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教授



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研究方向	半导体纳米材料与光电器件研究

### 详细描述

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#### 研究方向:

- (1) 半导体一维纳米材料及光电探测器研究
- (2) 半导体激光器及发光二极管研究
- (3) 半导体物理 (凝聚态物理)
- (4) 电子线路设计

**研究生: 招收微电子、凝聚态物理两个专业的博士研究生, 招收微电子、电科、物理、材料等专业的硕士研究生, 优先招收博士生和硕博连读生。**

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#### 主持的国家级项目及横向应用研究项目:

- (1) InGaN量子阱的离子注入及其在白光LED中的应用研究, 国家自然科学基金面上项目, 项目批准号: 11275144。
- (2) 离子注入制备硅基III - V 族半导体量子点及其光电特性研究, 国家自然科学基金面上项目, 项目批准号: 10775106。
- (3) AlGaIn纳米线的制备、组装及其紫外探测器研究 国家自然科学基金联合项目, 项目批准号: U1631110
- (4) 非致冷正入射吸收量子点中、远红外探测器研究, 国家自然科学基金面上项目, 项目批准号: 60676036。
- (5) CdS一维纳米材料制备、组装及其紫外探测器研究, 中央高校基本科研业务费专项资金, 项目批准号: 413000008。
- (6) 大学本科生与半导体物理及材料相关的前沿课题研究, 国家基础科学人才培养基金子项目, 项目批准号: J1210061。
- (7) 嵌入式设备及智能管理系统的开发研究, 横向应用研究项目。

武汉大学硕士研究生毕业, 中国科学院半导体研究所博士研究生毕业。参加了国家重大计划研究项目863和973有关量子点材料和器件的研究以及量子点带间跃迁红外激光器材料和器件研究。Applied Surface Science及半导体学报的论文审稿人。承担了本科生近代电子材料、电子线路实验课程, 研究生电子材料与器件课程的教学工作。获武汉市科技进步一等奖一次。申请专利一项。共发表80多篇学术论文, 其中以**通讯作者或第一作者发表的国际期刊论文如下:**

- (1) Qinwei An, Yang Liu, Renjie Jianga, Xianquan Meng\*, Chemical vapor deposition growth of ReS<sub>2</sub> nanowires for high-performance nanostructured photodetector, Nanoscale, 2018, 10, 14976-14983, SCI一区, 影响因子7.453
- (2) Yang Liu, Qinwei An, Xianquan Meng\*, Controllable growth of vertical ReS<sub>2</sub> nanosheets and nanorods by vapor transport method, Journal of Materials Science, 2019, 54:6807-6814, SCI三区, 影响因子2.631
- (3) Qinwei An, Xianquan Meng\*, Ke Xiong, Yunlei Qiu, high-performance fully nanostructured individual CdSe nanotube photodetector with enhanced responsivity and photoconductive gain, Journal of Materials Chemistry C, 2017, 5, 7057-706, SCI一区, 影响因子5.433
- (4) Qinwei An, Xianquan Meng\*, Ke Xiong, Yunlei Qiu and Weihua Lin, One-step fabrication of single-crystalline ZnS nanotubes with a novel hollow structure and large surface area for photodetector devices,

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