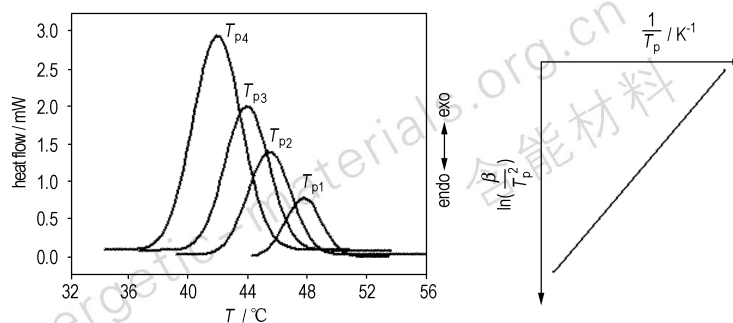


### On a Note of Calculating the Kinetic Parameters of Crystallization/Solidification Reaction from Peak Temperatures of DSC Curves under Different Constant Cooling Rate Conditions

HU Rong-zu, ZHAO Feng-qi, GAO Hong-xu,  
ZHAO Hong-an

*Chinese Journal of Energetic Materials*, 2008, 16(4): 361–363

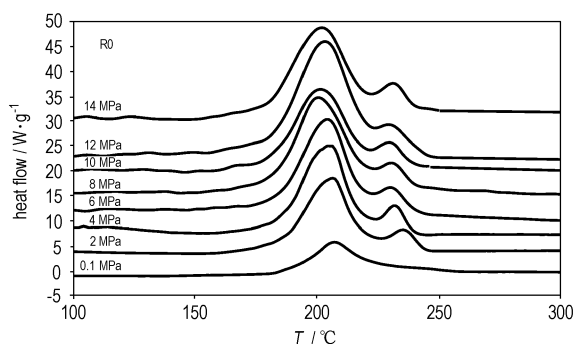


A calculation formula of treating the peak temperature of non-isothermal DSC curves under different constant cooling rate condition was presented.

### Catalytic Decomposition of RDX-CMDB I. Thermal Decomposition at High Pressure and its Correlation with Burning Rate

XIE Ming-zhao, LIU Zi-ru, HENG Shu-yun, WANG Han,  
ZHANG La-ying, ZHAO Feng-qi

*Chinese Journal of Energetic Materials*, 2008, 16(4): 364–367



The characteristic values of PDSC ( $\leq 14$  MPa) and pressure were correlated to burning rate using an empiric equation by binary regression.

### Thermodynamic Properties and Detonation Performance for Nitro Derivatives of THDCPD by Density Functional Theory

SONG Jing, LI Chun-ying, YANG Jian-ming, Lü Jian,  
WANG Wen-liang

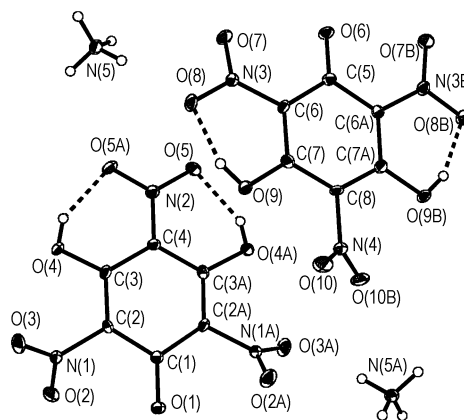
*Chinese Journal of Energetic Materials*, 2008, 16(4): 368–375

Tetrahydrodicyclopentadiene (THDCPD) and its derivatives were investigated at the B3LYP/6-31G level. The heat capacity and enthalpy ( $C_p$  and  $H_m$ ) at different temperatures were obtained by statistic thermodynamics.

### Synthesis, Crystal Structure, Thermal Analysis and Sensitivity of Mono-Ammonium Trinitrophenylglucuronate

HU Xiao-chun, ZHANG Tong-lai, LIU Zhen-hua,  
ZHANG Jian-guo, QIAO Xiao-jing, YANG Li

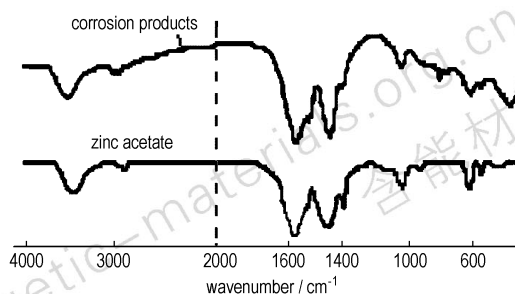
*Chinese Journal of Energetic Materials*, 2008, 16(4): 376–382



The new compound mono-ammonium trinitrophenylglucuronate was synthesized and characterized. Its crystal structure and thermal properties were determined.

### Failure Mechanism Analysis for Two Kinds of Weapons by IR

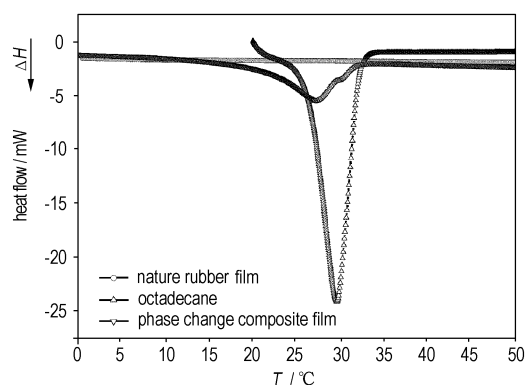
CHEN Zhi-qun, WANG Ming, WANG Ke-yong, XU Min  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 383–386



Infrared spectroscopy technique was used for the analysis of corrosion products, gas products and chemical structure changes of material in weapon during simulated storing. Failure mechanism was analyzed for weapons.

### Preparation and Properties of a New Type of Pliable Phase Change Material Composite Film

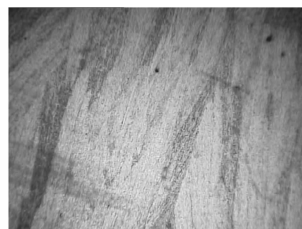
QIU Yong, ZHOU Bo-zhao, HE Ying-bo, ZHANG Kai  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 387–390



A new type of pliable composite films was prepared based on phase change material through the following steps. It can be used for energy storing purpose of geometrically complicated structure.

### Nano-RDX/RF Film Preparation with Sol-gel Method

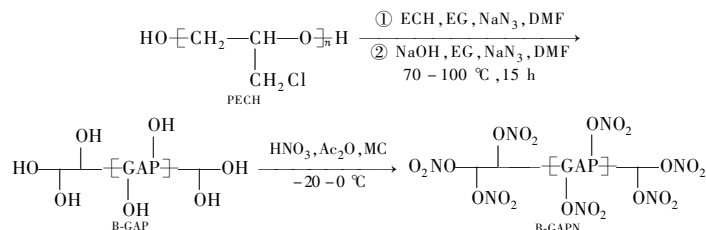
YU Wei-fei, HUANG Hui, ZHANG Juan, XIA Yun-xia,  
WANG Ping, LI Jin-shan, NIE Fu-de  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 391–394



Nano-RDX/RF composite film was obtained with sol-gel method. The composite film appeared semitransparent and brown to yellow from optical microscopy.

### Preparation of Branched Glycidyl Azide Polymer Nitrate

WANG Ping, YU Wei-fei, LIU Chun  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 395–397

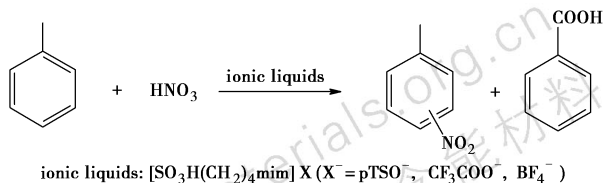


Branched glycidyl azide polymer (B-GAP) was obtained at 100 °C, starting from poly epoxy chloropropane, sodium azide, and sodium hydroxide as reactants and glycol as initiator. B-GAP was transformed to branched glycidyl azide polymer nitric acid ester (B-GAPN).

### Nitration of Toluene with Nitric Acid in the Presence of Acidic Ionic Liquids( II )

QI Xiu-fang, CHENG Guang-bin, Lü Chun-xu

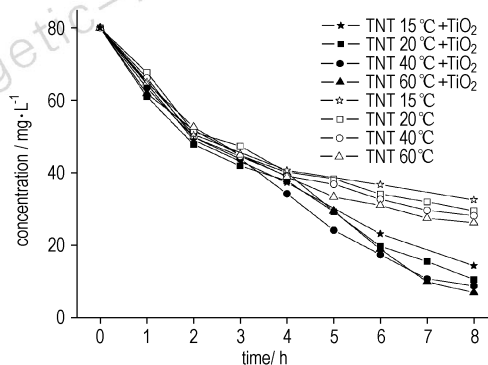
*Chinese Journal of Energetic Materials*, 2008, 16(4) : 398 – 400



### Effects of Nano-TiO<sub>2</sub> on Photocatalytic Degradation Reaction of TNT and HMX

LI Xian, HUO Ji-chuan, YE Xu

*Chinese Journal of Energetic Materials*, 2008, 16(4) : 401 – 405

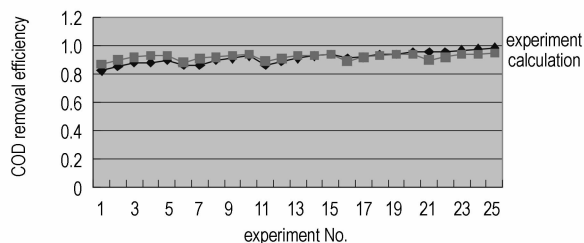


Nano-TiO<sub>2</sub> powder was prepared at different treatment temperature by sol-gel method. The effects of different TiO<sub>2</sub> as catalyst at different reaction temperatures and different intensities of UV light source on the photocatalytic degradation reaction of TNT and HMX were studied. The kinetic reaction mechanisms of photocatalytic degradation reactions were present.

### Kinetics and Influence Factors of Dinitrotoluene Wastewater Oxidation in Supercritical Water

ZHAO Bao-guo, LIU Yu-cun, GENG Peng-yin, LUO Wen-hao

*Chinese Journal of Energetic Materials*, 2008, 16(4) : 406 – 409

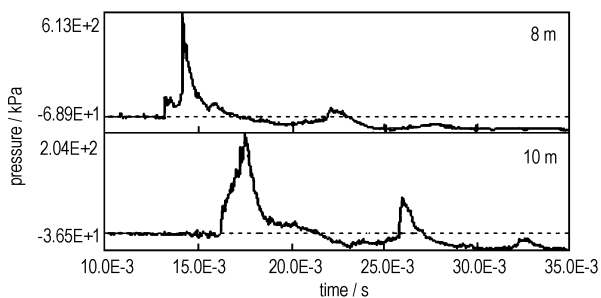


The dinitrotoluene (DNT) wastewater treatment was investigated in a semi-continuously supercritical water oxidation system with the temperature from 425 °C to 570 °C and the resident time from 0 to 60 s at 24 MPa and 300% excess oxygen.

### Blast/Shock Wave Parameters of Single-Event FAE

LI Xiu-li, HUI Jun-ming, WANG Bo-liang

*Chinese Journal of Energetic Materials*, 2008, 16(4) : 410 – 414



The outfield static blast experiment of a new type single-event FAE (SEFAE) and its test equipment was taken. The blast/shock wave parameters were measured and the after-burning phenomenon was studied.

### Numerical Simulation of Effect of Ignition Ways on Shaped Charge Jet

ZHANG Hui-suo, ZHAO Han-dong, HUANG Yan-ping,  
SHI Xing-yu, ZHANG Yan-xin

*Chinese Journal of Energetic Materials*, 2008, 16(4): 415–419

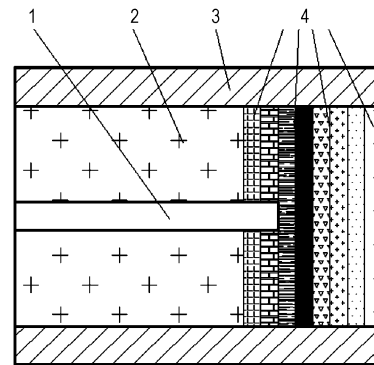


The ignition way of the liner top two ring line was used for numerical simulation detonation process. Jet tip velocity could be  $3040 \text{ m} \cdot \text{s}^{-1}$  by this ignition way.

### Electrical Conductivity for the Detonation Products of Some Explosives with Cast TNT

JIN Zhao-xin, JIAO Qing-jie, CHEN Xi, ZENG Liang

*Chinese Journal of Energetic Materials*, 2008, 16(4): 420–423

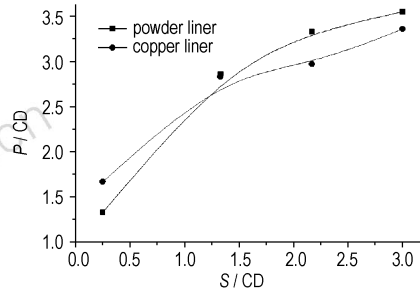


The coaxial measurement system of electrical conductivity for the detonation products was improved. The average electrical conductivities of cast TNT mixed with RDX, Al, KCl were studied.

### Deep Penetration Mechanism of Jet Produced by Shaped Charge with Porous Liner at Low Standoff Distance

LI Ru-jiang, SHEN Zhao-wu, LIU Tian-sheng

*Chinese Journal of Energetic Materials*, 2008, 16(4): 424–427

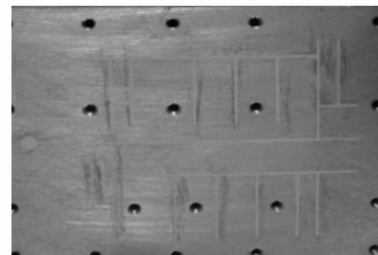


Copper liner with 11.4% porosity has better property than the homogeneous one when the standoff distance between 1.3 and 3 charge diameters (CD).

### Critical Characteristic of Detonation Propagation of Superfine Desensitized HMX Charge in Channel

LI Xiao-gang, JIAO Qing-jie, WEN Yu-quan

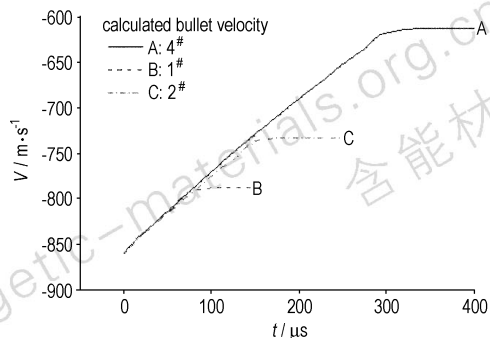
*Chinese Journal of Energetic Materials*, 2008, 16(4): 428–431



The detonation propagation critical characteristics of superfine desensitized HMX (587.3 nm) in channel was studied.

### Reaction Properties for Different Size PBX-2 Explosives in Bullet Impact Test

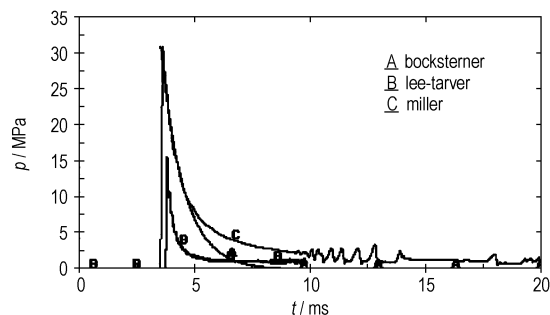
DAI Xiao-gan, SHEN Chun-ying, Lü Zi-jian, XIANG Yong  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 432–435



Bullet impact tests for four different size PBX-2 explosives were made by improving test method. The time of bullet perforating target and velocity after perforating target were measured.

### Application of Miller Energy Release Model for Aluminized Explosive

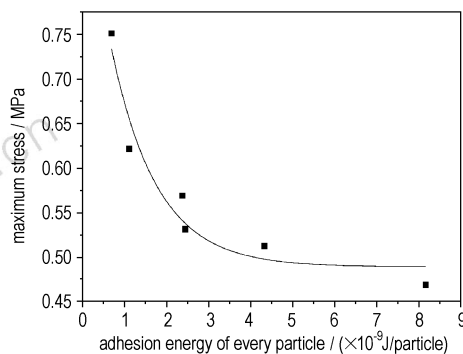
XIN Chun-liang, XU Geng-guang, LIU Ke-zhong, QIN Jian  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 436–440



Based on Bocksterner's underwater explosion experimental results, parameters of Miller energy release model were solved inversely.

### Effect of Particle Size and Surface Free Energy of RDX on the Mechanical Properties of HTPB Propellant

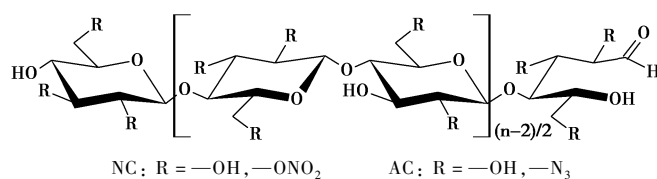
DU Mei-na, LUO Yun-jun  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 441–445



The particle size and the surface free energy of RDX on the mechanical properties of HTPB propellant were studied.

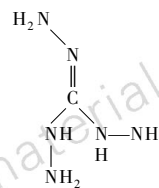
### Molecular Simulation on Structure and Solubility Parameter of Azidodeoxycellulose

HUANG Rui, YAO Wei-shang, TAN Hui-min  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 446–449



The structure and solubility parameter of azidodeoxycellulose (AC) were simulated by molecular mechanics (MM) method and molecular dynamics (MD) with COMPASS force field.

### Progress in Triaminoguanidine Energetic Compounds

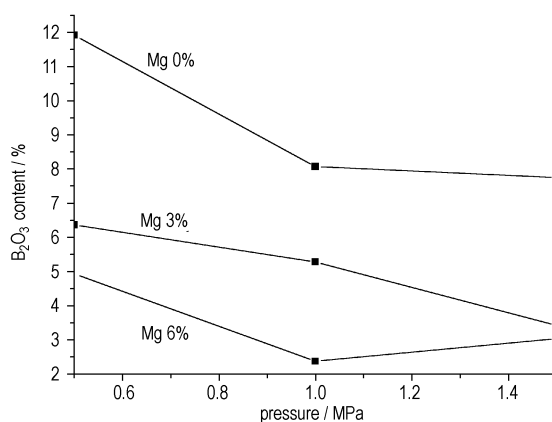


AO Guo-jun, LIU Zhen-hua, ZHANG Tong-lai, YANG Li, ZHANG Jian-guo

*Chinese Journal of Energetic Materials*, 2008, 16(4): 450–457

The molecular structure feature, preparation, physicochemical properties, explosion performance and application of triaminoguanidine energetic compounds in energetic material were reviewed.

### Effect of Mg and Al Powders on Combustion Performance of Boron-based Fuel-rich Propellant and Oxidation Efficiency of Boron

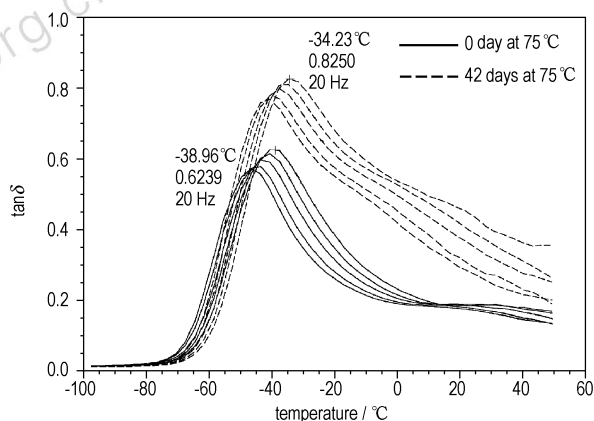


Effect of Mg and Al powder on combustion performance of boron-based fuel-rich propellants and oxidation efficiency of boron were studied. The contents of boron trioxide ( $B_2O_3$ ) and total boron (B) in propellant combustion residues were determined by chemical method.

WU Wan-e, MAO Gen-wang, LU Jun, Guo Er-ling, HU Jian

*Chinese Journal of Energetic Materials*, 2008, 16(4): 458–461

### Dynamic Mechanical Characterization of Aging Properties for Aged NEPE Propellant



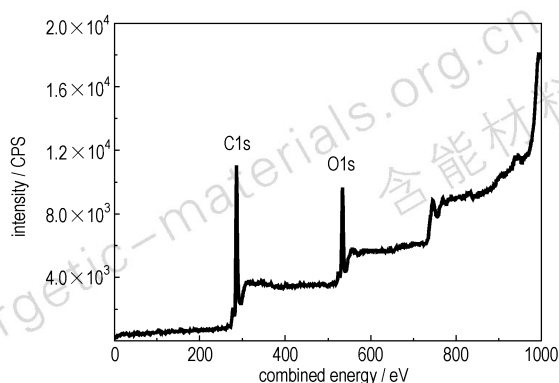
The dynamic mechanical properties of nitrate ester polyether (NEPE) propellant aged for various times at 75 °C were measured by dynamic mechanical analysis (DMA). The influence of aging time, test frequency and the content of plasticizers on loss coefficient  $\tan \delta$  was discussed.

LIU Xin-guo, WANG Guang, QIANG Hong-fu, YANG Yue-cheng

*Chinese Journal of Energetic Materials*, 2008, 16(4): 462–464

### Characterization of Charcoal Used in Pyrotechnic Composition

CUI Qing-zhong, JIAO Qing-jie, REN Hui, YANG Rong-jie  
*Chinese Journal of Energetic Materials*, 2008, 16(4): 465–468

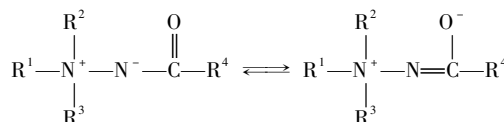


The effect of carbon content of poplar charcoal on hydrogen content, moisture absorption, ignition temperature and volatiles content was studied.

### Review on Aminimide Compounds Synthesized by UDMH

LI Zheng-li, ZHANG You-zhi, WANG Xuan-jun,  
 FAN Rui-jun

*Chinese Journal of Energetic Materials*, 2008, 16(4): 469–473

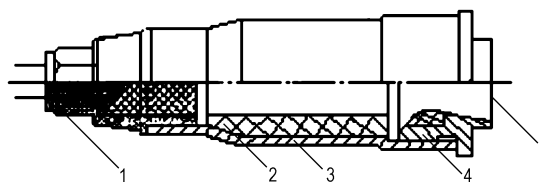


The main development trends of aminimide compounds synthesized by UDMH during the past decade were reviewed.

### Review on Impulse Thruster Used for Trajectory Correction of Conventional Munitions in Domestic and Abroad

YANG Qing, WANG Pei-lan, JIN Jian-feng

*Chinese Journal of Energetic Materials*, 2008, 16(4): 474–479



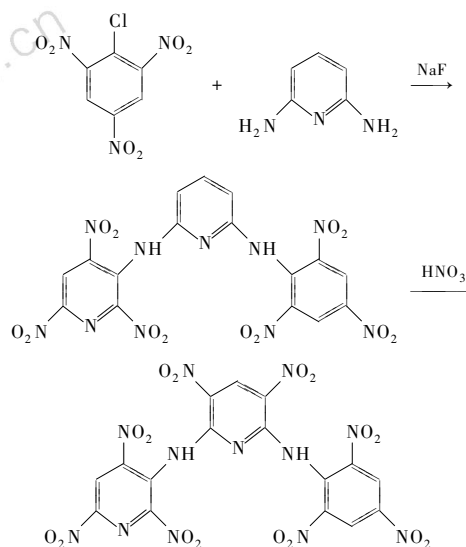
Structures and performance of several typical impulse thrusters for trajectory correction in domestic and abroad were introduced.

### A New Preparation Technology of PYX

WANG Jun, HUANG Jing-lun, LIAO Long-yu,

LI Hong-zhen, NIE Fu-de, HUANG Li-ming, LI Jin-shan

*Chinese Journal of Energetic Materials*, 2008, 16(4): 480



Using ethanol instead of DMF as solvent, through simple process, PYX can be prepared with high yield and high purity.