

# 兵器装备工程学报



ISSN 2096-2304



9 772096 230227

2022



## 目次

## 综述

- 弹药公路运输极端冲击环境综述 王光宇,王雨时,闻 泉,张志彪(1)
- 药型罩材料与结构的研究进展 贾梦晔,高永宏,周鹏飞,张 婧,李晨阳,刘迎彬,胡晓艳(10)
- 固体推进剂装药结构完整性分析的研究进展 魏晓林,周建辉,李宏岩,舒慧明(19)
- 水下推力矢量控制技术研究现状及进展 许 奇,权晓波,魏海鹏,鲍文春(27)
- 炮弹炸点坐标检测技术研究综述 连细南,陈 栋,石胜斌(35)

## 装备理论与装备技术

- 机枪系统支撑发射动力学特性及散布精度研究 华洪良,廖振强,郭 魂,陈勇将(42)
- 基于全矢谱-深度置信网络的转子故障诊断方法研究 李泽东,李志农,陶俊勇,许 贝(48)
- 冲击载荷作用下身管疲劳行为研究 郑 靖,李慧杰,吴 斌(55)
- 柱状炸药自由空气爆炸的网格划分方法研究 林文乐,王 硕,严 波(61)
- 舰载无人直升机作战应用模式及关键技术 孙盛智,孙小婷,郑卫娟,赵雪洋,苗 壮(68)
- 截顶式聚能装药战斗部射流成形规律研究 宣世峰,尚 伟,韩 伟,祖旭东(73)
- 筒式压缩空气弹射系统内弹道性能研究 刘南宏,张新敬,徐玉杰,郭 欢,冯 璐,陈海生(79)
- 基于拓扑优化的航炮炮塔轻量化研究 刘 镔,李 勇,申亚琳(86)
- 摇摆作用下舰炮指向运动误差补偿分析 张满慧,姚 忠,夏方超,张建斌(93)
- 子母式发烟弹全弹道建模与分析 陈 浩,李红欣,盖希强,赵 新,张开创,杨 洋(100)
- 机枪枪管失效分析 单永海,丁述宇,高 亢(107)
- 单组元姿控动力系统动态过程仿真研究 冀 鹏,肖明杰,梁树强(114)
- 基于 fsFBG 传感器的 SRM 粘接界面服役状态监测 齐重阳,常新龙,张有宏,胡 宽,孟云蛟,王 震,朱雪蒙(120)
- 基于深度学习的防空武器红外目标识别技术应用研究 杨 维,姚 桐,耿修堂,王 越,刘学超(125)
- 远程制导迫弹滑翔增程弹道方案研究 陈胜政,宋宇航,张 意,康博弈,杜青山(130)
- 弹引系统攻角侵彻混凝土仿真与试验研究 郭松林,高世桥,李泽章,李云彪(135)
- 船体梁爆炸损伤识别方法研究 王 琪,赵鹏铎,郝 宁,张 磊,计 晨,郭 君(140)

## 基础理论与应用研究

- 电磁感应加热弹丸装药倒空技术分析研究 向红军,施洪杰,吕庆教,乔志明,苑希超(146)
- 基于计算机视觉手势识别的人机交互技术研究 丛玉华,何 啸,邢长达,王志胜(152)
- 基于多层 LSTM 的复杂系统剩余寿命智能预测 付 强,王华伟(161)
- 开式方腔可压缩流动及噪声 LES 计算分析 冯 峰,王 强(170)
- 不同头型回转体空化现象的数值模拟研究 胡 俊,马 亮,侯夏伊(176)
- 炸药爆炸过程中电磁辐射数值模拟研究 赵宏涛,栗建桥,马天宝(182)
- 基于 ISIGHT 和 AMESim 的燃油增压器优化设计 熊 彪,杨 昆,赵建华,周 磊(188)
- BaTNR 的 130 °C 高温安定性研究 彭 帅,严 楠,李朝振,叶耀坤,吕智星,赵象润,张 楠(195)

## 信息科学与控制工程

- 基于频谱和瞬时自相关的雷达信号调制识别 王国涛,姜秋喜,刘方正,孙 兵(200)
- 基于多约束投标策略的改进合同网算法 姜月秋,宗 睿,关启学,关世杰,张 昕(206)
- 四轮驱动电动汽车电机故障检测及容错控制策略 时培成,章 亮,陈 晨,梁涛年(212)
- 固定翼无人机多工况聚类及识别研究 卢俊钢,张世荣,梁少军,杨 毅(221)
- 基于跟踪微分器的载体角速率算法研究 孟卫锋,李 静,史永杰,李联涛,赵芄沛,刘明雍(228)
- 脉冲切换系统有限时间稳定性分析与控制 柳 静,牛玉俊,王国欣(233)

## 化学工程与材料科学

- 含硝酸钡的发射药包覆层性能试验研究 魏 伦,于慧芳,姚月娟,李梓超,马方生,刘 波(238)
- 阻尼材料/纤维层合板复合靶板抗冲击性能研究 周越松,梁 森,王得盼,刘 龙(243)
- 高温射流温度对导流槽混凝土冲刷剥蚀的影响 黄皓翔,查柏林,周 伟,王金金(249)

## 机械制造与检测技术

- 连续高冲击试验装置动态作用过程仿真研究 李飞胤,马少杰,张 合(255)
- 基于油气弹簧的六臂结构轮对式悬挂分析 冯伟琦,武志博,焦 斌,马铁华(260)

## 光学工程与电子技术

- 地物背景近场散射特性数据产品建设论证研究 秦德淳,靳佰良,李 勇,樊智涛(268)
- 切割效应下的箔条质心干扰使用研究 张军涛,李尚生,但 波(274)

# JOURNAL OF ORDNANCE EQUIPMENT ENGINEERING

Vol. 43 No. 1 (Sum. No. 282) Jan. 2022

## CONTENTS

- Review of extreme shock environments during road transport of munitions**  
..... WANG Guangyu, WANG Yushi, WEN Quan, et al(1)
- Research progress on material and structure of drug cover** ..... JIA Mengye, GAO Yonghong, ZHOU Pengfei, et al(10)
- Research progress on structural integrity analysis of solid propellant charge**  
..... WEI Xiaolin, ZHOU Jianhui, LI Hongyan, et al(19)
- Research progress and prospects of underwater thrust vector control technology**  
..... XU Qi, QUAN Xiaobo, WEI Haipeng, et al(27)
- Survey on coordinate detection technology for burst point of artillery shells**  
..... CHEN Dong, LIAN Xinan, SHI Shengbin(35)
- Study on launch dynamics and dispersion accuracy of a machine gun system with supporting structures**  
..... HUA Hongliang, LIAO Zhenqiang, GUO Hun, et al(42)
- Rotor fault diagnosis based on full vector spectrum and deep belief network**  
..... LI Zedong, LI Zhinong, TAO Junyong, et al(48)
- Study on fatigue behavior of gun barrel under impact loading** ..... ZHENG Jing, LI Huijie, WU Bin(55)
- Study on grid division method by cylindrical explosions in infinite air** ..... LIN Wenle, WANG Shuo, YAN Bo(61)
- Operational application mode and key technology of shipborne unmanned helicopter**  
..... SUN Shengzhi, SUN Xiaoting, ZHENG Weijuan, et al(68)
- Study on jet forming law of truncation shaped charge warhead** ..... XUAN Shifeng, SHANG Wei, HAN Wei, et al(73)
- Study on interior ballistic performance of cylindrical compressed air catapult launch system**  
..... LIU Nanhong, ZHANG Xinjing, XU Yujie, et al(79)
- Research on lightweight of aircraft gun turret based on topology optimization** ..... LIU Bin, LI Yong, SHEN Yalin(86)
- Pointing error compensation characteristic analysis of naval gun under ship swaying condition**  
..... ZHANG Manhui, YAO Zhong, XIA Fangchao, et al(93)
- Modeling and analysis of full trajectory of smoking sub-munition** ..... CHEN Hao, LI Hongxin, GAI Xiqiang, et al(100)
- Failure analysis of machinegun barrel** ..... SHAN Yonghai, DING Shuyu, GAO Kang(107)
- Simulation study on transient process of monopropellant attitude control propulsion system**  
..... JI Peng, XIAO Mingjie, LIANG Shuqiang(114)
- Service status monitoring of SRM bonding interface based on fsFBG sensor**  
..... QI Chongyang, CHANG Xinlong, ZHANG Youhong, et al(120)
- Research on application of infrared target recognition technology of air defense weapon based on deep learning**  
..... YANG Wei, YAO Tong, GENG Xiutang, et al(125)
- Research on gliding extended range trajectory scheme of long range guided mortar projectile**  
..... CHEN Shengzheng, SONG Yuhang, ZHANG Yi, et al(130)
- Experiment and simulation of projectile obliquely penetrating into concrete target at attack angle**  
..... GUO Songlin, GAO Shiqiao, LI Zezhang, et al(135)
- Research on identification method of explosion damage of ship hull girder**  
..... WANG Qi, ZHAO Pengduo, HAO Ning, et al(140)

# JOURNAL OF ORDNANCE EQUIPMENT ENGINEERING

Vol. 43 No. 1 (Sum. No. 282) Jan. 2022

---

---

- Analysis and research on emptying technology of electromagnetic induction heating projectile**  
..... XIANG Hongjun, SHI Hongjie, LYU Qingao, et al(146)
- Research on human-computer interaction technology based on computer vision gesture recognition**  
..... CONG Yuhua, HE Xiao, XING Changda, et al(152)
- Intelligent prediction for remaining useful life of complex system based on multi-layer LSTM**  
..... FU Qiang, WANG Huawei(161)
- Large eddy simulation of compressible open-cavity flow and noise** ..... FENG Feng, WANG Qiang(170)
- Numerical simulation study on cavitating body of revolution with different head types**  
..... HU Jun, MA Liang, HOU Xiayi(176)
- Numerical simulation of electromagnetic radiation during explosion progress**  
..... ZHAO Hongtao, LI Jianqiao, MA Tianbao(182)
- Optimal design of fuel supercharger based on ISIGHT and AMESim**  
..... XIONG Biao, YANG Kun, ZHAO Jianhua, et al(188)
- Thermal stability analysis of BaTNR at 130 °C** ..... PENG Shuai, YAN Nan, LI Chaozhen, et al(195)
- Radar signal modulation recognition based on spectrum and instantaneous autocorrelation**  
..... WANG Guotao, JIANG Qiuxi, LIU Fangzheng, et al(200)
- An improved contract net protocol based on multi-constraint bidding strategy**  
..... JIANG Yueqiu, ZONG Rui, GUAN Qixue, et al(206)
- Research on motor fault detection and fault-tolerance control strategy for four wheel drive electric vehicle**  
..... SHI Peicheng, ZHANG Liang, CHEN Chen, et al(212)
- Study on multi-working clustering and recognition of fixed-wing UAV**  
..... LU Jungang, ZHANG Shirong, LIANG Shaojun, et al(221)
- Research on carrier angular rate algorithm based on tracking differentiator**  
..... MENG Weifeng, LI Jing, SHI Yongjie, et al(228)
- Finite-time stability analysis and control of pulse switching system** ..... LIU Jing, NIU Yujun, WANG Guoxin(233)
- Experimental study on performance of gun propellant coating containing Ba(NO<sub>3</sub>)<sub>2</sub>**  
..... WEI Lun, YU Huifang, YAO Yuejuan, et al(238)
- Impact resistance behavior of damping material/fiber laminate composite target**  
..... ZHOU Yuesong, LIANG Sen, WANG Depan, et al(243)
- Influence of jet flow temperature on erosion of concrete for flame diversion trough**  
..... HUANG Haoxiang, ZHA Bailin, ZHOU Wei, et al(249)
- Simulation research on dynamic action process of continuous high impact experimental equipment**  
..... LI Feiyin, MA Shaojie, ZHANG He(255)
- Analysis of six arm wheelset suspension based on hydro pneumatic spring**  
..... FENG Weiqi, WU Zhibo, MA Tiehua, et al(260)
- Research on data product construction dDemonstration of background near field scattering characteristics**  
..... QIN Dechun, JIN Bailiang, LI Yong, et al(258)
- Study on use of chaff centroid interference under cutting effect** ..... ZHANG Juntao, LI Shangsheng, DAN Bo(274)