



WUHAN,
UNIVERSITY



Contact Information

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Core Competencies & projects





- Hand-on experience in wet chemistry synthesis of inorganic nano-crystals and nano-polymer materials [redacted]:
- Hand-on experience in molecular biology is strong plus for the future interdisciplinary research [redacted] [redacted], **Anexin V-Core-streptavidin Anexin-V** [redacted]
Core-streptavidin

Fc

- Solid hands-on experience in epitaxial growth, optoelectronic / Nanoelectronic device fabrications [redacted]
- Solid hands-on experience in the design of thermoelectric materials with potential high ZT value [redacted] **ZT**
- Solid knowledge of device physics on both theoretical and experimental aspects [redacted]
- Experience in failure diagnosis and wireless monitoring based on accelerometer ([redacted])
- Research in SLAM (simultaneous localization and mapping) [redacted] [redacted]

Projects in the field of material physics:

1) Dynamical plasmonics based mechanical soft machine with active response to the environment is achieved in the first time in the field

ACS NANO

2) Bio-targeting and separating apoptotic cells based on bio-functionalized fluorescent-magnetic-bifunctional nanospheres - -

, **Chem. Commun.**

Chemical



Technology Chemistry World /

60

FNS-520,580,610;MNS-800

3) Real-time continuous tunable quantum-dots doped liquid-crystal laser based on dynamic plasmonics ()

3) Epitaxial growth of ZnO film /nanowire array for the fabrication of Fabry Perot laser, LED and photodetector: The P-type ZnO nanowire array was achieved by Sb-doping, and n-type ZnO film was doped by Ga. The FP laser was accomplished through this structure for the first time in ZnO academic community and published in Nature Nanotechnology (Vol. 6, 506, 2011), which has been cited over 180 times; More than two hundred news media and science and engineering magazines in different languages have commented on our paper, such as Materials today, Physics today, PhysOrg, NSF.org, Science daily, Laser Focus World, Press Enterprise. ZnO

FP Nature Nanotechnology

330

4) InGaN/GaN LED: Alleviating the quantum-confined Stark effect(QCSE) induced by polarizations in multi- quantum well region by introducing the superlattice structure into the conventional structure for better hole injection and wave function overlapping, leading to higher efficiency of the device, verified both experimentally and theoretically GaN LED

5 Calculating the thermal conductivity of Si/Ge quantum dots-superlattice: In order to improve ZT value (decreasing the thermal conductivity and retaining the electrical conductivity), the quantum-dot superlattice(QDSL) was adopted in this study. Started from Debye dispersion and introduced the relaxation time of quantum dots and



superlattice boundary, the thermal conductivity of quantum dot superlattices both in plane and cross-plane was calculated Superlattice nanowire-array synthesis for the thermoelectrical applications.

ZT

- 6 Modeling and Simulation of intermediate band solar cell(ZnTeO) by numerically solving coupled Poisson and continuity equations ()
- 7 Monitoring the health of the gears in real time for avoiding abnormal situations during which larger periodic vibrations occur (detecting the amplitude and frequency of such anomalies based on accelerometer and wirelessly transmitting the data to the receiver, computer, mobile phone, etc. ())

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- 8 Achieving a smart cooperation between the drone and robot: the robot can choose an optimal path to avoid obstacles via SLAM with the capability of real-time active-camouflage.

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pattern

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Education

2011	8	-	UC, Riverside
2006	6	/	
2003	6		

Appointments & Work Experience

2014.3-, ,

2013.05- 2013.12, ,

2012.09-2013.01, Research Scientist,

2011.11-2012.08, ,

Research Fundings

1				\
	500	2016-2018		
2	XXXXXXXXXXXXXXXXXX	100		XX
	2017			
3			LED	, 25
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Publications

1. G Y 7 W Z U W V XY U =
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 H Y U Y U W Y X V *Chemical Technology* U X *Chemistry World* U U
 Z Y Z Y X [redacted]
7. "Flexible Polymer Dispersed Liquid Crystal Module with Graphene Electrode" F. Liu, **Guoping Wang*(corresponding author)**. Journal of Nanoscience and Nanotechnology, Vol.15 (2015), pp.1-5
8. "Optical and electrical investigation of ZnO nano-wires array centre micro-flowers turn to hierarchical nano-rose structures" K. Pal, B. Zhan, X. Ma, **Guoping Wang*(corresponding author)**, Journal of Nanoscience and Nanotechnology , Volume 16, Number 1, January 2016, pp. 400-409(10)
9. = Z Y W Z N C B U W Y @ X 7 U = Y Z W Z 6 U Y
 G W 5 W D U 6 N U **(corresponding author)**
 5 Y X G Z W G W Y W (Volume 357, Part B, 1 December 2015, Pages 1499
 1510)
10. : W U Y X U Y Y X Y X X Y V X X X W U Y Z W Y



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(corresponding author) =999 U Z 8 U H W)

Issue:99 DOI:10.1109/JDT.2015.2499326)

"Investigations of CdS Nanostructures Encapsulated in Soft Self-Assembled Thermotropic Liquid Crystals Matrix " - K. Pal, **Guoping Wang*(corresponding author)**. Science of Advanced Materials, 1947-2935, 2016 (IF=2.598)

12. "Switchable Assembly of Self-organization CdS Nanomaterials Imbedded in Liquid Crystals Cells for High Performance Static Memory Device" - K. Pal, X. Yang, **Guoping Wang* (corresponding author)**, Materials Letters, **169, 37 41, 2016. (IF=2.489)**

13. J Y U Y 7 X G U W Y Z W U Y X X W U
W U V Y X Y W D U **Guoping Wang* (corresponding author)** X Y
Y Y Z U Z B U a U Y U

14. I U 7 X G U Y X Y a X W U Y Z
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15. ; U X 7 U U W Y U Z G U Y X 7 A Y X 7;



- Y Z U YUYU U YYZ a V Ya U WUY Y U WX U W
- a YW U VYU a Y U 7UV (- (* =1(, -
22. Jian Huang, Sheng Chu, Jieying Kong, Long Zhang, Casey M. Schwarz, **Guoping Wang**, Leonid Chernyak, Zhanghai Chen, Jianlin Liu; "ZnO p n Homojunction Random Laser Diode Based on Nitrogen-Doped p-type Nanowires", Advanced Optical Materials, 1, 2, 179 (2013)
 23. Zuxin Chen, Boya Lai, Junming Zhang, **Guoping Wang** and Sheng Chu, "Hybrid material based on plasmonic nanodisks decorated ZnO and its application on nanoscale lasers", Nanotechnology, 25, 29, 295203 (2014)

The current Group members:



Two more postdocs Coming soon

