Kunping Guo

Birth Date June 28, 1989

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EDUCATIONAL BACKGROUND

Sep. 2015- Present **Shanghai University**
PhD Candidate in Mechanical Engineering, Advisor: Professor Bin Wei

Sep. 2017- Mar. 2018 **University of California, Davis**
Visiting-PhD student in Chemical Engineering, Advisor: Professor Adam Moule

Sep. 2012-Apr. 2015 **Shanghai University**
M.S. in Microelectronics and Solid-State Electronics, Advisor: Professor Bin Wei

Sep. 2008-Jul. 2012 **Xi'an Technological University**
B.S. in Electronic Science and Technology, Advisor: Xiaolong Huang

RESEARCH AREAS

- Carrier injection, interface accumulation and exciton dynamics of OLEDs
- Low-threshold amplified spontaneous emission from organic semiconductor
- High-performance polymer solar cells, polymer doping and patterning
- Novel device structures for organic optoelectronics

TECHNICAL SKILLS

- Organic electronic device fabrication by Thermal Evaporation and Spin-coating on TCO glass or flexible substrate
- Nanostructure thin film preparation by ALD, PECVD, PVD and lithography
- Structure, optical and electrical characterization by using AFM, spectroradiometer, cooled CCD camera, Nd:YAG laser, UV-Vis spectrophotometer and FLSP920 (combined fluorescence lifetime and steady state spectrometer), etc.

RESEARCH EXPERIMENCE

- Participate in the following funding:

2017-Present UC System funding (MRPI) for UC Solar Collaborative

2015-17 National Basic Research Program of China (973 program, No. 2015CB655005)
Low-cost, High-efficiency Organic Polymer Luminescent Materials

2013-15 National Natural Science Foundation of China (NSFC, No. 6127504)
Space-charge Accumulation Effect and Exciton Control in Ultraviolet Organic Light-emitting Diode;

2013-15 National Natural Science Foundation of China (NSFC, No.61136003)
Stimulated Emission from Electrically Pumped Organic Semiconductor

2012-13 Ministry of Industry and Information Technology of China (MIIT)
OLED White Lighting

- 2015-17 Teach assistant at Key laboratory of advanced display and system applications Ministry of Education, Shanghai University
- 2014-17 Responsible for the maintenance of facilities in the clean room, arrange the experimental schedule, configure hardware and software of testing systems
- 2017 Invited as a peer reviewer of *Materials Science in Semiconductor Processing* (England Journal)
- 2016 Invited talk at The International Conference on the Energy Materials Nanotechnology Qingdao Meeting
- 2016 Attend The 20th International Symposium on Advanced Display Materials and Devices
- 2016 Attend The 18th International Workshop on Inorganic and Organic Electroluminescence
- 2014 Poster presentation at The International Symposium on Optoelectronic Technology and Application

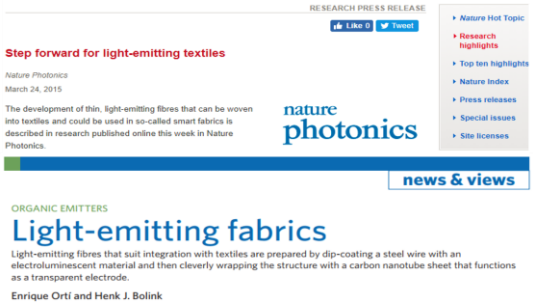
MAIN HONORS

- 2017, **National Scholarship**, Ministry of Education, P.R. China (*top 1% of all graduate students*); **Academic Rising Star (10/14000)**, Shanghai University.
- 2016, **National Scholarship**, Ministry of Education, P.R. China (*top 1% of all graduate students*); Outstanding Doctoral Dissertation Cultivation Project, Shanghai University
- 2014, **National Scholarship**, Ministry of Education, P.R. China (*top 1% of all graduate students*); Outstanding Student Scholarship, Key Laboratory of Advanced Display and System Applications, Ministry of Education, P.R. China
- 2013, Excellent Organizer, Shanghai Association of Person with Physical Disability, P.R. China
- 2012-14, Graduate Students Scholarship, Shanghai University
- 2011, First Prize Scholarship, Xi'an Technological University; Excellent League Member, Xi'an Technological University
- 2008-12, Merit Student and Ethic Award, Xi'an Technological University

PUBLICATION LIST

JOURNALS

1 Zhitao Zhang, Kunping Guo, Yiming Li, Xueyi Li, Guozhen Guan, Houpu Li, Yongfeng Luo, Fangyuan Zhao, Qi Zhang, Bin Wei, Huisheng Peng and Qibing Pei, "A colour-tunable, weaveable fibre-shaped polymer light-emitting electrochemical cell", ***Nature Photonics***, 9(4), 233-238, 2015. Research highlighted by *Nature Photonics* in April 2015.


RESEARCH PRESS RELEASE

Step forward for light-emitting textiles

Nature Photonics
March 24, 2015

The development of thin, light-emitting fibres that can be woven into textiles and could be used in so-called smart fabrics is described in research published online this week in Nature Photonics.

nature photonics

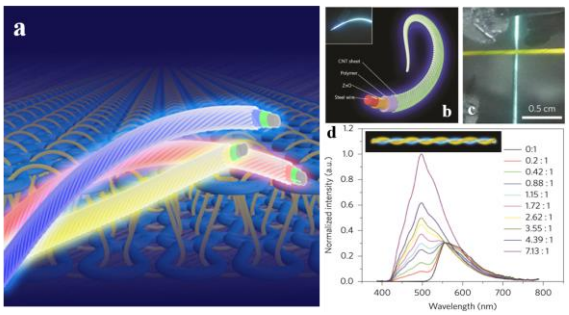
news & views

ORGANIC EMITTERS

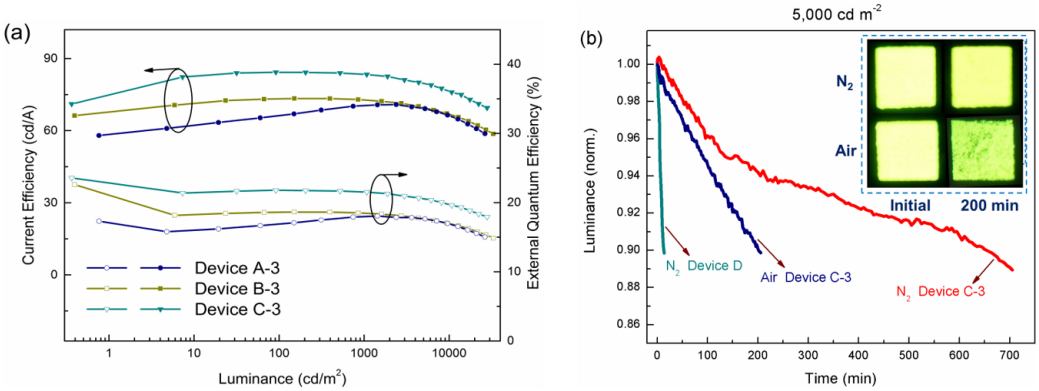
Light-emitting fabrics

Light-emitting fibres that suit integration with textiles are prepared by dip-coating a steel wire with an electroluminescent material and then cleverly wrapping the structure with a carbon nanotube sheet that functions as a transparent electrode.

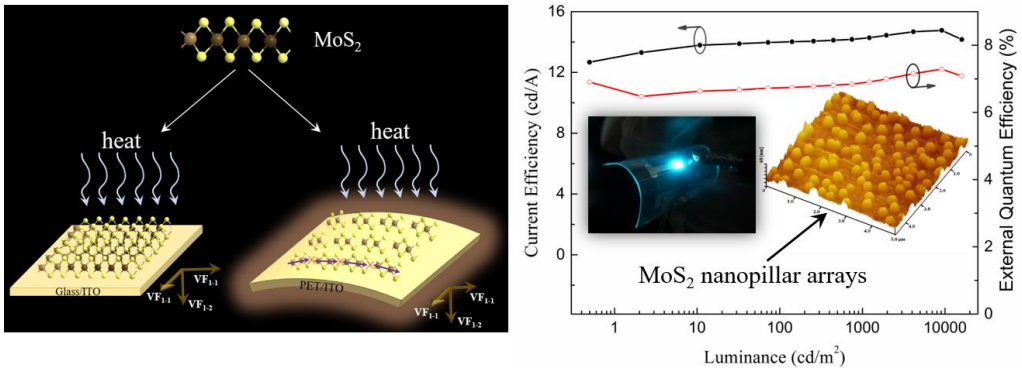
Enrique Ortí and Henk J. Bolink



2 Kunping Guo, Hedan Wang, Zixing Wang, Changfeng Si, Cuiyun Peng, Guo Chen, Jianhua Zhang, Gaofeng Wang and Bin Wei, "Stable green phosphorescence organic light-emitting diodes with low efficiency roll-off using a novel bipolar thermally activated delayed fluorescence material as host", ***Chemical Science***, 8(2), 1259-1268, 2017.



3 Kunping Guo, Changfeng Si, Ceng Han, Saihu Pan, Guo Chen, Yanqiong Zheng, Wenqing Zhu, Jianhua Zhang, Chang Sun and Bin Wei, "High-performance flexible inverted organic light-emitting diodes by exploiting MoS_2 nanopillar arrays as electron-injecting and light-coupling layer", ***Nanoscale***, 9(38),14602-14611,2017.



4 Kunping Guo, Weiling Li, Jianhua Zhang, Xiao Wang, Guo Chen, Tao Xu, Lianqiao Yang, Wenqing Zhu and Bin Wei, "Extremely high external quantum efficiency of inverted organic light-emitting diodes with low operation voltage and reduced efficiency roll-off by using sulfide-based double electron injection layers" ***RSC Advances***, 6(60), 55626-55634, 2016.

5 Kunping Guo, Changbo Chen, Chang Sun, Cuiyun Peng, Lianqiao Yang, Miao Cai, Xiaowen Zhang and Bin Wei, "Use of space interlayer in phosphorescent organic light-emitting diodes to improve efficiency and reduce efficiency roll-off" ***Journal of Physics D: Applied Physics***, 49(23), 235105, 2016.

6 Kunping Guo, Shuanglong Wang, Changfeng Si, Taohong Wang, Jing Zhang, Changbo Chen, Yuelin Jing, Lianqiao Yang, Guo Chen and Bin Wei, "Carrier transfer and luminescence characteristics of thickness-dependent organic light-emitting diodes using transporting material as the host of emitting layer" ***Physica Status Solidi Application & Materials***, 214(5), 1600689, 2017.

7 Kunping Guo, Jianhua Zhang, Tao Xu and Bin Wei, "High-efficiency near ultraviolet and blue organic light-emitting diodes using star-shaped material as emissive and hosting molecules" ***IEEE/OSA Journal of Display Technology***, 10(8), 642-646, 2014.

8 Kunping Guo, Qi Zhang, Feifei Wang, Hong Lin, Bin Wei and Xicun Gao, "Deep blue, low-threshold amplified spontaneous emitting and high thermal-stability binaphthyl derivates" ***Physica Status Solidi Application & Materials***, 211(10), 2372-2377, 2014.

9 Zhenyu Tang, Kunping Guo, Yulai Gao, Saihu Pan, Changfeng Si, Tao Xu and Bin Wei, "Lasing and transport properties of poly[(9,9-dioctyl-2,7-divinylenefluorenylene)-alt-co- (2-methoxy-5-(2-ethylhexyloxy)-1,4-phenylene)] (POFP) for the application of diode-pumped organic solid lasers" ***Nanoscale Research Letters***,12(1), 602, 2017.

10 Qi Zhang, Kunping Guo, Jing Zhang and Bin Wei, "High-efficiency red phosphorescent emitter and its application in color-tunable white organic light-emitting diodes" ***Nanoscience and Nanotechnology Letters***, 7(3), 204-208, 2015.

11 Na Wei, Kunping Guo, Pengchao Zhou, Jianning Yu, Bin Wei and Jianhua Zhang, "Pure blue and white light electroluminescence in a multilayer organic light-emitting diode using a new blue emitter" ***Chinese Physic B***, 23(7), 727-731, 2014.

12 Caicai Zhu, Kunping Guo, Wangbo Liu, Yanbo He, Zhimei Li, Xicun Gao, Fengjie Deng and Bin Wei, "Synthesis of asymmetric biphenyl derivatives for optoelectronic applications" ***Optical Materials***, 35(12), 2095-2101, 2013.

13 Yang Lin, Kunping Guo, Zhixiang Gao, Hua Wang, Tao Xu and Bin Wei, "Photoluminescence characteristics of the organic molecules in the accelerated aging organic light-emitting diodes" ***Physica Status Solidi Application & Materials***, 210(12), 2716-2719, 2013.

14 Chao Zhang, Kunping Guo, Yang Lin, Tao Xu, Jianhua Zhang and Bin Wei, "Individually addressable color-tuning white organic light-emitting diodes" ***Acta Optica Sinica***, 34(10), 1023002, 2014. (In Chinese)

15 Changfeng Si, Zhanfeng Li, Kunping Guo, Xiang Lv, Saihu Pan, Guo Chen, Yuying Hao and Bin Wei, "Functional versatile bipolar 3, 3′-dimethyl-9, 9′-bianthracene derivatives as an efficient host and deep-blue emitter" ***Dye and Pigments***, 148, 329-340, 2017.

16 Changfeng Si, Guo Chen, Kunping Guo, Saihu Pan, Cuiyun Peng and Bin Wei, "Enhanced performance in inverted organic light-emitting diodes using Li ion doped ZnO cathode buffer layer" ***Molecular Crystals and Liquid Crystals***, 651, 118-125, 2017.

17 Saihu Pan, Zhenyu Tang, Kunping Guo, Cuiyun Peng and Bin Wei, "High-performance color-tunable red organic light-emitting diodes for the application of an advanced adaptive rear-lighting system" ***Molecular Crystals and Liquid Crystals***, 651, 126-132, 2017.

18 Cuiyun Peng, Changbo Chen, Kunping Guo, Zhenghao Tian, Wenqing Zhu, Tao Xu and Bin Wei, "Organic light-emitting diodes using novel embedded al gird transparent electrodes" ***Physica E: Low-dimensional System and Nanostructures***, 87, 118-122, 2017.

19 Saihu Pan, Changfeng Si, Kunping Guo, Zhanhan Hu, Cuiyun Peng, Guo Chen and Bin Wei, "Simulation of transient delay time in organic LEDs and application for signal transmission" ***Chinese Journal of Luminescence***, 38(2), 188-193, 2017. (In Chinese)

20 Changbo Chen, Taohong Wang, Kunping Guo, Chang Sun, Hao Zhang, Lianqiao Yang, Bin Wei and Tao Xu, "Effect of periodically modified *n*-type electron transport layers on the optoelectrical performance of organic light-emitting diodes" ***Materials Science in Semiconductor Processing***, 56, 272-276, 2016.

21 Taohong Wang, Changbo Chen, Kunping Guo, Guo Chen, Tao Xu and Bin Wei, "Improved performance of polymer solar cells by using inorganic, organic, and doped cathode buffer layers" ***Chinese Physics B***, 25(3), 428-433, 2016.

22 Zhitao Zhang, Qi Zhang, Kunping Guo, Yiming Li, Xueyi Li, Lie Wang, Yongfeng Luo, Houpu Li, Ye Zhang, Guozhen Guan, Bin Wei, Xingrong Zhu and Huisheng Peng, "Flexible electroluminescent fiber fabricated from coaxially wound carbon nanotube sheets" ***Journal of Materials Chemistry C***, 3(22), 5621-5624, 2015.

23 Rongjuan Huang, Mengjie Wei, Kunping Guo, Yuelin Jing, Hao Zhang, Bin Wei and Miao Cai, "Carrier transport and recombination of white organic light-emitting diodes with a homojunction structure" ***High Power Laser and Particle Beams***, 27(2), 277-281, 2015.

24 Mengjie Wei, Rongjuan Huang, Kunping Guo, Yuelin Jing, Tao Xu and Bin Wei, "Carrier transportation, photoluminescence and lasing characteristics of 1,4-bis[1,4-bis[2-[4- [N,N-di(p-tolyl)amino]phenyl]vinyl] benzene:implications for diode-pumped organic solid-state lasers" ***Journal of Materials Chemistry C***, 2(38), 8131-8136, 2014.

25 Zhixiang Gao, Feifei Wang, Kunping Guo, Hua Wang, Bin Wei and Bingshe Xu, "Carrier transfer and luminescence characteristics of concentration-dependent phosphorescent $Ir(ppy)_3$ doped CBP film" ***Optics & Laser Technology***, 56(1), 20-24, 2014.

26 Yuelin Jing, Qi Zhang, Kunping Guo, Hao Zhang and Bin Wei, "Preparation of low-dimensional photonic crystals and its application in organic lasing cavity" ***Journal of Functional Materials***, 45(23), 23101-23104, 2014. (In Chinese)

27 Guo Chen, Changfeng Si, Pengpeng Zhang, Kunping Guo, Saihu Pan, Wenqing Zhu and Bin Wei, "Efficiency enhancement in DIBSQ: PC71BM organic photovoltaic cells by using Liq-doped Bphen as a cathode buffer layer" ***Frontiers of Materials Science***, 11(3), 233-240, 2017.

28 Zhenghao Tian, Changfeng Si, Wenshan Qu, Kunping Guo, Saihu Pan, Zhixiang Gao, Tao Xu and Bin Wei, "High-performance organic photovoltaics using solution-processed graphene oxide" ***Acta Optica Sinica***, 37(4), 0416001, 2017. (In Chinese)

29 Guo Chen, Changfeng Si, Zhenyu Tang, Kunping Guo, Taohong Wang, Jianhua Zhang and Bin Wei, ***Synthetic Metals***, 22, 293-298, 2016.

30 Xiao Wang, Jingshuang Zhang, Cuiyun Peng, Kunping Guo, Bin Wei and Hao Zhang, "High-brightness blue organic light emitting diodes with different types of guest-host systems" ***Optoelectronics Letters***, 12(2), 89-92, 2016.

31 Cuiyun Peng, Mengjie Wei, Rongjuan Huang, Kunping Guo, Yuelin Jing, Tao Xu and Bin Wei, "Theoretical and experimental studies on microcavity organic light-emitting diodes with different emitters". ***Key Engineering Materials***, 645-646, 1087-1092, 2015.

32 Jianhua Zhang, Jiantao Song, Hao Zhang, He Ding, Kunping Guo, Bin Wei, Yanqiong Zheng and Zhilin Zhang, "Sunlight-like white organic light-emitting diodes with inorganic/organic nanolaminate distributed Bragg reflector (DBR) anode microcavity by using atomic layer deposition" ***Organic Electronics***, 33, 88-94, 2016.

33 Wenqing Zhu, Xiaoliang Wu, Wenbing Sun, Liangliang Sun, Kunping Guo, Mei Tang and Pengchao Zhou, "A simple effective method to improve light out-coupling in organic light-emitting diodes by introducing pyramid-based texture structure" ***Organic Electronics***, 15(6), 1113-1119, 2014.

34 Fuli Zhang, Changfeng Si, Xiaobin Dong, Donghui Wei, Xin Yang, Kunping Guo, Bin Wei, Zhongyi Li, Chi Zhang, Suzhi Li, Bin Zhai and Guangxiu Cao, "Iridium (iii) complexes bearing oxadiazol-substituted amide ligands: color

tuning and application in highly efficient phosphorescent organic light-emitting diodes" ***Journal of Materials Chemistry C***, 5(35), 9146-9156, 2017.

35 Liangliang Sun, Wenqing Zhu, Mei Tang, Bingjie Qian, Teng Xiao, Jingting Yu and Kunping Guo, "Effect of inverted-pyramid shape on light extraction of organic light-emitting diodes" ***Physica Status Solidi Application & Materials***, 212(3), 646-650, 2015.

CONFERENCES

36 Kunping Guo and Bin Wei, "Three-peak standard white organic light-emitting devices for solid-state lighting" ***Proc. SPIE 9295***, International Symposium on Optoelectronic Technology and Application 2014: Laser Materials Processing; and Micro/Nano Technologies, 929516.

37 Zhenyu Tang, Kunping Guo, Changfeng Si, Saihu Pan and Bin Wei, "Low-energy consumption and high-color-quality white organic light-emitting diodes" Electronic Packaging Technology (ICEPT), 2017 18th International Conference on. IEEE, 2017:605-610.

38 Chunya Li, Jie Liu, Ming Li, Kunping Guo, Bin Wei and Xingwei Ding, "High color-rendering white organic light-emitting diodes for the application of lightening" 4th Annual International Conference on Material Science and Engineering (ICMSE) 2016:0546-0553.

BOOK (IN CHINESE)

39 Jianhua Zhang, Bin Wei, and Kunping Guo, "OLED display technology and process" ***Science Press***. (under review)

PAENTS (IN CHINESE)

40 Kunping Guo, Qi Zhang, Shiqi Liu, Ming Li, Mengjie Wei, Tao Xu and Bin Wei, "Double TFT modulation-based organic electroluminescent device and its preparation method" (CN 103594636 B).

41 Kunping Guo, Jing Zhang, Xiao Wang, Taohong Wang, Changbo Chen and Bin Wei, "The double electron injection structure for organic light-emitting diode, inverted organic light-emitting diode and its preparation method" (CN 105226199A).

42 Kunping Guo, Weiling Li, Mengjie Wei, Taohong Wang, Changbo Chen and Bin Wei, "A multi-wavelength laser with multilayer stacked planar waveguides and its preparation method" (CN 105226501A).

43 Kunping Guo, Taohong Wang, Changbo Chen, Weiling Li, Jing Zhang and Bin Wei, "Method for improving electrical performance of ZnO in organic solar cells using metal ion-doped" (CN 105226195 B).

44 Kunping Guo, Changbo Chen, Mengjie Wei, Taohong Wang and Bin Wei, "The OPV driven OLED source and its preparation method" (CN 105307304 B).

45 Kunping Guo, Rongjuan Huang, Weiling Li, Jing Zhang, Changbo Chen and Bin Wei, "Organic light-emitting field-effect transistors and its preparation method" (CN 201410564456.0).

46 Changfeng Si, Kunping Guo, Weiling Li, Bin Wei and Guo Chen, "An ultra-high definition organic laser display" (CN 106842704A).

47 Chao Zhang, Kunping Guo, Changbo Chen, Weiling Li, Jing Zhang, Tao Xu and Bin Wei, "Fabrication of nanopillar arrays with controllable surface structures" (CN 104310304A)

48 Zhenghao Tian, Shiqi Liu, Changfeng Si, Saihu Pan, Kunping Guo, Tao Xu and Bin Wei, "A passive-driven portable multifunction eye chart" (CN 2017104835348)

49 Yang Lin, Pengchao Zhou, Hong Lin, Qi Zhang, Kunping Guo and Bin Wei, “An adjustable color organic electroluminescence device” (CN102791051A)