

《含能材料》2019年(第27卷)总目次

第1期

推进剂

- 旋转条件下 AP/HTPB 二维火焰结构的数值分析.....叶振威, 余永刚 (1)
- 聚缩水甘油醚硝酸酯增塑剂的性能.....王 伟, 韩世民, 张得亮, 薛金强, 王 勃, 徐琰璐, 尚丙坤 (9)
- HTPB 推进剂复合型裂纹尖端变形场测量及破坏模式分析.....王 阳, 李高春, 王玉峰, 史小强, 韩永恒 (14)
- Effects of Plasticizers, Antioxidants and Burning Rate Modifiers on Aging Performance of the HTPB/ HMDI Composite Solid Propellant.....Ahmed M Enew, Ehab Abadir, Sahar Elmarsafy, Karim K Elsharkawy (21)
- TiO₂ NRAs/CdS/Au 复合薄膜光催化降解 UDMH 废水.....高 鑫, 朱左明, 高 纓, 耿 葵, 王庆波, 韩俊杰, 刘祥莹 (28)
- 偏二甲肼大气氧化生成亚硝基二甲胺(NDMA)的机理.....黄 丹, 刘祥莹, 王焯军, 杨玉雪, 慕晓刚 (35)

研究论文

- N,N'-二(氟偕二硝基乙基)-3,4-二硝胺呋咱(LLM-209)的晶体结构及热分解性质.....李 杰, 马 卿, 唐水花, 范桂娟 (41)
- 三种低熔点二异噁唑含能化合物的合成与表征.....吴敏杰, 毕福强, 张家荣, 翟连杰, 李祥志, 周彦水, 王伯周 (47)
- 溶剂-非溶剂法制备纳米 FOX-7 及其性能.....祁栋梁, 罗庆平, 崔鹏腾, 李兆乾, 段晓惠, 裴重华 (53)
- Viton/PVA 粘结剂乳液的设计及其在炸药油墨中的应用.....李千兵, 安崇伟, 徐传豪, 郭 浩, 王 爽, 刘 斌, 叶宝云, 王晶禹 (60)
- 准等熵加载特性对 PBXC03 炸药起爆的影响规律.....刘海庆, 段卓平, 李淑睿, 欧卓成, 白志玲, 黄风雷 (68)
- TATB 基 PBX 双曲 Drucker-Prager 强度准则适用性分析.....袁洪魏, 赵 龙, 董天宝, 颜熹琳, 唐 维 (74)

综述

- 爆炸箔起爆器作用机理研究进展.....陈清畴, 马 骏, 李 勇 (79)

读者·作者·编者

- 《含能材料》“含能共晶”征稿(13)
- 《含能材料》“观点”征稿(67)
- 《含能材料》“损伤与点火”征稿(73)

第2期

- 含能快递.....(89)

高效毁伤技术

- 锥弧结合罩形成长杆状密实 EFP 的可行性.....黄炫宁, 李伟兵, 程 伟, 王晓鸣, 李文彬 (90)

一种异面棱柱战斗部威力特性的数值模拟李元,赵倩,熊诗辉,温玉全 (97)

锥角对具有PELE效应的EFP成型影响的数值仿真分析王雪飞,尹建平 (104)

基于高斯扩散模型的催泪弹气溶胶烟雾非致命效能仿真王志刚,郭三学 (113)

◆ 研究论文

甲胺盐酸盐/发烟硝酸体系中DPT硝解-亚硝解反应制备MNX张宇,徐子帅,阮健,王小龙,张路遥,罗军 (119)

亚甲氨基硝基胍(MANG)的合成、晶体结构及热行为杨航,冯治存,关晓鸽,徐抗震,宋纪蓉,赵凤起 (125)

GAP基自修复粘结剂的制备及性能管晓霞,宋育芳,赵盟辉,梁益,周伟良,肖乐勤 (131)

龙骨状纳米结构TATB的构筑与热分解动力学研究李萍,敖登高娃,李纯志,段晓惠,裴重华 (137)

氧化钨点火桥电爆及点火性能徐威,代骥,许建兵,沈云,叶迎华,沈瑞琪 (144)

基于Al/CuO_x复合薄膜半导体桥间隙点火性能研究倪德彬,于国强,史胜楠,徐栋,陈利魁,朱雅红,王培勇 (149)

多层Al/Ni含能薄膜在电容放电激励下的能量释放特性和规律付帅,沈瑞琪,朱朋,叶迎华,马宏玲 (155)

改性B炸药主要组分的近红外光谱检测方法温晓燕,苏鹏飞,潘清,董小虎,杨建明 (162)

◆ 综述

微芯片爆炸箔起爆器及其平面高压开关研究进展杨智,朱朋,徐聪,张秋,覃新,沈瑞琪 (167)

◆ 读者·作者·编者

《含能材料》“含能共晶”征稿(103) 《含能材料》“观点”征稿(118) 《含能材料》“损伤与点火”征稿(136)

第3期

◆ 含能快递(177)

◆ 损伤与点火

破片撞击损伤装药点火数值模拟孙宝平,段卓平,刘彦,皮爱国,黄风雷 (178)

相变与微裂纹对HMX晶体高温下撞击感度的影响机制
.....文玉史,文雯,代晓淦,温茂萍,龙新平,郑雪,姚奎光,何松伟,李明 (184)

TATB基PBX张开型裂纹起裂及扩展行为刘晨,蓝林钢,陈华,唐明峰,甘海啸,李明 (190)

基于CT图像序列的围压TATB基PBX冲击损伤特性刘本德,陈华,张伟斌,张才鑫,刘晨 (196)

◆ 发射药

管状发射药内孔侵蚀燃烧与流动特性赵小亮,张小兵 (202)

微孔NC/TEGN/RDX复合材料的制备及力学性能张硕,丁亚军,应三九 (210)

三基发射药生产过程中气态硝化甘油的销爆研究刘秉鑫,韩坤祥,孙志杨,陈朋朋,张志芳,刘大斌,钱华 (216)

研究论文

- TKX-55合成工艺优化及性能刘洋,申程,陆明 (220)
- 二硝基乙腈钾盐的合成、热行为及晶体形貌李祥志,毕福强,周诚,周群,王伯周 (225)
- 温压作用下 α -DNAN的晶体结构及力学性能李华荣,杨永林,宗和厚,于海江 (230)
- 拉曼光谱分析六硝基六氮杂异戊兹烷的晶型纯度高凤,孟子晖,刘文芳,李志学,王明辉 (236)
- 用超级电容器驱动激光起爆BNCP的技术研究王浩宇,褚恩义,洪津,贺爱锋,曹椿强,井波,马玥,胡亚东 (242)
- 碳纳米管/石墨烯/碳复合材料烟幕的中远红外的干扰性能陈浩,高欣宝,许兴春,张倩,张开创 (249)

综述

- 激光驱动飞片飞行特征研究进展王志昊,李勇,覃文志,高原,蒋小华,王亮,何碧 (255)

读者·作者·编者

- 《含能材料》“含能共晶”征稿(189) 《含能材料》“观点”征稿(201) 《含能材料》“损伤与点火”征稿(215)
- 新书推荐——《复合推进剂燃速模拟计算》(229) 更正(241)

第4期

含能快递(265)

观点

- 浅谈固体推进剂燃烧催化剂的评判标准严启龙 (266)
- 基于材料基因工程的复合固体推进剂力学性能预估方法张炜 (270)

研究论文

- 低温动态加载下三组元HTPB复合固体推进剂的失效判据强洪夫,王哲君,王广,耿标 (274)
- 直流高压电场对固体燃料PMMA燃烧特性的影响杨小龙,魏志军,张泽霖,张靖佳,王佳兴 (282)
- 固体推进剂非线性压强耦合响应特性实验研究金秉宁,刘佩进,魏少娟 (290)
- ADN/GUDN双氧化剂对NEPE固体推进剂燃烧性能的影响(英)
.....李军强,庞维强,王可,肖立群,胥会祥,樊学忠,张崇民 (297)
- 废弃推进剂改善无烟煤燃烧的热重-红外实验研究魏潇,刘建忠,周禹男,苑继飞,邹德荣 (304)
- 温度对粒铸XLDB推进剂固化的影响李笑江,任治,刘萌,李军强,吴雄岗 (311)

综述

- 三氯化铝合成及应用评价技术进展庞爱民,朱朝阳,徐星星 (317)
- 5-Nitro-1,2,4-triazole-3-one: A Review of Recent Advances
.....Sabrina Hanafi, Djalal Trache, Slimane Abdous, Zineddine Bensalem, Abderrahmane Mezroua (326)
- 新型含能材料在丁羟复合推进剂中的应用进展吴世曦,张天福,周重洋,黎小平,胡期伟 (348)

◆ 读者·作者·编者

专辑导言与客座编审简介(前插) 《含能材料》“含能共晶”征稿(281) 深切缅怀含能材料热分析专家——胡荣祖先生(289)
 《含能材料》“观点”征稿(296) 《含能材料》“损伤与点火”征稿(310)
 中国兵工学会火工烟火专业委员会第二十届学术年会征文通知(347) 《含能材料》2019年专刊专栏预告(356)

第 5 期

◆ 计算与模拟

二元含能富氮化合物 PN_3 的理论研究高斯萌, 刘映岐, 康志红, 刘楠楠, 谷 笛, 王宝辉 (357)
 TNT熔铸炸药内部结晶组织的数值模拟刘雨菡, 曹红松, 刘 胜, 张 亨, 张晓东, 谢 峰 (363)
 模块装药快速烤燃特性的数值预测刘 静, 余永刚 (371)
 黑索今在乙酸乙酯-水二元混合溶剂中的溶解特性的模拟(英)
李 静, 金韶华, 徐子帅, 吴娜娜, 兰贯超, 陈树森, 王东旭 (377)
 高压水射流破碎炸药过程数值模拟黄玉平, 崔庆忠, 徐 洋, 陈明华, 吴兴宇 (385)

◆ 研究论文

高性能CNA的制备及其在HMX基混合炸药中的应用
刘燕华, 邵自强, 张馨方, 袁晶晶, 彭 欢, 孙建刚, 赵利斌, 张仁旭 (392)
 石蜡/HTPB燃料的力学性能王 印, 王 飞, 胡松启, 刘林林, 刘 辉 (398)
 端面摩擦对高聚物粘接炸药(PBX)静态压缩强度的影响规律(英) ...孙文旭, 罗智恒, 李 明, 刘 彤, 黄亨建, 章定国 (404)
 基于SVM算法的TATB基PBX单轴准静态应力应变关系 ...段晓畅, 孙 杰, 刘迎彬, 常双君, 赵 龙, 袁洪魏, 唐 维 (410)
 基于MOS控制晶闸管的高压电容放电特性章 新, 朱 朋, 徐 聪, 杨 智, 张 秋, 沈瑞琪 (417)
 可寻址起爆网络系统设计及可行性尹国福, 张进成, 任 西, 韩克华, 李黎明 (426)

◆ 综述

小角散射技术在高聚物粘结炸药中的应用研究进展
田 强, 闫冠云, 白亮飞, 刘佳辉, 陈可平, 林聪妹, 陈 华, 段晓惠, 刘 渝, 李敬明, 陈 波 (434)

◆ 读者·作者·编者

《含能材料》“含能共晶”征稿(384) 《含能材料》“观点”征稿(384) 《含能材料》“损伤与点火”征稿(433)

第 6 期

◆ 观点

含能材料增材制造技术——新兴的精密高效安全制备技术彭翠枝 (445)

特邀 微型电爆炸技术 专栏

微型电爆炸技术

- 低温共烧陶瓷爆炸箔起爆芯片的设计、制备与发火性能……张秋,陈楷,朱朋,徐聪,覃新,杨智,沈瑞琪 (448)
- Ni/Cu复合多层膜电爆炸等离子体发射光谱特性及飞片推动性能……杨爽,孙秀娟,王万军,付秋菠 (456)
- 基于二极管电爆炸的单触发开关导通机理……徐聪,胡博,朱朋,叶迎华,沈瑞琪 (465)
- 亚微秒内金丝电爆炸的激光探针测试及三维动力学仿真……王万军,孙秀娟,张雷,雷凡,郭菲,杨爽,付秋菠 (473)
- 桥丝电爆炸过程中的电磁脉冲效应……赵丽君,易涛,朱宏娜,付秋菠,孙秀娟,杨爽,郑万国,江少恩 (481)

推进与发射

- 部分切口杆状发射药内弹道性能的数值模拟……赵煜华,杨伟涛,严文荣,张江波,肖霞 (487)
- 发射药混同过程静电性能测试及风险评估……卫水爱,孙磊,李文海,李春光,白春华 (493)
- 高触变性高密度凝胶碳氢燃料的制备及性能……鄂秀天凤,潘伦,张香文,邹吉军 (501)
- 基于响应面中心复合设计的固体推进剂摩擦感度理论……邵明旺,王建,乔晓林,李兴刚,赵慧 (509)
- 制备液相色谱-离子色谱法测定二缩三乙二醇二硝酸酯(TEGDN)中阴离子杂质……陈爽,康莹,胡银,宁艳利,索志荣 (516)

爆炸与毁伤

- 动能侵彻体冲击带壳炸药装药的爆燃失效……冯顺山,赵宇峰,边江楠,周彤 (521)
- 多EFP定向聚焦战斗部设计与优化……司凯,李向东,周兰伟,陈兴 (528)
- 装填系数对破甲杀伤复合战斗部威力影响的数值模拟……李兴隆,陈科全,路中华,高大元,吕胜涛,寇剑锋,杨沙 (535)

读者·作者·编者

- 新书推荐——《含硼富燃料推进剂:特性、燃烧及应用技术》(492) 专辑导言与客座编审简介(前插一)
- 《含能材料》2019年专刊专栏预告(前插二)

第7期

- 含能快递**(541)

特邀 含能材料生物安全 专栏

含能材料生物安全

- 球形红细菌降解对硝基酚特性及响应面优化……孙慧敏,白红娟,张晴 (542)
- 球形红细菌降解HMX的途径及产酶特性……白红娟,赵婷婷,康鹏洲,高莉 (550)
- 典型炸药的毒性效应及其作用机制研究进展……魏桐,周阳,杨治林,杨宏 (558)

炸药的多相界面环境行为与归趋研究进展张慧君, 朱勇兵, 赵三平, 黄慧慧, 聂亚光, 刘晓东 (569)

研究论文

CL-20/FOX-7基PBX的制备及其性能表征李小东, 张锡铭, 杨武, 孙红燕, 宋昌贵, 王晶禹 (587)

非对称性呋喃醚3-叠氮基-3'-硝基呋喃醚: 合成及量子化学研究(英)王锡杰, 毕福强, 廉鹏, 刘宁, 王伯周 (594)

三官能度NIMMO-THF共聚醚含能粘合剂的合成与固化王晓川, 卢先明, 莫洪昌, 徐明辉, 舒远杰, 刘宁 (603)

5-酮-3-(5'-氨基-3'-偶氮异呋喃)-异呋喃和5,5'-二酮-3,3'-偶氮异呋喃的晶体结构和热稳定性
.....吴克林, 杨红伟, 程广斌 (609)

Cu/Al复合材料的制备及其对RDX热分解性能的影响姚冰洁, 郑晓东, 吕英迪, 唐望, 姜俊, 邱少君 (616)

高剪切速率下硼与HTPB、PBT和GAP端羟基的反应活性张怀龙, 王勇, 周伟良, 肖乐勤 (622)

读者·作者·编者

专栏导言及专栏编审简介(前插)

第8期

计算与模拟

PBX炸药冲击起爆的改进细观反应速率模型白志玲, 段卓平, 温丽晶, 张震宇, 欧卓成, 黄风雷 (629)

晶体缺陷对HMX基PBX性能影响的理论计算苗爽, 王涛, 王玉玲, 杭贵云, 戚春保, 鲁昌兵 (636)

LLM-105与高聚物黏结剂界面相互作用及力学性能的分子动力学模拟郭蓉, 杨志剑, 段晓惠, 裴重华 (644)

瞬态泄压过程中二次燃烧对底排装置尾部流场影响的数值分析周书培, 余永刚 (652)

考虑后燃烧效应密闭空间内爆炸场数值计算研究徐维铮, 吴卫国 (661)

研究论文

竹浆纤维素纳米纤维对硝化纤维素膜的增强作用
.....周逸, 魏洁, 吕妍妍, 樊浩瑜, 吴雪, 赵利斌, 张仁旭, 邵自强 (671)

两种DNAN基含铝炸药的爆轰性能杨洋, 段卓平, 张连生, 黄风雷 (679)

解耦合法研究1,1'-二羟基-5,5'-联四唑二羟胺盐(TKX-50)热分解(英)
.....祝艳龙, 安静, 丁黎, 毕福强, 周静, 梁忆 (685)

新型亚稳态合金材料冲击释能特性张云峰, 刘国庆, 李晨, 施冬梅, 张玉令, 甄建伟 (692)

内爆炸准静态压力对球形容器弹性动态响应的影响孙琦, 董奇, 杨沙, 张刘成 (698)

综述

笼状骨架含能化合物构建研究进展周静, 张俊林, 丁黎, 毕福强, 王伯周 (708)

第9期

观点

阵列爆炸——一种常规高效毁伤技术胡宏伟,肖川 (717)

固体推进剂

Al-Fe₃复合燃料的制备及应用性能朱朝阳,张思,夏德斌,唐泉,邱贤平,杨玉林,范瑞清 (720)

纳米镍粉对改性双基推进剂综合性能的影响袁志锋,李军强,舒慧明,张教强,宋秀锋,高红旭,赵凤起 (729)

HTPE推进剂烤燃试验尺寸效应及数值模拟宋柳芳,李尚文,王拯,武卓,李洪旭 (735)

HAN基电控固体推进剂的热分解和电导率特性鲍立荣,张伟,陈永义,陈苏杭,沈瑞琪,叶迎华 (743)

石墨烯基联四唑含能配位聚合物的制备、表征及催化活性张雪雪,吕杰尧,何伟,陈书文,杨志剑,严启龙 (749)

铝镁贫氧推进剂中铝颗粒团聚特性李连波,陈雄,周长省,朱敏,赖华锦 (759)

研究论文

ADN的溶解度、结晶介稳区及诱导期的测定刘欣玉,孙杰,罗义芬,王灵宇,龚俊波,董伟兵 (766)

短切碳纤维爆炸分散特征及云团参数变化规律实验研究刘志龙,王玄玉,姚伟召,董文杰,白海涛 (773)

一种无起爆药撞击火帽的输出特性彭加斌,魏领,王雪艳,刘帅,常昕,张虎 (779)

定应变加速老化条件下HTPB衬层交联密度老化模型杜永强,郑坚,支建庄,张晓 (786)

乳化炸药中空功能微囊的制备方法 & 性能表征程扬帆,方华,刘文近,韩体飞,龚悦,陶臣,姚雨乐,沈兆武 (792)

研究快报

3,5-双(二硝甲基)-1,2,4-三唑的双胍基脲盐的合成与性能霍欢,翟连杰,郭涛,毕福强,王子俊,王伯周 (801)

第10期

特邀 非冲击点火 专栏

非冲击点火

糖颗粒对HMX和RDX两种单质炸药非冲击点火的影响张钊,吴艳青 (805)

初始裂纹对高聚物粘结炸药低速撞击点火影响数值模拟研究刘睿,韩勇,代晓淦,李明,王军 (812)

炸药燃烧产物驱动裂纹动态扩展耦合特性尚海林,马骁,程赋,李涛,傅华 (819)

SHPB实验加载方式对PBX炸药力学响应的影响研究李俊玲,王硕,傅华,谭多望,卢芳云 (824)

一种Ni-Cr@Al/CuO钝感含能元件的制备及性能杨腾龙,沈云,代骥,郑国强,王成爱,叶迎华,沈瑞琪 (830)

研究论文

瞬态电压抑制二极管对半导体桥换能元电爆特性影响的模拟王军,李勇,卢兵,周彬,陈厚和,黄亦斌 (837)

原位红外光谱研究CL-20分子骨架内外基团的温度响应规律赵 浪, 孙 杰, 睢贺良, 于 谦, 银 颖 (845)

冷压成型压力对HMX基PBX微结构影响的SANS研究
..... 白亮飞, 田 强, 屠小青, 闫冠云, 孙光爱, 龚 建, 何冠松, 陈 良, 黄石亮, 李新喜, 刘 渝 (853)

HMX基含铝炸药装药慢烤缓释结构设计及验证沈 飞, 王胜强, 王 辉 (861)

多孔核壳结构Ni@C纳米棒的制备及其对高氯酸铵热分解催化性能的影响
.....李 丽, 柯 香, 安 亭, 宋振伟, 王 宁, 郝嘎子, 姜 炜 (867)

基于GO法的单输出爆炸逻辑网络系统可靠性分析杨小玉, 李燕华, 温玉全, 范富博 (875)

◆ 综述

HMX分子与晶体结构性能研究进展田贝贝, 陈丽珍, 张朝阳 (883)

◆ 读者·作者·编者

专栏导言及客座编审简介(前插一) 2020年专刊/专栏征稿(前插二)

第 11 期

特邀 安全弹药 专辑

◆ 含能快递(893)

◆ 观点

关于低敏感发射药与装药技术的思考与建议肖忠良, 梁 昊 (894)

◆ 研究论文

DNTE/HATO混合体系安全性及分子动力学模拟王 浩, 高 杰, 陶 俊, 罗一鸣, 蒋秋黎 (897)

TKX-50基混合炸药的爆轰及安全性能刘佳辉, 范桂娟, 卢校军, 徐 容, 杨光成, 杨志剑 (902)

AP对HATO热分解影响的机制张 坤, 陶 俊, 王晓峰, 常 静, 毕福强, 姜 帆, 杨 雄 (908)

微纳米CL-20颗粒级配对低共熔DNAN/TNT基熔铸炸药性能的影响
..... 宁 可, 张 哲, 肖 磊, 郭双峰, 苟兵旺, 杨超煜, 胡玉冰, 郝嘎子, 姜 炜 (915)

DNAN及TNT基熔铸炸药综合性能比较朱道理, 周 霖, 张向荣, 杏若婷 (923)

TATB/CL-20复合装药结构的3D打印成型技术黄 璠, 王 军, 毛耀峰, 徐瑞娟, 曾贵玉, 杨志剑, 聂福德 (931)

DAAF基不敏感PBX的热安全性武碧栋, 解佳妮, 李旭阳, 刘淑杰, 安崇伟, 王晶禹 (936)

FOX-7基浇注型PBX安全性能谢 虬, 王述存, 黄 川, 刘 涛, 郑保辉, 黄靖伦, 李尚斌 (942)

仿生聚多巴胺对HMX、TATB和铝粉的界面性能改性祝 青, 吴束力, 肖 春, 谢 虬, 李尚斌, 罗 观 (949)

圆柱形带壳推进剂装药枪击响应特性崔 浩, 郭 锐, 毛晓翔, 许进升, 顾晓辉, 刘荣忠, 宋 浦 (955)

降低丁羟高燃速推进剂机械感度研究庞爱民, 刘 学 (961)

双核二茂铁衍生物对超细AP/DFD体系机械感度的影响机制周 星, 张 炜, 邓 蕾, 姜本正, 周俊红, 杨 军 (967)

◆ 综述

国外钝感弹药危害缓解设计的原理和方法黄亨建,陈科全,陈红霞,陈翔,宋乙丹,路中华,李兴隆,寇剑锋 (974)

◆ 读者·作者·编者

专辑导言(前插一) 2020年专刊/专栏征稿(前插二)

第12期

特邀 弹药贮存延寿 专栏

◆ 观点

通用弹药储存可靠性研究面临的问题及对策穆希辉,赵晓东 (981)

◆ 弹药贮存延寿

自然温度环境贮存固体推进剂的老化等效温度研究池旭辉 (984)

二苯胺对硝化棉的等温热分解动力学的影响罗利琼,柴作虎,金波,黄琼,楚士晋,彭汝芳 (991)

布氏压力计法评估炸药寿命的判据研究陈捷,熊鹰,睢贺良,于谦,池钰,孙杰,徐瑞娟,陈建波 (998)

导弹贮存延寿试验关键技术及研究进展王浩伟,滕克难,吕卫民 (1004)

低场核磁共振技术在火炸药老化性能评估中的应用杜姣姣,贾林,王芳芳,于思龙,王琼,常海,张林军 (1017)

◆ 研究论文

1,4-二氨基-3,6-二硝基吡唑[4,3-c]并吡唑的制备及热分解机理李亚南,胡建建,陈涛,张义迎,王彬,常佩,王伯周 (1025)

3-氨基-3'-硝胺基-5,5'-联-1H-1,2,4-三唑的合成与表征王霆威,李燕,陈东,张祺,朱顺官 (1031)

3,5-二硝基-3,5-二氮杂庚烷合成与性能陈斌,刘亚静,高福磊,汪营磊,陆婷婷 (1036)

双叠氮直链醚增塑剂的合成与性能丁峰,汪伟,赵宝东,汪营磊,高福磊,陈斌,刘卫孝 (1043)

微米铝粉的热氧化过程研究刘庆,陈林泉,周禹男,苑继飞,王健儒,刘建忠 (1050)

约束HMX基PBX炸药裂缝中燃烧演化实验尚海林,杨洁,李涛,傅华,胡海波 (1056)

宽温域环境JB-9014炸药爆轰波波阵面曲率效应实验郭刘伟,刘宇思,黄宇,张旭,郑贤旭 (1062)

◆ 读者·作者·编者

专辑导言(前插一) 2020年专刊/专栏征稿(前插二) 向审稿人致谢(1049) 《复合推进剂燃速模拟计算》新书简介(·22·)

2019年(第27卷)总目次 (·1·)

ANNUAL CUMULATIVE CONTENTS OF CHINESE JOURNAL OF ENERGETIC MATERIALS (Vol. 27, 2019)

No. 1

Propellant

- | | | |
|----|---|---|
| 1 | YE Zhen-wei, YU Yong-gang | Numerical Simulation of 2D AP/HTPB Flame Structure Under Spinning Conditions |
| 9 | WANG Wei, HAN Shi-min, ZHANG De-liang,
XUE Jin-qiang, WANG Bo, XU Yan-lu, SHANG Bing-kun | Properties of Polyglycidyl Nitrate Plasticizer |
| 14 | WANG Yang, LI Gao-chun, WANG Yu-feng,
SHI Xiao-qiang, HAN Yong-heng | Deformation Field Measurement and Failure Mode Analysis of Mixed Mode Crack Tip of HTPB Propellant |
| 21 | Ahmed M Enew, Ehab Abadir, Sahar Elmarsafy,
Karim K Elsharkawy | Effects of Plasticizers, Antioxidants and Burning Rate Modifiers on Aging Performance of the HTPB/HMDI Composite Solid Propellant |
| 28 | GAO Xin, ZHU Zuo-ming, GAO Ying, GENG Kui,
WANG Qing-bo, HAN Jun-jie, LIU Xiang-xuan | Photocatalytic Degradation of UDMH Wastewater by TiO ₂ NRAs/CdS/Au Composite Thin Films |
| 35 | HUANG Dan, LIU Xiang-xuan, WANG Xuan-jun,
YANG Yu-xue, MU Xiao-gang | Mechanism of Forming Nitrosodimethylamine by Oxidation of Unsym-dimethylhydrazine in the Atmosphere |

Articles

- | | | |
|----|---|---|
| 41 | LI Jie, MA Qing, TANG Shui-hua, FAN Gui-juan | Crystal Structure and Thermal Decomposition Properties of <i>N,N'</i> -Bis(2-fluoro-2'-dinitroethyl)-3,4-dinitraminefurazan |
| 47 | WU Min-jie, BI Fu-qiang, ZHANG Jia-rong,
ZHAI Lian-jie, LI Xiang-zhi, ZHOU Yan-shui,
WANG Bo-zhou | Synthesis and Characterization of Three Low Melting Point Energetic Compounds Based on Bisisoxazole |
| 53 | QI Dong-liang, LUO Qing-ping, CUI Peng-teng,
LI Zhao-qian, DUAN Xiao-hui, PEI Chong-hua | Preparation of Nano-FOX-7 by Solvent-non-solvent Method and Its Properties |
| 60 | LI Qian-bing, AN Chong-wei, XU Chuan-hao, GUO Hao,
WANG Shuang, LIU Bin, YE Bao-yun, WANG Jing-yu | Design of Viton/PVA Binder Emulsion and its Application in Explosives Ink |
| 68 | LIU Hai-qing, DUAN Zhuo-ping, LI Shu-rui,
OU Zhuo-cheng, BAI Zhi-ling, HUANG Feng-lei | Influence Rule of Quasi-isentropic Loading Characteristics on the Initiation of PBXC03 Explosive |
| 74 | YUAN Hong-wei, ZHAO Long, DONG Tian-bao,
YAN Xi-lin, TANG Wei | Applicability Analysis of Hyperbolic Drucker-Prager Strength Criterion for TATB-based PBX |

Reviews

- 79 CHEN Qing-chou, MA Tao, LI Yong **Research Progress in the Function Mechanism of Exploding Foil Initiator**

No. 2

89 Energetic Express

Efficient Destruction

- 90 HUANG Xuan-ning, LI Wei-bing, CHENG Wei, WANG Xiao-ming, LI Wen-bin **Feasibility of the Formation of Long Rod-shaped Compacted Explosively Formed Penetrator by Cone-arc Liner**
- 97 LI Yuan, ZHAO Qian, XIONG Shi-hui, WEN Yu-quan **Numerical Modeling on lethality of a Faceted Prismatic Warhead**
- 104 WANG Xue-fei, YIN Jian-ping **Numerical Simulation Analysis of the Influence of Cone Angle on EFP Forming with PELE Effect**
- 113 WANG Zhi-gang, GUO San-xue **Simulation of Non-lethal Efficiency of Tear Bomb Aerosol Smoke Based on Gaussian Diffusion Model**

Articles

- 119 ZHANG Yu, XU Zi-shuai, RUAN Jian, WANG Xiao-long, ZHANG Lu-yao, LUO Jun **Preparation of MNX from DPT Through Nitrolysis-nitrosolysis Reaction in $\text{CH}_3\text{NH}_2 \cdot \text{HCl}$ /Fuming Nitric Acid System**
- 125 YANG Hang, FENG Zhi-cun, GUAN Xiao-ge, XU Kang-zhen, SONG Ji-rong, ZHAO Feng-qi **Synthesis, Crystal Structure and Thermal Behavior of Methyleneamino-nitroguanidine (MANG)**
- 131 JIAN Xiao-xia, SONG Yu-fang, ZHAO Meng-hui, LIANG Yi, ZHOU Wei-liang, XIAO Le-qin **Preparation and Performance of Self-healing Binder Based on GAP**
- 137 LI Ping, AODENG Gao-wa, LI Chun-zhi, DUAN Xiao-hui, PEI Chong-hua **Construction and Thermal Decomposition Kinetics of the Keel-like Nanostructure TATB**
- 144 XU Wei, DAI Ji, XU Jian-bing, SHEN Yun, YE Ying-hua, SHEN Rui-qi **Electro-explosion and Ignition Performance of the RuO_2 Ignition Bridge**
- 149 NI De-bin, YU Guo-qiang, SHI Sheng-nan, XU Dong, CHEN Li-kui, ZHU Ya-hong, WANG Pei-yong **The Gap Ignition Performances of Semiconductor Bridge Based on Al/CuO_x Multilayer Films**
- 155 FU Shuai, SHEN Rui-qi, ZHU Peng, YE Ying-hua, MA Hong-ling **Characteristics and Laws of Energy Release for Multilayer Al/Ni RMFs Under Capacitive Discharge Excitation**
- 162 WEN Xiao-yan, SU Peng-fei, PAN Qing, DONG Xiao-hu, YANG Jian-ming **Detection Method of the Main Components in Modified Composition B by Near Infrared Spectroscopy**

Reviews

- 167 YANG Zhi, ZHU Peng, XU Cong, ZHANG Qiu, QIN Xin, SHEN Rui-qi **Review on Micro Chip Exploding Foil Initiator and Its Planar High-voltage Switch**

No. 3

177 Energetic Express

Damage and Ignition

- 178 SUN Bao-ping, DUAN Zhuo-ping, LIU Yan, PI Ai-guo, HUANG Feng-lei **Numerical Simulation on Damaged Charge Ignition by Fragment Impact**
- 184 WEN Yu-shi, WEN Wen, DAI Xiao-gan, WEN Mao-ping, LONG Xin-ping, ZHENG Xue, YAO Kui-guang, HE Song-wei, LI Ming **Influence Mechanism of Phase Transition and Micro Cracks on Impact Sensitivity of HMX Crystal at High Temperature**
- 190 LIU Chen, LAN Lin-gang, CHEN Hua, TANG Ming-feng, GAN Hai-xiao, LI Ming **Opening Mode Crack Initiation and Propagation Behavior of TATB-based PBX**
- 196 LIU Ben-de, CHEN Hua, ZHANG Wei-bin, ZHANG Cai-xin, LIU Chen **Impact Damage Characteristics of TATB-based Polymer Bonded Explosive Under Confining Pressure Based on the CT Image Sequences**

Gun Propellant

- 202 ZHAO Xiao-liang, ZHANG Xiao-bing **Internal Perforation Erosive Burning and Flow Characteristics of Tubular Propellant**
- 210 ZHANG Shuo, DING Ya-jun, YING San-jiu **Fabrication and Mechanical Properties of Micro-porous NCTEGNRDX Composites**
- 216 LIU Bing-xin, HAN Kun-xiang, SUN Zhi-yang, CHEN Peng-peng, ZHANG Zhi-fang, LIU Da-bin, QIAN Hua **Explosion-elimination of Gaseous Nitroglycerin During the Production Process of Tri-base Gun Propellant**

Articles

- 220 LIU Yang, SHEN Cheng, LU Ming **Synthesis Optimization and Properties of TKX-55**
- 225 LI Xiang-zhi, BI Fu-qiang, ZHOU Cheng, ZHOU Qun, WANG Bo-zhou **Synthesis, Thermal Behavior and Crystal Morphology of Potassium Dinitroacetonitrile**
- 230 LI Hua-rong, YANG Yong-lin, ZONG He-hou, YU Hai-jiang **Crystal Structure and Mechanical Properties of α -DNAN Under Temperature-Pressure Coupling**
- 236 GAO Feng, MENG Zi-hui, LIU Wen-fang, LI Zhi-xue, WANG Ming-hui **Analyzing Crystal Form Purity of Hexanitrohexaazaisowurtzitane (CL-20) by Raman Spectroscopy**
- 242 WANG Hao-yu, CHU En-yi, HONG Jin, HE Ai-feng, CAO Chun-qiang, JING Bo, MA Yue, HU Ya-dong **Laser Initiation BNCP Driven by Super Capacitor**

- 249 CHEN Hao, GAO Xin-bao, XU Xing-chun, ZHANG Qian, ZHANG Kai-chuang **Middle and Far Infrared Interference Properties of CNT/Graphene/Carbon Composites Smoke Screen**
- Reviews**
- 255 WANG Zhi-hao, LI Yong, QIN Wen-zhi, GAO Yuan, JIANG Xiao-hua, WANG Liang, HE Bi **Research Progress in the Flight Characteristics of Laser-driven Flyer**

No. 4

- 265 **Energetic Express**
- Prospective**
- 266 YAN Qi-long **Comments on Criteria for Evaluation of Combustion Catalysts in Solid Propellants**
- 270 ZHANG Wei **Mechanical Property Prediction for Composite Solid Propellants Based on Genetic Engineering of Materials**
- Articles**
- 274 QIANG Hong-fu, WANG Zhe-jun, WANG Guang, GENG Biao **Failure Criteria of Three-component HTPB Composite Solid Propellant at Low Temperature Under Dynamic Loading**
- 282 YANG Xiao-long, WEI Zhi-jun, ZHANG Ze-lin, ZHANG Jing-jia, WANG Jia-xing **Effect of High Voltage Electric Fields on the Combustion Characteristics of PMMA**
- 290 JIN Bing-ning, LIU Pei-jin, WEI Shao-juan **Experiments on the Characteristic of the Nonlinear Combustion Response Functions of Solid Propellants**
- 297 LI Jun-qiang, PANG Wei-qiang, WANG Ke, XIAO Li-qun, XU Hui-xiang, FAN Xue-zhong, ZHANG Chong-min **Effect of ADN/GUDN Dual Oxidizers on the Combustion Features of Nitrate Ester Plasticized Polyether Solid Propellants**
- 304 WEI Xiao, LIU Jian-zhong, ZHOU Yu-nan, YUAN Ji-fei, ZOU De-rong **TG-FTIR Study on Waste Propellants for Enhanced Combustion of Anthracite**
- 311 LI Xiao-jiang, REN Zhi, LIU Meng, LI Jun-qiang, WU Xiong-gang **Effect of the Temperature on the Curing Process of Interstitial-casted XLDB Propellant**
- Reviews**
- 317 PANG Ai-min, ZHU Zhao-yang, XU Xing-xing **Recent Progresses on Synthesis and Evaluation of AlH_3**
- 326 Sabrina Hanafi, Djalal Trache, Slimane Abdous, Zineddine Bensalem, Abderrahmane Mezroua **5-Nitro-1,2,4-triazole-3-one: A Review of Recent Advances**

- 348 WU Shi-xi, ZHANG Tian-fu, ZHOU Chong-yang,
LI Xiao-ping, HU Qi-wei **Recent Advances on Applications of New Energetic Ingredients in HTPB Composite Solid Propellants**

No. 5

Calculation and Simulation

- 357 GAO Si-meng, LIU Ying-qi, KANG Zhi-hong,
LIU Nan-nan, GU Di, WANG Bao-hui **Theoretical Investigations on a Binary Energetic Nitrogen-rich Compound PN_3**
- 363 LIU Yu-di, CAO Hong-song, LIU Sheng, ZHANG Heng,
ZHANG Xiao-dong, XIE Feng **Numerical Simulation of the Internal Crystalline Structure of TNT Melt-Cast Explosive**
- 371 LIU Jing, YU Yong-gang **Numerical Prediction of Fast Cook-off Characteristics for Modular Charges**
- 377 LI Jing, JIN Shao-hua, XU Zi-shuai, WU Na-na,
LAN Guan-chao, CHEN Shu-sen, WANG Dong-xu **Simulation of the Dissolution Characteristics of RDX in Ethyl Acetate-Water Binary Mixed Solvent**
- 385 HUANG Yu-ping, CUI Qing-zhong, XU Yang,
CHEN Ming-hua, WU Xing-yu **Numerical Simulation for the Process of Breaking Explosives by High Pressure Water Jet**

Articles

- 392 LIU Yan-hua, SHAO Zi-qiang, ZHANG Xin-fang,
YUAN Jing-jing, PENG Huan, SUN Jian-gang,
ZHAO Li-bin, ZHANG Ren-xu **Preparation of High-performance CNA and Its Application in HMX-based Mixed Explosives**
- 398 WANG Yin, WANG Fei, HU Song-qi, LIU Lin-lin, LIU Hui **Mechanical Property of Paraffin/HTPB Fuel**
- 404 SUN Wen-xu, LUO Zhi-heng, LI Ming, LIU Tong,
HUANG Heng-jian, ZHANG Ding-guo **Influence Rule of End Face Friction on Static Compressive Strength of Polymer Bonded Explosive (PBX)**
- 410 DUAN Xiao-chang, SUN jie, LIU Ying-bin,
CHANG Shuang-jun, ZHAO Long, YUAN Hong-wei,
TANG Wei **Uniaxial Quasi-static Stress-strain Relationship of TATB-based PBX Based on SVM Algorithm**
- 417 QIN Xin, ZHU Peng, XU Cong, YANG Zhi, ZHANG Qiu,
SHEN Rui-qi **Characterization of High-Voltage Capacitor Discharge Unit Based on MOS Controlled Thyristor**
- 426 YIN Guo-fu, ZHANG Jin-cheng, REN Xi, HAN Ke-hua,
LI Li-ming **Design and Feasibility of an Addressable Initiation Network System**

Reviews

- 434 TIAN Qiang, YAN Guan-yun, BAI Liang-fei, LIU Jia-hui,
CHEN Ke-ping, LIN Cong-mei, CHEN Hua,
DUAN Xiao-hui, LIU Yu, LI Jing-ming, CHEN Bo **Progress in the Applied Research of Small-angle Scattering Technique in Polymer Bonded Explosives**

No. 6

Prospective

- 445 PENG Cui-zhi **Additive Manufacturing for Energetic Materials: Emerging Precision Loading & Efficient and Safe Preparation Technology**

Invited Column on Electrical Explosion

Electrical Explosion

- 448 ZHANG Qiu, CHEN Kai, ZHU Peng, XU Cong, QIN Xin, YANG Zhi, SHEN Rui-qi **Design, Fabrication and Ignition Performance of LTCC Exploding Foil Initiation Chip**
- 456 YANG Shuang, SUN Xiu-juan, WANG Wan-jun, FU Qiu-bo **Plasma Spectrograph and Driving Flyer Properties of Electrically Exploded Ni/Cu Multilayers**
- 465 XU Cong, HU Bo, ZHU Peng, YE Ying-hua, SHEN Rui-qi **Conduction Mechanism of the Single Shot Switch Based on Electro-explosion of Diode**
- 473 WANG Wan-jun, SUN Xiu-juan, ZHANG Lei, LEI Fan, GUO Fei, YANG Shuang, FU Qiu-bo **Sub-microsecond Interferometry Diagnostic and 3D Dynamic Simulation of the Bridgewire Electrical Explosion**
- 481 ZHAO Li-jun, YI Tao, ZHU Hong-na, FU Qiu-bo, SUN Xiu-juan, YANG Shuang, ZHENG Wan-guo, JIANG Shao-en **Electromagnetic Pulse Effect During the Bridge Wire Electric Explosion**

Propulsion and Projection

- 487 ZHAO Yu-hua, YANG Wei-tao, YAN Wen-rong, ZHANG Jiang-bo, XIAO Xia **Numerical Simulation of the Interior Ballistic Performance for Partially Cut Multi-perforated Stick Propellants**
- 493 WEI Shui-ai, SUN Lei, LI Wen-hai, LI Chun-guang, BAI Chun-hua **Electrostatic Performance Test and Risk Assessment of Propellant Mixing Process**
- 501 E Xiu-tian-feng, PAN Lun, ZHANG Xiang-wen, ZOU Ji-jun **Synthesis and Performance of High-density and High-thixotropy Gelled Hydrocarbon Fuels**
- 509 SHAO Ming-wang, WANG Jian, QIAO Xiao-lin, LI Xing-gang, ZHAO Hui **Theory of Friction Sensitivity of Solid Propellants Based on Center Composite Design of Response Surface**
- 516 CHEN Shuang, KANG Ying, HU Yin, NING Yan-li, SUO Zhi-rong **Determination of Anionic Impurities in Triethylene Glycol Dinitrate (TEGDN) by Preparative Liquid Chromatography-Ion Chromatography Method**

Explosion and Damage

- 521 FENG Shun-shan, ZHAO Yu-feng, BIAN Jiang-nan, ZHOU Tong **Deflagration Failure of Explosive Cased Charge Under Impact of Kinetic Energy Penetrators**
- 528 SI Kai, LI Xiang-dong, ZHOU Lan-wei, CHEN Xing **Design and Optimization of Directional and Focusing Multi-EFP Warhead**
- 535 LIXing-long, CHENKe-quan, LUZhong-hua, GAODa-yuan, LÜ Sheng-tao, KOU Jian-feng, YANG Sha **Numerical Simulation of the Influence of Charge-shell Mass Ratio on the Damage Power of Anti-armor and Anti-personnel Composite Warhead**

No. 7

541 Energetic Express

Invited Column on Biosafety of Energetic Materials

Biosafety of Energetic Materials

- | | | |
|----------------|---|--|
| 542 | SUN Hui-min, BAI Hong-juan, ZHANG Qing | Degradation of <i>p</i> -nitrophenol by <i>Rhodobacter Spheroides</i> and Optimization of Response Surface Methodology |
| 550 | BAI Hong-juan, ZHAO Ting-ting, KANG Peng-zhou, GAO Li | Degradation Pathway of HMX and the Property of Crude Enzyme Produced by <i>Rhodobacter sphaeroides</i> |
| 558 | WEI Tong, ZHOU Yang, YANG Zhi-lin, YANG Hong | Progress of Toxicity Effects and Mechanisms of Typical Explosives |
| 569 | ZHANG Hui-jun, ZHU Yong-bing, ZHAO San-ping, HUANG Hui-hui, NIE Ya-guang, LIU Xiao-dong | A Review on Environmental Behavior and Fate of Explosives in Multiphase Interfaces |
| Article | | |
| 587 | LI Xiao-dong, ZHANG Xi-ming, YANG Wu, SUN Hong-yan, SONG Chang-gui, WANG Jing-yu | Preparation and Property Characterization of CL-20/FOX-7 Polymer Bonded Explosive |
| 594 | WANG Xi-jie, BI Fu-qiang, LIAN Peng, LIU Ning, WANG Bo-zhou | A Novel Unsymmetrical Furazan Ether 3-Azido-3'-nitrodifurazanyl Ether (ANFO): Synthesis and Quantum Chemistry Studies |
| 603 | WANG Xiao-chuan, LU Xian-ming, MO Hong-chang, XU Ming-hui, SHU Yuan-jie, LIU Ning | Synthesis and Curing of Tri-functionality NIMMO-THF Copolyether Energetic Binder |
| 609 | WU Ke-lin, YANG Hong-wei, CHENG Guang-bin | Crystal Structure and Thermal Stability of 3-(5'-Amino-3'-diazenyl-1',2',4'-oxadiazol)-5-one-1,2,4-oxadiazol (BAKIF) and 3,3'-Azo-1,2,4-oxadiazol-5,5'-dione (BDKIF) |
| 616 | YAO Bing-jie, ZHENG Xiao-dong, LÜ Ying-di, TANG Wang, JIANG Jun, QIU Shao-jun | Preparation of Cu/Al Composite and Its Effect on Thermal Decomposition Properties of RDX |
| 622 | ZHANG Huai-long, WANG Yong, ZHOU Wei-liang, XIAO Le-qin | Reaction Activity of Terminal Hydroxyl Groups of HTPB, PBT and GAP with Boron at High Shear Rate |

No. 8

Calculation and Simulation

- | | | |
|-----|---|--|
| 629 | BAI Zhi-ling, DUAN Zhuo-ping, WEN Li-jing, ZHANG Zhen-yu, OU Zhuo-cheng, HUANG Feng-lei | A Modified Mesoscopic Reaction Rate Model for Shock Initiation of PBXs |
|-----|---|--|

- | | | |
|-----|--|---|
| 636 | MIAO Shuang, WANG Tao, WANG Yu-ling,
HANG Gui-yun, QI Chun-bao, LU Chang-bing | Theoretical Calculation of the Effect of Crystal Defects on Properties of HMX-based PBX |
| 644 | GUO Rong, YANG Zhi-jian, DUAN Xiao-hui,
PEI Chong-hua | Molecular Dynamics Simulations for Interfacial Interactions and Mechanical Properties of LLM-105 with Polymers |
| 652 | ZHOU Shu-pei, YU Yong-gang | Numerical Analysis of the Effect of Post-combustion on the Tail Flow Field of Base Bleed Equipment in Transient Depressurization Process |
| 661 | XU Wei-zheng, WU Wei-guo | Study on Numerical Calculation of Explosion Field in Closed Space Considering After-burning Effects |

Article

- | | | |
|-----|---|---|
| 671 | ZHOU Yi, WEI Jie, LÜ Yan-yan, FAN Hao-yu, WU Xue,
ZHAO Li-bin, ZHANG Ren-xu, SHAO Zi-qiang | Enhancement of Nitrocellulose Membrane by Bamboo Pulp Cellulose Nanofiber |
| 679 | YANG Yang, DUAN Zhuo-ping, ZHANG Lian-sheng,
HUANG Feng-lei | Detonation Performance of Two DNAN Based Aluminized Explosives |
| 685 | ZHU Yan-long, AN Jing, DING Li, BI Fu-qiang,
ZHOU Jing, LIANG Yi | Research on Thermal Decomposition of Dihydroxylammonium 5,5'-Bistetrazole-1,1'-diolate (TKX-50) by Decoupling Method |
| 692 | ZHANG Yun-feng, LIU Guo-qing, LI Chen,
SHI Dong-mei, ZHANG Yu-ling, ZHEN Jian-wei | Shock Energy Release Characteristics of Novel Metastable Alloy Materials |
| 698 | SUN Qi, DONG Qi, YANG Sha, ZHANG Liu-cheng | Effects of Quasi-static Pressure on Dynamic Elastic Response of Spherical Vessels under Internal Blast |

Reviews

- | | | |
|-----|---|---|
| 708 | ZHOU Jing, ZHANG Jun-lin, DING Li, BI Fu-qiang,
WANG Bo-zhou | Progress in the Construction of Cage-like Skeleton Energetic Compounds |
|-----|---|---|

No. 9

Prospective

- | | | |
|-----|-------------------------|---|
| 717 | HU Hong-wei, XIAO Chuan | Array Explosion—A Conventional High Efficiency Damage Technology |
|-----|-------------------------|---|

Solid Propellant

- | | | |
|-----|---|--|
| 720 | ZHU Zhao-yang, ZHANG Si, XIA De-bin, TANG Quan,
QIU Xian-ping, YANG Yu-lin, FAN Rui-qing | Preparation and Application Performance of Al-FeF₃ Composite Fuel |
| 729 | YUAN Zhi-feng, LI Jun-qiang, SHU hui-ming, ZHANG
Jiao-qiang, SONG Xiu-duo, GAO Hong-xu, ZHAO Feng-qi | Effect of Nano-Ni on Overall Properties of Al-CMDB and RDX/
Al-CMDB Propellants |

- | | | |
|-----|---|--|
| 735 | SONG Liu-fang, LI Shang-wen, WANG Zheng,
WU Zhuo, LI Hong-xu | Size Effect and Numerical Simulation of Cook-off Tests for HTPE Propellant |
| 743 | BAO Li-rong, ZHANG Wei, CHEN Yong-yi,
Chen Su-hang, SHEN Rui-qi, YE Ying-hua | Thermal Decomposition and Conductivity Characteristics of HAN-Based Electrically Controlled Solid Propellants |
| 749 | ZHANG Xue-xue, LÜ Jie-yao, HE Wei,
CHEN Shu-wen, YANG Zhi-jian, YAN Qi-long | Graphene-templated Energetic 5,5'-Bistetrazole Coordination Polymers and Their Catalytic Effects on Thermal Decomposition of RDX and AP |
| 759 | LI Lian-bo, CHEN Xiong, ZHOU Chang-sheng,
ZHU Min, LAI Hua-jin | Agglomeration Characteristics of Aluminum Particles in Aluminum-magnesium Oxygen-poor Propellant |

Article

- | | | |
|-----|---|---|
| 766 | LIU Xin-yu, SUN Jie, LUO Yi-fen, WANG Ling-yu,
GONG Jun-bo, DONG Wei-bing | Measurement of Solubility, Metastable Zone and Induction Period of ADN |
| 773 | LIU Zhi-long, WANG Xuan-yu, YAO Wei-zhao,
DONG Wen-jie, BAI Hai-tao | Experimental Study on Explosive Dispersion Characteristics and Variation Laws of Cloud Parameters of Short Carbon Fibers |
| 779 | PENG Jia-bin, WEI Ling, WANG Xue-yan, LIU Shuai,
CHANG Xin, ZHANG Hu | Output Characteristics of a Non-primary Explosive Percussion Primer |
| 786 | DU Yong-qiang, ZHENG Jian, ZHI Jian-zhuang,
ZHANG Xiao | Cross-linking Density Aging Model of HTPB Liner under the Accelerated Aging Condition with Constant Strain |
| 792 | CHENG Yang-fan, FANG Hua, LIU Wen-jin, HAN Ti-fei,
GONG Yue, TAO Chen, YAO Yu-le, SHEN Zhao-wu | Preparation and Application of Functional Hollow Microcapsules in Emulsion Explosives |

Letter

- | | | |
|-----|---|---|
| 801 | HUO Huan, ZHAI Lian-jie, GUO Tao, BI Fu-qiang,
WANG Zi-jun, WANG Bo-zhou | Synthesis and Properties of Diguanylurea 3,5-Bis(dinitromethyl)-1,2,4-triazolate |
|-----|---|---|

No. 10

Invited Column on Non-shock Initiation

Non-shock Initiation

- | | | |
|-----|--|--|
| 805 | ZHANG Zhao, WU Yan-qing | Effect of Sugar Particles on Non-Shock Ignition of Two Kinds of Single Compounds HMX and RDX |
| 812 | LIU Rui, HAN Yong, DAI Xiao-gan, LI Ming, WANG Jun | Numerical Simulation on the Influence of the Initial Crack on Polymer Bonded Explosive Ignition Under Low Velocity Impact |
| 819 | SHANG Hai-lin, MA Xiao, CHENG Fu, LI Tao, FU Hua | Coupling Properties of Crack Penetration Driven by Explosive Burning Products |

- 824 LI Jun-ling, WANG Shuo, FU Hua, TAN Duo-wang, LU Fang-yun **Investigation into the Influences of SHPB Loading Ways on the Mechanical Response of PBX**
- 830 YANG Teng-long, SHEN Yun, DAI Ji, ZHENG Guo-qiang, WANG Cheng-ai, YE Ying-hua, SHEN Rui-qi **Fabrication and Characterization of a Ni-Cr@Al/CuO Insensitive Energetic Element**

Article

- 837 WANG Jun, LI Yong, LU Bing, ZHOU Bin, CHEN Hou-he, HUANG Yi-bin **Simulation of the Influence of Transient Voltage Suppression Diode on the Electro-explosive Performance of Semiconductor Bridge Initiator**
- 845 ZHAO Lang, SUN Jie, SUI He-liang, YU Qian, YIN Ying **Temperature Response Law of the Internal and External Groups of CL-20 Molecule Skeleton by *In-situ* Infrared Spectroscopy**
- 853 BAI Liang-fei, TIAN Qiang, TU Xiao-qing, YAN Guan-yun, SUN Guang-ai, GONG Jian, HE Guan-song, CHEN Liang, HUANG Shi-liang, LI Xin-xi, LIU Yu **SANS Investigation on the Effect of Cold-pressed Forming Pressure on the Microstructure of HMX-based PBX**
- 861 SHEN Fei, WANG Sheng-qiang, WANG Hui **Slow Release Structure Design and Verification of HMX-based Aluminized Explosive Charge Under Slow Cook-off Condition**
- 867 LI Li, KE Xiang, AN Ting, SONG Zhen-wei, WANG Ning, HAO Ga-zi, JIANG Wei **Preparation of Porous Core-shell Structural Ni@C Nanorods and Their Catalytic Properties for Thermal Decomposition of Ammonium Perchlorate**
- 875 YANG Xiao-yu, LI Yan-hua, WEN Yu-quan, FANG Fu-bo **Reliability Analysis of Single Output Explosive Logic Circuit System Based on GO Method**

Reviews

- 883 TIAN Bei-bei, CHEN Li-zhen, ZHANG Chao-yang **Review on Structural Properties of HMX Molecules and Crystals**

No. 11

Invited Issue on Insensitive Munitions

- 893 **Energetic Express**

Prospective

- 894 XIAO Zhong-liang, LIANG Hao **Thoughts and Suggestions on Insensitive Propellant and Charge Technology**

Article

- 897 WANG Hao, GAO Jie, TAO Jun, LUO Yi-ming, JIANG Qiu-li **Safety Performances and Molecular Dynamics Simulation of DNTE/HATO**

- | | | |
|----------------|--|---|
| 902 | LIU Jia-hui, FAN Gui-juan, LU Xiao-jun, XU Rong,
YANG Guang-cheng, YANG Zhi-jian | Detonation and Safety Performance of TKX-50 Based PBX |
| 908 | ZHANG Kun, TAO Jun, WANG Xiao-feng, CHANG Jing,
BI Fu-qiang, JIANG Fan, YANG Xiong | Effect of AP on the Thermal Decomposition Mechanism of HATO |
| 915 | NING Ke, ZHANG Zhe, XIAO Lei, GUO Shuang-feng,
GOU Bing-wang, YANG Chao-yu, HU Yu-bing,
HAO Ga-zi, JIANG Wei | Effects of Particle Gradation of Micro-nano CL-20 on the Properties of Eutectic DNAN/TNT-Based Castable Explosives |
| 923 | ZHU Dao-li, ZHOU Lin, ZHANG Xiang-rong,
XING Ruo-ting | Comparison of Comprehensive Properties for DNAN and TNT-Based Melt-cast Explosives |
| 931 | HUANG Jin, WANG Jun, MAO Yao-feng, XU Rui-juan,
ZENG Gui-yu, YANG Zhi-jian, NIE Fu-de | Preparation of CL-20/TATB Composite Charge Structure by 3D Printing Technology |
| 936 | WU Bi-dong, XIE Jia-ni, LI Xu-yang, LIU Shu-jie,
AN Chong-wei | Thermal Safety of DAAF-Based Insensitive Polymer Bonded Explosives |
| 942 | XIE Xiao, WANG Shu-cun, HUANG Chuan, LIU Tao,
ZHENG Bao-hui, HUANG Jing-lun, LI Shang-bin | Safety Performance of FOX-7 Based Casting PBX |
| 949 | ZHU Qing, WU Shu-li, XIAO Chun, XIE Xiao,
LI Shang-bin, LUO Guan | Bioinspired Improving Interfacial Performances of HMX, TATB and Aluminum Powders with Polydopamine Coating |
| 955 | CUI Hao, GUO Rui, MAO Xiao-xiang, XU Jin-sheng,
GU Xiao-hui, LIU Rong-zhong, SONG Pu | Response Characteristics of Cylindrical Shelled Propellant Charges Under Bullet Impact |
| 961 | PANG Ai-min, LIU Xue | Study on Decreasing the Mechanical Sensitivity of HTPB Propellant with High Burning Rate |
| 967 | ZHOU Xing, ZHANG Wei, DENG Lei, JIANG Ben-zheng,
ZHOU Jun-hong, YANG Jun | Influence Mechanism of Molecular Structure on Mechanical Sensitivity of Fine AP and Double-core Ferrocene Derivative Mixture |
| Reviews | | |
| 974 | HUANG Heng-jian, CHEN Ke-quan, CHEN Hong-xia,
CHEN Xiang, SONG Yi-dan, LU Zhong-hua,
LI Xing-long, KOU Jian-feng | Principles and Methods for Insensitive Munitions Hazard Mitigation Design |

No. 12

Invited Column on Missile Storage and Life-extension Test

Prospective

- | | | |
|-----|---------------------------|---|
| 981 | MU Xi-hui, ZHAO Xiao-dong | Research Progress on Storage Reliability of General Ammunition |
|-----|---------------------------|---|

Missile Storage and Life-extension Test

- 984 CHI Xu-hui **Research on Aging Equivalent Temperature of Solid Propellants Stored at Natural Cycle Temperature**
- 991 LUO Li-qiong, CHAI Zuo-hu, JIN Bo, HUANG Qiong, CHU Shi-jin, PENG Ru-fang **Effects of Diphenylamine on Isothermal Thermal Decomposition Kinetics of Nitrocellulose**
- 998 CHEN Jie, XIONG Ying, SUI He-liang, YU Qian, CHI Yu, SUN Jie, XU Rui-juan, CHEN Jian-bo **Explosive Life Evaluation Criterion by Burdon Method**
- 1004 WANG Hao-wei, TENG Ke-nan, LÜ Wei-min **Review on Key Technologies for Missile Storage and Life-Extension Test**
- 1017 DU Jiao-jiao, JIA Lin, WANG Fang-fang, YU Si-long, WANG-Qing, CHANG Hai, ZHANG Lin-jun **Application of LF-NMR in Aging Property Evaluation of Explosives and Propellants**

Article

- 1025 LI Ya-nan, HU Jian-jian, CHEN Tao, ZHANG Yi-ying, WANG Bin, CHANG Pei, WANG Bo-zhou **Preparation and Thermal Decomposition Mechanism of 1,4-Diamino-3,6-dinitropyrazolo[4,3-c]pyrazole**
- 1031 WANG Ting-wei, LI Yan, CHEN Dong, ZHANG Qi, ZHU Shun-guan **Synthesis and Characterization of 3-Amino-3'-nitroamino-5,5'-bis-1H-1,2,4-triazole**
- 1036 CHEN Bin, LIU Ya-jing, GAO Fu-lei, WANG Ying-lei, LU Ting-ting **Synthesis and Properties of 3,5-Dinitro-3,5-diazaheptane**
- 1043 DING Feng, WANG Wei, ZHAO Bao-dong, WANG Ying-lei, GAO Fu-lei, CHEN Bin, LIU Wei-xiao **Synthesis and Properties of Diazido Linear Ether Plasticizers**
- 1050 LIU Qing, CHEN Lin-quan, ZHOU Yu-nan, YUAN Ji-fei, WANG Jian-ru, LIU Jian-zhong **Thermal Oxidation Process of Micron Zirconium Powder**
- 1056 SHANG Hai-lin, YANG Jie, LI Tao, FU Hua, HU Hai-bo **Experimental Study on Burning Evolution in Confined HMX-based PBX Cracks**
- 1062 GUO Liu-wei, LIU Yu-si, HUANG Yu, ZHANG Xu, ZHENG Xian-xu **Front Curvature Rate Stick Experiment of JB-9014 over a Wide Temperature Range**