

## 目 次

### 计算机科学与技术

- GSVM:一种支持 Gather/Scatter 的向量存储器 ..... 陈海燕,刘胜,吴健虢(1)  
基于新型非易失内存的远程零拷贝文件系统 ..... 韩文炳,陈小刚,李顺芬,李大刚,陈诗雁,段有康,宋志棠(9)  
130 nm 加固 SOI 工艺的抗辐射控制芯片设计 ..... 常永伟,余超,刘海静,王正,董业民(17)  
多模块 ROP 碎片化自动布局方法 ..... 黄宁,黄曙光,潘祖烈,常超(22)  
求解不确定型车辆路径问题的弱鲁棒优化方法 ..... 孙亮,王冰,郭栋,徐艺(30)

### 航天工程

- 天海一体化水下重力辅助导航研究进展 ..... 郑伟,李钊伟,吴凡(39)  
通道失配对 GNSS 阵列抗干扰性能的影响分析 ..... 陈飞强,鲁祖坤,陈雷,李峰嵘,孙广富(50)  
基于卷积神经网络的卫星网络协调态势评估方法 ..... 高翔,刘和光,陈志敏,姚秀娟,王春梅(56)  
不同射流状态下射流气体与高超声速主流相互作用影响 ..... 王丽燕,檀妹静,聂亮,蒋云淞,袁野,王振峰(66)  
空间非合作目标捕获方法综述 ..... 孙永军,王铃,刘伊威,谢宗武,金明河,刘宏(74)

### 材料科学与工程·化学工程与技术

- 纤维缠绕复合材料约束球形浮力芯材准静态压缩吸能机制 ..... 周晓松,张焱冰,梅志远(91)  
酚醛-石英混杂纤维增强苯并噁嗪复合材料高温失效特征 ..... 边立平,邢素丽,尹昌平(97)  
制氢过程中一氧化碳氧化反应速率控制的平滑切换方法 ..... 张蕾,盛利(102)  
液氧甲烷膨胀循环变推力发动机系统方案对比研究 ..... 崔朋,李清廉,成鹏,张北辰(106)

### 机械工程·信息与通信工程·物理学

- 基于旁支式次级源的舰船液压管路低频脉动有源衰减 ..... 赵佳锡,何琳,徐荣武,梁云栋(116)  
慢刀伺服加工环曲面的刀具路径规划方法 ..... 邱昕洋,张彦钦,王宏斌(121)  
旋转永磁式机械天线的研究与实现 ..... 周强,施伟,刘斌,魏志虎,何攀峰,张江(128)  
采用 3 电平非均匀量化的脉冲编码策略 ..... 陈剑斌,张江,周强,魏志虎(137)  
浅海中非金属圆柱体的扰动电场 ..... 喻鹏,程锦房,姜润翔(144)  
超压气球上升过程温度与动力学特性仿真分析 ..... 祝榕辰,王生,杨燕初,刘强,才晶晶(151)

# JOURNAL OF NATIONAL UNIVERSITY OF DEFENSE TECHNOLOGY

Vol. 42 No. 3

June 2020

## CONTENTS

### Computer Science and Technology

GSVM; a vector memory to support Gather/Scatter .....	CHEN Haiyan, LIU Sheng, WU Jianguo ( 1 )
A novel remote zero-copy file system based on non-volatile memory .....	HAN Wenbing, CHEN Xiaogang, LI Shunfen, LI Dagang, CHEN Shiyan, DUAN Youkang, SONG Zhitang ( 9 )
Design of radiation-tolerant controller chip in 130 nm hardened SOI process .....	CHANG Yongwei, YU Chao, LIU Huijing, WANG Zheng, DONG Yemin ( 17 )
Automatic fragmented layout for multi-module ROP .....	HUANG Ning, HUANG Shuguang, PAN Zulie, CHANG Chao ( 22 )
Light robust optimization approach for vehicle routing problem under uncertainty .....	SUN Liang, WANG Bing, GUO Dong, XU Yi ( 30 )

### Aerospace Engineering

Research progress of the underwater gravity-aided navigation based on the information of aerospace-marine integration .....	ZHENG Wei, LI Zhaowei, WU Fan ( 39 )
Effect of channel mismatch on the anti-jamming performance of GNSS adaptive antenna arrays .....	CHEN Feiqiang, LU Zukun, CHEN Lei, LI Zhengrong, SUN Guangfu ( 50 )
Satellite networks coordination situation assessment method based on convolution neural network .....	GAO Xiang, LIU Heguang, CHEN Zhimin, YAO Xiujuan, WANG Chunmei ( 56 )
Impact of gas ejection interaction with hypersonic mainstream at different ejecting states .....	WANG Liyan, TAN Meijng, NIE Liang, JIANG Yunsong, YUAN Ye, WANG Zhenfeng ( 66 )
A survey of non-cooperative target capturing methods .....	SUN Yongjun, WANG Qian, LIU Yiwei, XIE Zongwu, JIN Minghe, LIU Hong ( 74 )

### Materials Science and Engineering · Chemistry Engineering and Technology

Quasi-static compression energy absorption mechanism of filament wound composite constrained spherical buoyancy core material .....	ZHOU Xiaosong, ZHANG Yanbing, MEI Zhiyuan ( 91 )
High-temperature failure characteristics of phenolic-quartz hybrid fabrics reinforced benzoxazine composites .....	BIAN Liping, XING Suli, YIN Changping ( 97 )
Smooth switching scheme for the control of CO oxidation reaction rate in hydrogen production .....	ZHANG Lei, SHENG Li ( 102 )
A comparative study of system schemes for LOX/LCH <sub>4</sub> expander cycle liquid rocket engine .....	CUI Peng, LI Qinglian, CHENG Peng, ZHANG Beichen ( 106 )

### Mechanical Engineering · Information and Communication Engineering · Physics

Active control of low-frequency pulsation in marine hydraulic system using by-pass secondary source .....	ZHAO Jiaxi, HE Lin, XU Rongwu, LIAO Yundong ( 116 )
Tool path planning method for machining toric surface based on slow tool servo technology .....	QIU Xinyang, ZHANG Yanqin, WANG Hongbin ( 121 )
Research and practice of the mechanical antennas based on rotating permanent magnet .....	ZHOU Qiang, SHI Wei, LIU Bin, WEI Zhihu, HE Panfeng, ZHANG Jiang ( 128 )
Pulse encoding strategy using 3-level non-uniform quantizing .....	CHEN Jianbin, ZHANG Jiang, ZHOU Qiang, WEI Zhihu ( 137 )
Disturbed electric field of nonmetallic cylinders in shallow sea .....	YU Peng, CHENG Jinfang, JIANG Runxiang ( 144 )
Simulation and analysis of thermal and dynamic properties of super-pressure balloon during ascent .....	ZHU Rongchen, WANG Sheng, YANG Yanchu, LIU Qiang, CAI Jingjung ( 151 )