Resume of Zhongsheng Zhai

Basic Information

School:	School of Mechanical and Engineering
Gender：	Male
Date of Birth：	197808
Title：	Professor
Education：	Ph.D of Test and Measurement Technology and Instruments
Tutor：	Master degree, Doctoral degree
Email：	zs.zhai@hbut.edu.cn
Interest of research:	Optical precision measurement technology and laser micromachining

Academic Background

From September 1998 to July 2002, Hubei University of Technology, Bachelor's degree in Measurement Control Technology and Instruments;
From September 2002 to July 2005, Huazhong University of Science and Technology, Master's degree of Precision Instruments and Machines;
From September 2005 to July 2008, Huazhong University of Science and Technology, Ph.D of Test and Measurement Technology and Instruments.

Oversea visiting

2013/07-2014/07, Visiting scholar, The University of Liverpool, UK;
2018/09-2019/02,Visiting scholar, The University of Nottingham, UK;

Enrollment Information

1. Enrollment Discipline: Mechanical Engineering, Instrumentation Science and Technology
2. Research direction: Precision measurement, laser micromachining
3. Enrollment Year: 2023-2024

Representative Projects

1. National Natural Science Foundation of China (NSFC) project: "Research on high spatiotemporal resolution 3D microscopic imaging based on digital multiplexing lens" (32017457), 2021-2024, Project leader
2. NSFC project: "Research on cross-scale micro-topography measurement based on optical phase shift and multi-wavelength interference" (51575164), 2016-2019
3. NSFC project for young scholars: "Research on large depth-of-field visual detection based on non-diffracting light" (51005072), 2011-2013
4. Hubei Provincial Natural Science Foundation innovation group project: "Laser efficient peeling equipment and control method for aviation component functional

coating" (2022CFA006), 2022-2025

5. Hubei Provincial Natural Science Foundation project: "Research on key technologies for extending the depth of field in visual inspection systems", 2011-2012
6. Key R&D plan project of Hubei Provincial Science and Technology Department: "Research and development of a series of fiber optic hydrophone solutions", 2022-2023
7. Hubei Provincial Science and Technology Department project: "Development of automotive headlamp testing equipment", 2021-2022
8. Key research project of Hubei Provincial Education Department: "Research on absolute distance measurement technology based on dynamic multi-wavelength interference", 2016-2018
9. The Hubei Provincial Department of Education's Teaching Research Project: A Study on the Cultivation of Innovative Capacity for Students in the Instrumental Major in the Context of New Engineering, 2021-2023.
10. The Horizontal Project: Development of Technology for Corrosion Damage Monitoring System, 2022-2023, 2.03 million.

Representative Articles

1. Zhongsheng Zhai, Xuan He, Xin Yu, Qinghua Lv, “Parallel Bessel beam arrays generated by envelope phase holograms”. Optics and Lasers in Engineering, 2023,161(4):107348
2. Zhongsheng Zhai, Xin Yu, Xuan He, Luo Zhang, Qinghua Lv, "High uniformity Bessel beam generated by the axicon with a high-order curved surface," Opt. Eng. 2023, 62(8) 085105
3. Zhai, Zhongsheng, Qinyang Li, Xuan He, Qinghua Lv, Wei Feng, Zhen Zeng, and Xuanze Wang. "Multiplane Holographic Imaging Using the Spatial Light Modulator" Photonics, 2023, 10(9): 977.
4. Zhongsheng Zhai, Qinyang Li, Xin Yu, Zhen Zeng, Qinghua Lv, Wei Feng, Zhi Xiong, and Xuanze Wang, "Diffraction characteristics of orthogonal gratings analysis based on a spatial light modulator," Appl. Opt. 2022, 61, 7393-7400
5. Zhai Zhongsheng , Gao Tian, Zhang Yi, Lv Qinghua, Wang Xuanze , and Xie Boya, “Flattop Beam Shaping Using Hybrid Gratings” ,IEEE PHOTONICS JOURNAL, 2022, 14(4), 7440605
6. Zhai, Zhongsheng; Cao, Wenze; Gao, Tian; Liu, Dun; Lv, Qinghua; Wang, Xuanze; Xiong, Zhi; Feng, Wei. “Beam shaping with high energy utilization and uniformity using gradient orthogonal gratings”. Applied Optics, 2021, 60(17): 5104-5109.
7. Zhai, Zhongsheng; Cheng, Zhuang; Lv, Qinghua; Wang, Xuanze (2020). "Tunable Axicons Generated by Spatial Light Modulator with High-Level Phase Computer-Generated Holograms." Applied Sciences-Basel, 2020, 10(15).
8. Zhai Zhongsheng; Zhang yanhong; Wang xuanze*; Dong Zhengqiong; Cheng Zhuang; Lv Qinghua; Su Yuehong; Alignment of the initial phase during multiple-wavelength switching in microscopic interferometry, Optics and Laser

Technology, 2019, 115:493-499.
9. Zhai Zhongsheng ; Zhou Li; Zhang Yanhong; Dong Zhengqiong; Wang Xuanze; Lv Qinghua; An accurate phase shift extraction algorithm for phase shifting interferometry, Optics Communications, 2018, 429:144-151.
10. Zhai S., Li M. Y., Lv Q. H., Wang C., Feng W., Xiong Z.. Research on three-dimensional multi-focus modulation method based on feedback-weighted 3D-GS algorithm. China Laser, 2023, 50(10): 1005002.
11. C. Zhai, Y. Zhang, Q. Lv, H. Wang, C. Wang, W. Feng, Z. Xiong, Study on beam shaping method based on combined grating, China Laser, 2022, 49(13): 1305001.
12. Zhai S.C., Huang Yansheng, Li Qinyang, Yu X., Lv Q.H., Xie B.Y., Zeng Zhen, Diffraction characteristics of orthogonal phase grating based on spatial light modulator, Journal of Optics, 2022, 42(16):1605002