**Shuang-Peng Wang (王双鹏)**

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[Google Scholar](https://scholar.google.com/citations?user=fK7jhgYAAAAJ), [ScopusID:57192375409](https://www.scopus.com/authid/detail.uri?authorId=57192375409), [ResearcherID: D-7640-2015](https://publons.com/researcher/D-7640-2015/)

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| Education |

* **D.Sc.** State Key Laboratory of Luminescence and Applications, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences (CIOMP, CAS) 2005-2010
* **B****.E.** College of Electronic Science & Engineering, Jilin University 2001-2005

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| RESEARCH EXPERIENCE |

**Associate Professor** Institute of Applied Physics and Material Engineering (IAPME), University of Macau 2022-now

**Assistant Professor** Institute of Applied Physics and Material Engineering (IAPME), University of Macau 2016-2022

**Associate Researcher**State Key Laboratory of Luminescence and Applications, CIOMP, CAS 2013-2016

**Assistant Researcher**State Key Laboratory of Luminescence and Applications, CIOMP, CAS 2010-2013

**Interface State Engineering in Optoelectronic Materials and Devices (@IAPME, UM)**

* Quantum dot light-emitting diode (QLED)
* Discovered and suppressed the thermal damage in the organic hole transport layer
* First observed the stacking interface states in bi-layer electron transport layer and suppressed the interface by a ZnO@ZnMgO colloid mixture
* Improved the performance of QLED and solar cells by optimizing the interface and charge transport layers
* Multi-band Photodetection
* Studied the reversible liquefication mechanism of halide perovskite in amine, proposed and realized a close-loop recycling strategy of the lead-containing perovskite solar cells based on the mechanism
* Proposed the feasible way to achieve ultralong freestanding halide perovskite single crystal microwire by ion injection process, stable FP lasing and fast response photodetector were achieved on the well crystallized microwires
* Construct different heterostructure photodetectors, realize multi-band photodetection with different working mechanisms, and demonstrate their applications in light communication, single-pixel imaging, and logical devices.
* Surface engineering for the promotion of catalysts in hydrogenation and nitrogen fixation
* Theoretically predicted the surface engineering approach to improve the electrocatalytic ability of noble-metal-free materials
* Proposed the concept “Efficiency electrocatalysts can be good co-catalysts in photocatalysis for the improvement of solar-driven H2 evolution” and developed high reliable co-catalysts to improve the photocatalytic activity of non-noble metal photocatalysts
* Fabricated high-efficient large-scale steel-based electrocatalytic electrode material, for application in the green hydrogen industry

**ZnO based LED, LD and UV-Photodetector (@CIOMP, CAS)**

* Fabricated ZnO thin films by plasma assisted molecular beam epitaxy (PA-MBE)

Use VG V80H and DCA P600 MBE to fabricate ZnO, MgZnO and related material films, for realizing ZnO based light emitting device, laser diode and photodetector

* Designed and fabricated ALD/MOCVD hybrid equipment

In charge of the apparatus, fabricate ZnO and related materials with high crystal quality, such as ZnO nano structure, ultra-thin ZnO film, dielectric layer, and core-shell structures

* Fabrication of ZnO based optoelectronic devices

Build and ran a lab for fabricating ZnO-based optoelectronic devices

* Designed and fabricated vertical structure LED based on ZnO
* Designed and fabricated ZnO based LED Array, with ALD fabricated Al2O3 and ZnO. Combined ALD technique and lift off process, which made it possible to grow patterned layers on wafer directly
* Fabricated interdigital electrode on ZnO, MgZnO films, for realizing MSM structured photodetectors

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| Research Grants |

**Summary**

*2016-Present, at UM, 8 competitive grants, 3 completed, 4 currently active and 1 to be started. 5 as PI, 3 as Co-Investigator. Approximately 1.2 million USD in total directed by Shuang-Peng Wang.*

*2009-2016, at CIOMP, CAS, 2 grants completed as PI. Approximately 420000 (60K USD) in total.*

**Received at UM**

Macau SAR Government Grants:

1. Principal Investigator, Analysis Techniques on Material and Device of QLED under Display Working State，FDCT, Macau SAR, FDCT/0107/2023/AFJ, 12/2023-11/2026, MOP 2000000 (~ 250K USD), On-going
2. Principal Investigator, Surface Engineering of Perovskite Quantum Dots and Its Application in Optoelectronic Devices FDCT, Macau SAR, FDCT/0071/2019/AMJ, 09.2020-09.2023, MOP 1999000 (~ 250K USD), Completed
3. Principal Investigator, Long-Life Quantum Dot Light Emitting Diode on Atomic Layer Deposited TiO2 Electron Transportation Layer, FDCT, Macau SAR, FDCT/0125/2018/A3, 06.2019-06.2022, MOP 2071000 (~ 259K USD), Completed
4. Co-Investigator, Study on Hole Transport Layers for Highly Efficient, Long-life All-inorganic Quantum Dot Lighting Emitting Diodes, FDCT, Macau SAR, FDCT/199/2017/A3, 05.2018-05.2021, MOP 1934090 (~ 224K USD), Completed
5. Principal Investigator, The influence of metal nanocrystals on the efficiency and lifetime of inverted structure quantum dot light emitting diodes, FDCT, Macau SAR, FDCT 084/2016/A2, 03.2017-03.2020, MOP 1673000 (~ 209K USD), Completed

University Grants:

1. Principal Investigator, Perovskite Heterojunction Photodetectors for Controllable Multi-Wavelength Detection, MYRG, UM, Grant No. MYRG-GRG2023-00230-IAPME-UMDF, 01/2024-12/2025, MOP 480000 (~60K USD), On-going
2. Principal Investigator, Emergent quantum states in the moiré pattern of Van der Waals heterostructures, MYRG, UM, Grant No. MYRG2020-00207-IAPME, 01.2022-12.2023, MOP 360000 (~ 45K USD), On-going
3. Co-Investigator, Novel Synthesis Methodology and Equipment for Large Scale High Quality Luminescent Quantum Dots, MYRG, UM, MYRG2019-00103-IAPME,01.2020-12.2021, MOP 1050000 (~ 131K USD), Completed
4. Principal Investigator, Lead-free metal-halide perovskites for light-emitting diodes, MYRG, UM, Grant No. MYRG2017-00149-FST, 09.2017-08.2020, MOP 726300 (~ 91K USD), Completed
5. Principal Investigator, High performance quantum dot light emitting diode, Startup funding, UM, Grant No. SRG2016-00085-FST, 02.2017-02.2020, MOP 150000 (~ 19K USD), Completed

Other Funding Sources:

1. Co-Investigator, Controlled Arrangements of Metal Nanowire Percolation Network Electrodes for Efficient Fully Transparent Quantum Dot Light-emitting Diodes, Hong Kong & Macao Joint Research Grant from Wuyi University, 2019WGALH06, 01.2021 to 12.2023 *MOP*: 500000 (SP directs 125000 MOP ~ 15K USD), On-going

**Received at CIOMP, CAS**

* Principal Investigator, Polarization-introduced doping in ZnO-based heterostructures, National Science Foundation of China, Grant No. 11104265, 01. 2012-10.2014, CNY 300000
* Principal Investigator, Structure design of semiconductor lasers, Changchun University of Science and Technology, Grant No. 2012-2201-01-000287, 01. 2010-12. 2011, CNY 120000
* Co-Investigator, Interface engineering and device structure design of group-II oxide semiconductors epilayer, National Basic Research Program of China (973), Grant No. 2011CB302002, 01. 2011-08. 2015
* Co-Investigator, High performance heterojunction LED on ZnO,the Science and Technology Developing Project of Jilin Province, Grant No. 20111801, 09. 2011- 09. 2013
* Co-Investigator, Innovation team of Jilin province on ZnO based materials and devices, the Science and Technology Developing Project of Jilin Province, Grant No. 20090124, 08. 2009-08. 2011

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| Public Service Activities |

* Secretary-General, Founding Member, The Physical Society of Macau
* Young Editorial Board, Chinese Journal of Luminescence
* Member, The Optical Society of America

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| Award |

* Academic Awards 2020/2021 Excellence in Teaching, IAPME UM
* Academic Awards 2019/2020 Excellence in Teaching, IAPME UM
* Academic Awards 2018/2019 Excellence in Service, IAPME UM
* The First Grade Prize in Advancing the Science and Technology of Jilin Province, China, 2012

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| GRANTED Patents |

* **Wang SP**, Shan CX, Zhang ZZ, Li BH, Li KX, Shen DZ."*A method for fabricating p-type ZnO based material*"  
  CN201410182115.7, filed 4 30, 2014.
* **Wang SP**, Shan CX, Li BH, Zhang ZZ, Li KX, Shen DZ."*A method for fabricating p-type ZnO based material*"  
  CN201410182090.0, filed 4 30, 2014.
* Zhang ZZ, Shen DZ, Wu XJ, **Wang SP**, Jiang MM, Li BH."*Film fabricated by sputtering with oxide ceramic target*"  
  CN201410012303.5, filed 1 10, 2014.
* Shan CX, Ju ZG, Ni PN, Li BH, **Wang SP**, Shen DZ."*Hybrid method and apparatus for fabricating semiconductor films*" CN201110262400.6, filed 9 6, 2011.

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| Refereed Journal Articles |

**Summary: (till 28-Dec-2023)**

*Researcher ID: D-7640-2015*

*Publications: 173*

*Total Times Cited: 4108(Google Scholar)*

*H-index: 35 (Google Scholar)*

**Paper published**

1. Jiahao Xiong, Zhi-Hong Zhang, Zile Li, Peixia Zheng, Jiaxin Li, Xuan Zhang, Zihan Gao, Zhipeng Wei, Guoxing Zheng, **Shuang-Peng Wang\***, Hong-Chao Liu, (2023), Perovskite single-pixel detector for dual-color metasurface imaging recognition in complex environment. Light: Science & Applications, 12, 286
2. Di Liu, Lulu Qiao, Shuyang Peng, Haoyun Bai, Chunfa Liu, Weng Fai Ip, Kin Ho Lo, Hongchao Liu, Kar Wei Ng, **Shuangpeng Wang**\*, Xiaozhan Yang, Hui Pan. (2023), Recent Advances in Electrocatalysts for Efficient Nitrate Reduction to Ammonia. Advanced Functional Materials, 2303480
3. Di Liu, Lulu Qiao, Yuyun Chen, Pengfei Zhou, Jinxian Feng, Chon Chio Leong, Kar Wei Ng, Shengjie Peng, **Shuangpeng Wang**\*, Weng Fai Ip, Hui Pan(2023). Electrocatalytic reduction of nitrate to ammonia on low-cost manganese-incorporated Co3O4 nanotubes, Applied Catalysis B: Environmental, 324, 122293
4. Jun Yan, Qi Zheng, Shuang‐Peng Wang, Yong‐Zhi Tian, Wei‐Qiang Gong, Feng Gao, Ji‐Jun Qiu, Lin Li, Shu‐Hui Yang, Mao‐Sheng Cao, (2023) Multifunctional Organic‐Inorganic Hybrid Perovskite Microcrystalline Engineering and Electromagnetic Response Switching Multi‐Band Devices, Advanced Materials, 35, 2300015
5. Bao‐Shi Qiao, Su‐Yun Wang, Zhi‐Hong Zhang, Zhen‐Dong Lian, Zhi‐Yao Zheng, Zhi‐Peng Wei, Lin Li, Kar Wei Ng, Shuang‐Peng Wang, Zhi‐Bo Liu, (2023) Photosensitive Dielectric 2D Perovskite Based Photodetector for Dual Wavelength Demultiplexing, Advanced Materials, 35, 2300632
6. Yun-Peng Zhao, Zhi-Hong Zhang, Shan-Shan Yan, Bao-Shi Qiao, Zhen-Dong Lian, Zhi-Peng Wei, Francis Chi-Chung Ling, Hong-Yu Chen, Shi-Chen Su, Kar Wei Ng, Shuang-Peng Wang, (2023) A photo-switchable rectifier based on the MAPbBr 3–MAPbCl 3 halide perovskite heterostructure for dual-wavelength optical communications, Journal of Materials Chemistry C, 11, 11697
7. Zhihong Zhang, Peixia Zheng, Shan‐Shan Yan, Bao‐Shi Qiao, Kar Wei Ng, Hong‐Chao Liu, Shuang‐Peng Wang, Zhipeng Wei, (2023) Ultrasensitive Perovskite Photodetector for Filter‐Free Color Single‐Pixel Imaging, Advanced Optical Materials, 11, 2201847
8. Chen, Mingpeng, Liu, Di, Feng, Jinxian, Zhou, Pengfei, Qiao, Lulu, Feng, Wenlin, Chen, Yuyun, Wei Ng, Kar, **Wang, Shuangpeng\***, Fai Ip, Weng, Pan, Hui, .(2022).In-situ generation of Ni-CoOOH through deep reconstruction for durable alkaline water electrolysis. Chemical Engineering Journal,443.
9. An, Keyu, Chen, Mingpeng, He, Bingchen, Ai, Haoqiang, Wang, Wei, Zhang, Zhihong, Pan, Zhongbin, Chen, Shi, Ip, Weng Fai, Lo, Kin Ho, Chai, Jianwei, Wang, Shijie, Yang, Ming, **Wang, Shuangpeng**\*, Pan, Hui, .(2022).Wafer-Scale 2H- MoS2 Monolayer for High Surface-enhanced Raman Scattering Performance: Charge-Transfer Coupled with Molecule Resonance. Advanced Materials Technologies,7(8),2200217.
10. WU, Zhisheng, Yan, Shanshan, LI, Jielei, XU, Jincheng, CHEN, Shi, Tang, Zikang, **WANG, Shuang-eng\***, NG, Kar Wei,.(2022).Extraordinarily Stable Aqueous Electrochromic Battery Based on Li4Ti5O12 and Hybrid Al3+/Zn2+ Electrolyte.ACS Nano.
11. Weiwei Liu, Kar Wei Ng, Hao Lin, Zhendong Lian, Shichen Su, **Shuangpeng Wang\***, “Simple one-step synthesis of carbon microspheres for cold white light emitting diodes”, *Journal of Luminescence*,242.
12. Pengfei Zhou, Dong Liu, Yuyun Chen, Mingpeng Chen, Yunxiao Liu, Shi Chen, Chi Tat Kwok, Yuxin Tang\*, **Shuangpeng Wang**\*, Hui Pan\*, Corrosion engineering boosting bulk Fe50Mn30Co10Cr10 high-entropy alloy as high-efficient alkaline oxygen evolution reaction electrocatalyst, *Journal of Materials Science & Technology*, Just Accepted, 10.1016/j.jmst.2021.09.003
13. Di Liu, Mingpeng Chen, Keyu An, Dong Liu, Yuyun Chen, Pengfei Zhou, Jielei Li, Jinxian Feng, Ye Ke, Detao Liu, Pengcheng Zhao, Chi Tat Kwok, Shi Chen, **Shuangpeng Wang\***, Weng Fai Ip, Hui Pan\*, In situ surface reconstruction on LaCoO3−δ leads to enhanced hydrogen evolution reaction, *Journal of Alloys and Compounds*, Just Accepted, 10.1016/j.jallcom.2021.161754
14. Rui Tong\*, Miao Xu, Haiming Huang, Chengrui Wu, Xiao Luo, Minglei Cao, Xingxing Li, Xiaosai Hu\*, **Shuangpeng Wang\***, Hui Pan, 3D V-Ni3S2@CoFe-LDH core-shell electrocatalysts for efficient water oxidation, *International Journal of Hydrogen Energy*, Just Accepted, 10.1016/j.ijhydene.2021.09.190
15. Jia-Yi Dong, Kar Wei Ng, Yin-Man Song, Jie-Lei Li, You-Chao Kong, Meng-Wei Wang, Jin-Cheng Xu, Shi Chen\*, Zi-Kang Tang\*, **Shuang-Peng Wang\*** “Observation and Suppression of Stacking Interface States in Sandwich-Structured Quantum-Dot Light-Emitting Diodes”
16. Weiwei Liu, Qilin Yuan, Jiayi Dong, Wenyu Ji, Jincheng Xu, Kar Wei Ng, Zikang Tang\*, **Shuangpeng Wang\***, “Transportation and Recombination of Carriers in Multiple Emitting Layers white emission QLEDs”
17. Shanshan Yan, Zhihong Zhang, Shichen Su, Zhipeng Wei, Zikang Tang\*, Karwei Ng\*, **Shuangpeng Wang\***, Ultra Fast Ultraviolet Detector on Lead-Free 1D Single Crystal CsCu2I3 Microwires by Light-Induced Ion Migration
18. Liu, R.J., Dong, J.Y., Wang, M.W., Yuan, Q.L., Ji, W.Y., Xu, J.C., Liu, W.W., Su, S.C., Ng, K.W.\*, Tang, Z.K.\*, **Wang, S.P.\***, (09/2021) Efficiency Improvement of Quantum Dot Light-Emitting Diodes via Thermal Damage Suppression with HATCN, *ACS Applied Material & Interfaces*, 13(41). pp. 49058–49065.
19. Yan, S.S., *Wang, K.Y.*, *Xing, G.C.*, *Xu, J.C.*, Su, S.C., *Tang, Z.K.*, **Wang, S.P.\***, *Ng, K.W.\** (08/2021). Robust Ultralong Lead Halide Perovskite Microwire Lasers. *ACS Applied Material & Interfaces*, 13(32). pp. 38458-38466.
20. Zhang, Y.Q., Liu, K.X., Yu, J.K., Chen, H.F., Fu, R., Zhu, S.Q.\*, Chen, Z.Q., **Wang, S.P.\***, Lu, S.Y.\* (29/07/2021). Single Stain Hyperspectral Imaging for Accurate Fungal Pathogens Identification and Quantification. *Nano Research*, doi: 10.1007/s12274-021-3776-2.
21. Liu, D., Zhou, P.F., Bai, H.Y., Ai, H.Q., Du, X.Y., Chen, M.P., Liu, D., *Ip, W.F.*, *Lo, K. H.*, *Kwok, C.T.*, *Chen, S.\**, **Wang, S.P.\***, *Xing, G.C.\**, Wang, X.S., *Pan, H.\** (26/07/2021). Development of Perovskite Oxide-Based Electrocatalysts for Oxygen Evolution Reaction. *Small*, 17, 2101605.
22. He, J.F., Chen, H.Y., Zhao, Q.X., Wang, Y.F., Pan, Y., Huang, S., Ling, F.C.C., **Wang, S.P.**, Su, S.C.\* (02/07/2021). Catalyst-free growth of layer-structured CuInSe2/b-In2Se3 microwires for ultrasensitive self-powered photodetectors based on a lateral p–n junction. *Journal of Materials Chemistry C*, 9. pp. 9484-9491.
23. Huang, Z.M., *Wei, J.C.*, Wan, Y.P., *Li, P.\**, Yu, J., Dong, J.Y., **Wang, S.P.\***, Li, S.L.\*, Lee, C.S.\* (21/06/2021). Aligned Millineedle Arrays for Solar Power Seawater Desalination with Site-Specific Salt Formation. *Small*, 17, 2101487.
24. Kong, Y.C., *He, T.W.*, Santiago, A.P., Liu, D., Du, A.J., **Wang, S.P.\***, *Pan, H.\** (21/06/2021). Unravelling the Reaction Mechanisms of N2 Fixation on Molybdenum Nitride: A Full DFT Study from the Pristine Surface to Heteroatom Anchoring. *ChemSusChem*, 14. pp. 3257-3266. (VIP Paper, Cover Feature)
25. *Lin, H.*, *Wei, Q.*, *Ng, K. W.*, *Dong, J.*, Li, J., *Liu, W.*, Yan, S., *Chen, S.*, *Xing, G.C.\**, Tang, X.S., *Tang, Z.K.\**, **Wang, S.P.\*** (13/06/2021). Stable and Efficient Blue‐Emitting CsPbBr3 Nanoplatelets with Potassium Bromide Surface Passivation. *Small*, 17, 2101359.
26. Xiang, Y.F., Mei, R.L., **Wang, S.P.**, Azad, F., Zhao, L.Z., Su, S.C. \* (13/06/2021). Numerical investigation of the effect of laser shock peening parameters on the residual stress and deformation response of 7075 aluminum alloy. *Optik*, 243. pp. 167446-1-167446-15.
27. Liu, J.S.#, Jiang, J.Z.#, **Wang, S.P.*#***, Li, T.F., Jing, X., Liu, Y.L., Wang, Y.X., Wen, H., Yao, M.N., Zhan, X.W., Shen, L.\* (10/06/2021). Fast Response Organic Tandem Photodetector for Visible and Near-Infrared Digital Optical Communications. *Small*, 17, 2101316.
28. *Liu, W.W.*, *Ng, K. W.*, *Lin, H.*, Dai, Z.Y., *Xu, J.C.*, Su, S.C., *Tang, Z.K.\**, **Wang, S.P.\*** (08/06/2021). Stable UV-Pumped White Light-Emitting Diodes Based on Anthracene-Coated CsCu2I3. *Journal of Physical Chemistry C*, 125. pp. 13076-13083.
29. Chen, M.P., Liu, D., Zi, B.Y., *Chen, Y.*, Liu, D., Du, X.Y., Li, F.F., Zhou, P.F., Ke, Y., Li, J.L., *Lo, K.H.*, *Kwok, C.T.*, *Ip, W.F.*, *Chen, S.*, **Wang, S.P.\***, *Liu, Q.J.*, *Pan, H.\** (29/05/2021). Remarkable synergistic effect in cobalt-iron nitride/alloy nanosheets for robust electrochemical water splitting. *Journal of Energy Chemistry*, 65. pp. 405-414.
30. Wang, T. #, **Wang, S. P.****#**, Cheng, Z., *Wei, J.*, Yang, L., *Zhong, Z.F.*, *Hu, H.*, *Wang, Y. T.*, *Zhou, B.*, *Li, P.* (16/05/2021). Emerging core–shell nanostructures for surface-enhanced Raman scattering (SERS) detection of pesticide residues. *Chemical Engineering Journal*, 424. pp. 130323-130323.
31. Feng, X.Y.#, **Wang, S.P.*#***, Guo, Q., Zhu, Y.D., Xiu, J.W., Huang, L.M., *Tang, Z.*, He, Z.B.\* (13/05/2021). Dialkylamines Driven Two-Step Recovery of NiOx/ITO Substrates for High-Reproducibility Recycling of Perovskite Solar Cells. *The Journal of Physical Chemistry Letters*, 12. pp. 4735-4741
32. Zhao, Y.Y., He, B.C., Liu, E.S., Li, J.L., Wang, L.M., *Chen, S.*, Chen, Y.Q., Tan, Z.A., *Ng, K.W.\**, **Wang, S.P.\***, *Tang, Z.K.*, *Qu, S.N.\** (05/2021). Aluminum-Based Surface Polymerization on Carbon Dots with Aggregation-Enhanced Luminescence. *The Journal of Physical Chemistry Letters*, 12. pp. 4530-4536.
33. Liu, D., Ai, H., Chen, M., Zhou, P., Li, B., Liu, D., Du, X., *Lo, K. H.*, *Ng, K. W.*, **Wang, S.P.\***, *Chen, S.\**, *Xing, G.C.\**, Hu, J., *Pan, H.\** (18/03/2021). Multi‐Phase Heterostructure of CoNiP/CoxP for Enhanced Hydrogen Evolution Under Alkaline and Seawater Conditions by Promoting H2O Dissociation. *Small*, 17, 2007557
34. Yan, S.S, Ma, Y., Kong, Y.C., Jiang, J.Z, *Xie, X.H.*, Su, S.C., *Tang, Z.*, Shen, L.\*, **Wang, S.P.\***, *Ng, K. W.\** (12/03/2021). Freestanding CH3NH3PbBr3 single-crystal microwires for optoelectronic applications synthesized with a predefined lattice framework. *Journal of Materials Chemistry C*, 9. pp. 4771-4781.
35. Zhou, P.F., Liu, D., Wen, Z.R., Chen, M.P., Liu, Q.J., Ke, Y., Li, S., *Chen, S.*, *Kwok, C.T.*, **Wang, S.P.\***, Tang, Y.X.\*, *Pan, H.\** (05/03/2021). Quaternary-metal phosphide as electrocatalyst for efficient hydrogen evolution reaction in alkaline solution. *International Journal of Hydrogen Energy*, 46(36). pp. 18878-18886.
36. Rashid, R., Ling, F.C.C., **Wang, S.P.**, Xiao, K., Cui, X.D., Rao, Q., Ki, D.K. (02/03/2021). IP and OOP ferroelectricity in hexagonal γ-In2Se3 nanoflakes grown by chemical vapor deposition. *Journal of Alloys and Compounds*, 870. pp. 159344-159344.
37. Feng, X.Y., Guo, Q., Xiu, J., Ying, Z, *Ng, K. W.*, Huang, L.M., **Wang, S.P.\***, *Pan, H.*, *Tang, Z.*, He, Z.B.\* (10/02/2021). Close-loop recycling of perovskite solar cells through dissolution-recrystallization of perovskite by butylamine. *Cell Reports Physical Science*, 2. pp. 100341-100341.
38. Yan, S.S., **Wang, S.P.\***, Su, S.C.\* (05/02/2021). Hybrid Plasmonic Leaky-Mode Lasing on Subwavelength Scale. *Chinese Optics*, 14. pp. 397-408.
39. Ai, H.Q., Liu, D., Geng, J.Z., **Wang, S.P.**, *Lo, K.H.*, *Pan, H.\** (21/01/2021). Theoretical evidence of the spin–valley coupling and valley polarization in two-dimensional MoSi2X4 (X = N, P, and As). *Physical Chemistry Chemical Physics*, 23. pp. 3144-3151.
40. *Liu, W.W.*, **Wang, S.P.\***, Liu, C.L., Chen, X.B., Chen, H.X., Miao, Z.Z. (20/01/2021). First-principles study on electronic and optical properties of Mg-N dual acceptor co-doped CuAlO2. *Materials Research Express*, 8. pp. 015904-015904.
41. Liu, D., Chen, M., Du, X., Ai, H., *Lo, K. H.*, **Wang, S.P.\***, *Chen, S.\**, *Xing, G.\**, Wang, X., *Pan, H.\** (27/12/2020). Development of electrocatalysts for efficient nitrogen reduction reaction under ambient condition. *Advanced Functional Materials*, 31. pp. 1/2008983-36/2008983.
42. Kong, Y.C., Yan, S.S., Feng, J.X., **Wang, S.P.\***, *Pan, H.\** (27/11/2020). Design of phosphorus-functionalized MXenes for highly efficient hydrogen evolution reaction. *Journal of Materials Chemistry A*, 9. pp. 597-606.
43. Kong, Y. C., Liu, D., Ai, H. Q., *Lo, K. H.*, **Wang, S. P.\***, *Pan, H.\** (04/11/2020). Theoretical Screening of Single Atoms Supported on Two-Dimensional Nb2CN2 for Nitrogen Fixation. *ACS Appl. Nano Mater.*, 3. pp. 11274-11281.
44. Feng, M.L., Wang, W., Zhou, H.P., Li, W., **Wang, S.P.\***, Zang, Z.G.\*, Chen, S.J.\* (29/10/2020). High-Efficiency and Stable Inverted Planar Perovskite Solar Cells with Pulsed Laser Deposited Cu-Doped NiOx Hole-Transport Layers. *ACS Applied Materials & Interfaces*, 12(45). pp. 50684-50691.
45. Chen, M, Ji, B, Dai, Z, Du, X, He, B, Chen, G, Liu, D, *Chen, S.*, *Lo, K. H.*, **Wang, S.P.\*,** *Zhou, B.\**, *Pan, H.\** (15/10/2020). Vertically-aligned 1T/2H-MS2 (M= Mo, W) nanosheets for surface-enhanced Raman scattering with long-term stability and large-scale uniformity. *Appl. Sur. Sci.*, 527. pp. 146769-146769.
46. Tong, R., *Ng, K.W.*, Wang, X.N., **Wang, S.P.\***, Wang, X.S., *Pan, H.\** (15/10/2020). Two-Dimensional Materials as Novel Co-Catalysts for Efficient Solar-Driven Hydrogen Production. *J. Mater. Chem. A*, 8. pp. 23202-23230.
47. Feng, M.L., Wang, M., Zhou, H.P., Li, W., **Wang, S.P.\***, Zang, Z.G.\*, Chen, S.J.\* (12/10/2020). Optoelectronic Modulation of Undoped NiOx Films for Inverted Perovskite Solar Cells via Intrinsic Defect Regulation. *ACS Applied energy materials*, 3. pp. 9732-9741.
48. Chen, M.P., Liu, D., Du, X.Y., *Lo, K.H.*, **Wang, S.P.\***, *Zhou, B.P.\**, *Pan, H.\** (09/2020). 2D Materials: Excellent substrates for Surface-enhanced Raman scattering (SERS) in chemical sensing and biosensing. *Trends in Analytical Chemistry*, 130. pp. 115983-115983.
49. Wang, X.Q., Li, D.Y., **Wang, S.P.**, Azad, F., Su, S.C. (27/08/2020). Synthesis of Core-Shell Au@TiO2@C Nanoparticles and Their Photocatalytic Properties for the Degradation of Rhodamine B Under Simulated-Solar Light. *ChemistrySelect*, 5(32). pp. 10055-10059.
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**Conference Presentations (Part)**

* **Wang SP** *Lead Halide Perovskite Microwires for High Performance Optoelectronic Devices* [Invited speaker]2021 IEEE International Conference on Manipulation, Manufacturing and Measurement on the Nanoscale, Xi’an China, 3-5 Aug. 2021
* **Wang SP** *Improve the Performance of Inverted QLED by Interface Optimization* [Invited speaker]  
  2019 Greater Bay Area Symposium for Wave Functional Materials, Guangzhou, China, 18-20 Jul. 2019
* **Wang SP** *Improve the Performance of Inverted QLED by Interface Optimization* [Invited speaker]  
  International Conference on Energy, Materials and Photonics 2019 (EMP19), Shanghai, China, 14-16 Jul. 2019
* **Wang SP** *Efficiency Boost of Inverted Quantum Dot Light Emitting Diodes by Thermal Damage Suppression Using an HAT-CN Interlayer* [Invited speaker]International Seminar on Advanced Materials Research, Shanghai, China, 2-5 Aug, 2018
* **Wang SP** *Efficiency Boost of Inverted Quantum Dot Light Emitting Diodes by Thermal Damage Suppression Using an HAT-CN Interlayer* [Invited speaker]The 14th Cross-Strait Workshop on “Nano Science and Technology”, Macau, China, 23 Jun, 2018
* **Wang SP***Efficiency Boost of Inverted Quantum Dot Light Emitting Diodes by Thermal Damage Suppression Using an HAT-CN Interlayer* [Poster Award]Conference on chemistry, physics and applications of quantum dot (2018), Hangzhou, China, Apr 14-15 2018
* **Wang SP**, Shan CX, Zhu H, Li BH, Shen DZ, Liu XY   
  *Phosphor-converted light-emitting diode based on ZnO-based heterojunction*, [Oral]  
  The 12th Conference on Luminescence of China, Suzhou, China, Nov 2010
* **Wang SP**, Liu XY, Shan CX, Xie XH, Shen DZ, Fan XW   
  *Electrically pumped random laser in ZnO,* [Oral]  
  The 5th ZnO Conference of China, Shenzhen, China, Nov 4-6 2011
* **Wang SP**, Shan CX, Lu YJ, Wei Q, Shen DZ   
  *Design and demonstration of ALD/MOCVD hybrid equipment,* [Oral]  
  The 1st International Conference on ALD Applications, Shanghai, China, OCT 15-16 2012

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| --- |
| TEACHING & Supervising |

* Courses:

Undergraduate Course: Physcis and Modern Society

Ph.D. Courses: Semiconductor Physics, Thin Film Physics

* Graduate Students

Sole-Supervisor Jing JIANG Enrolled in Aug. 2022

Sole-Supervisor Hao LIN Enrolled in Aug. 2021

Chief-Supervisor Ke-Yu AN Enrolled in Aug. 2021

Sole-Supervisor Ting DING Enrolled in Aug. 2021

Sole-Supervisor Yin-Man SONG Enrolled in Aug. 2020

Co-Supervisor Zhi-Sheng WU Enrolled in Aug. 2020

Chief-Supervisor Meng-Wei WANG Enrolled in Aug. 2020

Chief-Supervisor Hang LIU Enrolled in Aug. 2020

Co-Supervisor Di LIU Graduated in 2023

Co-Supervisor Bo-Wen LI Graduated in 2023

Chief -Supervisor Peng-Fei ZHOU Graduated in 2023

Co-Supervisor Shan-Shan YAN Graduated in 2022

Sole-Supervisor You-Chao KONG Graduated in 2021

Chief-Supervisor Xi-Yuan FENG Graduated in 2021

Co-Supervisor Yun-Yang ZHAO Graduated in 2021

Sole-Supervisor Jia-Yi DONG Graduated in 2021

Other-Supervisor Rui TONG Graduated in 2020

* Visiting Scholars Hosted

Mr. Su-Yun WANG, Visiting Ph. D Student from Nankai University, P. R. China, from 1/2022-12/2022

Mr. Zhi-Hong Zhang, Visiting Ph. D Student from Changchun University of Science and Technology, P. R. China, from 9/2020-present

Mr. Hong-Xiang An, Visiting Master Student from Wuyi University, P. R. China, 10/2021- present

Dr. Bao-Shi Qiao, Visiting Scholar from State Key Laboratory of Luminescence and Applications, P. R. China, from 7/2021-10/2022

Dr. Wei-Wei Liu, Visiting Scholar from Yancheng Teachers University, P. R. China, from 8/2020-7/2021

Mr. Hao Lin, Visiting Master Student from Chongqing University, P. R. China, 8/2020-8/2021

Dr. Bo Wang, Wuyi University, P. R. China, from 4/2020-6/2020

Mr. Yun-Peng Zhao, Visiting Master Student from South China Normal University, P. R. China, from 4/2021-10/2021

Dr. Xiu-Hua Xie, Visiting Scholar from State Key Laboratory of Luminescence and Applications, P. R. China, from 9/2019-9/2020

Mr. Di Liu, Visiting Master Student from Jilin University, P. R. China, 8/2019-8/2020

(The End)