

## 目次

### □ 红外材料与器件

室温下高探测效率InGaAsP/InP单光子雪崩二极管	祁雨菲 王文娟 孙京华 武文 梁焰 等(1)
非均匀GaAs/AlGaAs量子阱红外探测器材料表征和器件性能研究	苏家平 周孝好 唐舟 范柳燕 夏顺吉 等(7)
InAs/GaSb II类超晶格材料的Si离子注入研究	何苗 周易 应翔霄 梁钊铭 黄敏 等(15)
通过成结模拟器研究n <sup>+</sup> -n <sup>-</sup> -p碲镉汞高温探测器	林加木 周松敏 王溪 甘志凯 林春 等(23)
不同生长条件对CdTe/GaAs外延薄膜表面形貌和光学性质的影响	朱辰玮 刘欣扬 巫艳 左鑫荣 范柳燕 等(29)
10 μm 1280×1024 HgCdTe中波红外焦平面阵列探测性能提升	谭必松 毛剑宏 陈殊璇 李伟伟 陈世锐 等(36)
γ辐照对InGaAsP/InP单光子雪崩探测器性能的影响	孙京华 王文娟 诸毅诚 郭子路 祁雨菲 等(44)
片上红外偏振探测研究进展	甄玉冉 邓杰 布勇浩 代旭 余宇 等(52)
MBE脱氧条件与InGaAs/InP APD性能的相关性	郭子路 王文娟 曲会丹 范柳燕 诸毅诚 等(63)

### □ 太赫兹与毫米波技术

基于CMOS的高响应度太赫兹探测器线阵	白雪 张子宇 徐雷钧 赵心可 范小龙(70)
连续波输出功率111.27 mW的G波段四端口平衡式倍频器	黄昆 杨昊 李若雪 周人 蒋均 等(79)
一种改进的基于110 GHz在片S参数测试的HEMT器件寄生电阻提取方法	李织纯 吕渊婷 张傲 高建军(85)
基于超材料设计实现C/Co复合材料的超宽带吸收	王啸坤 过劲超 梁磊磊 李威 唐东明 等(91)

### □ 红外光谱与光谱分析

红外高光谱大气探测仪(FY-3E/HIRAS-II)在轨数据非线性校正方法	黄硕 顾明剑 胡勇 杨天杭 邵春沅 等(98)
---------------------------------------	-------------------------

### □ 遥感技术与应用

基于联合方向梯度和均值对比度的红外弱小目标检测方法	李宁 郭义放 焦继超 逢敏 徐威(106)
一种基于IGA的融合点云和影像的建筑物提取方法	赖旭东 骈蔚然 薄立明 何丽华(116)

### □ 红外及光电技术与应用

应用双弹光级联差频调制的红外材料应力缺陷检测	李克武 王爽 李孟委 王志斌(126)
------------------------	---------------------

### □ 图像处理及软件仿真

对象随型粗糙面近红外单目视觉测量与基准图像自愈	侯旺 屈也频 刘坚强 吕余海(134)
-------------------------	---------------------



本刊支持开放获取(Open Access)  
彩色电子版内容获取  
请扫描左侧二维码关注学报公众号

本期责任编辑:张旻浩

**CONTENTS**

High detection efficiency InGaAsP/InP single-photon avalanche diode at room temperature .....  
..... QI Yu-Fei, WANG Wen-Juan, SUN Jing-Hua, WU Wen, LIANG Yan,  
QU Hui-Dan, ZHOU Min, LU Wei (1)

Study on material characterization and device performance of non-uniform GaAs/AlGaAs quantum well infrared  
detectors ..... SU Jia-Ping, ZHOU Xiao-Hao, TANG Zhou, FAN Liu-Yan,  
XIA Shun-Ji, CHEN Ping-Ping, CHEN Ze-Zhong (7)

Si ion implantation study of InAs/GaSb type II superlattice materials .....  
..... HE Miao, ZHOU Yi, YING Xiang-Xiao, LIANG Zhao-Min, HUANG Min, WANG Zhi-Fang,  
ZHU Yi-Hong, LIAO Ke-Cai, WANG Nan, CHEN Jian-Xin (15)

Study on HgCdTe detectors with high operating temperature by junction formation simulator .....  
..... LIN Jia-Mu, ZHOU Song-Min, WANG Xi, GAN Zhi-Kai, LIN Chun, DING Rui-Jun (23)

Effect of different growth conditions on surface morphology and optical properties of CdTe/GaAs epitaxial films ...  
..... ZHU Chen-Wei, LIU Xin-Yang, WU Yan, ZUO Xin-Rong, FAN Liu-Yan,  
CHEN Ping-Ping, QIN Xiao-Mei (29)

Improved detection performance of  $1280 \times 1024$  middle-wavelength infrared HgCdTe focal plane arrays with  $10$   
 $\mu\text{m}$  pixel pitch ..... TAN Bi-Song, MAO Jian-Hong, CHEN Shu-Xuan, LI Wei-Wei, CHEN Shi-Rui,  
CHEN Tian-Qing, DU Yu, PENG Cheng-Pan, XIONG Xiong, ZHOU Yong-Qiang, YU Bo, WANG Shu (36)

Effects of Gamma irradiation on performance of InGaAsP/InP single-photon avalanche diodes .....  
..... SUN Jing-Hua, WANG Wen-Juan, ZHU Yi-Cheng, GUO Zi-Lu, QI Yu-Fei, XU Wei-Ming (44)

Recent advances in on-chip infrared polarization detection ... ZHEN Yu-Ran, DENG Jie, BU Yong-Hao, DAI Xu,  
YU Yu, SHI Meng-Die, WANG Ruo-Wen, YE Tao, CHEN Gang, ZHOU Jing (52)

Correlation between MBE deoxidation conditions and InGaAs/InP APD performance .....  
..... GUO Zi-Lu, WANG Wen-Juan, QU Hui-Dan, FAN Liu-Yan, ZHU Yi-Cheng, WANG Ya-Jie,  
ZHENG Chang-Lin, WANG Xing-Jun, CHEN Ping-Ping, LU Wei (63)

High responsivity Terahertz detector linear array based on CMOS .....  
..... BAI Xue, ZHANG Zi-Yu, XU Lei-Jun, ZHAO Xin-Ke, FAN Xiao-Long (70)

G-band quad-port balanced multiplier with  $111.27$  mW continuous-wave output power .....  
..... HUANG Kun, YANG Hao, LI Ruo-Xue, ZHOU Ren, JIANG Jun, HE Yue, TIAN Yao-Ling (79)

An improved method for determination of extrinsic resistances for HEMT devices based on  $110$  GHz S-parameters  
on-wafer measurement ..... LI Zhi-Chun, LYU Yuan-Ting, ZHANG Ao, GAO Jian-Jun (85)

Ultra-wideband absorption of C/Co composites achieved through metamaterial-based design .....  
..... WANG Xiao-Kun, GUO Meng-Chao, LIANG Lei-Lei, LI Wei, TANG Dong-Ming, ZHANG Bao-Shan,  
YE Jian-Dong, YANG Yi (91)

Nonlinear response correction method for on-orbit data of FY-3E hyperspectral infrared atmospheric sounder II ...  
..... HUANG Shuo, GU Ming-Jian, HU Yong, YANG Tian-Hang, SHAO Chun-Yuan, ZHANG Chun-Ming (98)

Infrared small target detection based on associated directional gradient and mean contrast .....  
..... LI Ning, GUO Yi-Fang, JIAO Ji-Chao, PANG Min, XU Wei (106)

A building extraction method based on IGA that fuses point cloud and image data .....  
..... LAI Xu-Dong, PIAN Wei-Ran, BO Li-Ming, He Li-Hua (116)

Research on the stress defect detection of infrared material using differential frequency modulation with cascaded  
dual photoelastic modulators ..... LI Ke-Wu, WANG Shuang, LI Meng-Wei, WANG Zhi-Bin (126)

Near-infrared monocular vision measurement and reference image self-healing of object random rough surface ...  
..... HOU Wang, QU Ye-Pin, LIU Jian-Qiang, LYU Yu-Hai (134)