Curriculum Vitae

謝伯宗

Po-Tsung Hsieh Ph.D.

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Current Position

Assistant Research Fellow, Center for Micro/Nano Science and Technology, National Cheng Kung University (04/2017)

Education

01/2008-09/2002 Ph.D. in Electrical Engineering, National Sun-Yat-Sen University
06/2002-08/2000 M.S. in Electronic Engineering I-Shou University
06/2000-08/1996 B.S. in Electronic Engineering I-Shou University

Working Experiences

Section Manager, Dept. of Process Engineering & Process Integration Engineering, Neo Solar Power Corporation (11/2015~02/2017)
Senior Principle Engineer, Dept. of R&D, Motech Industries, Inc. (04/2011~11/2015)
Assistant Research Professor, Center for Micro/Nano Science and Technology, National Cheng Kung University (03/2008~03/2011)

Fields of Expertise

- Opto-electronic material development
- FIB/TEM inspection and applications
- Enhanced Raman and its applications
- Novel solar energy development

Honors

- Oral Session Co-chair for The 3rd IEEE International Conference on Nano/Molecular Medicine and Engineering (IEEE NANOMED 2009)
- Invited speakers in 2013 PVSEC, 2014 n-PV, 2014 BIFIPV, 2015 n-PV
- Motech Annually Best Engineer Award in 2013
- Motech Annually Best Contribution Award in 2014
- Neo Solar Power Excellent Contribution Award in 2016

Patents

- Po-Tsung Hsieh et.al. ”Solar cell and solar module including the same” US Patent-US20150255656 A1
- Po-Tsung Hsieh et.al. ”Back contact solar cell and the process method” China patent-CN103531653 B
- Po-Tsung Hsieh et. al. ”Display advice with ultraviolet light isolated” TW patent-I401993
- Po-Tsung Hsieh et. al. ”Solar cell, process method and the module” TW patent issued (201501337)
- Po-Tsung Hsieh et. al. ”Glass with self-clean ability” TW patent issued (201039932)
- Po-Tsung Hsieh et. al. ”Display advice with photoluminescent units” TW patent issued (201041431)
- Po-Tsung Hsieh et. al. ”Photo-catalyst structure with self-luminescent ability” TW patent issued (201040027)
- Po-Tsung Hsieh et. al. ”Display advice” TW patent issued (098115323)

Publication Lists

Journal Papers: 32

1. Z. W. Peng, **P. T. Hsieh***, C. J. Huang, Y. C. Lin, P. K. Chang, C. Kuo, C. C. Li, “Toward 21% Efficiency nPERT Solar Cells with Selective Back Surface Field Technique”, ***Energy Procedia***, 92 (2016) 702-707
2. Z. W. Peng, **P. T. Hsieh***, C. J. Huang, Y. C. Lin, C. C. Li, “Investigation on Blistering Behavior for n-type Silicon Solar Cells”, ***Energy Procedia***, Volume 77 (2015) 827-831
3. H. C. Chang, **P. T. Hsieh***, C. J. Huang, W. C. Mo, S. H. Yu, C. C. Li,” Improvement on Industrial N-type Bifacial Solar Cell with >20.6% Efficiency”, ***Energy Procedia***, 55 (2014) 643-648
4. W. C. Shih, K. S. Kao, D. L. Cheng, C. J. Chung, **P. T. Hsieh**, S. L. Ou., “Characteristics of transparent conductive Al-doped ZnO and Ag–Ti tri-layer thin films prepared by multi-target magnetron sputtering”, ***Surface and Coatings Technology***, 219, (2013) 139-143. **(SCI, IF: 1.867)**
5. T. C. Li, B. H. Wu, C. F. Han, **P. T. Hsieh**, J. F. Lin, “Effects of prestrain applied to a polyethylene terephthalate substrate before the coating of Al-doped ZnO film on film quality, electrical properties, and pop-in behavior during nanoindentation”, ***IEEE/ASME Journal of Microelectromechanical Systems*** 21(5), (2012) 1059-1070. **(SCI, IF: 1.96)**

6. **P. T. Hsieh**, T. C. Li, B. H. Wu, C. J. Chung, J. F. Lin, "Structural and mechanical properties of pre-strained transparent conducting oxide films on flexible substrate", ***Surface and Coatings Technology***, 231 (2013) 443-446. **(SCI, IF: 2.135)**
7. **P. T. Hsieh**, T. C. Li, C. J. Chung, H. S. Peng, J. F. Lin, "Effects of Sputtering Power on Optical and Electrical Properties of Al-doped ZnO Thin Film on Flexible Substrates", ***Advanced Materials Research,*** 579 (2012) 118-123. **(SCI, IF: 1.2)**
8. P. K. Hung, T. W. Kuo, K. C. Hunag, N. F. Wang, **P. T. Hsieh**, M. P. Hung, "Effect of copper concentration in the electrolyte on the surface morphology and the microstructure of CuInSe2 films", ***Appled Surface Science***, 258 (2012), 7238-7343
9. P. K. Chang, W. T. Hsu, **P. T. Hsieh**, C. H. Lu, C. H. Yeh, M. P. Houng, "Improved stability of amorphous silicon solar cell with p-type nanocrystalline silicon carbide window layer", ***Thin Solid Films***, 520, Issue 7, 31 (2012), 3096-3099. **(SCI, IF: 1.909)**
10. P. K. Chang, **P. T. Hsieh**, F. J. Tsai, C. H. Lu, C. H. Yeh, N. F. Wang, M. P. Houng, "High efficiency amorphous silicon solar cells with high absorption coefficient intrinsic amorphous silicon layers", ***Thin Solid Films***, 520, Issue 15, 31 (2012), 5042-5045. **(SCI, IF: 1.909)**
11. T. C. Li, **P. T. Hsieh**, J. F. Lin," Effects of pre-strain applied at a polyethylene terephthalate substrate before the coating of Al-doped ZnO film on film quality and optical and electrical properties", ***Ceramics International,*** 37 (2011) 2467-2476. **(SCI, IF: 1.471)**
12. P. K. Chang, **P. T. Hsieh**, C. H. Lu, C. H. Yeh and M. P. Houng, "Development of high efficiency p–i–n amorphous silicon solar cells with the p-μc-Si:H/p-a-SiC:H double window layer", ***Solar Energy Materials and Solar Cells***, 95, Issue 9, (2011), 2659-2663. **(SCI, IF: 4.593)**
13. P. K. Chang, **P. T. Hsieh**, F. J. Tsai, C. H. Lu, C. H. Yeh, M. P. Houng, "Improvement of the short-circuit current density and efficiency in micromorph tandem solar cells by an anti-reflection layer", ***Thin Solid Films***, 520, Issue 1, 31 (2011), 550-553. **(SCI, IF: 1.909)**
14. **P. T. Hsieh**, H. S. Chin, P. K. Chang, C. M. Wang, Y. C. Chen, M. P. Houng, "Effects of the annealing environment on green luminescence of ZnO thin films," ***Physica B*****,** 405 (11), (2010) 2526-2529. **(SCI, IF: 0.822)**
15. **P. T. Hsieh**, R. W. K. Chuang, C. Q. Chang, C. M. Wang, S. J. Chang, "Optical and Structural Characteristics of Yttrium doped ZnO Films Using Sol-Gel Technology," Journal of Sol-Gel Science and Technology, 58 (2011) p. 42–47

(SCI, IF: 1.433)

16. T. H. Chen, **P. T. Hsieh***, C. Y. Huang, J. Q. Wang, R. W. Chuang, "Investigation on the Mechanical Properties of Molybdenum-Doped Zinc Oxide Transparent Thin Film by Sputtering Technique," ***Materials Science Forum***, Vols. 654-656 (2010) 1756-1759. **(SCI, IF: 0.843)**
17. K. S. Kao, D. L. Cheng, S. H. Chang, **P. T. Hsieh**, H. S. Chin, H. K. Lin, "Effect of mesh patterning with UV pulsed-laser on optical and electrical properties of ZnO/Ag-Ti thin films," ***Applied Surface Science*** (2010) 256: 7446–7450. **(SCI, IF: 1.616)**
18. **P. T. Hsieh**, T. H. Chen, C. Y. Huang, J. Q. Wang, R. W. Chuang, "Molybdenum doped Zinc Oxide Nanocomposite Transparent Film Derived by Sputtering Technique," ***J. Micro/Nanolith. MEMS MOEMS.,*** Vol. 9(4) (2010) 043004. **(SCI, IF: 1.142)**
19. C. M. Wang, K. S. Kao, D. L. Cheng, C. C. Cheng, **P. T. Hsieh**, S. Y. Lin, T. Y. Shih, C. Y. Wen, "Electrochromic Properties of Nano-columnar Nickel Oxide," ***Materials Science Forum***, Vols. 654-656 (2010) 1904-1907. **(SCI, IF: 0.843)**
20. C. J. Chung, C. L. Wei, **P. T. Hsieh**, C. Y. Huang, J. F. Lin, Y. C. Chen, C. C. Cheng, "Synthetic Properties of the c-axis Tilted AlN Thin Films," ***Materials Science Forum***, Vols. 654-656 (2010) 1780-1783. **(SCI, IF: 0.843)**
21. C. L. Wei, Y. C. Chen, K. S. Kao, K. T. Wu, D. L. Cheng, **P. T. Hsieh**, "Characterization of ZnO Films of SAW Oscillators for UV Sensing Application," ***J. Micro/Nanolith. MEMS MOEMS***, Vol. 9(3) (2010), 031009. **(SCI, IF: 1.142)**
22. S. Y. Lin, Y. C. Chen, C. M. Wang, **P. T. Hsieh**, S. C. Shih, "Post-annealing effect upon optical properties of electron beam evaporated molybdenum oxide thin films," ***Applied Surface Science*** 255 (2009) 3868–3874. **(SCI, IF: 1.616)**
23. K. S. Kao, S. H. Chang, **P. T. Hsieh**, Y. C. Chen, C. M. Wang, D. L. Cheng, "Transparence and electrical properties of ZnO-based multilayer electrode," ***Appl Phys A*** (2009) 96: 529–533. **(SCI, IF: 1.884)**
24. S. Y. Lin, C. M. Wang, **P. T. Hsieh,** Y. C. Chen, C. C. Liu, S. C. Shih, "A novel gel polymer electrolyte based on lithium salt with an ethyl cellulose," ***Colloid and Polymer Science***, 287 (2009) 1355-1358. **(SCI, IF: 1.736)**
25. **P. T. Hsieh**, Y. C. Chen, K. S. Kao, C. M. Wang, "Luminescence mechanism of ZnO thin film investigated by XPS measurement," ***Applied Physics A***, 90, (2008) p.317-321. **(SCI, IF: 1.884)**
26. **P. T. Hsieh**, Y. C. Chen, K. S. Kao, C. M. Wang, "Structural and Luminescent Characteristics of Non-stoichiometric ZnO Films by Various Sputtering and Annealing Temperatures," ***Physica B***, 403, (2008) pp.178-183. **(SCI, IF: 0.822)**

27. **P. T. Hsieh**, Y. C. Chen, M. S. Lee, K. S. Kao, M. C. Kao, M. P. Houng, "Enhanced Ultraviolet Luminescence of ZnO Films by Sol-Gel Technology and Annealing Environment," ***Journal of Sol-Gel Science and Technology,*** 47, (2008) pp.1–6. **(SCI, IF: 1.433)**
28. M. C. Kao, H. Z. Chen, S. L. Yang, Y. C. Chen, **P. T. Hsieh**, C. C. Yu, "Pyroelectric Ta-modified $LiNbO_3$ Thin Films and Devices for Thermal Infrared Detection," ***Thin Solid Films***, 516, (2008) pp.5518-5522. **(SCI, IF: 1.884)**
29. **P. T. Hsieh**, Y. C. Chen, K. S. Kao, C. M. Wang, "Structural Effect on UV Emission Properties of High-quality ZnO Thin Films Deposited by RF Magnetron Sputtering," ***Physica B***, 392, (2007) p.332-336. **(SCI, IF: 0.822)**
30. **P. T. Hsieh**, Y. C. Chen, K. S. Kao, M. S. Lee, C. C. Cheng, "The Ultraviolet Emission Mechanism of ZnO Thin Film Fabricated by Sol-Gel Technology," ***Journal of the European Ceramic Society***, 27, (2007) p.3815-3818. **(SCI, IF: 1.58)**
31. M. C. Kao, H. Z. Chen, S. L. Yang, Y. C. Chen and **P. T. Hsieh**, "Influence of grain size of ZnO nanocrystalline films for performance of dye-sensitized solar cells," ***International Journal of Modern Physics B***, Vol. 21, No. 18-19, pp. 3448-3454 (2007). **(SCI, IF: 0.647)**
32. **P. T. Hsieh**, Y. C. Chen, C. M. Wang, Y. Z. Tsai, C. C. Hu, "Structural and Photoluminescence Characteristics of ZnO Films by Room Temperature Sputtering and Rapid Thermal Annealing Process," ***Applied Physics A***, 84, No.3, (2006) p. 345-349. **(SCI, IF: 1.884)**

International Conference Papers: 57

1. **P. T. Hsieh**, Y. M. Chang, J. M. Xu, C. M. Uang, "Double Bridge Technique for Temperature Compensation of Piezoresistive Pressure Sensor," SPIE' s 9th Annual International Symposium on Smart Structures and Materials, San Diego, United States, Mar. 17-21, 2001.
2. **P. T. Hsieh**, C. M. Wang, Y. C. Chen, Y. N. Guo, C. C. Hu, "Crystallization and Photoluminescence Characteristics of ZnO Thin Films Deposited by RF Magnetron Sputtering," 17th International Symposium on Integrated Ferroelectrics, ISIF, Shanghai, China, Apr. 17-20, 2005.
3. **P. T. Hsieh**, Y.C. Chen, C.C. Hu, "Enhanced Green Luminescence of ZnO Films by Different Sputtering and annealing Temperatures," The 2nd International Symposium on Point Defect and Nonstoichiometry, ISPN, Kaohsiung, Taiwan, Oct. 4-6, 2005.
4. **P. T. Hsieh**, Y. C. Chen, C. M. Wang, Y. Z. Tsai, C. C. Hu , "Structural and Photoluminescence Characteristics of ZnO Films by Room Temperature

Sputtering and Rapid Thermal Annealing Process," The 18th Annual Meeting of the IEEE Laser & Electro-Optics Society, IEEE-LEOS , Sydney, Australia, Oct. 23-27, 2005.

5. **P. T. Hsieh**, Y. C. Chen, K. S. Kao, M. S. Lee, C.C. Cheng, "The Ultraviolet Emission Mechanism of ZnO Thin Film Fabricated by Sol-Gel Technology," ELECTROCERAMICS X, International Conference on Electroceramics, Toledo, Spain, June 18-22, 2006.
6. **P. T. Hsieh**, Y. C. Chen, M. S. Lee, C. M. Wang, M. C. Kao, "Effects of Annealing Process on the Photoluminescence Properties of ZnO Thin Film," The International Conference on Technological Advances of Thin Films & Surface Coatings, Thinfilms, Singapore, Dec. 12-16, 2006.
7. M. C. Kao, S. L. Yang, H. Z. Chen, Y. C. Chen, **P. T. Hsieh**, C. C. Yu, "Pyroelectric Ta-modified LiNbO3 Thin Films and Devices for Thermal Infrared Detection," The International Conference on Technological Advances of Thin Films & Surface Coatings, Thinfilms, Singapore, Dec. 12-16, 2006.
8. M.C. Kao, H. Z. Chen, S. L. Yang, **P. T. Hsieh**, "Influence of grain size of ZnO nanocrystalline films for performance of dye-sensitized solar cells," 6th International Conference on New Theories, Discoveries and Applications of Superconductors and Related Materials, Sydney, Australia, Jan. 9-11 2007.
9. R. C. Lin, Y. C. Chen, **P. T. Hsieh**, K. S. Kao, C. M. Wang, "Effects of Substrate Residue on Frequency Response of High-Tone Bulk Acoustic Resonator, IEEE Frequency Control Symposium, IEEE-FCS, Geneva, Switzerland, May. 29-Jun. 1, 2007.
10. **P. T. Hsieh**, Y. C. Chen, K. S. Kao, C. M. Wang, "ZnO Nanorods by Sputtering Technology and Annealing," The 6th International Conference on Materials Processing for Properties and Performance, MP^3, Beijing, China, Sep. 13-16, 2007.
11. **P. T. Hsieh**, Y. C. Chen, K. S. Kao, C. M. Wang, "The effects of homogeneous buffer layer for the fabrication of ZnO nanowires," IEEE 6th International Symposium on Metallic Multilayers, IEEE MML, Perth, Australia, Oct. 15-19, 2007.
12. C. L. Wei, Y. C. Chen, C. C. Cheng, C. M. Wang, ,K. S. Kao, **P. T. Hsieh**, "The Resonance Characteristics of Solidly Mounted Resonators with 1/2 λ and 1/4 λ Configurations," IEEE International Frequency Control Symposium, IFCS 2008, May 23-29, 2008.
13. S. H. Chang, K. S. Kao, **P. T. Hsieh**, D. L. Cheng, Y. C. Chen, "Structural, optical and electrical properties of the ZnO/Ag-Ti/ZnO multilayer transparent electrode," The 4th International Conference on Technological Advances of Thin

Films & Surface Coatings, ThinFilms 2008, Jul. 13-16, 2008.

14. **P. T. Hsieh**, K. S. Kao, C. M. Wang and Y. C. Chen. "ZnO nanowires growth by sputtering with homogeneous buffer layer," 2008 Taiwan- Spain Workshop on Micro/Nano Electronics, Oct. 14-15, 2008.
15. **P. T. Hsieh**, K. S. Kao, C. M. Wang, H. S. Chin, Y. C. Chen, "Metal-Catalyst-Free Growth of ZnO Nanostructures by Various Annealing Techniques," The 9th International Symposium on Ceramic Materials and components for Energy and Environmental Applications, Shanghai, China, Nov. 10-14, 2008.
16. **P. T. Hsieh**, K. S. Kao, S. J. Chang, Y. C. Chen, S. H. Chang, "Novel High Conductive YZO/Ag-Ti/YZO Multilayer Transparent Conducting Oxide Thin Film," IEEE International Conference on Nano/Molecular Medicine and Engineering, Suzhou, China, Nov. 6-9, 2008.
17. **P. T. Hsieh**, H. S. Chin, K. S. Kao, C. Y. Huang, Y. C. Chen, M. S. Lee, and M. K. Sun, "The study of the intrinsic defects in ZnO thin film by various sputtering pressure" 6th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, Tokyo, Japan, Apr. 15-17, 2009.
18. **P. T. Hsieh**, C. M. Wang, L. S. Chen, T. W. Wu, T. H. Chen, S. J. Chang "Molybdenum-doped Zinc Oxide Nanocomposite Film on glass derived by Sol–Gel Technique" 6th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, Tokyo, Japan, Apr. 15-17, 2009.
19. **P. T. Hsieh**, K. S. Kao, Y. C. Chen, M. S. Lee, and Y. T. Tsai, "Optical and electrical properties of ZnO/Pt/ZnO multilayer coatings using sol-gel technology" ECERS 11th International Conference and Exhibition of the European Ceramic Society, Krakow, Poland, Jun. 21-25, 2009.
20. **P. T. Hsieh**, C. M. Wang and C. L. Wei, „Extremely Strong UV Emission of Yttrium doped ZnO Films Derived by Sol-Gel Technology," ECERS 11th International Conference and Exhibition of the European Ceramic Society, Krakov, Poland, Jun. 21-25, 2009.
21. **P. T. Hsieh**, T. H. Chen, C. Y. Huang and J. Q. Wang, "Molybdenum-doped Zinc Oxide Nanocomposite Film on glass derived by Sputtering Technique," 3th IEEE International Conference on Nano/Molecular Medicine and Engineering, Tainan, Taiwan, Oct. 28-21, 2009.
23. **P. T. Hsieh**, T. H. Chen, C. Q. Chang, S. W. Lai, and S. J. Chang, "UV Emission of Yttrium Doped ZnO Thin Film by Sol-Gel Technology" 3th IEEE International Conference on Nano/Molecular Medicine and Engineering, Tainan, Taiwan, Oct. 28-21, 2009.

24. K. S. Kao, K. T. Wu, D. L. Cheng, and **P. T. Hsieh**, "UV-Sensitive SAW Device for Medical Application," 3th IEEE International Conference on nano/Molecular Medicine and Engineering, Tainan, Taiwan, Oct. 28-21, 2009.
25. **P. T. Hsieh**, K. S. Kao, C. M. Wang, C. L. Wei, C. C. Cheng, and Y. C. Chen, "The effects of oxygen concentration on ZnO Nanorods Growth by Sputtering Technique," International Conference on Nanoscience and Nanotechnology 2010, Feb. 22-26, Sydney, Australia, 2010.
26. **P. T. Hsieh**, T. H. Chen, C. J. Chung, C. Q. Chang, S. W. Lai, and S. J. Chang, "Study on Enhancement of UV Emission for ZnO:Y Thin Film by Sol-Gel Technology," The 7th Pacific Rim International Conference on Advanced Materials and Processing, Aug. 1-5, Cairns, Australia, 2010.
27. T. H. Chen, **P. T. Hsieh**, C. Y. Huang, J. Q. Wang, and R. W. Chuang, "Investigation on the mechanical properties of Molybdenum-doped Zinc Oxide Transparent Thin Film by Sputtering Technique," The 7th Pacific Rim International Conference on Advanced Materials and Processing, Aug. 1-5, Cairns, Australia, 2010.
28. C. J. Chung, C. L. Wei, **P. T. Hsieh**, C. Y. Huang, J. F. Lin, Y. C. Chen, and C. C. Cheng, "Synthetic Properties of the C-axis Tilted AlN Thin Films," The 7th Pacific Rim International Conference on Advanced Materials and Processing, Aug. 1-5, Cairns, Australia, 2010.
29. C. M. Wang, K. S. Kao, D. L. Cheng, C. C. Cheng, **P. T. Hsieh**, S. Y. Lin, T. Y. Shih, and C. Y. Wen, "Electrochromic Properties of Nano-columnar Nickel Oxide**,"** The 7th Pacific Rim International Conference on Advanced Materials and Processing, Aug. 1-5, Cairns, Australia, 2010.
30. **P. T. Hsieh**, T. C. Li, K. W. Chen, C. M. Wang, J. F. Lin, "Study of Pre-Strain Effect on Optical and Electrical Properties of Al doped ZnO Thin Film on Flexible Substrate," 7th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, Mar. 14-16, Tokyo, Japan, 2011.
31. **P. T. Hsieh**, C. Q. Chang, P. K. Chang, W. C. Chang, J. H. Chou, M. P. Houng, S. J. Chang, "Effect of Improved Carrier Concentration of sol-gel derived AZO Thin Film by Inert Gas Annealing," 7th International Symposium on Transparent Oxide Thin Films for Electronics and Optics, Mar. 14-16, Tokyo, Japan, 2011.
32. **P. T. Hsieh**, T. C. Li, C. J. Chung, H. S. Peng, J. F. Lin, "Effects of Sputtering Power on Optical and Electrical Properties of Al-doped ZnO Thin Film on Flexible Substrates", The 4th International Conference on Advanced Manufacturing (ICAM 2012), Session 8:Micro- and Nano-Fabrication II, Session 8-3: S0053, March 4-8, Yilan, Taiwan, R.O.C.
33. **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung-Chih Chang, Shih-Wei Chiu, Chi-Chun Li, "Over 20% N-type Bifacial Solar Cell by Industrial Fabrication

Process**", Chambery, France, 2013 nPV**

34. **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung Chih Chang, Shih-Wei Chiu, Chi-Chun Li, "20.2% Efficiency N-type Bifacial Solar Cell by Industrial Fabrication Processes", Paris, France, **2013 EUPVSEC**
35. Hung Chih Chang, Chih-Jeng Huang, **Po-Tsung Hsieh***, Shih-Wei Chiu, Chi-Chun Li, "Investigation on Thermal Oxide Thickness for Passivation of N-type Bifacial Solar Cell Application", Paris, France, **2013 EUPVSEC**
36. Shih-Wei Chiu, **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung-Chih Chang, Chi-Chun Li, "Boron Emitter of N-type Solar Cell Made with BBr3 and Spin-Coating Boron Sources", Paris, France, **2013 EUPVSEC**
37. A. Li, W.-H. Chen, Y.-M. Lin, C.-W. Lai, L.-T. Wang, T. Fang, **P.-T. Hsieh*,** Role of Laser Damage in Local Contact Formation", Paris, France, **2013 EUPVSEC**
38. Y.-P. Pai, W.-C. Chou, C.-W. Lai, C.C. Li, **P.-T. Hsieh***, "Influence of Laser Pulse Energy on the Emitter Sheet Resistance and Nickel Light-Induced Plating", Paris, France, **2013 EUPVSEC**
39. Y.-P. Pai, W.-C. Chou, C.-W. Lai, **P.-T. Hsieh***, "Analysis of the Emitter Dead Layer Uniformity on c-Si Solar Cell Performance", Paris, France, **2013 EUPVSEC**
40. C.-W. Chang, **P.-T. Hsieh***, T. Fang, J.-L. Lue, C.-H. Wu**, "**The Effects of Rear-Side Morphology on PERC Cells by Alkaline Etching", Paris, France, **2013 EUPVSEC**
41. W.-C. Chou, C.-H. Lin, K. Du, **P.-T. Hsieh***, "Influence of Reducing Inactive Phosphorus on the Emitter Region", Paris, France, **2013 EUPVSEC**
42. K.-C. Lai, C.-N. Li, K. Huang, **P.-T. Hsieh***, "Application of Etching Paste on Metallization of Interdigitated Back-Contact n-Type Silicon Solar Cells", Paris, France, **2013 EUPVSEC**
43. **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung-Chih Chang, Shih-Wei Chiu, Chi-Chun Li, "Investigation on passivation mechanism of boron diffusion conditions", Taipei, Taiwan, **2013 PVSEC-23 (Invited Talk)**
44. **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung-Chih Chang, Shih-Wei Chiu, Chi-Chun Li, "Over 20% Efficient N-type Bifacial Solar Cell by Industrial Fabrication Process", Taipei, Taiwan, **2013 PVSEC-23 (Invited Talk)**
45. H.L. Tsai, S.-H.-L. Chen, C.-M. Wei, **P.-T. Hsieh***, "I-V Characterizations of High Efficiency c-Si Solar Cell with Solar I-V Tester and TCAD Simulation", Paris, France, **2013 EUPVSEC**
46. Y.-C. Chou, P.-H. Tsai, Y.-C. Chen, C.-H. Wu, **P.-T. Hsieh***, "Studies of Diamond Wire Sawn Wafers Among Different Diamond Size", Paris, France,

2013 EUPVSEC

47. W.-T. Chung, T.-Y. Lin, C.-K. Wu, W.-C. Lee, C.-W. Chen, C.-H. Wu, **P.-T. Hsieh***, "Pilling Strength Behavior in the Different Bus Bar Design and Soldering Tools for Solar Cell Soldering", Paris, France, **2013 EUPVSEC**
48. Hung Chih Chang, Chih-Jeng Huang, **Po-Tsung Hsieh***, Shih-Wei Chiu, Chi-Chun Li," Influence of Radom Pyramid Textures on Passivation of N-type Bifacial Solar Cells with Efficiency ~20%", U.S.A, **2013 IEEE PVSC**
49. Hung-Chih Chang, Chih-Jeng Huang, **Po-Tsung Hsieh***, Wei-Cheng Mo, Shu-Hung Yu, Chi-Chun Li, "Improvement on Industrial N-type Bifacial Solar Cell with >20.6% Efficiency", s-Hertogenbosch, Holland, **2014 Silicon PV**
50. **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung-Chih Chang, Wei-Cheng Mo, Shu-Hung Yu, Chi-Chun Li, "Development of High Efficiency nPERT Bifacial Solar Cells", s-Hertogenbosch, Holland, **2014 nPV (Invited Talk)**
51. **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung-Chih Chang, Wei-Cheng Mo, Shu-Hung Yu, Chi-Chun Li, "Performance of bifacial module of n-PERT cells", Chambery, France, **2014 bifiPV II (Invited Talk)**
52. **Po-Tsung Hsieh***, Chih-Jeng Huang, Hung-Chih Chang, Wei-Chen Mo, Shu-Hung Yu, Chi-Chun Li, "Study of Al2O3 Passivation on N-type Bifacial Solar Cells by XPS Analysis", Shanghai, China, **2014 SNEC**
53. Shu-Hung Yu, Chih-Jeng Huang, **Po-Tsung Hsieh***, Hung-Chih Chang, Wei-Cheng Mo, Zih-Wei Peng, Chi-Chun Li, "20.63 % nPERT Cells and 20% PR Gain Bifacial Module", U.S.A, **2014 IEEE PVSC**
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