

目 次 第 20 卷 第 1 期 2012 年 2 月 25 日

◆ 研究论文

- 有机酸优化 FOX-7 的合成 丁厚锰, 叶志文, 吕春绪 (1)
3,7-二硝基-1,3,5,7-四氮杂双环[3.3.1]壬烷的硝解副产物及硝解机理 何志勇, 罗军, 吕春绪, 汪平, 徐容, 李金山 (5)
1-氨基-3-甲基-1,2,3-三唑硝酸盐的合成与表征 李琳, 叶志文, 吕春绪 (9)
Keggin 杂多阴离子基型 Brønsted 酸性盐催化甲苯的硝酸硝化 齐秀芳, 程广斌, 吕春绪 (13)
3,3'-二(四唑-5-基)二呋咱基醚的合成与表征 李辉, 王伯周, 于倩倩, 李亚南, 尚雁 (18)
相转移催化法合成 4-溴-4,4-二硝基丁酸甲酯 肖玲娜, 金波, 彭汝芳, 史文秀, 楚士晋, 董海山 (22)
1-甲基-3-氨基-5-硝基-1,2,4-三唑的合成新工艺 周群, 王伯周, 贾思媛 (26)
HNIW 在乙酸乙酯-正庚烷溶剂体系中的结晶机制研究 李洪珍, 周小清, 王述存, 徐容, 黄明, 王蔺 (30)
4-氨基-1,2,4-三唑-NTO 盐的晶体结构及性能 徐容, 董海山, 孙杰 (35)
1-甲基-4,5-二硝基咪唑的晶体结构与感度性能 王小军, 鲁志燕, 王建龙, 尚凤琴, 张广源, 杨琰鹏, 秦亮 (40)
硝基爆炸物对 2-(氯甲基)-4-苯基喹啉-3-甲酸乙酯的荧光猝灭研究 何娜, 钟发春, 舒远杰, 张勇, 瞿贺良, 郝晓飞 (44)
DBM 和 BDO 为扩链剂的聚氨酯粘合剂性能 张文雨, 李晋庆, 罗运军, 李晓萌, 酒永斌 (49)
RDX 激光点火特性数值分析 田占东, 卢芳云, 张震宇, 赵剑衡, 谭福利 (53)
滑移爆轰作用下飞板运动规律的特征线差分法研究 赵春风, 李晓杰, 于娜 (57)
基于 Hopkinson 杆技术分析典型传爆药的动力力学性能 张子敏, 许碧英, 贾建新, 吕永柱, 李公法 (62)
含 CL-20 改性双基推进剂的能量计算与分析 金溪, 王江宁, 宋秀铎, 谢波 (67)
浇铸无烟 CMDB 推进剂流变性能 蔡红建, 樊学忠, 付小龙, 滕学峰, 孟玲玲, 张伟, 谢五喜 (71)
颗粒模压发射药的燃烧性能 姚月娟, 刘少武, 王琼林, 张远波, 魏伦, 王锋, 刘波, 韩冰 (76)
消焰剂降低枪口火焰的研究 刘波, 郑双, 刘少武, 王锋, 张远波, 韩冰, 姚月娟 (80)
三硝基间苯三酚在去离子水中的溶解性质(英) 张国英, 杨利, 周遵宁, 张同来, 田永锐, 王胜胜 (83)
动态法研究 ADN 的吸湿性能 王婧娜, 张皋, 严蕊, 胡岚, 张婷 (86)
工艺参数对电氧化合成五氧化二氮的影响 王庆法, 孙小明, 章一夫, 陈志强, 王莅 (90)
含铝炸药中铝粉活性的光谱法测试研究 胡岚, 王婧娜, 熊贤锋, 严蕊, 张婷, 高朗华, 李晓宇 (94)
半导体桥静电作用前后点火特性 郭晓荣, 朱顺官, 张琳, 马鹏, 陈飞, 王大为 (99)
一种直列式传爆序列的装药传爆性能试验研究 金丽, 杨振英, 张玉若, 高艳, 王放, 刘文灏 (105)
爆炸箔起爆器桥箔夹角优化设计 周密, 钱勇, 刘燕, 韩克华, 孟庆英, 秦国圣 (109)
基于混合先验分布的弹射弹 Bayes 可靠性估计 张天飞, 董海平, 蔡瑞娇, 郝志 (113)
电爆管失效模式及影响因素研究 涂小珍, 韦兴文, 王培, 周筱雨, 王翕 (117)

◆ 综述

- FOX-7 的反应性研究进展 陈咏顺, 徐抗震, 王敏, 黄洁, 马海霞, 宋纪蓉, 赵凤起 (120)
3,5-二硝基羟基吡啶类含能盐的研究进展 张国防, 亚森·木萨, 赵凤起, 樊学忠 (126)
高燃速推进剂用硼氢化物的研究进展 王为强, 薛云娜, 杨建明, 李亚妮, 余秦伟, 梅苏宁, 吕剑 (132)

◆ 研究快报

- 双呋咱并[3,4-b;3',4'-f]氧化呋咱并[3'',4''-d]氧杂环庚三烯的合成 周彦水, 王伯周, 王锡杰, 周诚, 霍欢, 张叶高, 刘鹏 (137)

◆ 含能快递

- (139)

◆ 读者·作者·编者

《含能材料》征订启事(12) 会议信息(17) 第十二届战斗部与毁伤技术学术交流会召开(21)

《含能材料的研究与发展》专辑征稿——纪念董海山院士诞辰 80 周年(138)

Article

- 1 DING Hou-meng, YE Zhi-wen, Lü Chun-xu **Synthetic Improvement of FOX-7 with Organic Acid**
- 5 HE Zhi-yong, LUO Jun, Lü Chun-xu,
WANG Ping, XU rong, LI Jin-shan **Mechanisms and By-products of Nitrolysis of 3,7-dinitro-1,3,5,7-tetrazabicyclo[3.3.1]nonane**
- 9 LI Lin, YE Zhi-wen, Lü Chun-xu **Synthesis and Characterization of 1-Amino-3-methyl-1,2,3-triazolium Nitrate**
- 13 QI Xiu-fang, CHENG Guang-bin, Lü Chun-xu **Toluene Nitration Catalyzed by Keggin Heteropolyacid Anionic Brønsted Acid Salt**
- 18 LI Hui, WANG Bo-zhou, YU Qian-qian,
LI Ya-nan, SHANG Yan **Synthesis and Characterization of 3,3'-Bis(tetrazol-5-yl)difurazanyl Ether**
- 22 XIAO Ling-na, JIN Bo, PENG Ru-fang,
SHI Wen-xiu, CHU Shi-jin, DONG Hai-shan **Synthesis of Methyl-4-bromo-4, 4-dinitrobutyrate by Phase Transfer Catalysis**
- 26 ZHOU Qun, WANG Bo-zhou, JIA Si-yuan **New Synthetic Process of 1-Methyl-3-amino-5-nitro-1,2,4-triazole**
- 30 LI Hong-zhen, ZHOU Xiao-qing, WANG Shu-cun,
XU Rong, HUANG Ming, WANG Lin **Crystallization Mechanism of ε -HNIW in Ethyl Acetate/n-Heptane Solution**
- 35 XU Rong, DONG Hai-shan, SUN Jie **Crystal Structure and Properties of 4-Amino-1,2,4-triazole NTO Salt**
- 40 WANG Xiao-jun, LU Zhi-yan, WANG Jian-long,
SHANG Feng-qin, ZHANG Guang-yuan,
YANG Yan-peng, QIN Liang **Cystal Structure and Sensitivity of 1-Methy-4,5-dinitroimidazole**
- 44 HE Na, ZHONG Fa-chun, SHU Yuan-jie,
ZHANG Yong, SUI He-liang, HAO Xiao-fei **Fluorescence Quenching Studies of Ethyl 2-(chloromethyl)-4-phenyl-quinoline-3-carboxylate in the Presence of Nitro-explosives**
- 49 ZHANG Wen-yu, LI Jin-qing, LUO Yun-jun,
LI Xiao-meng, JIU Yong-bin **Properties of Thermoplastic Polyurethane Elastomers Extended with BDO and DBM**
- 53 TIAN Zhan-dong, LU Fang-yun, ZHANG Zhen-yu,
ZHAO Jian-heng, TAN Fu-li **Numerical Analysis of Laser Ignition Characteristics of RDX**
- 57 ZHAO Chun-feng, LI Xiao-jie, YU Na **Movement of Flyer Plate in Difference Method of Characteristics Curve Under Sliding Detonation**
- 62 ZHANG Zi-min, XU Bi-ying, JIA Jian-xin,
Lü Yong-zhu, LI Gong-fa **Analysis on Dynamic Properties of Typical Boosters Based on Hopkinson Bars**
- 67 JIN Xi, WANG Jiang-ning, SONG Xiu-duo, XIE Bo **Calculation and Analysis on Energy Characteristics of Composite Modified Double-based Propellant Containing CL-20**

CONTENTS

Vol. 20, No. 1, 25 February, 2012

71	YU Hong-jian, FAN Xue-zhong, FU Xiao-long, TENG Xue-feng, MENG Ling-ling, ZHANG Wei, XIE Wu-xi	Rheological Properties of Cast Smokeless CMDB Propellants
76	YAO Yue-juan, LIU Shao-wu, WANG Qiong-lin, ZHANG Yuan-bo, WEI Lun, WANG Feng, LIU Bo, HAN Bing	Burning Performance of Grain-molded Propellant
80	LIU Bo, ZHENG Shuang, LIU Shao-wu, WANG Feng, ZHANG Yuan-bo, HAN Bing, YAO Yue-juan	Research of Reducing the Muzzle Flame by Flame Inhibitor
83	ZHANG Guo-ying, YANG Li, ZHOU Zun-ning, ZHANG Tong-lai, TIAN Yong-rui, WANG Sheng-sheng	Dissolution Properties of Trinitrophloroglucinol Dissolved in Deionized Water
86	WANG Jing-na, ZHANG Gao, YAN Rui, HU Lan, ZHANG Ting	Hygroscopicity of ADN with Dynamic Method
90	WANG Qing-fa, SUN Xiao-ming, ZHANG Yi-fu, CHEN Zhi-qiang, WANG Li	Influence of Technological Parameters on Electro-oxidation of Tetroxide Dinitrogen to Form Pentoxide Dinitrogen
94	HU Lan, WANG Jing-na, XIONG Xian-feng, YAN Rui, ZHANG Ting, GAO Lang-hua, LI Xiao-yu	Determination of Aluminium Powder Activation in Aluminized Explosives by Spectrometry
99	GUO Xiao-rong, ZHU Shun-guan, ZHANG Lin, MA Peng, CHEN Fei, WANG Da-wei	Ignition Characteristics of Non-electrostatic Discharge and Electrostatic Discharge on Semiconductor Bridge
105	JIN Li, YANG Zhen-ying, ZHANG Yu-ruo, GAO Yan, WANG Fang, LIU Wen-hao	Performance of an in-line Explosive Trains
109	ZHOU Mi, QIAN Yong, LIU Yan, HAN Ke-hua, MENG Qing-ying, QIN Guo-sheng	Optimal Design of Foil Bridge Included Angle of Exploding Foil Initiator
113	ZHANG Tian-fei, DONG Hai-ping, CAI Rui-jiao, HAO Zhi	Reliability Assessment of Cartridge of Ejector Based on Mixed Beta Distribution
117	TU Xiao-zhen, WEI Xing-wen, WANG Pei, ZHOU Xiao-yu, WANG Xi	Failure Modes of Electric Squib and Its Effect Factor

Review

120	CHEN Yong-shun, XU Kang-zhen, WANG Min, HUANG Jie, MA Hai-xia, SONG Ji-rong, ZHAO Feng-qi	A Review on Reactivity of 1,1-Diamino-2,2-dinitroethene (FOX-7)
126	ZHANG Guo-fang, YA-sen · Mu-sa, ZHAO Feng-qi, FAN Xue-zhong	A Review on 3,5-Dinitrohydroxypyridines and Their Salts
132	WANG Wei-qiang, XUE Yun-na, YANG Jian-ming, LI Ya-ni, YU Qin-wei, MEI Su-ning, Lü Jian	A Review of Boron Hydrides Used in High Burning Rate Propellant

Letter

137	ZHOU Yan-shui, WANG Bo-zhou, WANG Xi-jie, ZHOU Cheng, HUO Huan, ZHANG Ye-gao, LIU Peng	Synthesis of Bifurazano[3,4-b;3',4'-f]furoxano[3'',4''-d]oxacycloheptatriene
139	Energetic Express	