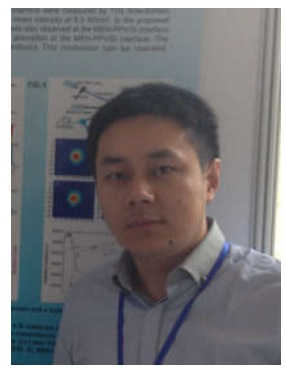
张波

副教授



所属学科	光学
研究方向	太赫兹光电子学，可控太赫兹超材料和有机太赫兹光电子器件
招生方向	光学、凝聚态物理
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个人简介

首都师范大学物理系副教授。2012年于北京交通大学获得光学工程博士学位，博士期间主要从事有机聚合物受激辐射光放大的研究工作。2012年到首都师范大学从事教学和科研工作，主要从事可控太赫兹超材料和有机太赫兹光电子器件等研究工作。相关研究工作已发表在Appl. Phys. Lett.、Opt. Lett.、Opt. Express等国内外期刊论文40余篇，授权国家发明专利2项，实用新型专利2项。主持国家自然科学基金青年项目、北京市自然科学基金、北京市教育委员会科技计划面上项目、北京市属高校高水平教师队伍建设支持计划青年拔尖项目等4项。

讲授课程

普通物理实验、综合设计实验（大学二年级）
光电信息综合实验（大学三年级）

教学成果

教学奖励：获得“2014年首都师范大学青年标兵”
获得“2016年首都师范大学青年教师教学基本功竞赛三等奖”

研究方向

从事可控太赫兹超材料和有机太赫兹功能器件等研究工作

1、基于有机半导体材料的太赫兹调控器件；

2、主动可控太赫兹超材料器件；

3、金属氧化物太赫兹功能器件。

科研项目

1. 主持国家自然科学基金，“基于有机光电材料的太赫兹光调制器的研究”，61505125，22万
2. 主持北京市自然科学基金，“太赫兹空心波导的设计制备及应用研究”，4144069，8万
3. 主持北京市属高校高水平教师队伍建设支持计划青年拔尖项目，“有机光电材料的太赫兹调制器的特性研究”，45万
4. 主持北京市教育委员会科技计划面上项目，“干涉直写式聚合物分布反馈激光器的研究”，15万
5. 主持青年燕京学者培育计划，20万

招生计划

拟招收硕士研究生2人

科研成果

一、科研论文（其中“*”表示通讯作者）

[1] 【2019】Bin Liu, Jingyu Liu, Hongyu Ji, Wei Wang, Jingling Shen, **Bo Zhang***, (2019) Terahertz nonvolatile in situ electrically-erasable rewritable photo-memory based on indium oxide/PEDOT:PSS，Optics Express, In press.

[2] 【2019】Dandan Liu, Wei Wang, Luyao Xiong, Hongyu Ji, **Bo Zhang***, Jingling Shen, (2019) High-efficiency optical terahertz modulation of organometallic halide perovskite nanoplates on silicon, Optical Materials, In press.

[3] 【2019】张波，和挺，钟良，汪国崔，王维，沈京玲，(2019) 基于有机光电材料的太赫兹波调制器件研究进展，中国激光，第6期46卷，（Invited paper）

[4] 【2019】Hongyu Ji, Wei Wang, Luyao Xiong, Dandan Liu, Longfeng Lv, **Bo Zhang***, Jingling Shen*, (2019) Terahertz read-only multi-order nonvolatile rewritable photo-memory based on indium oxide nanoparticles, Applied Physics Letters, 114, 011105 (2019).

[5] 【2019】张弘润(本科生)，季鸿雨，赵萍，林高照，王福合，**张波***，沈京玲*，(2018) 太赫兹波段金属线栅的紫外光控特性研究，光谱学与光谱分析，第7期39卷.

[6] 【2018】Wei Wang, Hongyu Ji, Dandan Liu, Luyao Xiong, Yanbing Hou, **Bo Zhang***, Jingling Shen*, Active bidirectional electrically-controlled terahertz device based on Dimethylsulfoxide-doped PEDOT:PSS, Optics Express, 26, 25849-25857 (2018).

[7] 【2018】Luyao Xiong, **Bo Zhang,*** Hongyu Ji, Wei Wang, Xin Liu, Shuli He, Jingling Shen*. (2018). Active optically-controlled broadband terahertz modulator based on Fe_3O_4 nanoparticles. IEEE Transactions on Terahertz Science and Technology, 8(5), 535-540 (2018).

[8] 【2018】**Bo Zhang*,** Longfeng Lv, Jingling Shen*. (2018). Ultrafast terahertz modulation characteristics of organolead halide perovskite films revealed by time-resolved terahertz spectroscopy. **JOURNAL OF INFRARED AND MILLIMETER WAVE**, 37 (5),523-526 (2018) .

[9] 【2018】Xue Yang, **Bo Zhang***, Jingling Shen*. (2018). An ultra?broadband and highly?efficient tunable terahertz polarization converter based on composite metamaterial. Optical and Quantum Electronics, 50:315 (2018).

[10] 【2018】Dandan Liu, **Bo Zhang***, Wei Wang, Hongyu Ji, Guocui Wang, Jingling Shen*. (2018) Optically tunable terahertz-band interference fringes shift. Optics Communications, 425, 44–48 (2018).

[11] 【2018】Wei Wang, **Bo Zhang***, Hongyu Ji, Ting He, Dandan Liu, Yanbing Hou, Jingling Shen*. (2018) Terahertz spatial-shift modulation by photo-excitation of polymer/silicon hybrid structures. Optics Communications, 421, 110–114 (2018).

[12] 【2018】 Hongyu Ji, **Bo Zhang*,** Wei Wang, Longfeng Lv, Jingling Shen*, (2018). Ultraviolet light-induced terahertz modulation of an indium oxide film, Optics Express, 26, 7204-7210 (2018).

[13] 【2018】Xin Liu, Luyao Xiong, Xiang Yu, Shuli He, **Bo Zhang*,** Jingling Shen*, (2018). Magnetically controlled terahertz modulator based on Fe3O4 nanoparticle ferrofluids, Journal of Physics D: Applied Physics, 51, 105003 (2018).

[14] 【2018】 Hongyu Ji, **Bo Zhang*,** Guocui Wang, Wei Wang, Jingling Shen*. (2018). Photo-excited multi-frequency terahertz switch based on a composite metamaterial structure. Optics Communications. 412 (2018) 37–40.

[15] 【2017】Jianna Zhang, **Bo Zhang*,** Jingling Shen*. (2017). The Optical Properties of Dinitrobenzoic Acid Isomers in the Terahertz and Infrared Regions. **JOURNAL OF INFRARED AND MILLIMETER WAVES**. 36 (2017) 538

[16] 【2017】Yanan He, **Bo Zhang***, Jingling Shen*. (2017). Performance of terahertz metamaterials as high-sensitivity sensor. Modern Physics Letters B, 1750240.

[17] 【2017】Xin Liu, **Bo Zhang***, Guocui Wang, Wei Wang, Hongyu Ji, Jingling Shen*. (2017). Active terahertz wave modulator based on molybdenum disulfide. Optical Materials, 73, 718-722.

[18] 【2017】Guocui Wang, **Bo Zhang***, Hongyu Ji, Xin Liu, Ting He, Longfeng Lv, Yanbing Hou, Jingling Shen*. (2017). Monolayer graphene based organic optical terahertz modulator. Applied Physics Letters, 110(2), 023301

[19] 【2016】Liang Zhong, **Bo Zhang***, Ting He, Longfeng Lv, Yanbing Hou, Jingling Shen*. (2016). Conjugated polymer based active electric-controlled terahertz device. Applied Physics Letters, 108(10), 103301.

[20] 【2016】Guocui Wang, Jianna Zhang, **Bo Zhang***, Ting He, Yanan He, Jingling Shen*. (2016). Photo-excited terahertz switch based on composite metamaterial structure. Optics Communications, 374, 64-68.

[21] 【2016】 JiannaZhang, Guocui Wang, **Bo Zhang***, Ting He, Yanan He, Jingling Shen*. (2016). Photo-excited broadband tunable terahertz metamaterial absorber. Optical Materials, 54, 32-36.

[22] 【2016】Ting He, **Bo Zhang***, Guocui Wang, Yanbing Hou, Jingling Shen*. (2016). High efficiency THz-wave modulators based on conjugated polymer-based organic films. Journal of Physics D: Applied Physics, 49(7), 075111 (2016).

[23] 【2015】He, Y., **Zhang, B.***, He, T., Chen, T., Wang, G., Hou, Y., & Shen, J*. (2015). Optically-controlled metamaterial absorber based on hybrid structure. Optics Communications, 356, 595-598.

[24] 【2015】He, T., **Zhang, B.***, Shen, J.*, Zang, M., Chen, T., Hu, Y., & Hou, Y. (2015). High-efficiency THz modulator based on phthalocyanine-compound organic films. Applied Physics Letters, 106(5), 053303.

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[26] 【2015】**Bo Zhang***, Liang Zhong, Ting He, Jingling Shen*, (2015) Photo-Doped Active Electrically Controlled Terahertz Modulator, Journal of Electronic Science and Technology, 13,113-116.

[27] 【2014】**Zhang, B.**, He, T., Shen, J.*, Hou, Y., Hu, Y., Zang, M. & Qin, L. (2014). Conjugated polymer-based broadband terahertz wave modulator. Optics letters, 39(21), 6110-6113.

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[33] 【2011】**B. Zhang,** Y. B. Hou*, F. Teng, Z. D. Lou, X. J. Liu, B. Hu, and W. B. Wu, Solvent-vapour treatment of the induced performance enhancement of amplified spontaneous emission based on poly[2-methoxy-5-(2′-ethyl-hexyloxy)-1, 4-phenylene vinylene], Chin. Phys. B, 20(5), 054208 (2011)

[34] 【2009】**B. Zhang**, Y. Hou*, F. Teng, X. Liu, Amplified spontanous emission in conjugated polymer waveguide under modulation of electric field, Sci. China, Ser. G 39(11), 1678 (2009) (in Chinese)

二、授权专利

1.【2017】张波，和挺，沈京玲，陈天霁，臧梦迪，一种基于有机聚合物薄膜的太赫兹波调制器，ZL 2014 1 0222118.9

2.【2016】和挺，陈天霁，刘婧，张波，沈京玲，太赫兹波导测试系统，ZL 2014 1 0290290.8

3.【2014】陈天霁，和挺，沈京玲，张波，一种太赫兹波导耦合器，ZL 2014 2 0306136.9

4.【2014】和挺，陈天霁，刘婧，张波，沈京玲，太赫兹波导测试系统，ZL 2014 2 0343603.7

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