|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title**  | Prof./Dr. | **Name** | Xin-Jian Li |                           |
| **Subject** | Condensed Matter Physics | **Research Interest** | Nano-material Physics and Devices |
| **E-mail**  | lixj@zzu.edu.cn | **Tel** | 86-371-67766629 |
| **Educational Background** | 1984.09-1988.06, a student in physics in Zhengzhou University;1988.09-1991.06, a MS in high-energy physics in Zhengzhou University;1996.03-1999.03, Ph. D in condensed matter physics in University of Science and Technology of China. |
| **Working Experiences** | 1991.07-1994.10, an assistant in physics in Department of Physics, Zhengzhou University;1994.11-1996.02, a lecturer in physics in Department of Physics, Zhengzhou University;1999.03-1999.10, a lecturer in physics in School of Physics and Engineering, Zhengzhou University;1999.11-2002.10, an associate professor in physics in School of Physics and Engineering, Zhengzhou University;2002.11- , a professor in physics in School of Physics and Engineering, Zhengzhou University. |
| **Research Projects** | 1. Preparation, characterization and optoelectronic properties of silicon nanostructures;
2. Optoelectronic properties and device applications of silicon-based wide-bandgap compound semiconductor nanoheterojunctions (solar cells, light-emitting diodes and photodectors);
3. Highly-sensitive gas sensors and biological detectors based on nanomaterials and nanotechnology;
4. High-efficiency thermoelectric materials based on nanostructures.
 |
|
| **Selected Publications** | 1. Zhifeng Shi, Ying Li, Yuantao Zhang, Yongsheng Chen, **Xinjian Li**\*, Di Wu, Tingting Xu, Chongxin Shan\*, Guotong Du. High-efficiency and air-stable perovskite quantum dots light-emitting diodes with an all-inorganic heterostructure, Nano Letters 17, 313-321(2017);
2. Ling Li Wang\*, Li Ping Kang, Hai Yan Wang, Zhen Ping Chen, Xin Jian Li\*, Capacitive humidity sensitivity of SnO2:Sn thin film grown on silicon nanoporous pillar array, Sensors and Actuators B-Chemical 229, 513-519 (2016);
3. Zhifeng Shi\*, Xuguang Sun, Di Wu, Tingting Xu, Shiwei Zhuang, Yongtao Tian, Xinjian Li\*, Guotong Du. High-performance planar green light-emitting diodes based on a PEDOT:PSS/CH3NH3PbBr3/ZnO sandwich structure, Nanoscale, 2016, 8:10035-10042
4. Zhifeng Shi\*, Xuguang Sun, Di Wu, Tingting Xu, Shiwei Zhuang, Yongtao Tian, Xinjian Li\*, Guotong Du. Near-infrared random lasing realized in a perovskite CH3NH3PbI3 thin film, Journal of Materials Chemistry C, 2016, 4:8373-8379
5. Zhifeng Shi, Tingting Xu, Di Wu, Yuantao Zhang, Baolin Zhang, Yongtao Tian, Xinjian Li\*, Guotong Du\*. Semitransparent all-oxide ultraviolet light-emitting diodes based on ZnO/NiO-core/shell nanowires, Nanoscale, 2016, 8:9997-10003
6. Zhifeng Shi, Di Wu, Tingting Xu, Yuantao Zhang, Baolin Zhang, Yongtao Tian, Xinjian Li\*, Guotong Du\*. Improved electrical transport and electroluminescence properties of p-ZnO/n-Si heterojunction via introduction of patterned SiO2 intermediate layer, Journal of Physical Chemistry C, 2016, 120:4504-4510
7. Chang Bao Han, Chuan He, Xin Jian Li\*, Near-Infrared Light Emission from a GaN/Si Nanoheterostructure Array, Adv. Mater. 23, 4811-4814 (2011);
8. Hai Yan Wang, Yong Qiang Wang, Qing Fei Hu, Xin Jian Li\*, Capacitive humidity sensing properties of SiC nanowires grown on silicon nanoporous pillar array, Sens. Actuators B 166, 451-456 (2012);
9. Fei Feng, Gang Zhi, He Shun Jia, Liang Cheng, Yong Tao Tian, Xin Jian Li\*, SERS detection of low-concentration adenine by a patterned silver structure immersion plated on a silicon nanoporous pillar array, Nanotechnology 20, 295501(2009);
10. Hai Jun Xu, Xin Jian Li\*, Silicon nanoporous pillar array: a silicon hierarchical structure with high light absorption and triple-band photoluminescence, Optics Express 16 (5), 2933-2941 (2008);
11. Wei Fen Jiang, Shun Hua Xiao, Chun Yue Feng, Hua Yang Li, Xin Jian Li\*, Resistive humidity sensitivity of arrayed multi-wall carbon nanotube nests grown on arrayed nanoporous silicon pillars, Sens. Actuators B 125 (2), 651-658 (2007);
12. Xin Jian Li\*, Wei Fen Jiang, Enhanced field emission from a nest array of multi-walled carbon nanotubes grown on a silicon nanoporous pillar array, Nanotechnology 18 (6)，065203 (2007);
13. Yuan Yuan Xu, Xin Jian Li\*, Jin Tian He, Xing Hu, Hai Yan Wang, Capacitive humidity sensing properties of hydrothermally-etched silicon nano-porous pillar array, Sens. Actuators B 105 (2), 219 - 222 (2005);
14. Xin Jian Li\*, Yu Heng Zhang, Quantum confinement in porous silicon, Phys. Rev. B 61 (19), 12605 - 12607 (2000);
15. Yu Heng Zhang, Xin Jian Li\*, Lei Zheng, Qian Wang Chen, Nondegrading Photoluminescence in Porous Silicon, Phys. Rev. Lett. 81, 1710 - 1713 (1998).
 |