

《含能材料》2020年(第28卷)总目次

第1期

◆ 综述

- 含能晶体密度预测的研究进展 王丽莉, 熊 鹰, 谢炜宇, 牛亮亮, 张朝阳 (1)
2,4-二硝基苯甲醚(DNAN)基熔铸炸药研究进展 蒙君斐, 周 霖, 曹同堂, 王亲会 (13)

◆ 爆炸与毁伤

- 内爆炸准静态压力对球形容器弹塑性动态响应的影响 孙 琦, 董 奇, 杨 沙, 张刘成 (25)
PBX模拟材料压剪应力状态下的幂函数M-C强度准则与失效特性 贾 东, 高 洋, 陈勇梅, 周燕良, 郝志明, 黄西成 (32)
Al/PTFE活性材料的动态力学行为和撞击点火特性 李 尉, 任会兰, 宁建国, 刘元斌 (38)
方形坑道内爆炸冲击波传播规律 张玉磊, 王胜强, 袁建飞, 张俊峰, 李尚青 (46)

◆ 推进与发射

- 铝粉对高氯酸盐基电控固体推进剂感度的影响 何志成, 夏智勋, 胡建新, 李 洋 (52)
两种固化剂对PBT弹性体力学性能的影响 丁腾飞, 翟进贤, 郭晓燕, 耿 泽 (56)
中止燃烧方法模拟固体推进剂动态点火冲击过程(英) 张怀龙, 王 勇, 管晓霞, 周伟良, 肖乐勤 (62)

◆ 制备与性能

- 仿生疏液表面对浇注PBX药浆的低黏附性能研究 祝 青, 蒋全萍, 王德海, 郑保辉, 李尚斌, 罗 观 (71)
多频谱复合干扰剂的制备及遮蔽性能 陈 浩, 高欣宝, 张 倩, 李天鹏, 杨 洋 (76)
丙基硝基胍(PrNQ)热化学特性及分解机理(英) 张俊林, 周 静, 霍 欢, 毕福强, 胡怀明, 王伯周 (83)

第2期

◆ 火工品技术

- 基于新型半导体激光系统的B/KNO₃/PF点火特性 郭 伟, 曹金乐, 常仕民, 胡 蓬, 吴立志, 沈瑞琪, 叶迎华 (89)
加速膛对激光驱动飞片速度及形貌的影响规律 覃文志, 王志昊, 何 碧, 高 原, 王 窈, 王 亮 (99)
调制周期对Al/MoO₃反应薄膜热性能和发火性能的影响 倪德彬, 党鹏阳, 徐 栋, 于国强, 陈利魁, 朱雅红, 解战锋, 褚恩义 (105)

- 诱导期法研究过饱和度对 LLM-105 成核的影响★ 单军辉, 周小清, 李洪珍, 刘天生 (841)
 HMX 晶体颗粒微结构的原位变温 X 射线小角散射★ 石 靖, 刘佳辉, 白亮飞, 闫冠云, 段晓惠, 田 强 (848)
 共晶炸药晶体稳定性和爆轰能量提升策略的理论研究★ 李重阳, 黄勇力, 孙长庆, 张 蕾 (854)
 基于研磨过程研究 TNT/NNAP 含能共晶形成机理★ 易镇鑫, 张 宇, 王天平, 张 琳, 朱顺官 (861)
 TKX-50 在甲酸/水混合溶剂中生长形貌的分子动力学模拟★ 周 涛, 陈 芳, 李 军, 曹端林, 王建龙 (865)

◆ 综述

- 炸药晶体结构形态调控——研究进展及发展建议★ 李洪珍 (874)
 含能晶体中分子间相互作用的特点及其启示★ 张朝阳 (889)
 RDX、HMX 及 CL-20 晶体的高温高压相变研究进展★ 鄢 婵, 孙晓宇, 梁文韬, 李相东, 张 洋, 代如成, 王中平, 张增明 (902)

◆ 推进与发射

- 含快燃物 ACP 丁羟推进剂高压燃烧特性和常压火焰结构 孟令超, 卞秀伦, 李建民, 周续源, 郭延佩, 巍 丽, 杨荣杰 (915)
 3D 网状静电纺 NC/GAP/nano-TATB 纤维的表征及热化学性能(英) 罗婷婷, 王 毅, 刘丽霞, 宋小兰 (925)

◆ 环境友好技术

- 亲水色谱-质谱联用分析硝酸羟乙基肼含量 徐林楠, 张学军, 赵 坦, 李 俊, 方 涛 (936)
 球形红细菌降解 PNP 的不同因素影响及代谢机理 白红娟, 孙慧敏, 张 晴 (942)

◆ 读者·作者·编者

- 专栏导言(前插一) 含能材料晶体学团队(前插二)

第 10 期

特邀 损伤与点火 专栏 (特邀★)

- ◆ 含能快递 (951)

◆ 损伤与点火

- 高氯酸盐对 Al-MnO₂ 纳米铝热剂热性能及燃烧性能的影响★ 宋佳星, 郭 涛, 姚 森, 陈嘉琳, 丁 文, 刘晓峰 (953)
 TATB 造型粉颗粒单轴压缩力学性能★ 马寅翔, 刘 晨, 王 慧, 张才鑫, 陈 华, 张伟斌 (960)
 基于多孔介质模型的点火火焰在发射药颗粒床中的传播特性★ 刘 承, 陶如意, 薛 绍, 王 浩 (969)

◆ 计算与模拟

- 高能三唑铜配合物 Cu(DNABT)(NH₃)_{2-x}(NH₂NO₂)_x的结构和性能理论研究 吴琼, 颜高杰, 李启迪, 张泽武, 朱卫华 (112)
外电场中1,4-二硝基咪唑-N-氧化物感度的理论研究 王勇, 任福德, 曹端林, 袁军, 李永祥, 王建龙 (118)

◆ 高品质炸药晶体

- 晶胞内嵌H₂O₂分子的CL-20基主客体炸药的温和制备(英) 余治慧, 徐金江, 孙善虎, 王洪范, 张浩斌, 段晓畅, 朱春华, 王树民, 孙杰 (127)
超细CL-20/HMX共晶的制备、表征及其与推进剂组分的相容性 任晓婷, 卢艳华, 陆志猛, 王青松, 何金选, 丁宁 (137)
喷雾干燥法制备亚微米鞣酸铁/硝胺炸药复合微球及其催化性能 杨利, 李泓润, 宋乃孟, 刘剑超 (145)

◆ 安全性能与评价

- PBX炸药模拟材料正交切削的切削力响应规律 谢凤英, 张中伟, 黄交虎, 刘维, 肖才伟 (151)
RDX热分解特性及HMX对其热稳定性的影响 许亚北, 谭迎新, 曹卫国, 尚伊平, 张孟华, 张伟, 王华煜, 田斌 (157)
利用ZIF-8@Ag复合材料构筑SERS基底及其对痕量TNT的检测 刘毅, 余数温, 何璇, 黄石亮, 刘渝, 李显寅, 王敦举 (164)
制备条件对鞣酸铅催化燃烧活性的影响规律 马文喆, 赵凤起, 杨燕京, 徐抗震, 牛秋成, 赵俊波, 张建侃, 张明 (170)

第3期

◆ 制备与性能

- 3,5-二氨基氧化哒嗪含能衍生物合成及性能 罗义芬, 毕福强, 胡米, 霍欢, 贾思媛, 王伯周 (177)
高氮钝感含能化合物6-((2H-四唑-5-基)-氨基)-1,2,4,5-四唑-3(2H)-酮:π堆积和氢键作用(英) 张聪, 陈湘, 白杨, 郭兆琦, 宋纪蓉, 马海霞 (182)
N-(6-羟基己基)-2-甲氧基-8-硝基苯偶氮基咔唑的合成与三阶非线性光学性能(英) 钟全洁, 郑坚, 张林, 罗炫 (190)
耐热炸药ZXC-20的合成与性能 张行程, 邹芳芳, 高畅, 杨培, 胡文祥, 周秋菊 (198)
球磨法制备高氯酸铵基分子钙钛矿微纳米颗粒及安全性能分析 李昊昊, 曹雄, 王保民, 贾琪, 邓鹏 (203)

◆ 高品质炸药晶体

- 三维纳米结构FOX-7的构筑与热分解性能 刘凯, 王建锋, 李兆乾, 崔鹏腾, 罗庆平, 段晓惠 (208)
FOX-7在DMF/H₂O二元体系中的冷却结晶动力学 刘立媛, 张萌, 赵鑫华, 陈丽珍, 王建龙, 周诚 (215)
高致密球形RDX基浇注炸药的性能 姜洪伟, 赵雪, 芮久后, 钱华, 刘大斌 (223)

◆ 推进与发射

- FOX-7对NC/TMETN基低敏感无烟改性双基推进剂燃烧性能的影响 张超, 王寅虎, 杨立波, 李军强, 何俊武, 王江宁, 陈俊波 (229)
 三元混合溶剂对高氮含量单基发射药性能的影响 喻艾萍, 徐滨, 王彬彬, 廖昕 (235)
 堵孔钝感高能叠氮硝胺发射药的性能 赵强, 刘波, 刘少武, 马方生, 王琼林, 李梓超 (242)

◆ 爆炸与毁伤

- 云爆燃料分散过程窜火机理的数值模拟 贾承志, 张奇 (248)
 基于分装结构的CS刺激剂爆炸分散过程研究 李廷, 梁婷, 李江存, 孙航, 蒋志刚 (255)
 舱内设备对爆载荷毁伤效应影响的对比分析 谭波, 王伟力, 严平, 董军 (261)

◆ 环境友好技术

- 超重力强化非均相催化臭氧矿化苯酚废水的响应面分析与优化 魏兴跃, 吕行, 焦纬洲, 刘有智 (268)

第4期

◆ 综述

- 聚脲弹性体在爆炸防护中的研究进展 冯加和, 董奇, 张刘成, 杨沙, 胡榕希 (277)

◆ 计算与模拟

- AP多粒度级配固体推进剂非稳态燃烧响应模型 金秉宇, 刘佩进, 徐冠宇 (291)
 基于SPH-FEM耦合法切缝药包爆破机理数值模拟 程兵, 汪海波, 宗琦 (300)
 PEG/增塑剂共混物相容性的分子动力学模拟和介观模拟 陈思彤, 董可海, 唐岩辉, 裴立冠, 王鑫, 夏成, 孔令泽 (308)
 八种溶剂体系中HMX晶体形貌的分子动力学模拟和实验研究(英) 王蕾, 陈东, 李洪珍, 段晓惠, 于雁武 (317)

◆ 制备与性能

- 新型内盐N-(2,2-二硝基乙基)氨基胍的合成与性能 赖媛, 潘传鑫, 周婷婷, 段晓惠, 伍波 (330)
 球磨法制备 Fe_2O_3 掺杂纳米铝热剂及其燃烧性能(英) 姜艾锋, 夏德斌, 李梦茹, 林凯峰, 强亮生, 李佳贺, 范瑞清, 杨玉林 (336)
 两种多硝基偶氮苯类含能化合物的合成及其性能 杨晓明, 周铭锐, 林芯羽, 李志敏, 王林, 张同来 (344)

◆ 安全性能与评价

- 液压致裂法在PBX炸药拉伸强度测试中的适用性 颜学坚, 唐维, 袁洪魏, 赵龙, 孙杰, 常双君 (352)
 淹没空化水射流倒空钝黑铝炸药实验研究 张么玄, 廉鹏, 康超, 陈松, 雷靖华, 罗志龙, 李萌, 陈厚和 (358)

第 5 期**特邀 液体燃料与燃烧 专栏 (特邀*)**

- ◆ 含能快递 (365)

◆ 观点

- 对提高液体燃料能量密度的思考* 邹吉军 (366)

◆ 液体燃料与燃烧

- 超支化聚合物稳定的JP-10基铂纳米流体燃料的制备与催化燃烧性能* 吴熙, 何桂金, 郭永胜, 方文军 (369)
 煤直接液化油制备航空航天燃料的工艺研究* 曹宏伟, 李月婷, 王腾达, 张香文, 李国柱 (376)
 含纳米铝颗粒的JP-10凝胶燃料理化及流变性能* 曹锦文, 潘伦, 张香文, 邹吉军 (382)
 航空煤油裂解气的高温自点火延迟特性* 郑祖骏, 万中军, 李萍, 张昌华 (391)
 裂解态正癸烷点火延迟时间的理论研究(英)* 王鸿燕, 裴闪闪, 王莅, 张香文, 刘国柱 (398)
 汽油和柴油掺混燃料的着火特性:高压下的点火延迟实验和反应动力学模型的研究(英)* 李阳 (407)
 乙醇辅助碳氢燃料催化吸热反应* 许国梁, 陈帅, 吴春田, 唐南方, 商庆浩, 丛昱 (416)

◆ 综述

- 高密度高热安定烷基金刚烃燃料的合成及性质研究进展* 谢嘉维, 王晓宇, 潘伦, 史成香, 邹吉军, 张香文 (424)
 自燃型离子液体点火燃烧机制研究进展* 孙常庚, 唐韶坤 (435)

◆ 损伤与点火

- 高聚物黏结炸药CT图像像素级裂纹识别方法研究 张韬, 宗和厚, 陈华, 戴斌, 刘本德, 骆吉洲 (442)
 基于光纤光栅的PBX声发射监测方法 邱芷蕊, 温茂萍, 周红萍, 付涛 (449)
 考虑T应力的PBX裂纹尖端失效区和起裂行为 董天宝, 袁洪魏, 赵龙, 唐维 (456)
 PBX稀疏CT投影PICCS图像重建算法 张建伟, 张才鑫, 陈华, 张韬, 刘晨, 刘丰林 (464)

◆ 安全性能与评价

- 铅、铜盐催化剂对DNTF炸药热分解及烤燃响应特性的影响
 蒋秋黎, 罗一鸣, 杨斐, 巨荣辉, 张蒙蒙, 王玮, 李秉擘 (470)
 RDX基含铝炸药爆炸电磁辐射信号特性实验研究 陈鸿, 何勇, 潘绪超, 焦俊杰, 沈杰, 张江南 (475)

◆ 读者·作者·编者

- 液体燃料与燃烧专栏导言(前插) 更正(474)

第6期

◆ 含能快递 (483)

◆ 推进与发射

- 脲醛树脂/TiO₂复合微球缓蚀剂的制备及性能表征 林少森, 杜仕国, 鲁彦玲, 王海洋 (484)
 四孔长方体发射药的形状函数计算及燃烧性能 许征光, 梁昊, 丁亚军, 肖忠良, 李纯志, 贺云 (491)
 双层包覆对超多孔发射药燃烧性能的影响 张丽娜, 王英博, 南风强, 塘平 (498)
 SC-CO₂辅助高固含量发射药代料挤出加工的流变行为(英) 阮建, 熊奥, 丁亚军, 应三九 (504)
 HTPB推进剂三点弯曲过程试验与数值模拟 伍鹏, 李高春, 王鑫 (514)
 NG/TMETN混合增塑PEG体系的力学、感度及相容性能 陈思彤, 董可海, 夏成, 王鑫, 裴立冠, 唐岩辉 (522)
 烟火药在定容条件下的爆燃p-t曲线仿真 赵象润, 严楠, 李朝振, 闫利伟, 赵变玲, 王德君 (533)

◆ 制备与性能

- 分子钙钛矿含能材料的合成、表征及吸湿性 李宗佑, 曹雄, 李晓霞, 贾琪, 张士旗 (539)
 蜂窝状ZnCo₂O₄的制备及对AP和CL-20热分解行为的影响 李璐璐, 张婷, 李翠翠, 王伟, 庞爱民, 郭兆琦, 马海霞 (544)
 新型含能增塑剂A16对HTPB的增塑性能 肖春, 刘慧慧, 郑保辉, 刘长波, 苗成才, 罗观 (552)

◆ 火工品技术

- 硅基Cu(N₃)₂@CNTs复合含能薄膜的制备与表征 魏海, 刘旭文, 胡艳, 唐惠梁, 叶迎华, 沈瑞琪 (557)
 Zr基非晶合金的燃烧释能特性 尚春明, 施冬梅, 张云峰, 石永相, 余志统, 徐雪涛 (564)
 高压短脉冲作用下HNS-IV型炸药的全发火冲击起爆判据 王万军, 祝明水, 郭菲, 吕军军, 杨爽, 付秋波 (569)

◆ 综述

- 基于聚多巴胺的仿生界面设计在含能材料中的应用研究进展
 林聪妹, 何伟, 巩飞艳, 何冠松, 刘佳辉, 曾诚成, 杨志剑, 严启龙 (576)

第7期**特邀 新型含能材料的合成与性能 专刊 (特邀★)**

◆ 含能快递 (587)

◆ 观点

- 高能致爆基团构筑新型高能量密度材料策略* 王伯周 (588)

◆ 制备与性能

- 五唑非金属盐的氢键作用规律★ 王鹏程, 姜振明, 周新利, 林秋汉, 陆明 (591)
- 高氮含量金属掺杂氮原子簇的液氮冷却-激光溅射生成研究★
..... 丁可伟, 李陶琦, 许洪光, 卜建华, 杨斌, 郑卫军, 葛忠学 (597)
- 4-叠氨基-2,2,6,6-四硝基金刚烷的合成与热稳定性★ 蔡荣斌, 张健, 罗军 (603)
- 一种双配体耐热含能金属有机骨架材料的合成及性能★ 史庆蝶, 苏辉, 李亚琼, 丁宁, 赵超峰, 李生华, 庞思平 (609)
- 红色烟火着色剂 MOF[$\text{Sr}_2(\text{DTDA})(\text{H}_2\text{O})_6$]_n 的制备与性能★ 周金阳, 何浏, 王霆威, 朱顺官, 张祺 (618)
- 5,6-二氨基呋咱并[3,4-b]吡嗪-4,7-二氧化物(DAFPO)的合成、结构及性能★
..... 刘宁, 段秉蕙, 卢先明, 张倩, 王伯周 (625)
- 3,3'-双(2-硝胺基-1,3,4-噁二唑-4-基)-5,5'-联-1,2,4-噁二唑及其含能离子盐的合成及性能★
..... 廖思丞, 邓沐聪, 宋思维, 靳云鹤, 刘天林, 张庆华 (632)
- 5,5'-二氨基-4,4'-二硝胺基-3,3'-联-1,2,4-三唑三氨基胍盐(TAGAT)的晶体结构及爆轰性能★
..... 薛钰冰, 程广斌, 杨红伟 (638)
- 6-甲基-2-叠氨基-5-硝基-嘧啶-4(3H)-酮(AMNP)的合成、晶体结构及性能★ 胡勇, 杨俊清, 张建国 (644)
- 含能增塑剂双(3-叠氨基-2,2-双(叠氮甲基)丙基)丙二酸酯的合成与性能★
..... 赵宝东, 金国良, 刘亚静, 高福磊, 陈斌, 汪营磊, 葛忠学 (650)
- 多硝基3,3,7,7-四(三氟甲基)-2,4,6,8-四氮杂双环[3.3.0]辛烷的合成与性能★
..... 杨童童, 刘洋, 侯晓文, 孟子晖, 徐志斌 (657)
- 4-氨基-1,2,3-三氮唑[4,5-e]呋咱并[3,4-b]吡嗪-6-氧化物的合成及性能
..... 李亚南, 胡建建, 陈涛, 王彬, 常佩, 王伯周 (664)
- 噁二唑硝胺化合物在水中稳定性及其水解机制★ 张祯琦, 马卿, 卢欢唱, 廖龙渝, 范桂娟 (670)
- 1,2-双(5,5'-二硝胺基-1,3,4-噁二唑-2-)乙烷的合成与性能★ 马英杰, 卢艳华, 曹一林, 何金选 (678)
- 新型含能基团偕叠氮硝基熔铸炸药载体AzDNAZ的合成及性能(英)★
..... 贾思媛, 张海昊, 张家荣, 刘愆, 栾杰玉, 毕福强, 王伯周 (685)
- 2,4,6-三硝基-3,5-二氟苯酚热分解动力学★ 杨雷, 刘玉存, 荆苏明 (690)

◆ 综述

- 联吡唑含能化合物合成及性能研究进展★ 罗义芬, 肖川, 毕福强, 李祥志, 王子俊, 王伯周 (695)
- 硼基含能化合物制备方法研究进展 王国栋, 刘玉存, 荆苏明, 刘国庆, 韩瑞连 (707)

◆ 读者·作者·编者

专刊导言(前插一) 客座编审简介(前插二)

第8期**◆ 含能快递** (717)**◆ 计算与模拟**

- 含能五唑离子盐的能量性能预估 许元刚, 李冬雪, 田丽莉, 姜振明, 王鹏程, 陆 明 (718)
丁羟推进剂花板浇注过程数值仿真 江晓瑞, 李 卓, 鲁 荣, 黄大辉 (724)
单模块装药点传火过程中药粒散布模拟试验与仿真 陈 安, 余永刚 (731)
PEG/N-100中增塑剂扩散性能的微观与介观模拟 陈思彤, 董可海, 王 鑫, 裴立冠, 孔令泽, 夏 成 (740)
基于瑞利表面波的曲面PBX表面裂纹深度检测的数值模拟(英) 江 畅, 杨占锋, 李卫彬, 张伟斌, 田 勇 (749)

◆ 制备与性能

- 含不同燃速催化剂的NC/GAP复合球形药的制备与热分解性能 龚庄城, 柴 宽, 吴艳光, 占 煦, 刘爱传, 王文俊 (759)
球形Al-Si合金燃料的制备及其反应特性 闫 石, 潘 兵, 袁庆庆, 王家鹏, 焦清介, 杜风贞 (766)
喷雾干燥前驱体纳米Al悬浮液的制备及分散稳定性 李小东, 孙红燕, 杨 玥, 宋昌贵, 刘慧敏, 王晶禹 (773)
甲烷爆炸初期关键自由基化学发光与爆炸压力的耦合关系分析 李孝斌, 崔沥巍, 张瑞杰, 黄宇翔 (779)

◆ 环境友好技术

- 可移动式液固云爆剂绿色处理装置研究 郑占胜, 胡炳成 (786)
纳米HNS、TATB及LLM-105的RAW264.7巨噬细胞毒性及其机制 唐 灿, 黄 兵, 刘 柳, 范美坤, 周 阳 (792)

◆ 综述

- 含能材料热分解动力学求解及热安全性理论评估的进展 李 陈, 马凤国, 瞿贺良, 于 谦, 银 翠, 孙 杰 (798)
1,1'-二羟基-5,5'-联四唑二羟胺盐(TKX-50)研究进展 熊晓雪, 薛向贵, 杨海君, 张朝阳 (810)

第9期**特邀 含能材料晶体学 专栏 (特邀*)****◆ 含能快递** (817)**◆ 含能材料晶体学**

- CL-20/1,4-DNI共晶形成的热力学* 董海燕, 龙义强, 周婷婷, 伍 波, 段晓惠 (819)
FOX-7在DMSO-EAC混合体系中的结晶热力学* 赵鑫华, 陈丽珍, 王建龙, 韩子豪 (826)
三种联结方式对典型双四唑含能材料晶体结构和性能的影响* 林秋汉, 李 鑫, 王鹏程, 陆 明 (834)

- 典型压装与浇注PBX炸药缝隙挤压损伤-点火响应★ 杨昆, 吴艳青, 金朋刚, 黄风雷 (975)
- Al/Ni类含能结构材料冲击压缩特性细观模拟★ 熊玮, 张先锋, 陈海华, 杜宁, 包阔, 潘梦婷 (984)
- 基于有限元-离散元结合方法的Steven实验三维数值模拟 黄彬彬, 傅华, 喻寅, 刘仓理 (995)
- 空位对五唑阴离子盐Mn(N₅)₂冲击反应和损伤演化的影响★ 姚闻, 杨叶子, 余一, 孙长庆, 张蕾 (1003)
- 基于电磁超声共振的金属环-含能材料界面脱粘缺陷检测★ 周海强, 刘天浩, 裴翠祥 (1010)

◆ 综述

- 含能铝粉表面改性技术研究进展 刘勇, 白海军, 甘巧玉, 景黄丽, 石建波, 王洪波, 黄革, 赵奇志 (1017)
- TATB在不同溶剂中的溶解特性研究进展 贾建慧, 陈建波, 刘渝 (1026)

◆ 读者·作者·编者

- 专栏导言(前插一) 中国工程物理研究院化工材料研究所主办的Energetic Materials Frontiers创刊(前插二)
2021专题预告(后插)

第11期

◆ 含能快递 (1035)

◆ 制备与性能

- 1,2-二(四唑-5-基)乙烷Mg盐和Ca盐的合成、结构与热分析 李新锐, 杨晓明, 李海波, 李志敏, 王林, 张同来 (1036)
- 7-羟基三呋咱并[3,4-b;3',4'-f;3",4"-d]氮杂环庚三烯的合成与性能 翟连杰, 霍欢, 吴敏杰, 张家荣, 毕福强, 王伯周 (1043)
- CL-20基含能薄膜的微双喷直写成型与性能 孔胜, 安崇伟, 徐传豪, 郭浩, 叶宝云, 武碧栋, 王晶禹, 董军 (1048)
- 蝶翅状纳米TiO₂的制备及其对AP热分解的催化性能 周婷婷, 蔡福林, 伍波, 段晓惠 (1054)
- PTFE含量和烧结温度对Al/PTFE复合粒子形貌与燃烧性能的影响 徐闻婷, 杭思羽, 李亚宁, 韩志伟, 王伯良 (1061)

◆ 爆炸与毁伤

- EFP垂直侵彻靶板后效破片云形状描述 黄炫宁, 李伟兵, 郭腾飞, 李文彬, 王晓鸣 (1068)
- 不同炸高爆炸条件地下工程内冲击波传播规律的工程算法 刘飞, 任新见, 何翔 (1076)
- 传爆药柱直径对主装药爆轰成长特性的影响 段英良, 韩勇, 冉剑龙, 刘清杰, 瞿继超, 贾路川 (1083)
- 界面粒子速度法评估雷管输出压力 陈清畴, 李光, 李艺 (1089)

◆ 安全性能与评价

- 超声检测方法研究 HMX 及 TATB 基 PBX 的热循环性能 程 垚, 徐 尧, 李 丽, 肖 盼, 庞海燕, 张伟斌 (1095)
三种典型炸药晶体微塑性与撞击感度的相关性 温茂萍, 付 涛, 唐明峰, 谭凯元, 徐 容, 陈天娜 (1102)

◆ 综述

- 熔铸载体炸药的研究进展 陈 方, 刘玉存, 王 毅, 张庆华 (1109)
咪唑桥连唑类含能化合物的合成与性能研究进展 刘亚静, 赵宝东, 汪营磊, 高福磊, 刘卫孝, 陈 斌 (1120)

第 12 期

◆ 含能快递 (1131)

◆ 制备与性能

- Al/Bi₂O₃-HNIW 复合物的制备及其性能 王志强, 黄寅生, 李 瑞, 毛 立 (1132)
全氯代 NQ 和 FOX-7 的合成 张 理, 白亮飞, 李 昊, 黄嘉伟, 谭红阳, 夏元华, 杨海君 (1140)
CL-20/1,4-DNI 共晶及其晶组分的声子谱和热力学性质的第一性原理研究 郭 蓉, 段晓惠, 李洪珍, 伍 波 (1147)
HMX/TATB 混合炸药中 HMX 与 TATB 组分含量的液相色谱分析 陈 玲, 赵颖彬, 逢小青, 张 勇 (1156)

◆ 推进与发射

- 3,5-二硝氨基-1,2,4-三唑盐晶体结构、热性能及在 CMDB 推进剂中的应用
..... 周 诚, 李吉祯, 李祥志, 屈 蓓, 常 佩, 王伯周, 刘 宁 (1163)
三氨基胍硝酸盐的晶体形貌控制及性能 任晓婷, 李 纲, 王业腾, 丁 宁, 何金选 (1170)
乙醇气液两相云雾最低着火温度 孙楚彦, 孙 航, 张 奇 (1178)
固体火箭发动机水下工作推力特性的实验研究 张 磊, 余湖清 (1184)

◆ 综述

- 电控固体推进剂制备方法及性能研究进展 何志成, 夏智勋, 胡建新, 马立坤 (1190)
硝酸羟胺基绿色推进剂研究进展 鲍立荣, 汪 辉, 陈永义, 张 伟, 张晓军, 黄寅生, 沈瑞琪, 叶迎华 (1200)
含能材料领域的几类颠覆性技术进展 曾贵玉, 齐秀芳, 刘晓波 (1211)

2020 年(第 28 卷)总目次 (·1·)

ANNUAL CUMULATIVE CONTENTS OF CHINESE JOURNAL OF ENERGETIC MATERIALS (Vol. 28, 2020)

No. 1

Reviews

- | | | |
|----|-------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1 | WANG Li-li, XIONG Ying, XIE Wei-yu, NIU Liang-liang,
ZHANG Chao-yang | Review of Crystal Density Prediction Methods for Energetic Materials |
| 13 | MENG Jun-jiong, ZHOU Lin, CAO Tong-tang,
WANG Qin-hui | Research Progress of 2, 4-Dinitroanisole-based Melt-cast Explosives |

Explosion and Damage

- | | | |
|----|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 25 | SUN Qi, DONG Qi, YANG Sha, ZHANG Liu-cheng | Effects of Quasi-static Pressure on Dynamic Elastic-Plastic Response of Spherical Vessels under Internal Blast |
| 32 | JIA Dong, GAO Yang, CHEN Yong-mei, ZHOU Yan-liang,
HAO Zhi-ming, HUANG Xi-cheng | Power Function Mohr-Coulomb Strength Criterion and Failure Characteristics of PBX Simulant Under Compression-Shear Stress State |
| 38 | LI Wei, REN Hui-lan, NING Jian-guo, LIU Yuan-bin | Dynamic Mechanical Behavior and Impact Ignition Characteristics of Al/PTFE Reactive Materials |
| 46 | ZHANG Yu-lei, WANG Sheng-qiang, YUAN Jian-fei,
ZHANG Jun-feng, LI Shang-qing | Experimental Study on the Propagation Law of Blast Waves in a Square Tunnel |

Propulsion and Projection

- | | | |
|----|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 52 | HE Zhi-cheng, XIA Zhi-xun, HU Jian-xin, LI Yang | Effect of Aluminum Powder on Sensitivity of Perchlorate-Based Electrical Controlling Solid Propellant |
| 56 | DING Teng-fei, ZHAI Jin-xian, GUO Xiao-yan, GENG Ze | Effect of Curing Agent Types on Mechanical Properties of PBT Elastomer |
| 62 | ZHANG Huai-long, WANG Yong, JIAN Xiao-xia,
ZHOU Wei-liang, XIAO Le-qin | Simulation Dynamic Shock of Ignition Process on Solid Propellant with Quenched Combustion Method |

Preparation and Property

- | | | |
|----|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 71 | ZHU Qing, JIANG Quan-ping, WANG De-hai,
ZHENG Bao-hui, LI Shang-bin, LUO Guan | Study on Low Adhesive Property of Bioinspired Anti-wetting Surface to Cast PBX Slurry |
| 76 | CHEN Hao, GAO Xin-bao, ZHANG Qian, LI Tian-peng,
YANG Yang | Preparation and Shielding Performance of Multi-spectral Composite Interfering Agent |
| 83 | ZHANG Jun-lin, ZHOU Jing, HUO Huan, BI Fu-qiang,
HU Huai-ming, WANG Bo-zhou | Thermal Properties and Decomposition Mechanism of Propyl-Nitroguanidine(PrNQ) |

No. 2**Pyrotechnics**

- | | | |
|-----|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 89 | GUO Wei, CAO Jin-le, CHANG Shi-min, HU Peng, WU Li-zhi, SHEN Rui-qi, YE Ying-hua | Ignition Characteristics of B/KNO₃/PF Based on Semiconductor Laser System |
| 99 | QIN Wen-zhi, WANG Zhi-hao, HE Bi, GAO Yuan, WANG Yao, WANG Liang | Influence of Barrel Parameters on Velocity and Morphology of Laser-driven Flyer |
| 105 | NI De-bin, DANG Peng-yang, XU Dong, YU Guo-qiang, CHEN Li-kui, ZHU Ya-hong, XIE Zhan-feng, CHU En-yi | Influence of Modulation Period on the Thermal Properties and Firing Properties of Al/MoO₃ Reactive Films |

Calculation and Simulation

- | | | |
|-----|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 112 | WU Qiong, YAN Gao-jie, LI Qi-di, ZHANG Ze-wu, ZHU Wei-hua | Theoretical Study on the Structure and Performance of High-energy Triazole-based Copper Complexes Cu(DNABT)(NH₃)_{2-x}(NH₂NO₂)_x |
| 118 | WANG Yong, REN Fu-de, CAO Duan-lin, YUAN Jun, LI Yong-xiang, WANG Jian-long | Theoretical Prediction of the Sensitivity of 1,4-Dinitroimidazole-N-oxide in the External Electric Fields |

High Quality Explosive Crystals

- | | | |
|-----|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 127 | YU Zhi-hui, XU Jin-jiang, SUN Shan-hu, WANG Hong-fan, ZHANG Hao-bin, DUAN Xiao-chang, ZHU Chun-hua, WANG Shu-min, SUN Jie | A Mild Method for the Construction of CL-20/H₂O₂ Host-guest Energetic Material |
| 137 | REN Xiao-ting, LU Yan-hua, LU Zhi-meng, WANG Qing-song, HE Jin-xuan, DING Ning | Preparation, Characterization of Ultrafine CL-20/HMX Cocrystal Explosive and Its Compatibility With the Components of Propellants |
| 145 | YANG Li, LI Hong-run, SONG Nai-meng, LIU Jian-chao | Preparation and Catalytic Properties of Submicron Iron Tannate /Nitramine Explosive Composite Microspheres from Spray Drying Process |

Safety Performance and Assess

- | | | |
|-----|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 151 | XIE Feng-ying, ZHANG Zhong-wei, HUANG Jiao-hu, LIU Wei, XIAO Cai-wei | Cutting Force Response of Orthogonal Cutting of Polymer Bonded Explosive Simulants |
| 157 | XU Ya-bei, TAN Ying-xin, CAO Wei-guo, SHANG Yi-ping, ZHANG Meng-hua, ZHANG Wei, WANG Hua-yu, TIAN Bin | Thermo-decomposition Performance of RDX and the Effect of HMX on Its Thermo-stability |
| 164 | LIU Yi, YU Shu-wen, HE Xuan, HUANG Shi-liang, LIU Yu, LI Xian-yin, WANG Dun-ju | Construction of SERS Substrates by ZIF-8@Ag Composites and Detection of Trace TNT |
| 170 | MA Wen-zhe, ZHAO Feng-qj, YANG Yan-jing, XU Kang-zhen, NIU Qiu-cheng, ZHAO Jun-bo, ZHANG Jian-kan, ZHANG Ming | Effects of Experimental Conditions on Catalytic Efficiency of Lead Tannate on Combustion of Propellants |

No. 3**Preparation and Property**

- 177 LUO Yi-fen, BI Fu-qiang, HU Mi, HUO Huan, JIA Si-yuan, WANG Bo-zhou **Synthesis and Performance of 3,5-Diaminopyridazine-1-oxide Energetic Derivatives**
- 182 ZHANG Cong, CHEN Xiang, BAI Yang, GUO Zhao-qi, SONG Ji-rong, MA Hai-xia **6-((2*H*-tetrazol-5-yl)-amino)-1,2,4,5-tetrazin-3(*2H*)-one: High-nitrogen Insensitive Energetic Compound Stabilized by π -stacking and Hydrogen-bonding Interactions**
- 190 ZHONG Quan-jie, ZHENG Jian, ZHANG Lin, LUO Xuan **Synthesis and Third-order Nonlinear Optical Properties of *N*-(6-hexanol)-2-methoxy-8-nitroazophenyl Carbazole**
- 198 ZHANG Xing-cheng, ZOU Fang-fang, GAO Chang, YANG Pei, HU Wen-xiang, ZHOU Qiu-ju **Synthesis and Properties of Heat-resistant Explosive ZXC-20**
- 203 LI Hao-min, CAO Xiong, WANG Bao-min, JIA Qi, DENG Peng **Preparation and Safety Performances of Ammonium Perchlorate-based Molecular Perovskite Micro/nano Particles by Ball Milling**

High Quality Explosive Crystals

- 208 LIU Kai, WANG Jian-feng, LI Zhao-qian, CUI Peng-teng, LUO Qing-ping, DUAN Xiao-hui **Construction and Thermal Decomposition Properties of Three-dimensional Nanostructure FOX-7**
- 215 LIU Li-yuan, ZHANG Meng, ZHAO Xin-hua, CHEN Li-zhen, WANG Jian-long, ZHOU Cheng **Cooling Crystallization Kinetics of FOX-7 in DMF/H₂O Binary System**
- 223 JIANG Hong-wei, ZHAO Xue, RUI Jiu-hou, QIAN Hua, LIU Da-bin **Properties of High Density Spherical RDX-based Cast Explosives**

Propulsion and Projection

- 229 ZHANG Chao, WANG Yin-hu, YANG Li-bo, LI Jun-qiang, HE Jun-wu, WANG Jiang-ning, CHEN Jun-bo **Effect of FOX-7 on Combustion Performance of NC/TMETN Based Low-sensitive and Smokeless CMDB Propellant**
- 235 YU Ai-ping, XU Bin, WANG Bin-bin, LIAO Xin **Effect of Ternary Mixed Solvents on the Single-based Propellants with High Nitrogen Content**
- 242 ZHAO Qiang, LIU Bo, LIU Shao-wu, MA Fang-sheng, WANG Qiong-lin, LI Zi-chao **Performance of Plugged and Insensitive High-energy Azidonitrilamine Gun Propellant**

Explosion and Damage

- 248 JIA Cheng-zhi, ZHANG Qi **Numerical Simulation on the Mechanism of Premature-combustion in the Process of FAE Fuel Dispersion**
- 255 LI Ting, LIANG Ting, LI Jiang-cun, SUN Hang, JIANG Zhi-gang **Explosion Dispersion Process of CS Irritant Agent Based on Divided Structure**
- 261 TAN Bo, WANG Wei-li, YAN Ping, DONG Jun **Comparative Analysis of the Damage Effect of Equipments on the Internal Blast Loading in a Cabin**

Environment-friendly Technologies

- 268 WEI Xing-yue, LÜ Xing, JIAO Wei-zhou, LIU You-zhi **Response Surface Analysis and Optimization of High Gravity-enhanced Heterogeneous Catalytic Ozonation for Mineralization of Phenol Wastewater**

No. 4

Reviews

- 277 FENG Jia-he, DONG Qi, ZHANG Liu-cheng, YANG Sha, HU Rong-xi **Review on Using Polyurea Elastomer for Enhanced Blast-mitigation**

Calculation and Simulation

- 291 JIN Bing-ning, LIU Pei-jin, XU Guan-yu **Unsteady Combustion Response Model of Multi-modal Ammonium Perchlorate Composite Propellant**
- 300 CHENG Bing, WANG Hai-bo, ZONG Qi **Numerical Simulation on Blasting Mechanism of Slotted Cartridge Based on Coupled SPH-FEM Algorithm**
- 308 CHEN Si-tong, DONG Ke-hai, TANG Yan-hui, PEI Li-guan, WANG Xin, XIA Cheng, KONG Ling-ze **Molecular Dynamic Simulations and Mesoscopic Dynamic Simulations on the Compatibility of PEG/Plasticizer Blends**
- 317 WANG Lei, CHEN Dong, LI Hong-zhen, DUAN Xiao-hui, YU Yan-wu **Crystal Morphology of β -HMX Under Eight Solvents System Using Molecular Dynamics Simulation and Experiment**

Preparation and Property

- 330 LAI Yuan, PAN Chuan-xin, ZHOU Ting-ting, DUAN Xiao-hui, WU Bo **Synthesis and Properties of New Zwitterionic *N*-(2,2-Dinitroethyl)-aminoguanidine**
- 336 JIANG Ai-feng, XIA De-bin, LI Meng-ru, LIN Kai-feng, QIANG Liang-sheng, LI Jia-he, FAN Rui-qing, YANG Yu-lin **Combustion Performance of Fe_2O_3 -containing Nanothermites Prepared by Ball Milling Method**
- 344 YANG Xiao-ming, ZHOU Ming-rui, LIN Xin-yu, LI Zhi-min, WANG Lin, ZHANG Tong-lai **Synthesis and Properties of Two Kinds of Polynitroazobenzene Energetic Compounds**

Safety Performance and Assess

- 352 YAN Xue-jian, TANG Wei, YUAN Hong-wei, ZHAO Long, SUN Jie, CHANG Shuang-jun **Applicability of Hydraulic Fracturing Method in Tensile Strength Test of Polymer Bonded Explosives**
- 358 ZHANG Yao-xuan, LIAN Peng, KANG Chao, CHEN Song, LEI Jing-hua, LUO Zhi-long, LI Meng, CHEN Hou-he **Experimental Study of Emptying A-IX-II Explosive Using Submerged Cavitation Water Jet**

No. 5**Invited Column on liquid fuel and combustion****365 Energetic Express****Prospective**

- 366 ZOU Ji-jun **Prospectives for Improving the Energy Density of Liquid Fuels***

liquid fuel and combustion

- 369 WU Xi, HE Gui-jin, GUO Yong-sheng, FANG Wen-jun **Preparation and Catalytic Combustion of JP-10 Based Pt Nanofluid Fuels Stabilized by Hyperbranched Polymer***
- 376 CAO Hong-wei, LI Yue-ting, WANG Teng-da, ZHANG Xiang-wen, LI Guo-zhu **Process of Upgrading Direct Coal Liquefaction Oil to Aerospace Fuel***
- 382 CAO Jin-wen, PAN Lun, ZHANG Xiang-wen, ZOU Ji-jun **Physicochemical and Rheological Properties of Al/JP-10 Gelled Fuel***
- 391 ZHENG Zu-jun, WANG Zhong-jun, LI Ping, ZHANG Chang-hua **High Temperature Auto-ignition Delay Characteristics of Pyrolysis Gas of Aviation Kerosene***
- 398 WANG Hong-yan, PEI Shan-shan, WANG Li, ZHANG Xiang-wen, LIU Guo-zhu **Theoretical Study on Ignition Delay Time of Thermally Cracked n-Decane***
- 407 LI Yang **Auto-ignition Characteristics of Gasoline and Diesel Fuel Blends: A High-Pressure Ignition Delay and Kinetic Modelling Study***
- 416 XU Guo-liang, CHEN Shuai, WU Chun-tian, TANG Nan-fang, SHANG Qing-hao, CONG Yu **Ethanol-assisted Catalytic Endothermic Reaction of Hydrocarbon Fuel***

Reviews

- 424 XIE Jia-wei, WANG Xiao-yu, PAN Lun, SHI Cheng-xiang, ZOU Ji-jun, ZHANG Xiang-wen **Progress on Synthesis and Performance of High-Density and High-Thermal-Stability Alkyl Diamondoid Fuels***
- 435 SUN Chang-geng, TANG Shao-kun **Progress on Ignition and Combustion Mechanism of Hypergolic Ionic Liquids***

Damage and Ignition

- 442 ZHANG Tao, ZONG He-hou, CHEN Hua, DAI Bin, LIU Ben-de, LUO Ji-zhou **Research on Pixel-level Crack Extraction Method for CT images of Polymer Bonded Explosives**
- 449 QIU Zhi-wei, WEN Mao-ping, ZHOU Hong-ping, FU Tao **Acoustic Emission Monitoring Method of Fiber Bragg Grating in PBX**
- 456 DONG Tian-bao, YUAN Hong-wei, ZHAO Long, TANG Wei **PBX Crack Tip Failure Zone and Fracture Behavior Considering the T-stress**
- 464 ZHANG Jian-wei, ZHANG Cai-xin, CHEN Hua, ZHANG Tao, LIU Chen, LIU Feng-lin **PICCS Image Reconstruction Algorithm for Sparse CT Projection of Polymer Bonded Explosive**

Safety Performance and Assess

- 470 JIANG Qiu-li, LUO Yi-ming, YANG Fei, JU Rong-hui, ZHANG Meng-meng, WANG Wei, LI Bing-bo **Influence of Lead and Copper Salt Catalysts on the Thermal Decomposition and Cook-off Responses of DNTF**
- 475 CHEN Hong, HE Yong, PAN Xu-chao, JIAO Jun-jie, SHEN Jie, ZHANG Jiang-nan **Experimental Study on Characteristics of Explosive Electromagnetic Radiation Signals of RDX Based Aluminized Explosives**

No. 6

483 Energetic Express

Propulsion and Projection

- 484 LIN Shao-sen, DU Shi-guo, LU Yan-ling, WANG Hai-yang **Preparation and Characterization of Urea-formaldehyde/TiO₂ Composite Microsphere Erosion Inhibitor**
- 491 XU Zheng-guang, LIANG Hao, DING Ya-jun, XIAO Zhong-liang, LI Chun-zhi, HE Yun **Calculation of Shape Function and Combustion Performance of Four-hole Cuboid Gun Propellant**
- 498 ZHANG Li-na, WANG Ying-bo, NAN Feng-qiang, DU Ping **Effect of Double-layer Coating on Combustion Performance of Super-porous Propellant**
- 504 RUAN Jian, XIONG Ao, DING Ya-jun, YING San-jiu **Rheological Behavior of High Solid Content Propellant Substitutes in Extrusion Process Assisted with SC-CO₂**
- 514 WU Peng, LI Gao-chun, WANG Xin **Experimental and Numerical Simulation on the Damage Process of HTPB Propellant at the Crack Tip**
- 522 CHEN Si-tong, DONG Ke-hai, XIA Cheng, WANG Xin, PEI Li-guan, TANG Yan-hui **Mechanical Properties, Sensitivity and Compatibility of TMETN/NG Mixed-plasticizers/PEG Blends**
- 533 ZHAO Xiang-run, YAN Nan, LI Chao-zhen, YAN Li-wei, ZHAO Bian-ling, WANG De-jun **Simulation on *p-t* Curves of Deflagration of Pyrotechnical Compositions Under Constant Volume**

Preparation and Property

- 539 LI Zong-you, CAO Xiong, LI Xiao-xia, JIA Qi, ZHANG Shi-qi **Synthesis, Characterization and Hygroscopicity Testing of Molecular Perovskite Energetic Materials**
- 544 LI Yao-yao, ZHANG Ting, LI Cui-cui, WANG Wei, PANG Ai-min, GUO Zhao-qi, MA Hai-xia **Preparation of ZnCo₂O₄ with Honeycomb Morphology and the Effect on the Thermal Decomposition of AP and CL-20**
- 552 XIAO Chun, LIU Hui-hui, ZHENG Bao-hui, LIU Chang-bo, MIAO Cheng-cai, LUO Guan **Plasticization of A16 Energetic Plasticizer to HTPB**

Pyrotechnics

- 557 WEI Hai, LIU Xu-wen, HU Yan, TANG Hui-liang, YE Ying-hua, SHEN Rui-qi **Preparation and Characterization of Silicon-based Cu(N₃)₂@CNTs Composite Films**
- 564 SHANG Chun-ming, SHI Dong-mei, ZHANG Yun-feng, SHI Yong-xiang, YU Zhi-tong, XU Xue-tao **Combustion and Energy Release Characteristics of Zr-based Amorphous Alloys**

- 569 WANG Wan-jun, ZHU Ming-shui, GUO Fei, LÜ Jun-jun, YANG Shuang, FU Qiu-bo **Parameters of the All-fire Shock Initiation Criterion for HNS-IV Explosive Under the Impact of a Short-Duration High Pressure Pulse**

Reviews

- 576 LIN Cong-mei, HE Wei, GONG Fei-yan, HE Guan-song, LIU Jia-hui, ZENG Cheng-cheng, YANG Zhi-jian, YAN Qi-long **Research Progress of Bioinspired Interface Design in Energetic Materials Based on Polydopamine**

No. 7**Invited Issue on Synthesis and Properties of Novel Energetic Materials****Energetic Express****Prospective**

- 588 WANG Bo-zhou **Synthetic Strategies for New High Energy Density Materials Based on High Energetic Explosophoric Groups***

Preparation and Property

- 591 WANG Peng-cheng, JIANG Zhen-ming, ZHOU Xin-li, LIN Qiu-han, LU Ming **Effect of Hydrogen Bonding in Pentazole Nonmetallic Salts***
- 597 DING Ke-wei, LI Tao-qi, XU Hong-guang, BU Jian-hua, YANG bin, ZHENG Wei-jun, GE Zhong-xue **Generation of Metal-doped Nitrogen Clusters with High Nitrogen Content by Liquid Nitrogen Cooling-laser Ablation***
- 603 CAI Rong-bin, ZHANG Jian, LUO Jun **Synthesis and Thermal Stability of 4-Azido-2,2,6,6-tetranitroadamantane***
- 609 SHI Qing-rong, SU Hui, LI Ya-qiong, DING Ning, ZHAO Chao-feng, LI Sheng-hua, PANG Si-ping **Synthesis and Properties of a Heat-resistant Biligand Energetic Metal-organic Framework Material***
- 618 ZHOU Jin-yang, HE Liu, WANG Ting-wei, ZHU Shun-guan, ZHANG Qi **Preparation and Properties of Red Pyrotechnic Colorant MOF $[\text{Sr}_2(\text{DTDA})(\text{H}_2\text{O})_6]_n$ ***
- 625 LIU Ning, DUAN Bing-hui, LU Xian-ming, ZHANG Qian, WANG Bo-zhou **Synthesis, Structure and Properties of 5,6-Diaminofurazano[3,4-b]pyrazine-4,7-dioxide***
- 632 LIAO Si-cheng, DENG Mu-cong, SONG Si-wei, JIN Yun-he, LIU Tian-lin, ZHANG Qing-hua **Synthesis and Properties of 3,3'-Bis(2-nitroamino-1,3,4-oxadiazol-4-yl)-5,5'-linked-1,2,4-oxadiazole and Its Energetic Salts***
- 638 XUE Yu-bing, CHENG Guang-bin, YANG Hong-wei **Crystal Structure and Detonation Performance of 5,5'-Diamino-4,4'-dinitroamino-3,3'-bi-1,2,4-triazole Triaminoguanidinium Salt (TAGAT)***
- 644 HU Yong, YANG Jun-qing, ZHANG Jian-guo **Synthesis, Crystal Structure and Properties of 2-Azido-6-methyl-5-nitro-pyrimidin-4(3H)-one(AMNP)***
- 650 ZHAO Bao-dong, JIN Guo-liang, LIU Ya-jing, GAO Fu-lei, CHEN Bin, WANG Ying-lei, GE Zhong-xue **Synthesis and Properties of Energetic Plasticizer Bis (3-azido-2,2-bis(azidomethyl) propyl) malonate***

657	YANG Tong-tong, LIU Yang, HOU Xiao-wen, MENG Zi-hui, XU Zhi-bin	Synthesis and Properties of Polynitro 3,3,7,7-Tetra(trifluoromethyl)- 2,4,6,8-tetraazabicyclo [3.3.0]octane*
664	LI Ya-nan, HU Jian-jian, CHEN Tao, WANG Bin, CHANG Pei, WANG Bo-zhou	Synthesis and Properties of 4-Amino-1,2,3-triazolo[4,5-e]furazano [3,4-b]pyrazine 6-oxide
670	ZHANG Zhen-qi, MA Qing, LU Huan-chang, LIAO Long-yu, FAN Gui-juan	Stability of Oxadiazole Nitramide Compounds in Water and Its Hydrolysis Mechanism*
678	MA Ying-jie, LU Yan-hua, CAO Yi-lin, HE Jin-xuan	Synthesis and Properties of 1,2-Bis(5,5'-dinitramino-1,3,4-oxadia- zol-2-)ethane*
685	JIA Si-yuan, ZHANG Hai-hao, ZHANG Jia-rong, LIU Qian, LUAN Jie-yu, BI Fu-qiang, WANG Bo-zhou	A Melt-cast Explosive 3-Azido-1,3-dinitroazetidine (AzDNAZ) with Gem-azidonitro of Novel Energetic Group: Synthesis and Performance*
690	YANG Lei, LIU Yu-cun, JING Su-ming	Kinetics of Thermal Decomposition of 2,4,6-Trinitro-3,5-Difluoropheno*

Reviews

695	LUO Yi-fen, XIAO Chuan, BI Fu-qiang, LI Xiang-zhi, WANG Zi-jun, WANG Bo-zhou	Review on Energetic Compounds Based on Bipyrazoles: Synthesis and Property*
707	WANG Guo-dong, LIU Yu-cun, JING Su-ming, LIU Guo-qing, HAN Rui-lian	Review on Preparation of Boron-based Energetic Compounds

No. 8

717 Energetic Express

Calculation and Simulation

718	XU Yuan-gang, LI Dong-xue, TIAN Li-li, JIANG Zhen-ming, WANG Peng-cheng, LU Ming	Prediction of the Energetic Performance of Pentazolate Salts
724	JIANG Xiao-rui, LI Zhuo, LU Rong, HUANG Da-hui	Numerical Simulation of the Pouring Process of HTPB Propellant
731	CHEN An, YU Yong-gang	Modeling Test and Simulation Study of Granular Dispersion Character- istics for Single Modular Charge Ignition and Flame-spreading
740	CHEN Si-tong, DONG Ke-hai, WANG Xin, PEI Li-guan, KONG Ling-ze, XIA Cheng	Micro and Mesoscopic Simulations on Diffusion Behaviors of Plasticizers in PEG/N-100
749	JIANG Chang, YANG Zhan-feng, LI Wei-bin, ZHANG Wei-bin, TIAN Yong	Numerical Estimation of Crack Depth in Curved Surfaces of Polymer Bonded Explosives Using Rayleigh Surface Wave

Preparation and Property

759	YI Zhuang-cheng, CHAI Kuan, WU Yan-guang, ZHAN Yu, LIU Ai-zhuan, WANG Wen-jun	Preparation and Thermal Decomposition Properties of NC/GAP Com- posite Spherical Powders Containing Different Burning Rate Catalysts
766	YAN Shi, PAN Bing, YUAN Qing-qing, WANG Jia-peng, JIAO Qing-jie, DU Feng-zhen	Preparation and Reaction Characteristics of Spherical Al-Si Alloy Fuel
773	LI Xiao-dong, SUN Hong-yan, YANG Yue, SONG Chang-gui, LIU Hui-min, WANG Jing-yu	Preparation and Dispersion Stability of Spray-drying Precursor Nano-Al Suspension

- 779 LI Xiao-bin, CUI Li-wei, ZHANG Rui-jie, HUANG Yu-xiang **Analysis of Coupling Relationship Between Critical Free Radical and Explosion Pressure in the Initial Stage of Methane Explosion**

Environment-friendly Technologies

- 786 ZHENG Zhan-sheng, HU Bing-cheng **Mobile Equipment for Green Treatment of Liquid-solid Fuel Air Explosive**
- 792 TANG Can, HUANG Bing, LIU Liu, FAN Mei-kun, ZHOU Yang **Cytotoxicity and Mechanisms of Nanoscale HNS, TATB and LLM-105 to RAW264.7 Macrophage**

Reviews

- 798 LI Chen, MA Feng-guo, SUI He-liang, YU Qian, YIN Ying, SUN Jie **Review on Thermal Decomposition Kinetics and Theoretical Evaluation Method for Thermal Safety of Energetic Materials**
- 810 XIONG Xiao-xue, XUE Xiang-gui, YANG Hai-jun, ZHANG Chao-yang **Review on Dihydroxylammonium 5,5'-Bistetrazole-1,1'-diolate(TKX-50)**

No. 9

Invited Column on crystallography of energetic materials

Energetic Express

Crystallography of energetic materials

- 819 DONG Hai-yan, LONG Yi-qiang, ZHOU Ting-ting, WU Bo, DUAN Xiao-hui **Thermodynamic on the Formation of CL-20/1,4-DNI Cocrystal^{*}**
- 826 ZHAO Xin-hua, CHEN Li-zhen, WANG Jian-long, HAN Zi-hao **Crystallization Thermodynamics of FOX-7 in DMSO-EAC Solvent Mixtures^{*}**
- 834 LIN Qiu-han, LI Xin, WANG Peng-cheng, LU Ming **Effects of Three Types of Molecular Connection on Crystal Structures and Energetic Properties of Bis-tetrazolium Compounds^{*}**
- 841 SHAN Jun-hui, ZHOU Xiao-qing, LI Hong-zhen, LIU Tian-sheng **Effect of Supersaturation on Nucleation of LLM-105 Based on Induction Period Measurement Method^{*}**
- 848 SHI Jing, LIU Jia-hui, BAI Liang-fei, YAN Guan-yun, DUAN Xiao-hui, TIAN Qiang **Microstructure of HMX crystallites studied by in situ variable-temperature small-angle X-ray scattering^{*}**
- 854 LI Chong-yang, HUANG Yong-li, SUN Chang-qing, ZHANG Lei **Theoretical Study on Improvement Strategy of Crystal Stability and Detonation Energy of Cocrystal Explosive^{*}**
- 861 YI Zhen-xin, ZHANG Yu, WANG Tian-ping, ZHANG Lin, ZHU Shun-guan **TNT/NNAP Cocrystal Formation Mechanism via Grinding Process^{*}**
- 865 ZHOU Tao, CHEN Fang, LI Jun, CAO Duan-lin, WANG Jian-long **Growth Morphology of TKX-50 in Formic Acid/Water Mixed Solvent by Molecular Dynamics Simulation^{*}**

Reviews

- 874 LI Hong-zhen **Research Progress and Suggestion for the Modification of the Explosive Crystal Characteristics^{*}**

889	ZHANG Chao-yang	Characteristics and Enlightenment from the Intermolecular Interactions in Energetic Crystals*
902	GAO Chan, SUN Xiao-yu, LIANG Wen-tao, LI Xiang-dong, ZHANG Yang, DAI Ru-cheng, WANG Zhong-ping, ZHANG Zeng-ming	Review on Phase Transition of RDX, HMX and CL-20 Crystals under High Temperature and High Pressure*

Propulsion and Projection

915	MENG Ling-chao, RAN Xiu-lun, LI Jian-min, ZHOU Xu-yuan, GUO Yan-pei, GONG Li, YANG Rong-jie	High Pressure Combustion Characteristics and Atmosphere Pressure Flame Structure of ACP-containing Hydroxyl Terminated Polybutadiene (HTPB) Propellants
925	LUO Ting-ting, WANG Yi, LIU Li-xia, SONG Xiao-lan	Characterization and Thermochemical Properties of NC/GAP/nano-TATB Electrospinning Composite Fibers with 3D Network Structure

Environment-friendly Technologies

936	XU Lin-nan, ZHANG Xue-jun, ZHAO Tan, LI Jun, FANG Tao	Determination of Hydroxyethyl Hydrazine Nitrate by Hydrophilic Interaction Chromatography Coupled with Mass Spectrometry
942	BAI Hong-juan, SUN Hui-min, ZHANG Qing	Effects of Different Factors on PNP Degradation by <i>Rhodobacter sphaeroides</i> and Metabolic Mechanisms

No. 10

Invited Column on damage and ignition

951 Energetic Express

Damage and Ignition

953	SONG Jia-xing, GUO Tao, YAO Miao, CHEN Jia-lin, DING Wen, LIU Xiao-feng	Effects of Perchlorates on Thermal Properties and Combustion Performance of Al-MnO₂ Nanothermite*
960	MA Yin-xiang, LIU Chen, WANG Hui, ZHANG Cai-xin, CHEN Hua, ZHANG Wei-bin	Mechanical Property of the Single TATB Granule by Uniaxial Compression*
969	LIU Cheng, TAO Ru-yi, XUE Shao, WANG Hao	The Propagation Characteristics of Ignition Flame in Propellant Particle Bed Based on Porous Media Model*
975	YANG Kun, WU Yan-qing, JIN Peng-gang, HUANG Feng-lei	Damage-ignition Simulation for Typical Pressed and Casted PBX under Crack-extruded Loading*
984	XIONG Wei, ZHANG Xian-feng, CHEN Hai-hua, DU Ning, BAO Kuo, TAN Meng-ting	Mesoscale Modeling on Dynamic Behavior of Al/Ni Energetic Structural Materials Under Shock Compression*
995	HUANG Bin-bin, FU Hua, YU Yin, LIU Cang-li	Three-dimensional Numerical Simulation of Steven Test by the Combined Finite-Discrete Element Method
1003	YAO Chuang, YANG Ye-zi, YU Yi, SUN Chang-qing, ZHANG Lei	Effect of vacancy defect on shock reaction and damage evolution of pentazolate salt Mn(N₅)₂*

- 1010 ZHOU Hai-qiang, LIU Tian-hao, PEI Cui-xiang **Interface Debonding Inspection in Metal Ring and Energy-Containing Material Bonding StructureBased on Electromagnetic Acoustic Resonance***

Reviews

- 1017 LIU Yong, BAI Hai-jun, GAN Qiao-yu, JING Huang-li, SHI Jian-bo, WANG Hong-bo, HUANG Ge, ZHAO Qi-zhi **Surface Modification Technologies of Energetic Aluminum Powders: A Review**
- 1026 JIA Jian-hui, CHEN Jian-bo, LIU Yu **Review on the Dissolution Characteristics of TATB in Different Solvents**

No. 11

- 1035 **Energetic Express**

Preparation and Property

- 1036 LI Xin-rui, YANG Xiao-ming, LI Hai-bo, LI Zhi-min, WANG Lin, ZHANG Tong-lai **Magnesium and Calcium Salts of 1,2-Bis(tetrazol-5-yl)ethane: Synthesis, Crystal Structures and Thermal Analysis**
- 1043 ZHAI Lian-jie, HUO Huan, WU Min-jie, ZHANG Jia-rong, BI Fu-qiang, WANG Bo-zhou **Synthesis and Properties of 7-Hydroxytrifurazano[3,4-*b*;3',4'-*f*;3'',4''-*d*]azepine**
- 1048 KONG Sheng, AN Chong-wei, XU Chuan-hao, GUO Hao, YE Bao-yun, WU Bi-dong, WANG Jing-yu, DONG Jun **Double-nozzle Microjet Direct Writing and Properties of CL-20 Based Energetic Film**
- 1054 ZHOU Ting-ting, CAI Fu-lin, WU Bo, Duan Xiao-hui **Preparation of Butterfly Wing-shaped TiO₂ and Its Catalytic Effects on the Thermal Decomposition of Ammonium Perchlorate**
- 1061 XU Wen-ting, HANG Si-yu, LI Ya-ning, HAN Zhi-wei, WANG Bo-liang **Effects of PTFE Content and Sintering Temperature on the Morphology and Combustion Performances of Al/PTFE Composites**

Explosion and Damage

- 1068 HUANG Xuan-ning, LI Wei-bing, GUO Teng-fei, LI Wen-bin, WANG Xiao-ming **Shape Description of Behind-armor Debris Cloud from Vertical Penetration of Target Plate by EFP**
- 1076 LIU Fei, REN Xin-jian, HE Xiang **Engineering Algorithm of Shock Wave Propagation Law in Underground Bunker at Various Depths of Explosion**
- 1083 DUAN Ying-liang, HAN Yong, RAN Jian-long, LIU Qing-jie, ZAN Ji-chao, JIA Lu-chuan **Effect on the Detonation Growth Characteristics of Main Charge from Booster Diameter**
- 1089 CHEN Qing-chou, LI Guang, LI Yi **Evaluation of Detonator Output Pressure by Interface Particle Velocity Method**

Safety Performance and Assess

- 1095 CHENG Long, XU Yao, LI Li, XIAO Pan, PANG Hai-yan, ZHANG Wei-bin **Thermal Cycling Properties of HMX- and TATB- Based PBX on Ultrasonic Testing Method**

- 1102 WEN Mao-ping, FU Tao, TANG Ming-feng, TAN Kai-yuan, XU Rong, CHEN Tian-na **Linear Correlation between Micro-plastic Properties of TNT, RDX and HMX Explosives Crystals and Their Corresponding Impact Sensitivities**

Reviews

- 1109 CHEN Fang, LIU Yu-cun, WANG Yi, ZHANG Qing-hua **Review on Melt-cast Carrier Explosives**
- 1120 LIU Ya-jing, ZHAO Bao-dong, WANG Ying-lei, GAO Fu-lei, LIU Wei-xiao, CHEN Bin **Review on Synthesis and Properties of Energetic Imidazole-bridged Azoles**

No. 12

- 1131 **Energetic Express**

Preparation and Property

- 1132 WANG Zhi-qiang, HUANG Yin-sheng, LI Rui, MAO Li **Preparation and Properties of Al/Bi₂O₃-HNIW Hybrid Composites**
- 1140 ZHANG Li, BAI Liang-fei, LI Hao, HUANG Jia-wei, SHEN Hong-yang, XIA Yuan-hua, YANG Hai-jun **Synthesis of Deuterated NQ and FOX-7**
- 1147 GUO Rong, DUAN Xiao-hui, LI Hong-zhen, WU Bo **First-Principle Studies on Phonon Spectra and Thermodynamic Properties of CL-20/1,4-DNI Cocrystal and Co-formers**
- 1156 CHEN Ling, ZHAO Yin-bin, PANG Xiao-qing, ZHANG Yong **Liquid Chromatographic for Component Content in HMX/TATB Explosive Formulations**

Propulsion and Projection

- 1163 ZHOU Cheng, LI Ji-zhen, LI Xiang-zhi, QU Bei, CHANG Pei, WANG Bo-zhou, LIU Ning **Crystal Structure, Thermal Properties of Hydrazinium 3,5-Dinitroamino-1,2,4-triazole and Application in CMDB Propellant**
- 1170 REN Xiao-ting, LI Gang, WANG Ye-teng, DING Ning, HE Jin-xuan **Crystal Morphology Control and Characterization of Triaminoguanidinium Nitrate**
- 1178 SUN Chu-yan, SU Hang, ZHANG Qi **Experimental Study on the Minimum Ignition Temperature of Vapor-Liquid Two-Phase Ethanol/Air Mixtures**
- 1184 ZHANG Lei, SHE Hu-qing **Experimental Research on Thrust Characteristics of Solid Rocket Engine Working Underwater**

Reviews

- 1190 HE Zhi-cheng, XIA Zhi-xun, HU Jian-xin, MA Li-kun **Review on Preparation Methods and Properties of Electrically Controlled Solid Propellants**
- 1200 BAO Li-rong, WANG Hui, CHEN Yong-yi, ZHANG Wei, ZHANG Xiao-jun, HUANG Yin-sheng, SHEN Rui-qi, YE Ying-hua **Review on Hydroxylammonium Nitrate Based Green Propellant**
- 1211 ZENG Gui-yu, QI Xiu-fang, LIU Xiao-bo **Progress on Several Disruptive Technologies of Energetic Materials Field**