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## 研究方向

- 铁磁、铁电薄膜制备和性能研究;
- 稀磁半导体材料制备和性能研究;
- 新型纳米存储机理和技术的研究;

- 硕士研究生方向: **物理电子学、微电子与固体电子学**
- 博士研究生方向: **微电子与固体电子学**

## 社会兼职

英国Heriot-Watt大学 物理与工程科学学院 博士

法国国家科学研究中心(CNRS)外延与应用研究中心(CRHEA) 博士后

中国科学院上海光学精密机械研究所 “百人计划”研究员(2005年2月)

华东师范大学信息科学技术学院 教授(2006年9月)

上海市“曙光学者”(2006年)

中国光学学会光学材料专业委员会委员(2007年)

## 学术成果

先后参加了国家863计划、中科院重大项目、上海市重大、重点和应用基础项目等9项课题的研究工作。参与两项国家重大科学研究计划项目子课题和一项上海市基础研究重点课题的研究工作;同时,主持国家自然科学基金委课题、上海市基础研究重大项目子课题、上海市“曙光计划”课题各一项。

## 近期刊论文

1. Magnetocapacitance effects of  $\text{Pb}_{0.7}\text{Sr}_{0.3}\text{TiO}_3/\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$  thin film on Si substrate”, *Appl. Phys. Lett.*, 98, (2011) 052910 (3pages)
2. Structure, optical, and room-temperature ferromagnetic properties of pure and transition metal (Cr, Mn, and Ni)-doped ZnO nanocrystalline films grown by the sol-gel method, *J. Phys. Chem. C*, 114 (27) (2010): 11951-11957
3. Fabrication and characterization of a novel wafer-level micro-electrode system for dielectrophoresis manipulation, *Physica E*, 42 (2010) 1653-1658
4. Giant Temperature Coefficient of Resistance in ZnO/Si (111) Thin Films, *Chinese Physics Lett.*, 27 (2010) 018101
5. Thermoelectric signals from Si/SiGe Superlattices, *J. Phys. D: Appl. Phys.* 42 (2009) 225303 (5 pages)
6. Field Enhancement Effect of Metal Probe in Evanescent Field, *Chinese Optics Letters*, 7 (2009) 74-77
7. Dielectrophoretic manipulation of nano-materials and its application to micro/nano-sensors, *Sensors and Actuators B: Chemical*, 133 (2008) 664-670
8. Time-resolved spectroscopy of excitonic transitions in ZnO/(Zn,Mg)O quantum wells, *Superlattices and Microstructures*, 41 (2007) 352-359.
9. Time resolved photoluminescence study of ZnO/(Zn,Mg)O quantum wells, *Journal of Crystal Growth* 287 (2006) 12-15
10. Direct and exchange Coulomb energies in CdSe/ZnSe quantum dots, *Physica Status Solidi (B)*, 243 (2006) 782-786
11. Metastable group II sulphides grown by MBE: surface morphology and crystal structure, *Journal of Crystal Growth*, 275 (2005) 141 - 149
12. Internal electric field in wurtzite ZnO/ZnMgO quantum well, *Physical Review B*, 72 (2005) 241305(R)
13. Structural and electronic properties of ZnMgO/ZnO quantum wells, *Superlattices and Microstructures*, 38(2005) 455-463
14. Increasing the spectral separation between the emission lines from individual CdSe quantum dots through annealing, *Journal of Crystal Growth*, 278(2005) 743-746
15. Electrical characterisation of ZnO thin films by electrochemical capacitance-voltage profiling, *Applied Physics Letters*, 84 (2004) 3043-3045
16. Growth by MBE and characterization of metastable group II sulphides, *Physica Status Solidi (B)*, 241 (2004) 463-470
17. Temperature dependent photoluminescence of CdSe quantum dots grown in MgS and ZnSe, *Physica Status Solidi (C)*, 1 (4) (2004) 755-758

18. Characterization of heterostructures containing MnS grown by MBE, *Physica Status Solidi (B)*, 241 (2004) 471-474
19. Electrical characterisation of zinc oxide thin films by Capacitance-Voltage profiling, *Physica Status Solidi (C)*, 1(4) (2004) 860-863
20. Characterisation of MBE grown II-VI semiconductor thin layers by X-Ray interference, *Journal of Crystal Growth*, 251 (2003) 565-570
21. Growth and Characterisation of CdSe:Mn Quantum Dots, *Journal of Crystal Growth*, 251 (2003) 586-590
22. Growth of Zinc Blende MnS and MnS Heterostructures by MBE Using ZnS as a Sulphur Source, *Journal of Crystal Growth*, 251 (2003) 591-595
23. Growth and Spectroscopy of CdSe:Mn Quantum Dots, *Journal of Superconductivity*, 16 (1) (2003) 19-22

#### 近期国际会议报告

1. *Experimental observation of piezoelectric fields in ZnO-ZnMgO quantum wells* (invited talk), E-MRS 2005 Spring Meeting, Strasbourg / France, April 2005
2. *Approaches to ultrahigh density optical storage based on some novel technologies* (invited talk), 4<sup>th</sup> Cross-Strait Workshop on Nanoscale Science and Technology, Lijiang / China, August 2005
3. *Structural and electronic properties of ZnMgO/ZnO quantum wells* (Oral presentation), SOXESS ZnO Workshop, Bangor / Wales, October 2004
4. *Electrical characterisation of zinc oxide thin films by Electrochemical Capacitance-Voltage profiling* (Poster), 11<sup>th</sup> International Conference on II-VI Compounds, Niagara Falls, New York / U.S.A., September 2003

#### 专利

1. 可变入射角的激光会聚装置, 中国发明专利, 申请号: 200810038933.4
2. 一种多功能介电泳操控电极板上系统及其制作方法, 中国发明专利, 申请号: 200810036441.1
3. 探针诱导光刻薄膜及其制备方法, 中国发明专利, 申请号: 200810035321.X
4. 探针诱导表面等离子体共振耦合的光刻方法, 中国发明专利, 申请号: 200710173060.3

#### 编著和译著

1. 《材料科学与技术》丛书 (主编: 师昌绪, 柯俊, 卡恩 R.W.) 之第九卷《玻璃和非晶态材料》之第十三章“玻璃的力学性质”, 科学出版社 (1999) (译自《Materials Science and Technology》Vol. 4 (Glass and Amorphous Materials) Chapter 14)
2. 《中国材料工程大典》丛书 (编委会主任: 路甬祥) 之第十一卷《信息功能材料》中第八篇《信息存储材料》之第十四章“非易失性存储材料”, 化学工业出版社 (2006)