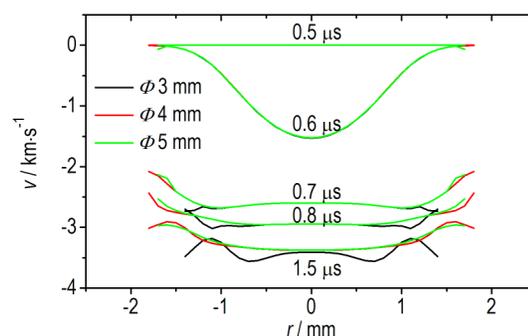


### Numerical Simulation of Velocity and Shape of the Flyer Driven by HNS-IV Explosive

CHEN Qing-chou, MA Tao, LI Yong

*Chinese Journal of Energetic Materials*, 2018, 26(10): 814–819

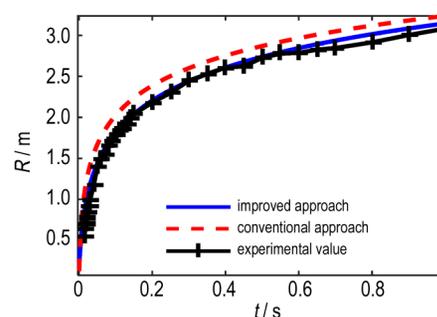


The effects of material, thickness and diameter on the velocity and the shape of the flyer driven by HNS-IV explosive were studied in order to design detonating sequence efficiently.

### Numerical Simulation of Maximum Radius of Initial Cloud Cluster of Smoke Screen

CHEN Hao, GAO Xin-bao, LI Tian-peng, ZHANG Kai-chuang, YANG Yang

*Chinese Journal of Energetic Materials*, 2018, 26(10): 820–827

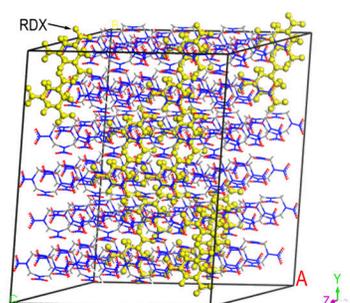


In order to reduce the error caused by the assumption that the traditional theoretical calculation is based on the isentropic expansion principle, the explosive decentralization process was simulated using Autodyn software, and the detonation pressure was fitted by the piecewise linear function. Further combined with the theoretical model, the Euler method was used for calculation and the solid line and dotted line was programmed by MATLAB.

### Molecular Dynamics Study on Effects of RDX Dopants on Properties of HMX

MIAO Shuang, ZHANG Lei, WANG Tao, WANG Yu-ling, HANG Gui-yun, MEI Zong-shu

*Chinese Journal of Energetic Materials*, 2018, 26(10): 828–834

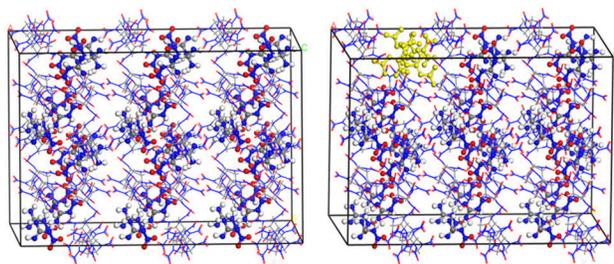


The defect-free and defective HMX supercell models were established and the effects of doping defect on sensitivity, compatibility with  $F_{2311}$ , detonation properties and mechanical properties of explosive were investigated by molecular dynamics method.

### Theoretical Investigation of the Effect of Crystal Defect on the Properties of CL-20/NQ Cocrystal Explosive

HANG Gui-yun, YU Wen-li, WANG Tao, WANG Jin-tao,  
MIAO Shuang

*Chinese Journal of Energetic Materials*, 2018, 26(10):835–842

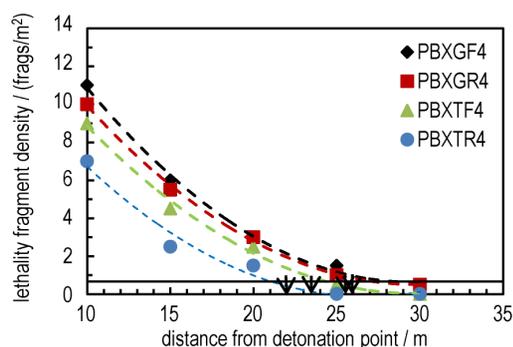


The “perfect” and defective CL-20 / NQ cocrystal models were established and the effect of crystal defect on the stability, sensitivity and energetic performance of explosive were investigated by molecular dynamics method.

### Preparation and Properties of PBXs Based on FOX-7 in Controlled Fragmentation Warhead Application

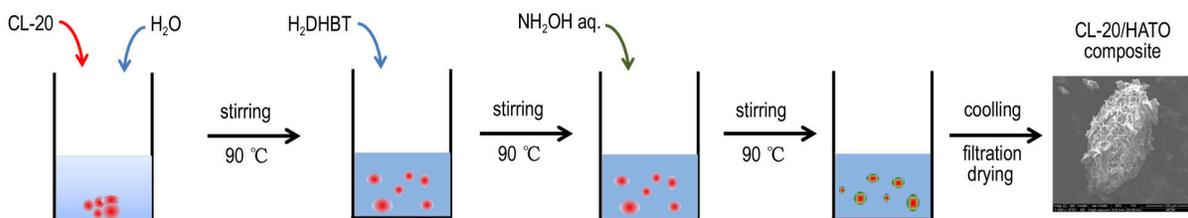
Karim K Elsharkawy, Lin Guo, Ahmed M Enew

*Chinese Journal of Energetic Materials*, 2018, 26(10):843–849



Polymer bonded explosive (PBX) formulations were successfully prepared in the laboratory scale containing 1, 1-diamino-2, 2-dinitroethene (FOX-7) and hexogen (RDX) as brisant high explosives and different binder types of polyurethane (PU) based on glycidyl azide polymer (GAP) and hydroxyl-terminated polybutadiene (HTPB) as an energetic and inert polymeric binder respectively. The sensitivity to different initial impulses and performance characteristics of the explosive and lethal zone were studied.

### Preparation, Characterization and Properties of CL-20/HATO Composite

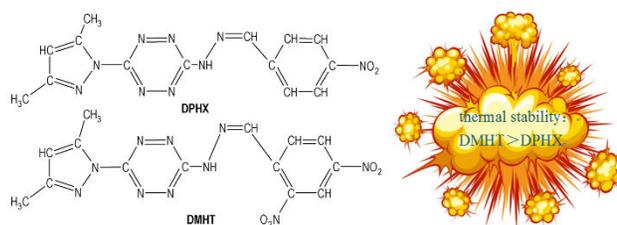


QU Chen-xi, GE Zhong-xue, ZHANG Min, XU Cheng,  
BI Fu-qiang, DING Ke-wei

*Chinese Journal of Energetic Materials*, 2018, 26(10):850–855

CL-20/HATO composite samples were prepared through in-situ crystallization method. Composition, structure and polymorph of the synthesized product were characterized by SEM, FTIR, NMR and XRD. The thermal decomposition and safety properties of CL-20/HATO composite were investigated by means of DSC and impact and friction sensitivity test. Theoretical detonation velocity was calculated using Urizar equation.

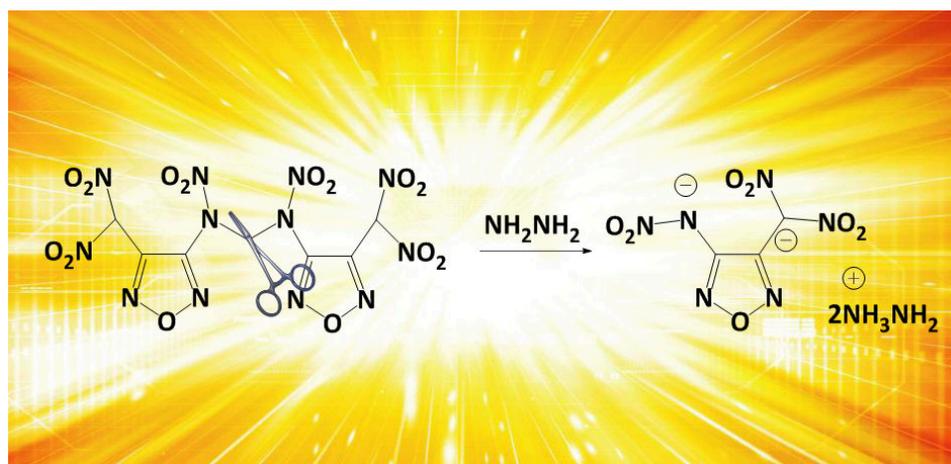
### Structure, Thermal Behavior and Thermal Safety of Asymmetric 1,2,4,5-Tetrazine Compounds DPHX and DMHT



ZENG Tian, HAN Xue, CHEN Xiang, ZHANG Cong,  
 GUO Zhao-qj, MA Hai-xia  
*Chinese Journal of Energetic Materials*, 2018, 26(10): 856–863

Two new 1,2,4,5-tetrazine derivatives (DPHT and DMHT) have been synthesized, and DMHT has higher thermal stability and safety than DPHX.

### Dihydrazinium 3-Dinitromethyl-4-nitraminofurazan: Synthesis, Structure and Performance



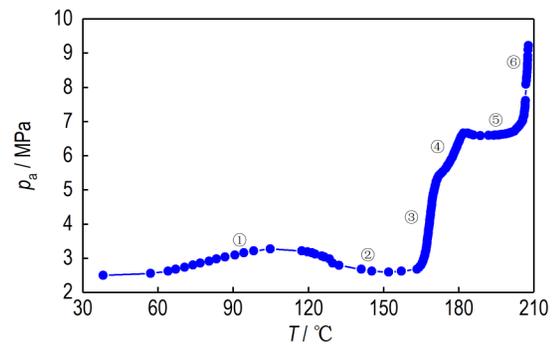
LIN Zhi-hui, SUN Qi, LU Ming  
*Chinese Journal of Energetic Materials*, 2018, 26(10): 864–868

Dihydrazinium 3-dinitromethyl-4-nitraminofurazan was prepared via five steps of reaction using 3-amino-4-chloroximinofurazan as raw material. Its structure was characterized and determined by nuclear magnetic resonance, infrared spectroscopy, element analysis, and X-ray single crystal diffraction.

### Effect of Thermal Stress on the Response Characteristics of HMX Based Aluminized Explosive Charge in Slow Cook-off Test

SHEN Fei, QU Ke-peng, WANG Sheng-qiang, XING Xiao-ling, WANG Hui

*Chinese Journal of Energetic Materials*, 2018, 26(10): 869–874

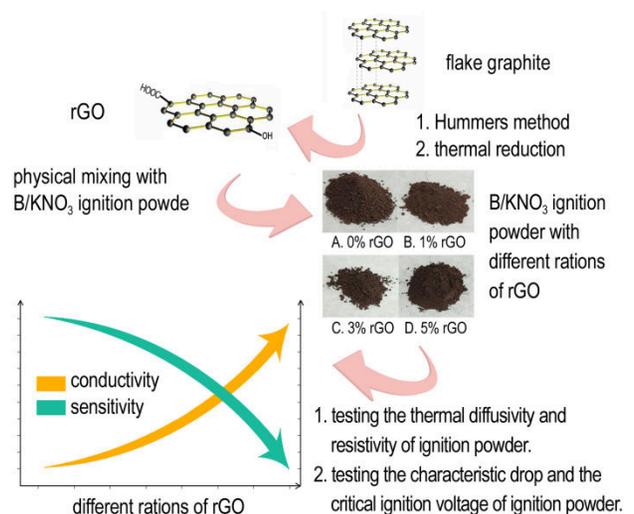


The thermal stress analysis system was established to determine the verity of the thermal stress during the slow cook-off test, the stress vs. temperature curve of HMX based aluminized explosive charge were obtained. The cook-off bombs with different volume ratio of charge and its coating layer was researched and the critical ignition temperature or the response with different heating process was discussed.

### Effect of Reduced Graphene Oxide on the Impact Sensitivity and Electrostatic Sensitivity of B/KNO<sub>3</sub> Ignition Powder

WANG Qian, LIU Jie, REN Hui, JIAO Qing-jie

*Chinese Journal of Energetic Materials*, 2018, 26(10): 875–880

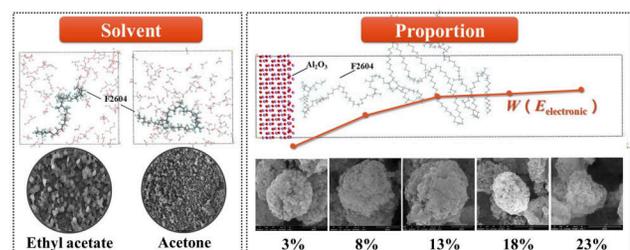


The thermal diffusivity and resistivity of B/KNO<sub>3</sub> ignition powder with different ratios of rGO were measured.

### Influence Mechanism of Solution Parameters on the Micro-morphology Structure of Nano-Aluminum/F2604 Composite Particles

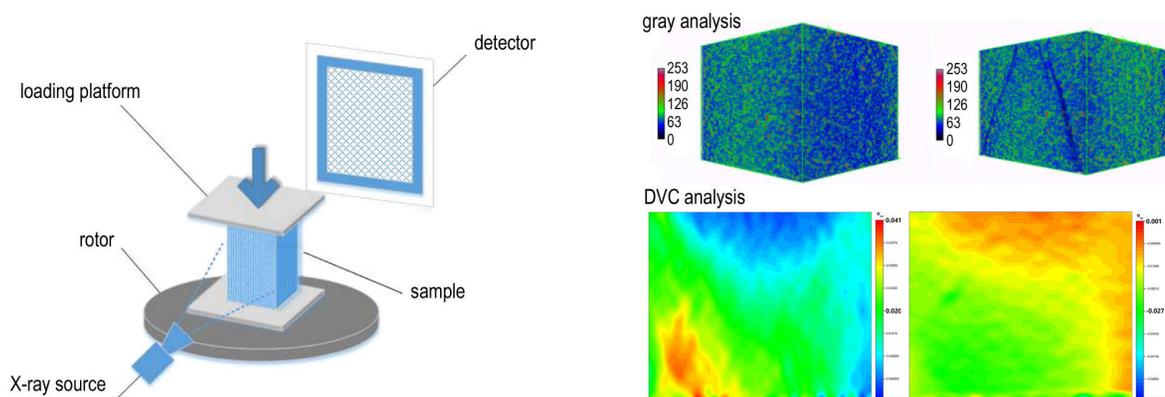
GAN Lu-yao, LI Ning, LI Ya-ning, HAN Zhi-wei, WANG Bo-liang

*Chinese Journal of Energetic Materials*, 2018, 26(10): 881–887



To reveal the coating mechanism of fluorine rubber (F2604) on nano-aluminum powder, composite particles with different content of F2604 were prepared in different solvents.

### Damage Evolution Behavior of PBX Substitute Material Using In-situ CT

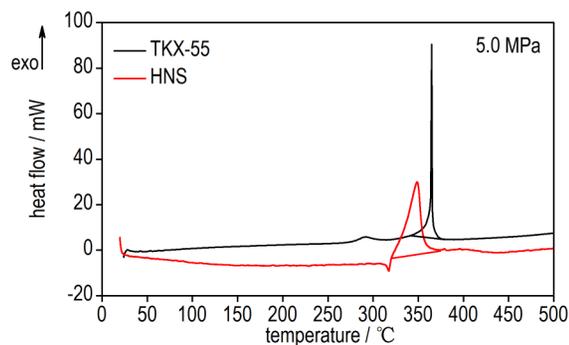
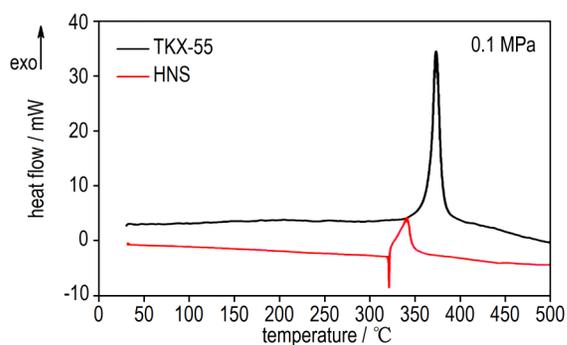


XU Pan-pan, CHEN Hua, XIE She-juan, DAI Bin, LIU Chen,  
ZHANG Cai-xin, ZHOU Hai-qiang, CHEN Hong-en,  
ZHANG Wei-bin, CHEN Zhen-mao

*Chinese Journal of Energetic Materials*, 2018, 26(10): 888–895

This paper performed the uniaxial compression test of PBX substitute using in-situ CT and revealed the evolution of damage during loading by means of DVC and DIC method.

### Thermal Decomposition Characteristics of TKX-55 Under Normal Pressure and High Pressure



ZHANG Jun-lin, ZHOU Jing, HU Huai-ming, BI Fu-qiang,  
WANG Bo-zhou

*Chinese Journal of Energetic Materials*, 2018, 26(10): 896–900

The thermal decomposition behavior and thermal decomposition kinetics of TKX-55 at normal pressure and high pressure were studied by thermal analysis method and compared with HNS.

Executive editor: ZHANG Qi WANG Yan-xiu GAO Yi JIANG Mei