
37. Chun-Hsien Chou and Fang-Chung Chen* “Plasmonic nanostructures for light trapping in organic photovoltaics devices” **Nanoscale** 6, 8444 (2014) **(Times Cited:86) (IF:7.233)**.
38. Yen-Tseng Lin, Chu-Hsien Chou, Fang-Chung Chen*, Chih-Wei Chu, and Chain-Shu Hsu “Reduced optical loss in mechanically stacked multi-junction organic solar cells exhibiting complementary absorptions” **Opt. Express**, 22, S2, A481-A490 (2014) **(Times Cited:4) (IF:3.356)**.
39. Yu-Hsuan Ho, Hsun Liang, Shun-Wei Liu, Wei-Cheng Tian, Fang-Chung Chen and Pei-Kuan Wei* “Efficiency improvement of organic bifunctional devices by applying omnidirectional antireflection nanopillars” **RSC Adv.** 4, 9588 (2014) **(Times Cited:2) (IF:2.936)**.
40. Ming-Kai Chuang, Shih-Wei Lin, Fang-Chung Chen*, Chih-Wei Chu, and Chain-Shu Hsu “Gold nanoparticle–decorated graphene oxides for plasmonic-enhanced polymer photovoltaic devices” **Nanoscale** 6, 1573 (2014) **(Times Cited:63) (IF:7.233)**.
41. Wei-Ting Lin, Yen-Tseng Lin, Chu-Hsien Chou, Fang-Chung Chen* and Chain-Shu Hsu “Organic solar cells comprising multiple-device stacked structures exhibiting complementary absorption behavior” **Sol. Energy Mater. Sol. Cells** 120, 724 (2014) **(Times Cited:6) (IF:5.018)**.
42. Kim-Shih Tan, Ming-Kai Chuang, Fang-Chung Chen*, and Chain-Shu Hsu “Solution-processed nanocomposites containing molybdenum oxide and gold nanoparticles as anode buffer layers in plasmonic-enhanced organic photovoltaic devices” **ACS Appl. Mater. Interfaces** 5, 12419 (2013) **(Times Cited:28) (IF:8.097)**.
43. Chun-Hsien Chou, Jui-Kang Chuang and Fang-Chung Chen* “High-Performance Flexible Waveguiding Photovoltaics” **Sci. Rep.** 3, 2244 (2013) **(Times Cited:22) (IF:4.122)**.
44. M. L. Keshtov, Fang-Chung Chen, E. I. Maltsev, D. V. Marochkin, V. S. Kochurov, and A. R.

Khokhlov “New conjugated electroluminescent triphenylamine containing polymers with side-chain pyridin-2-ylimidazo[1,5-a]pyridine groups for polymer light-emitting diodes” **Doklady Chem.** 450, 165 (2013) **(Times Cited:1) (IF:0.580)**.

45. Chu-Chen Chueh, Shang-Chieh Chien, Hin-Lap Yip, José Francisco Salinas, Chang-Zhi Li, Kung-Shih Chen, Fang-Chung Chen, Wen-Chang Chen, and Alex K.-Y. Jen* “Toward high-performance semi-transparent polymer solar cells: optimization of ultra-thin light absorbing layer and transparent cathode architecture” **Adv. Energy Mat.** 4, 417-423 (2013) **(Times Cited:87) (IF:21.875)**.
46. Chuan-Sheng Kao, Fang-Chung Chen*, Ching-Wen Liao, Michael H. Huang, and Chain-Shu Hsu “Plasmonic-enhanced performance for polymer solar cells prepared with inverted structures” **Appl. Phys. Lett.** 101, 193902 (2012) **(Times Cited:31) (IF:3.495)**
47. Yu-Sheng Hsiao, Shobhit Charan, Feng-Yu Wu, Fan-Ching Chien, Chih-Wei Chu, Peilin Chen,* and Fang-Chung Chen* “Improving the light trapping efficiency of plasmonic polymer solar cells through photon management” **J. Phys. Chem. C** 116 (39), 20731–20737 (2012) **(Times Cited:80) (IF:4.484)**
48. Ya-Wei Chung, Fang-Chung Chen*, Ying-Ping Chen, Yu-Ze Chen and Yu-Lun Chueh “High-performance solution-processed amorphous ZrInZnO thin-film transistors“ **Phys. Status Solidi RRL** 6, 400 (2012) **(Times Cited:3) (IF:3.721)**
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50. Wei-Chi Chen, Shang-Chieh Chien, Fang-Chung Chen*, and Chain-Shu Hsu “Stacked structures for assembling multiple organic photovoltaic devices” **Appl. Phys. Express** 5, 072301 (2012) **(Times Cited:2) (IF:2.555)**
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Conference papers

International Conference Papers (sorted by conference location)

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2. Hsin-Hung Sung, Hong-Lin Yue, Chien-Chen Kuo, Hung-Sheng Chiang, Fang-Chung Chen*, “Asymmetric thin-plate perovskite single crystals for solar energy applications” 2019 Collaborative Conference on Materials Research (CCMR), Goyang, South Korea (2019). **(invited oral presentation)**
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16. Ming-Kai Chuang, Fang-Chung Chen*, and Chain-Shu Hsu “Green synthesis of gold nanoparticle – decorated graphene oxides that enhance the photocurrent in polymer solar cells” 2014 Materials Research Society Spring Meeting (April 2014).
17. Fang-Chung Chen* “Surface plasmonic effects of metallic nanostructures on the performance of polymer solar cells” 9th World Congress of Chemical Engineering (Seoul, Korea, Aug. 2013) (**invited oral presentation**)
18. Fang-Chung Chen* “Light Harvesting Schemes for High-performance Polymer Solar Cells” The 12th Emerging Information & Technology Conference (Toronto, Canada, Aug. 2012) (**invited oral presentation**)
19. Fang-Chung Chen*, Jyh-Lih Wu, Chia-Ling Lee, Yi Hong, Ming-Kai Chuang and Kim-shih Tan “Light Harvesting Schemes for High-performance Polymer Solar Cells” 4th International Conference

Smart Materials, Structures and Systems (Italy, June 2012) **(invited oral presentation)**

20. Fang-Chung Chen*, and Ming-Kai Chuang “Thin-film Transfer-printing of Polymer Blends with Self-organized Interfaces for Flexible Polymer Solar Cells” 2011 Materials Research Society Spring Meeting (April 2011) (oral presentation).
21. Fang-Chung Chen*, Tzung-Da Chen, Bing-Ruei Zeng and Ya-Wei Chung “Electrical Characteristics of Flexible Organic Thin-film Transistors under Bending Conditions” The 17th International Display Workshops (IDW) (Dec. 2010 Japan).
22. Fang-Chung Chen*, Jyh-Lih Wu, Yi Hung “Light Harvesting Schemes for High-performance Polymer Solar Cells” Advances in Optoelectronics and Micro/nano-optics (AOM) (Dec. 2010 Guangzhou, China) **(invited oral presentation)**
23. Fang-Chung Chen*, and Shang-Chieh Chien “Nanoscale functional interlayers formed through spontaneous vertical phase separation in polymer photovoltaic devices” MRS (Spring 2010) (oral presentation).
24. Chao-Feng Sung, Dhananjay Kekuda, Li Fen Chu, Yuh-Zheng Lee, Fang-Chung Chen, Meng-Chyi Wu, and Chih-Wei Chu*, “Fullerene C₆₀ thin film transistors fabricated by solution processing” MRS (Spring 2010) (oral presentation).
25. Fang-Chung Chen* “Morphology manipulation for polymer solar cells” Progress in Electromagnetics Research Symposium PIERS 2010 Xi’an (oral presentation).
26. Li Fen Chu, Chao-Feng Sung, Yuh-Zheng Lee, Fang Chung Chen, Meng-Chyi Wu, and Chih Wei Chu ”Ambipolar charge carrier transport in C60 and Poly(3-hexylthiophene) blends of organic semiconductor thin film transistors and their logic circuits” International Conference on Solid State Devices and Materials 2009 (SSDM 2009)
27. Yi-Hsing Chu, Gao-Ming Wu, Chiao-Shun Chuang, Wei-Kuan Yu, Fang Chung Chen, Han-Ping D. Shieh “CMOS-Like Ambipolar Organic/Inorganic TFTs for AMLCD and AMOLED Applications” Society for Information Display (2009).
28. Jyh-Lih Wu, Kuo-Huang Hsieh, Wen-Chang Chen and Fang-Chung Chen*, “Highly efficient inverted bulk-heterojunction polymer photovoltaic devices with transparent contacts” 215th Electrochemical Society Meeting (2009).
29. Shang-Chieh Chien and Fang-Chung Chen* “Improved Hole-Mobility of Polymer Bulk Heterojunction Photovoltaic Cells Incorporating Hole Transporting Materials” 215th Electrochemical Society Meeting (2009)
30. Fang-Chung Chen* “High-performance polymer solar cells” Printed electronics Asia 08’ **(invited oral presentation)**
31. Fang-Chung Chen*, Cheng-Hsiang Liao, Wei-Pang Huang, Tom Huang “Improved Air-stability of n-Channel Organic Thin Film Transistors via Surface Modification on Gate Dielectrics” Pacific Rim Meeting on Electrochemical and Solid-state Science (PRiME) (2008). (oral presentation)
32. Yung-Shiuan Chen, Shang-Chieh Chien, Fang-Chung Chen*, Jan-Tian Lian, Chien-Lung Tsou and

- Chi-Neng Mo “Enhanced power efficiency of single-layer white triplet polymer light-emitting diodes by blending with polymer oxides“ Society for Information Display (2008).
33. J. P. Lu, F. C. Chen, F.K. Chen, W.C. Chen, H.C Hsu, Y. Z Liao, and Y. Z. Lee “The Fabrication of Single Substrate Multi-Color Cholesteric Liquid Crystal Display by Ink-Jet Printing” Society for Information Display (2008).
 34. Fang-Chung Chen*, Hisn-Chen Tseng, and Chu-Jung Ko, “Efficient polymer solar cells prepared from co-solvent systems” MRS (Spring 2008).
 35. Chu-Jung Ko, Fang-Chung Chen*, and Wei-Chi Chen “In-situ, dynamic investigation of phase separation in P3HT/PCBM blends during the solvent annealing process“ MRS (Spring 2008)
 36. Fang-Chung Chen*, Chu-Jung Ko, and Yi-Kai Lin “Highly efficient polymer photovoltaic devices with bulk heterogeneous *p-n* junctions” 212th ECS meeting (2007) (oral presentation)
 37. Shang-Chieh Chien and Fang-Chung Chen* “Polymeric electrophosphorescent devices with low turn-on voltage and high power efficiency by blending with poly(ethylene glycol)” Society for Information Display (2007)
 38. Chiao-Shun Chuang, Su-Ting Tsai, Yung-Sheng Lin, Jung-An Cheng, Fang-Chung Chen*, and Han-Ping D. Shieh “Transparent OTFTs with color filtering functional gate insulators” Society for Information Display (2007).
 39. Fang-Chung Chen*, Chu-Jung Ko, and Yi-Kai Lin “Microwave annealing processes in polymer photovoltaic devices” MRS (Spring 2007) (oral presentation)
 40. Fang-Chung Chen*, Wen-Kuei Huang, and Jhih-Ping Lu “High-quality Microlens Arrays Fabricated by Ink-jet Printing and Micro-contact Printing” MRS (Spring 2007) (oral presentation)
 41. Chiao-Shun Chuang, Shu-Ting Tsai, Fang-Chung Chen*, and Han-Ping D. Shieh “Organic thin-film transistors with reduced-photosensitivity” The 13th International Display Workshops, Otsu, Japan, Dec. 6 (2006)
 42. Fang-Chung Chen*, Ssu-Fang Liu and Wen-Sheng Wang “Polarized polymer light-emitting diodes with conducting alignment layers” The 6th International Conference on Electroluminescence of Molecular materials and Related Phenomena, Hong Kong (August 2006). (oral presentation)
 43. Wen-Kuei Huang, Jhih-Ping Lu and Fang-Chung Chen* “Fabrication of a microlens array using ink-jet printing on a pre-patterned substrate by self-assembled monolayers” Micro & Nano Engineering, (2006).
 44. Fang-Chung Chen*, Tung-Hsien Chen, and Yung-Sheng Lin, “Novel electrode architecture for transparent organic thin-film transistors” International Meeting on Information Display/International Display Manufacturing Conference, Korean (2006). (oral presentation)
 45. Wen-Kuei Huang, Wen-Sheng Wang, Hui-Chun Kan, and Fang-Chung Chen* “Enhanced Light Out-coupling Efficiency of OLEDs with Self-organized Microlens Arrays” Society for Information Display (2006).
 46. Fang-Chung Chen*, Chiao-Shun Chuang, Yung-Sheng Lin, Li-Jen Kung, and Dong-Sian Chen,

“Polymeric Nanocomposite Dielectrics for Organic thin-film Transistors” MRS (Spring 2006).

47. Chiao-Shun Chuang, Yung-Sheng Lin, Li-Jen Kung, Dong-Sian Chen, Fang-Chung Chen*, and Han-Ping D. “Organic Thin-Film Transistors based on Nanocomposite Gate Insulators for High-current Driving Applications” International Display Workshops (2005). (oral presentation)
48. Wen-Kuei Huang, Fang-Chung Chen* and Chu-Jung Ko “Fabrication of microlens arrays on glass substrates by lotus effect” Micro & Nano Engineering, (2005).
49. Fang-Chung Chen, Roozbeh Jafari, Eren Kursun, Vijay Raghunathan, Thomas Schoellhammer, Doug Sievers, Deborah Estrin, Glenn Reinman, Majid Sarrafzadeh, Mani Srivastava, Ben Wu, and Yang Yang “Reconfigurable Fabric: An enabling technology for pervasive medical monitoring” Commucation Networks and Distributed Systems Modeling and Simulation Conference, (2004).
50. Fang-Chung Chen, and Yang Yang*, “Enhanced efficiency of plastic photovoltaic devices by blending with ionic solid electrolytes” MRS (Spring 2003) (oral presentation)
51. Fang-Chung Chen, and Yang Yang*, Qibing Pei, “Phosphorescent light-emitting electrochemical cells” MRS (Spring 2003) (post presentation)
52. Yang Yang*, Fang-Chung Chen, Mark. E. Thompson, “High performance polymer light-emitting diodes” ACS (Fall 2002). This paper is published in **Polymer Reprints**, 43, 487 (2002).
53. Fang-Chung Chen, Shun-Chi Chang, Yang Yang*, “Energy transfer and triplet exciton confinement in phosphorescent polymer light-emitting diodes” TMS 2002 Electronic Materials Conference, (Spring 2002) (oral presentation)
54. Fang-Chung Chen, Shu-Chi Chang, Gufeng He, Seungmoom Pyo, Jie Liu, Yang Yang*, Sergey Lamansky, Mark E. Thompson, Junji Kido, “The search of polymeric hosts for phosphorescent polymer light-emitting diodes” ICEL-3 (2001) (oral presentation)
55. Shun-Chi Chang, Fang-Chung Chen, Shu-Chi Chang, Yang Yang* “The search of host materials in phosphorescent polymer light-emitting diodes” MRS (2001) (post presentation)

Domestic Conference Papers

1. Fang-Chung Chen*, Ming-Ju Wu, Chien-Chen Kuo, Lu-Syuan Jhuang, Shun-Shing Yang, Po-Han Chen, Zong-Chun Hsieh, Nai-Wei Teng, “Emerging Organic and Perovskite Photovoltaic Devices for Indoor Applications” Optics & Photonics Taiwan, International Conference 2019 (OPTIC 2019). **(invited oral presentation)**
2. Yi-Fong Lai, and Fang-Chung Chen*, “Virtual Screening of Conjugated Polymers for Organic Photovoltaic Devices Using Support Vector Machines and Ensemble Learning” The 7th RIKEN-NCTU Symposium on Physical and Chemical Sciences (2019). (Master Student Paper Award)
3. Fang-Chung Chen* “Off-grid Photovoltaics for Smart Applications” The EITA Conference on New Materials, Nanotechnology and New Energy 2019, Hsinchu, Taiwan **(invited oral presentation)**
4. Wun-Jhen Chen, Tzu-Hsueh Wu, Fang-Chung Chen* “Enhancing the Performance of Perovskite Solar Cells by Utilizing the Local Surface Plasmon Effects of Copper Nanoparticles” The EITA Conference on New Materials, Nanotechnology and New Energy 2019, Hsinchu, Taiwan.

5. Shi-Da Huang, Ren-Yung Yang, Fang-Chung Chen* “Plasmonic Effects of Gold Nanoparticles on the Performance of Perovskite Quantum Dot Light-Emitting Diodes” The EITA Conference on New Materials, Nanotechnology and New Energy 2019, Hsinchu, Taiwan.
6. Hsin-Hung Sung, Hung-Sheng Chiang, Ren-Yung Yang, Fang-Chung Chen* “Fabrication and Characteristic of Mixed-Cation Single-Crystal Plates for Perovskite Solar Cells” The EITA Conference on New Materials, Nanotechnology and New Energy 2019, Hsinchu, Taiwan.
7. Yu-Chang Lin, Wun-Jhen Chen, and Fang-Chung Chen* “Solution-Processable Copper Nanoparticles for Plasmonic-Enhanced Perovskite Solar Cells” Optics & Photonics Taiwan, International Conference 2018 (OPTIC 2018).
8. Chen-Min Yang, Lu-Syuan Jhuang, Fang-Chung Chen* “Plasmonic Effects of Gold Nanoparticles on the Performance of Perovskite Light-Emitting Diodes” Optics & Photonics Taiwan, International Conference 2018 (OPTIC 2018).
9. Ming-Ju Wu, Chien-Chen Kuo, and Fang-Chung Chen* “Band-gap Engineering of Perovskite Photovoltaic Devices for Indoor Applications” Optics & Photonics Taiwan, International Conference 2018 (OPTIC 2018).
10. Xin-Jie Chen, Ming-Ju Wu, and Fang-Chung Chen* “Semitransparent Perovskite Solar Cells and their Tandem Structures Assembled with Si Cells” Optics & Photonics Taiwan, International Conference 2017 (OPTIC 2017)
11. Pang-Hua Huang, Yi-Chun Lai, Sih-Han Chen, Peichen Yu*, and Fang-Chung Chen ” Hybrid Carbon Nanotube/Silicon Schottky Junction Solar Cells” Optics & Photonics Taiwan, International Conference 2016 (OPTIC 2016)
12. Chi-Yu Yang, Hao-Wu Lin*, Ken-Tsung Wong*, and Fang-Chung Chen* “Efficient Excimer Delay Fluorescence Organic Light Emission Devices Based on Fluorene Derivatives” Optics & Photonics Taiwan, International Conference 2016 (OPTIC 2016)
13. Guan Yu Chen, Tsung Sheng Kao, Kuo Bin Hong, Yu Hsun Chou, Jiong Fu Huang, Fang Chung Chen*, Tien Chang Lu* “Lasing performance enhanced by localized surface plasmon in solution-processed perovskites” Optics & Photonics Taiwan, International Conference 2016 (OPTIC 2016) (oral presentation)
14. Zong-Chun Hsieh, Po-Han Chen and Fang-Chung Chen* ” Organic Photovoltaic Devices Prepared with a Low-Band-Gap Polymer for Low Light Applications” Optics & Photonics Taiwan, International Conference 2015 (OPTIC 2015)
15. Shun-Shing Yang, Nai-Wei Teng, and Fang-Chung Chen* ”Organic Photovoltaic Devices for Indoor Applications” Optics & Photonics Taiwan, International Conference 2015 (OPTIC 2015)
16. Shun-Shing Yang and Fang-Chung Chen* ”Organic Photovoltaic Devices for Indoor Applications” 2015 International Conference on Flexible and Printed Electronics, (The 6th ICFPE, 2015, Taipei)
17. Zong-Chun Hsieh and Fang-Chung Chen* ”Organic Photovoltaic Devices Prepared with a Low-Band-Gap Polymer for Low Light Applications” 2015 International Conference on Flexible and Printed

Electronics, (The 6th ICFPE, 2015, Taipei)

18. Wai-Chen Lin, Hung-Wen Hsu, and Fang-Chung Chen* " Polymer Solar Cells Prepared with Photoexfoliated Fluorinated Graphite as Cathode Buffer Layer" 2015 International Conference on Flexible and Printed Electronics, (The 6th ICFPE, 2015, Taipei)
19. Chun-Hao Lin, Jiong-Fu Huang, and Fang-Chung Chen*, "Plasmonic Effects of Gold Nanoparticle-Decorated Graphene Oxide Nanocomposites on the Performance of Polymer Light-Emitting Devices" Optics & Photonics Taiwan, International Conference 2014 (OPTIC 2014).
20. Ming-Kai Chuang, Shun-Shing Yang and Fang-Chung Chen*, "PEGylated gold nanoparticle-decorated graphene oxides for realizing synergistic plasmonic effects on polymer solar cells" Optics & Photonics Taiwan, International Conference 2014 (OPTIC 2014).
21. Fang-Chung Chen* "Plasmonic nanostructures for light-trapping in organic photovoltaic devices" International Conference on New Materials, Nanotechnology and New Green Energy 2014 (EITA–New Materials 2014) (**invited talk**).
22. Fang-Chung Chen* Ming-Kai Chuang, and Shih-Wei Lin, "Graphene Derivatives for Organic Optoelectronics" Graphene 2014 International Conference (Nov. 2014) (**invited talk**).
23. Fang-Chung Chen*, Ming-Kai Chuang, and Shih-Wei Lin, "Plasmonic nanostructures for polymer photovoltaic devices" International Symposium on Organic Photovoltaics (OPV-2014) (**invited talk**).
24. Chun-Hsien Chou, Fang-Chung Chen*, Li Wen-Chieh, Lin Yao-Leng, Wu Cheng-Han "Anti-reflection encapsulant for solar cells" Annual Meeting of The Physical Society of Republic of China, 2014.
25. Chun-Hsien Chou and Fang-Chung Chen* "Ray-tracing Designed Microlenses for Improving Flexible Waveguiding Photovoltaics" Optics & Photonics Taiwan, International Conference 2013 (OPTIC 2013) (**student paper award**).
26. An-Kai Ling, Chun-Hao Lin, and Fang-Chung Chen* "Enhanced Light Out-Coupling Efficiency of Polymer Light-Emitting Devices by Blending Low Refractive Index materials" Optics & Photonics Taiwan, International Conference 2013 (OPTIC 2013).
27. Yan-Hao Liao, Fang-Chung Chen*, Michael H. Huang and Min-Yi Yang "Au Nanosheets Induced Surface Plasmon to Enhance Performance of Organic Solar Cells" Optics & Photonics Taiwan, International Conference 2013 (OPTIC 2013).
28. Yen-Tseng Lin, and Fang-Chung Chen* "Multiple-device stacked structures for High-performance organic cells" Optics & Photonics Taiwan, International Conference 2013 (OPTIC 2013).
29. Chun-Hsien Chou and Fang-Chung Chen* "A Novel Concentrator Design with High Performance Flexible Waveguiding Photovoltaics" Photovoltaic Science and Engineering Conference (International PVSEC-23).
30. Shih-Wei Lin, Ming-Kai Chuang, and Fang-Chung Chen* "Gold nanoparticle-decorated graphene oxide nanocomposites for plasmonic-enhanced polymer photovoltaic devices" Photovoltaic Science and Engineering Conference (International PVSEC-23).

31. Kim-Shih Tan, Jyh-Lih Wu, Fang-Chung Chen*, Shu-Hao Chang, and Hsing-Yu Tuan “Near-Infrared Laser-Driven Polymer Photovoltaic Devices Containing Upconversion Nanocrystals”, Optics & Photonics Taiwan, International Conference 2012 (OPTIC 2012, formerly OPT 2012).
32. Chuan-Sheng Kao and Fang-Chung Chen* “Plasmonic-Enhanced Polymer Solar Cells with Inverted Structures”, Optics & Photonics Taiwan, International Conference 2012 (OPTIC 2012, formerly OPT 2012).
33. Fang-Chung Chen* “Light Harvesting Schemes for High-performance Polymer Solar Cells” International Conference on Functional Organic Materials and Related Devices 2012.
34. Chen-Wei Lin and Fang-Chung Chen* “Small Molecule Sensitizers in Polymer Photodetectors for Extended Spectral Response” Symposium on Nano Device Technology 2012.
35. Ya-Wei Chung, Hsieh Po-Cheng, Yu-Ze Chen, Yu-Lun Chueh, and Fang-Chung Chen* “Effect of Doping Ratio on the Electrical Properties of Zirconium-Indium-Zinc-Oxide Thin-film Transistors Fabricated by Using a Solution Process” Taiwan Display Conference (2012).
36. Shao-Tang Chuang, and Fang-Chung Chen* “Realization of Broad Spectral Response of Organic Photomultiple Photodetectors through Codoping Near-Infrared Dyes” International Photonics Conference (IPC 2011).
37. Jyh-Lih Wu, Ming-Kai Chuang, Kim-Shih Tan, and Fang-Chung Chen* “Near-Infrared Laser-Driven Polymer Photovoltaic Devices and Their Biomedical Applications” International Photonics Conference (IPC 2011).
38. Shu-Cheng Lin, and Fang-Chung Chen* “Charge Blocking Layers for Improving Detectivity of Organic Photomultiple Photodetectors” International Photonics Conference (IPC 2011).
39. Wai-Chen Lin*, Mei-Ju Lee, Chao-Feng Sung, Fang-Chung Chen “Inverted and semitransparent polymer solar cells” The Asian Conference on Organic Electronics” (ACOE 2011).
40. Fang-Chung Chen* “Light Harvesting Schemes for High-performance Polymer Solar Cells” 2011 Asia Pacific Academy of Materials (APAM) (2011) **(Invited)**
41. Fang-Chung Chen*, Jyh-Lih Wu, Yi Hong, and Chia-Ling Lee “Light Trapping Approaches for High-performance Polymer Solar Cells” 16th Opto-electronics and Communications Conference (OECC) (2011). **(Invited)**
42. Ya-Wei Chung, Ying-Pin Chen, and Fang-Chung Chen* “Solution-Processed ZrInZnO Semiconductor for Thin Film Transistors” International Display Manufacturing Conference (IDMC) (2011).
43. Fang-Chung Chen*, Shang-Chieh Chien, Shao-Tang Chuang, and Guan-Lin Cious “High-performance organic photomultiple photodetectors exhibiting broadband response” 2010 International Conference on Optics and Photonics in Taiwan (OPT’ 10)
44. Ming-Kai Chuang and Fang-Chung Chen* “A novel transfer-printing technique for flexible polymer solar cells” 2010 International Conference on Optics and Photonics in Taiwan (OPT’ 10)
45. 陳宗達、陳方中*, 可撓式有機薄膜電晶體在彎曲應力下的電性探討, Taiwan Display Conference

- (2010). (Student paper award)
46. Tzung-Han Tsai, Shang-Chieh Chien, and Fang-Chung Chen* “Performance-enhanced n-channel organic thin-film transistors incorporating poly(ethylene glycol)” Taiwan Display Conference (2010).
 47. Shang-Chieh Chien, and Fang-Chung Chen*, “Nanoscale functional interlayers formed through spontaneous vertical phase separation in high-performance polymer photovoltaic devices”, Optics and Photonics Taiwan (OPT) (2009). (Student paper award)
 48. Jyh-Lih Wu, Yi Hung, and Fang-Chung Chen*, “The exploitation of optical interference for improving the performance of inverted polymer solar cells”, Optics and Photonics Taiwan (OPT) (2009). (Student paper award)
 49. Bing-Ruei Zeng, Fang-Chung Chen*, Shang-Chieh Chien, Chi-Neng Mo, Huai-An Li, and Shou-Cheng Weng, “Hysteresis-free photopatternable dielectrics for flexible organic thin-film transistors” International Display Manufacturing Conference/3D System and Application/Asia Display, (2009).
 50. Yi-Hsing Chu, Gao-Ming Wu, Wei-Kuan Yu, Fang-Chung Chen, and Han-Ping D. Shieh, “Complementary circuits of ambipolar organic/oxide thin-film transistors for AMFPD applications” International Display Manufacturing Conference/3D System and Application/Asia Display, (2009). (Best paper award)
 51. Jyh-Lih Wu, Fang-Chung Chen*, Kuo-Huang Hsieh, and Wen-Chang Chen “Transparent cathode for bulk-heterojunction organic solar cells”, International Conference on Optics and Photonics in Taiwan (OPT) (2008) (Student paper award)
 52. Wen-Che Huang, Shang-Chieh Chien and Fang-Chung Chen*, “Highly efficient semi-transparent polymer solar cells”, International Conference on Optics and Photonics in Taiwan (OPT) (2008)
 53. Shang-Chieh Chien, Hsin-Chen Tseng and Fang-Chung Chen* “Solvent mixtures for improving device efficiency of polymer photovoltaic devices” International Conference on Optics and Photonics in Taiwan (OPT) (2008).
 54. Yu-Jen Huang, Hsiao-Fen Chang, Su-Ting Tsai, Chiao-Shun Chuang, Jung-An Cheng, Fang-Chung Chen*, and Han-Ping D. Shieh “Color filtering functional organic thin-film transistors” International Display Manufacturing Conference & Exhibition, (2007).
 55. Yin-Ting Shih and Fang-Chung Chen* “The post-annealing effect on the electrical properties of pentacene thin film transistors” International Display Manufacturing Conference & Exhibition, (2007).
 56. Shu-Ting Tsai and Fang-Chung Chen* “Effect of the surface treatments on the turn-on voltages of pentacene-based thin film transistors” International Display Manufacturing Conference & Exhibition, (2007).
 57. Ying-Pin Chen and Fang-Chung Chen* “Effect of deposition temperature on the channel and contact resistance of pentacene thin film transistors” International Display Manufacturing Conference & Exhibition, (2007).
 58. Hao-Wei Ting and Fang-Chung Chen* “Triplet energy transfer between a conjugated polymer and

- phosphorescent molecules” International Display Manufacturing Conference & Exhibition, (2007).
59. Yan-Chu Tsai, Shu-Ting Tsai, Chiao-Shun Chuang, Jung-An Cheng, Fang-Chung Chen, and Han-Ping D. Shieh* “Organic thin-film transistors with novel solution-process polymeric gate insulators” International Display Manufacturing Conference & Exhibition, (2007).
 60. Fang-Chung Chen* “Recent Developments in polymer photovoltaic devices” Flexible Electronics – Organic Photovoltaic Workshop (2007). **(Invited)**
 61. Fang-Chung Chen* “Recent development of phosphorescent polymer light-emitting diodes and other organic electronics” The 5th International OLED and PLED workshop in Taipei (2007). **(Invited)**
 62. Jyh-Lih Wu, Fang-Chung Chen*, and Sidney S. Yang “Highly Efficient Organic Solar Cell with an Interlayer of Cesium Carbonate” Optics and Photonics Taiwan (2006).
 63. Yi-Kai Lin, Fang-Chung Chen* and Chu-Jung Ko “Manipulation of the phase separation in organic blends by self-alignment method in sub-micron scale” Optics and Photonics Taiwan (2006).
 64. Shang-Chieh Chien, and Fang-Chung Chen* “Polymer electrophosphorescent devices with Low turn-on voltage and high power conversion efficiencies” Optics and Photonics Taiwan (2006).
 65. Ying-Pin Chen and Fang-Chung Chen* “Effect of deposition temperature on the device properties of pentacene thin-film transistors” Optics and Photonics Taiwan (2006).
 66. Chu-Jung Ko, Yi-Kai Lin, and Fang-Chung Chen* “Microwave annealing processes in polymer photovoltaic devices” International Symposium on Flexible electronics and Display, (2006)
 67. Tung-Hsien Chen, and Fang-Chung Chen* “Metal oxides as the buffer layers for organic thin-film transistors” Taiwan Display Conference (2006)
 68. Li-Jen Kung, and Fang-Chung Chen* “High-performance organic thin-film transistors with copper phthalocyanine-modified source/drain contacts” Taiwan Display Conference (2006)
 69. 劉思芳，王文生，陳方中*，偏極化高分子發光二極體之新型導電配向層，Taiwan Display Conference (2006)
 70. 甘惠君，王文生，黃文奎，陳方中*，利用自組裝微小陣列透鏡增加有機發光二極體的光耦合效率，Taiwan Display Conference (2006)
 71. Fang-Chung Chen* “The development of high-performance organic electronics” ITRI 學員交流論壇, (June 2006) **(invited)**.
 72. Fang-Chung Chen* “Organic Photovoltaic Devices for Low Power Sensor Networks” Wireless Sensor Network Workshop 2005
 73. Chiao-Shun Chuang, Han-Ping D. Shieh, Yang Yang, and Fang-Chung Chen* “Numerical Prediction of Effective Dielectric Constant in Organic Thin-film Transistors with Nanocomposite Gate Insulator” International Display Manufacturing Conference & Exhibition, (2005).
 74. Wen-Kuei Huang, Chu-Jung Ko, Hui-Chun Kan, and Fang-Chung Chen* “Fabrication of self-organized microlens array on plastic substrates” Optics and Photonics Taiwan (2005).

1. 陳新傑、岳宏霖、莊名凱、陳方中，2017 年，「鈣鈦礦太陽能電池」，奈米通訊，二十四卷，p21-26。
2. 陳方中，2013 年，「有機光偵測器與三維空間動作感知技術」，電子月刊，第 216 期。
3. 莊名凱、陳方中，2011 年，「以轉印製程製作高分子太陽能電池」，光學工程，第 114 期。
4. 陳方中，2011 年，「高分子太陽能電池與其新穎集光方式的探討」，化工，第 58 卷，第 2 期。
5. 陳方中，2009 年，「可撓性高效能高分子薄膜太陽能電池的發展」，化合物半導體與光電技術。
4. 陳方中，2008 年，「高分子薄膜太陽能電池」，化合物半導體與光電技術。
5. 吳志力、陳方中，2008 年，「透明與疊層式有機太陽能電池」，光學工程，第 102 期。
6. 黃昱仁、廖呈祥、陳方中，2008 年，「有機半導體材料與電晶體技術」，電子月刊，第 153 期。
7. 葛祖榮、陳方中，2007 年，「高分子太陽能電池之退火技術」，光學工程，第 100 期。
8. 葛祖榮、陳方中，2007 年，「有機高分子太陽能電池的發展現況」，奈米通訊，十四卷。
9. 葛祖榮、林義凱、陳方中，「高分子太陽能電池光電轉換效率的提升」，電子月刊，第 145 期。
10. 陳方中、陳東賢、林永昇，「有機薄膜電晶體的發展與應用」，化合物半導體與光電技術。
11. 陳方中，2006 年，「磷光高分子發光二極體與其三重態的能量轉移」，光學工程，第 94 期。
12. 葛祖榮、黃文奎、陳方中，2006 年，「有機高分子太陽能電池的發展現況」，工業材料雜誌，第 230 期。
13. 陳方中，2005 年，「有機薄膜太陽能電池」，工業材料雜誌，第 219 期。
14. 陳方中、楊陽，No. 9，October、2004 年，「奈米技術於有機太陽能電池的應用」，產業奈米技術應用資訊園地奈米粉體與應用專刊。
15. 陳方中，2004 年，「有機電激磷光顯示器的發展及現況」，光訊，第 108 期。

Patents

1. 「鈣鈦礦單晶的合成方法」，陳方中、岳宏霖。中華民國專利第 I657172 號。
2. 「鈣鈦礦型發光元件及其製造方法」，陳方中、黃炯福。中華民國專利第 I657123 號。(美國專利申請中)
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