

## 胡劲华导师信息

胡劲华，男，1984年10月出生，博士，副教授，中国光学学会高级会员、中国光学工程学会高级会员。2014年9月毕业于北京邮电大学信息光子学与光通信国家重点实验室，获得电子科学与技术专业，工学博士学位。在博士期间参与国家973项目研究工作，2014年12月至今工作于信电学院通信工程系。2017年9月获得教育部中西部高等学校青年骨干教师国内访问学者项目资助，在北京邮电大学信息光子学与光通信国家重点实验室访学一年，考核为优秀。近年来，在 *Laser & Photonics Reviews*, *Applied Physics Letters*, *Optics Express*, *Journal of Lightwave Technology*, *Optics Communications*, *Chinese Optics Letters* 等期刊上发表论文50余篇，授权国家发明专利5项。担任SCI检索期刊《*Materials*》专题客座编辑；*Applied Physics Express*、*Japanese Journal of Applied Physics*、*Photonics*、《*红外与激光工程*》《*光学学报*》以及《*激光与光电子进展*》等国内外期刊审稿人；2022年获国际学术“Best Researcher Award”奖(International Research Awards on Sensing Technology SENSORS 2022)。2022年获河北工程大学优秀硕士学位论文指导教师荣誉。



### 一、研究方向

1. 光电信息感知与人工智能技术
2. 微纳光子器件与智慧医疗检测
3. 亚波长光子学与智能信息处理

### 二、主要科研成果

1. 河北省高等学校科学技术研究项目,基于硅亚波长光栅的石墨烯光探测器研究, 2016/01-2018/12, 主持, 结题
2. 河北省自然科学基金项目青年项目, 基于亚波长光栅的石墨烯光探测器研究, 2017/01-2019/12, 主持, 结题
3. 国家自然科学基金项目,基于微纳复合啁啾光栅结构的高性能光学生物传感器研究, 2020/01-2022/12, 主持, 结题
4. 横向课题项目, 高性能光学生物传感技术及其系统开发, 2023/01-2023/12, 主研, 结题
5. 国家发明专利,一种基于深度学习的FBG光谱循环去噪方法(ZL202310690347.2), 2023.12 授权, 第一发明人

### 三、主要研究论文

- [1] L Sun, **J Hu\***, L Li, X Liu, J Zhao. Tunable flat-top filter with cascaded compound gratings based on lithium niobate assisted by quasi-bound states in the continuum. *Optics Communications*, 2024,559: 130408.(SCI 通信作者)
- [2] X Liu, S Zhang,**J Hu\***, H Han, Near-perfect multi-band graphene absorber with a compound grating-based resonant structure.*Optics Communications*, 2024, 550: 129965.(SCI, 通信作者)
- [3] **J Hu**, B Wang, K Di, J Zou, D Ren, J Zhao. High-performance gas sensor with symmetry-protected quasi-bound states in the continuum, **Optics Express**,2023, 31(25):41313-41325 (SCI二区, TOP)
- [4] **J Hu**, H Guan, X Liu, Danping Ren, J Zhao. High-performance gas sensor with symmetry-protected quasi-bound states in the continuum, **Optics Express**,2023, 31(22):36228-36235 (SCI二区, TOP)
- [5] **J Hu**, K Di, D Ren, Y Deng, and J Zhao. Recognition and localization of asymmetric spectra in FBG sensing networks, **Optics Express**, 2023,31(6):10645-10656 (SCI二区, TOP)
- [6] X Liu, C Zhang, **J Hu\***, H Han. Dual-band refractive index sensor with cascaded asymmetric

- resonant compound grating based on bound states in the continuum. **Optics Express**, 2023, 31:13959-13969 (SCI二区, TOP, 通讯作者)
- [7] J Hu, J Liang, J Zou, C Shi, J Zhao. Dual-band perfect graphene absorber with an all-dielectric zero-contrast grating-based resonant cavity. **Optics Communications**, 2023, 527: 128908.(SCI)
- [8] J Liang, J Hu\*, X. Liu, J Zhao. Near-perfect narrow-band tunable graphene absorber with a dual-layer asymmetric meta-grating. **Photonics**. 2023, 10(1): 14 (SCI, 通讯作者)
- [9] X Liu, C Shi, J Hu\*, H Wang, H Han, J Zhao. Improving the sensitivity of refractive index sensors with integrated double-layer resonant meta-grating structure. **Optics Communications**,2022,515:128171.(SCI, 通讯作者)
- [10] C. Shi, J. Hu\*, X. Liu\*, J. Liang, J. Zhao, H. Han, and Q. Zhu, Double-layer symmetric gratings with bound states in the continuum for dual-band high-Q optical sensing, . **Beilstein Journal of Nanotechnology**, 2022, 13(1): 1408-1417(SCI, 通讯作者)
- [11] C Shi, X Liu, J Hu, H Han, J Zhao. High performance optical sensor based on double compound symmetric gratings. **Chinese Optics Letters**,2022,20(2):021201.(SCI)
- [12] J Zou, L Li, C Wang, Y Zhuang, X Wang, J Hu, S Luo, J J He. Novel high-resolution and large - bandwidth micro-spectrometer using multi-input counter propagating arrayed waveguide grating and dual - wavelength grating coupler on silicon on insulator. **Laser & Photonics Reviews**,2022, 2200355.(SCI 一区, IF 13.138)
- [13] J Hu, J Yu, X Liu, J Zou, L Zhang, J Zhao. Tunable flat-top filtering response in cascaded resonant waveguide gratings. **IEEE Photonics Journal** 2021,13 (2):1-8 (SCI)
- [14] J Hu, J Fu, X Liu, D Ren, J Zhao, Y Huang. Perfect absorption in a monolayer graphene at the near-infrared using a compound waveguide grating by robust critical coupling. **Chinese Optics Letters** 2019,17 (1): 010501 (SCI)
- [15] J Hu, X Liu, J Zhao, J Zou. Investigation of Fano resonance in compound resonant waveguide gratings for optical sensing. **Chinese Optics Letters** 2017,15 (3): 030502 (SCI)
- [16] J Hu, Y Huang, X Duan, Q Wang, X Zhang, J Wang, X Ren. Enhanced absorption of graphene strips with a multilayer subwavelength grating structure. **Applied Physics Letters** 2014,105 (22):22111 (SCI二区, TOP)
- [17] J Hu, Y Huang, X Ren, X Duan, Y Li, Y Luo. Realization of quantum efficiency enhanced PIN photodetector by assembling resonant waveguide grating. **Chinese Optics Letters** 2014,12 (7):072301 (SCI)
- [18] J Hu, Y Huang, X Ren, X Duan, Y Li, Q Wang, X Zhang, J Wang. Modeling of Fano resonance in high-contrast resonant grating structures. **Chinese Physics Letters** 2014, 31 (6): 064205 (SCI)

#### 四、主要科研项目

1. 河北省高等学校科学技术研究项目重点项目，面向智慧医疗POCT的光栅型物传感器研究，2021/01-2023/12，主持，9万
2. 企业横向课题项目，面向周界安全监控的 FBG 传感网光谱解调系统研制，2023/11-2025/12，主持，30万

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