

西安市主动光电成像探测技术重点实验室

科研成果

获奖：

序号	获奖成果名称	奖励名称	奖励等级	奖励级别	授奖单位	获奖日期
1	高性能快速反射镜系列化产品	第三届全国博士后创新创业大赛创新赛	其他	国家级	陕西省人民政府	2025-10-01
2	中大口径光学元件超精密加工与检测关键技术	陕西省科学技术进步奖	一等	省部级	陕西省人民政府	2025-7-24
3	全国五一劳动奖章	全国五一劳动奖章	其他	国家级	全国总工会	2026-05-01
4	特色引领，融合创新，共享保障--兵工特色专业卓越人才培养的研究与实践	陕西省教学成果	二等	省部级	陕西省人民政府	2024-09-04
5	中大口径光学元件多工序抛光闭环控制技术	陕西高等学校科学技术研究优秀成果	一等	省部级	陕西省教育厅	2024-06-01
6	超小型高速大行程压电陶瓷驱动扫描器研制	第二届陕西省博士后创新创业大赛创新赛	一等	省部级	陕西省人力资源和社会保障厅	2023-11-01
7	基于敏捷遥感小卫星星座的机场快速巡查预警系统	空军首届航空创意挑战赛	三等	省部级	中国人民解放军空军	2023-10-20
8	激光编码束场环境下空间飞行物体姿态信息研究	中国兵器工业集团有限公司2021年“兵工杯”高校创新竞赛	二等	省部级	中国兵器工业集团公司	2022-05-01
9	基于单片微波集成电路的低成本软件化雷达研制与应用项目	第一届全国博士后创新创业大赛	三等	省部级	人力资源与社会保障部	2021-12-01

专利：

序号	专利号	专利名称	受理日期	授权日期	授权号
1	202610711246.2	基于TD-ZFFT的调频连续波激光雷达测距测速方法	2026-05-22		
2	202610487249.2	一种内置可调刚度磁流变弹性体吸振式的减振镗杆	2026-04-14		
3	202610488183.9	一种内置 MRE 可控谐振吸振器的内冷式减振镗杆	2026-04-14		
4	202610378729.5	基于MSE-Mamba的稀疏点云分类方法	2026-03-26		
5	202610378728.0	基于 LSHW-Mamba 网络的小样本点云目标分类方法	2026-03-26		
6	202511975396.6	一种基于数据物理联合驱动的HRRP自动目标识别方法	2025-12-25		

7	202511975132.0	基于可变形Mamba模型的点云分类与部件分割方法	2025-12-25		
8	202511926255.5	一种用于五轴联动气囊抛光轮廓误差抑制的多轴协同鲁棒控制方法	2025-12-19		
9	202511833775.1	一种用于非球面数控抛光的抑振转台摆臂及其滑模控制方法	2025-12-08		
10	202511050269.5	基于改进Faster RCNN算法的SAR图像飞机检测模型构建方法	2025-07-29		
11	202511024040.4	基于三维点云的建筑物识别方法及系统	2025-07-24	2025-09-23	CN202511024040.4
12	202510992792.3	基于分数阶广义Kelvin模型的液晶光学相控阵光束调控动力学建模方法	2025-07-18		
13	202510965111.4	基于NCFMamba 网络实现三维点云的分类方法	2025-07-14		
14	202510892378.5	一种基于局部邻域特征点云去噪方法	2025-06-30		
15	202510828114.3	一种基于状态空间模型的点云分类方法	2025-06-20		
16	202510828018.9	基于动态切换的目标点云高效识别方法	2025-06-20		
17	202510796609.2	基于FOTD-FRFT的调频连续波激光雷达测距方法	2025-06-16		
18	202510798832.0	基于FOTD-SESTH的调频连续波激光雷达测距方法	2025-06-16		
19	202510718254.5	一种小样本点云目标识别方法	2025-05-30		
20	202510702305.5	一种基于峭度因子和多尺度分析的GM-APD激光雷达距离像重建方法	2025-05-28		
21	202510461422.7	一种基于磁控管脉冲雷达的双通道准相参信号处理方法	2025-04-14		
22	202510452308.8	一种异形身管三维轮廓自动测量系统和方法	2025-04-11		
23	202510452009.4	基于光谱共焦技术的身管内壁粗糙度自动测量系统和方法	2025-04-11		
24	202510010488.4	一种基于聚类边界检测的雷达高分辨距离像开集识别方法及装置	2025-01-03	2025-11-28	CN202510010488.4
25	202411961514.3	基于多智能体异质图风险感知编码与连续参数解码的轨迹预测方法	2024-12-30		
26	202411837657.3	基于复合控制器的控制系统及优化控制方法	2024-12-19		
27	202411837655.4	一种基于改进人工兔算法	2024-12-13	2025-11-28	CN202411837655.4

		的控制器参数整定方法及 控制器			
28	202410607887.4	基于分数阶全变分正则化 与非局部正则化的Gm- APD 激光雷达距离像压 缩感知重构方法	2024-05-06		
29	202410347052.X	基于强度像与点云数据融 合的目标跟踪方法	2024-03-26		
30	202410220175.7	基于荧光偏振调制的光学 元件亚表面缺陷超分辨成 像方法	2024-02-28		
31	202410095306.3	全口径研磨抛光可控环带 去除方法	2024-01-24	2026-05-26	CN20241009 5306.3
32	202311566605.2	基于凸集投影的GM-APD 激光雷达距离像重构方法	2024-01-08		
33	202311663122.4	一种基于自适应图卷积神 经网络的目标识别方法	2023-12-06		
34	20231020608.6	基于分数阶全变分GM- APD激光雷达距离像去噪 算法	2023-08-04	2026-04-24	CN20231020 608.6
35	202310793290.9	基于空间相关分数阶的 GM-APD 激光雷达深度图 像去噪方法	2023-06-30		
36	202310500234.1	基于强度像补偿的点云目 标识别方法	2023-05-06	2025-11-07	CN20231050 0234.1
37	202310415173.9	基于激光雷达的三维目标 识别方法	2023-04-18	2025-12-09	20231041517 3.9
38	202310400306.5	远距离单光子测距的精细 化时间数字转换电路及方 法	2023-04-14		
39	202310021769.0	一种基于双偏差角特征直 方图的点云目标识别方法	2023-01-06		
40	202211011247.4	基于液晶的小型式二维光 束捷变扫描仪的设计方法	2022-08-23		
41	202210788756.1	大角度液晶光学相控阵粗 精两级同步调控系统的设 计方法	2022-07-06	2024-04-26	CN20221078 8756.1
42	202210782117.4	一种基于偏差角统计的三 维局部表面特征描述方法	2022-07-05	2026-03-03	CN20221078 2117.4
43	202210739151.3	一种分数阶三步法控制器 及其鲁棒参数整定方法	2022-06-28	2024-09-13	20221073915 1.3
44	202210685726.8	基于超体素分割和双向最 近邻距离比匹配的配准方 法	2022-06-17	2026.03.03	CN20221068 5726.8
45	202210514015.4	基于量子点光漂白的光学 元件亚表面缺陷检测方法 及系统	2022-05-12	2024-05-10	CN20221051 4015.4
46	202210287990.6	一种基于液晶相控阵的光 束偏转系统分数阶建模方 法	2022-03-23	2024-06-11	CN20221028 7990.6

47	202210132900.6	一种级联式液晶偏振光栅衍射效率的计算方法	2022-02-14	2024-01-26	CN202210132900.6
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论文:

序号	论文题目	期刊名称	发表日期
1	Three-dimensional point cloud denoising via a gravitational feature function	Applied Optics	2022-01-15
2	Parameter identification of fractional-order time delay system based on Legendre wavelet	Mechanical systems and signal processing	2022-01-15
3	Diffraction characteristics of non-mechanical beam steering system with liquid crystal polarization gratings	Optics Express	2022-02-20
4	Optimal Target Function for the Fractional Fourier Transform of LFM Signals	Circuits Systems Signal Processing	2022-02-28
5	Liquid crystal spatial light modulator based non-mechanical beam steering system fractional-order modelling	Optics Express	2022-03-14
6	Visual search difficulty prediction with image ROI information	Neural Comput & Applic	2022-03-28
7	Subsurface damage detection of optical elements by analyzing the photobleaching properties of quantum dots	Precision Engineering	2022-05-01
8	A Vibration Fault Signal Identification Method via SEST	electronics	2022-05-02
9	Subsurface damage detection of optical elements by analyzing the photobleaching properties of quantum dots	Precision Engineering	2022-05-02
10	A liquid crystal polarization grating beam scanning component driver based on MCU	2022 IEEE Asia-Pacific Conference on Image Processing, Electronics and Computers	2022-05-11
11	基于IVCCS的三维点云配准算法	红外与激光工程	2022-05-15
12	斜入射下液晶偏振光栅衍射特性研究	红外与激光工程	2022-06-11
13	Depth Image Denoising Algorithm Based on Fractional Calculus	electronics	2022-06-11
14	A DASKL Descriptor via Encoding the Information of Keypoints and a 3D Local Surface for 3D Matching	electronics	2022-07-01
15	基于样条插值的液晶空间光调制器衍射效率优化方法研究	红外与激光工程	2022-08-22
16	LFM Signal Parameter Estimation via FTD-FRFT in Impulse Noise	Fractal and Fractional	2022-11-20
17	CALCULATION AND ANALYSIS OF VIBRATION CHARACTERISTICS OF IMU ISOLATION SYSTEM WITH MRE ISOLATORS	1st International Conference on Mechanical System Dynamics	2023-01-07
18	Simulation of vibration characteristics of IMU with controllable magnetorheological isolation system	Multibody System Dynamics	2023-01-16
19	基于环摆式双面抛光法加工预测模型的去除均匀性研究	光学学报	2023-01-26
20	Super-Resolution Reconstruction of an Array Lidar Range Profile	applied sciences	2023-03-11
21	机载光电稳定平台滑模自抗扰控制方法研究	电光与控制	2023-03-11

22	基于迭代学习交叉耦合的轮廓误差控制方法研究	机床与液压	2023-03-15
23	A Single-Tube Robust Model Predictive Control Method Based on ε -Approximation	electronics	2023-04-28
24	Design and control of a fast steering mirror based on flexible supports and piezoelectric ceramic actuators	Applied optics	2023-04-28
25	Research of non-mechanical beam scanning technology	NTMIM-2023	2023-04-30
26	LIDAR Point cloud object recognition method via histograms of dual deviation angle feature	INTERNATIONAL JOURNAL OF REMOTE SENSING	2023-05-01
27	Super-twisting sliding mode control based on electrostatic MEMS micromirror scanning	NTMIM 2023	2023-05-01
28	Polishing Uniformity Analysis and Process Optimization Based on Kinematic Model of Ring Pendulum Double-sided Polisher	International Jour-nal of Advanced Manufacturing Technology	2023-05-03
29	Depth Image Enhancement Algorithm Based on Fractional Differentiation	Fractal and Fractional	2023-05-05
30	LiDAR Point Cloud Object Recognition Method via Intensity Image Compensation	Electronics	2023-05-11
31	基于贪心遗传算法的液晶光学相控阵多光束扫描	兵工学报	2023-05-13
32	A spatially correlated fractional integral-based method for denoising geiger-mode avalanche photodiode light detection and ranging depth images	Optik	2023-05-31
33	A Fractional-Order Total Variation Regularization- Based Method for Recovering Geiger-Mode Avalanche Photodiode Light Detection and Ranging Depth Images	Fractal and Fractional	2023-05-31
34	A Polishing Processes Optimization Method for Ring-Pendulum Double-Sided Polisher	Applied Sciences	2023-07-01
35	Adaptive fading Kalman depth estimation with chi square hypothesis testing for Geiger-mode avalanche photo diode LIDAR	Optical Engineering	2023-07-05
36	基于偏振补偿的级联式液晶偏振光栅衍射效率优化方法研究	液晶与显示	2023-07-12
37	A review of subsurface damage detection methods for optical components	AIP Advances	2023-07-12
38	Vehicle Target Recognition Method Based on Visible and Infrared Image Fusion Using Bayesian Inference	applied sciences	2023-07-19
39	Study of high-resolution helicopter cable obstacle avoidance LIDAR	APPLIED PHYSICS B- LASERS AND OPTICS	2023-08-18
40	Laser Beam Control Method Based On Model Prediction And Sliding-Mode Dual Closed-Loop Controller	ICIEA2023	2023-08-18
41	Sliding Window TD-FrFT Algorithm for High-Preciion Ranging of LFM Signals in the Presence of Impulse Noise	fractal and fractional	2023-09-07
42	Fractional-Order Total Variation Geiger-Mode Avalanche Photo-diode Lidar Range-Image Denoising Algorithm Based on Spa-tial Kernel Function and Range Kernel Function	fractal and fractional	2023-09-07
43	基于FPGA的远距离单光子精细化时间数字	红外与激光工程	2023-09-13

	转换电路		
44	Detection of Subsurface Damage Morphology of Lapped Optical Components by Analysis of the Fluorescence Lifetimes of Quantum Dots	Electronics	2023-09-13
45	Multi-Innovation Nesterov accelerated gradient parameter identification method for autoregressive exogenous models	JOURNAL OF VIBRATION AND CONTROL	2023-10-01
46	Wavefront Reconstruction Method Based on Improved U-Net	IEEE	2023-11-01
47	Research on Super-twisting Sliding Mode Control Based on Disturbance Observer	IEEE	2023-11-01
48	A Target Classification Optimization Recognition and Information Extracting Method of Laser Fuse Detection System Based on Fuzzy C-Means Incremental Update and Neural Network	IEEE Access	2023-11-17
49	Research on Multiple-Axis Contour Error Suppression Method Based on Composite Layered Control	applied sciences-basel	2023-11-29
50	Cuckoo Coupled Improved GreyWolf Algorithm for PID Parameter Tuning	applied sciences	2023-12-04
51	3D Lidar Target Detection Method at the Edge for the Cloud Continuum	J Grid Computing	2024-01-19
52	A fractional integral method inverse distance weight-based for denoising depth images	AIP Advances	2024-02-01
53	Research on Active Repetitive Control for Tracking Lissajous scan Trajectories with Voice Coil Motors Actuated Fast Steering Mirror	fractal and fractional	2024-03-04
54	Decoupling modeling design and high-precision position control of fast steering mirror	Precision Engineering	2024-03-31
55	Accuracy calibration of the multi-light screen measurement system using array optical signal	MEASUREMENT SCIENCE AND TECHNOLOGY	2024-06-25
56	Bidirectional long-short term memory predictor for material removal rate in computer-controlled optical surfacing	Precision Engineering	2024-07-18
57	Intra-Frame Graph Structure and Inter-Frame Bipartite Graph Matching with ReID-Based Occlusion Resilience for Point Cloud Multi-Object Tracking	Electronics	2024-07-24
58	Fractional-Order Super-Resolution Reconstruction Algorithm for GM-APD LidarDistance Images Based on Convex Set Projection	12th IFAC Conference on Fractional Differentiation and its Applications	2024-08-01
59	Gm-APD lidar distance image recovery based on intensity image target edge guidance	7th International Conference on Computer Network, Electronic and Automation, ICCNEA 2024	2024-08-26
60	Tracking Method of GM-APD LiDAR Based on Adaptive Fusion of Intensity Image and Point Cloud	Applied Sciences	2024-09-20
61	FRKVF: High-accuracy motion interpolation for polishing operations using fourth-order Runge-Kutta and velocity flexibility planning	Precision Engineering	2024-10-10
62	基于压力分布的环摆式双面抛光去除均匀性研究	光学学报	2024-10-16

63	Time-lag Liquid Crystal Optical Phased Array Beam Deflection Control Method Based on Smith's Prediction Compensation	Proceedings of the 43rd Chinese Control Conference	2024-10-25
64	Heterogeneous Multi-Agent Risk-Aware Graph Encoder with Continuous Parameterized Decoder for Autonomous Driving Trajectory Prediction	Electronics	2024-11-30
65	A non-local regularization-based fractional-order total variational compressive sensing algorithm for effective recovery of Ceiger-mode avalanche photodiode LiDAR images	AIP Advances	2024-11-30
66	A Local Discrete Feature Histogram for Point Cloud Feature Representation	APPLIED SCIENCES-BASEL	2025-02-22
67	A Wavelet-CNN-LSTM frame-work for edge effect suppression in ultra-precision optical surface polishing	Optics and Laser Technology	2025-03-11
68	基于激光雷达的遮蔽目标三维重建技术	光学与光电技术	2025-03-18
69	Research on Deterministic Ring Removal Method for Full-Aperture Double-Sided Polishing of Large Aperture Optical Components	IEEE Photonics Journal	2025-05-04
70	基于SystemVue的微多普勒雷达校准信号生成方法	测试技术学报	2025-05-31
71	Calibration Method for Micro-Doppler Radar to Identify Pedestrian Posture	2024 10th International Conference on Mechanical and Electronics Engineering	2025-06-04
72	Improving the Detection Accuracy of Subsurface Damage in Optical Materials by Exploiting the Fluorescence Polarization Properties of Quantum Dots	Nanomaterials	2025-06-12
73	Using an optical scanning galvanometer to suppress image shift in a circumferential scanning detection system	Optics Express	2025-06-12
74	Range image reconstruction for Geiger-mode Avalanche photodiode array LiDAR systems in Sparse echo with low signal-to-background ratio scenarios	Optics Express	2025-06-16
75	Modeling of the Dynamic Characteristics for a High-Load Magnetorheological Fluid-Elastomer Isolator	ACTUATORS	2025-08-24
76	Enhanced Kalman Filter with Dummy Nodes and Prediction Confidence for Bipartite Graph Matching in 3D Multi-Object Tracking	Electronics	2025-08-29
77	High-dynamic tracking control technology for the fast-steering mirror in a laser communication system	Applied Optics	2025-09-05
78	基于邻域一致性特征调制的点云分类网络	光学学报	2025-09-15
79	Design of a new type of high-speed scanning galvanometer structure and scanning control strategy	Mechanical Systems and Signal Processing	2025-09-15
80	A Hierarchical Absolute Visual Localization System for Low-Altitude Drones in GNSS-Denied Environments	remote sensing	2025-10-17
81	High-precision ranging algorithm for FMCW lidar based on improved FTRLs	AOPC2025	2025-10-27
82	Investigation of the Robustness and Transferability of Adversarial Patches in Multi-	Journal of Imaging	2025-10-28

	View Infrared Target Detection		
83	Point cloud denoising method based on local neighborhood features	Optics and Laser Technology	2025-10-30
84	Magnetic field vector and temperature sensing based on parallel fiber Bragg gratings fabricated by femtosecond laser	Sensors and Actuators: A. Physical	2025-11-01
85	基于平滑度欧式聚类的点云目标检测方法	飞控与探测	2025-11-26
86	Research on the Dynamic Modeling Method of Beam Control for Liquid Crystal Optical Phased Array Based on the Fractional-Order Generalized Kelvin Model	Optics Express	2025-12-12
87	Research on the Attenuation Characteristics of LiDAR Transmission Energy in Different Atmospheric Environments	Atmosphere	2025-12-12
88	Range Image Reconstruction From GM-APD LiDAR Data Based on Neyman-Pearson Criterion	IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing	2026-03-11
89	Parameter Estimation of LFM Signals Based on PID-PSO-FRFT	fractal and fractional	2026-03-20
90	Fast calibration algorithm for output beams in optical waveguide phased arrays using the rotating electric field vector fitting	applied optics	2026-03-26
91	Fastest tracking differentiator-FFT algorithm for high-precision ranging of FMCW LiDAR in impulse noise	Measurement	2026-04-12
92	Robust Trajectory Prediction for Mobile Robots via Minimum Error Entropy Criterion and Adaptive LSTM Networks	Entropy	2026-05-12
93	Dynamic Compensation Strategy for Beam Pointing Based on Cascaded Liquid Crystal Polarization Gratings Using Liquid Crystal Optical Phased Array	fractal and fractional	2026-05-23
94	A 3D local feature description algorithm based on point distribution	COMPUTERS & ELECTRICAL ENGINEERING	2024-07-18