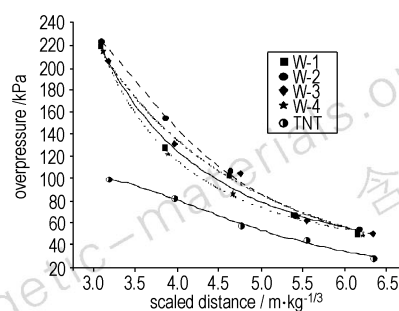


Study on Composite Explosive with High Power

GUO Xue-yong, HUI Jun-ming, LI Xiu-li, WU Kui-xian,
HUANG Hui

Chinese Journal of Energetic Materials, 2007, 15(1): 1–5

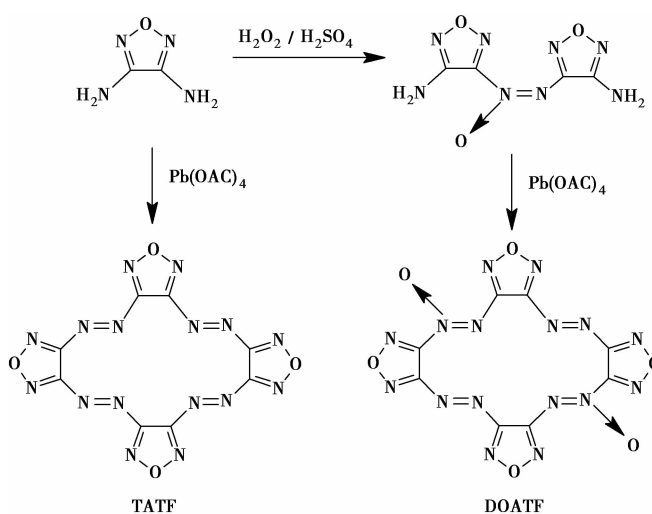


Composite explosives with good damage performance were studied. Explosives were composed of NH_4NO_3 , Al powder, liquid function additive and sensitizer.

Synthesis and Property of Furazan Macrocylic Compounds TATF and DOATF

LI Zhan-xiong, TANG Song-qing, WANG Wan-jun

Chinese Journal of Energetic Materials, 2007, 15(1): 6–8



PBX Booster Explosive Based on HMX/TATB

WANG Bao-guo, ZHANG Jing-lin,
CHEN Ya-fang, CHAI Tao

Chinese Journal of Energetic Materials, 2007, 15(1): 9–11

The formulation of PBX booster explosive was confirmed by the orthogonal experiment, blend binder and main explosive particle grading technology. The properties of this formulation was tested, its main capability (small clap-board amount, impact sensitivity, vacuum stability, self ignition temperature, volume expansibility, velocity of detonation) precede to that of PBX-N5's.

Theoretical Analysis on Friction Sensitivity of High Explosive

LIN Wen-zhou, HONG Tao

Chinese Journal of Energetic Materials, 2007, 15(1): 12–15

Friction sensitivity of high explosive was analyzed according to thermal explosion theory by theoretical analysis and numerical modeling. Temperature increase on friction surface and distribution of temperature in high explosive and steel was calculated and ignition time of high explosive was determined by calculation.

Preparation of RDX/SiO₂ Nanocomposite Energetic Materials by Sol-Gel Method

CHI Yu, HUANG Hui, LI Jin-shan, ZENG Gui-yu

Chinese Journal of Energetic Materials, 2007, 15(1): 16–18

RDX/SiO₂ nanocomposite energetic materials were prepared by sol-gel method. The surface topography, crystal structure, thermal decomposition and impact sensitivity were studied.

Simulation of the Effect of Radiation on Explosive Decomposition

YANG Jie, GUO Hui-ping, WANG Dong, LI Ru-song

Chinese Journal of Energetic Materials, 2007, 15(1): 19–22

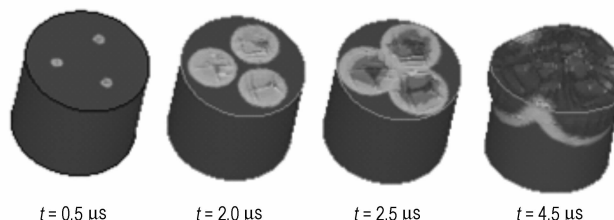
Radiation effect of neutron and γ rays on high explosive was studied.

Investigation of Three-point Detonation Mechanism and Formation of Tails of EFP

LI Cheng-bing, SHEN Zhao-wu, PEI Ming-jing

Chinese Journal of Energetic Materials, 2007, 15(1): 23–28

The detonation wave theory was applied to analyze the interacting process of detonation waves after the shaped charge was initiated with three initiation points. And the forming process and mechanism of the hyper pressure on the symmetrical plane were obtained.

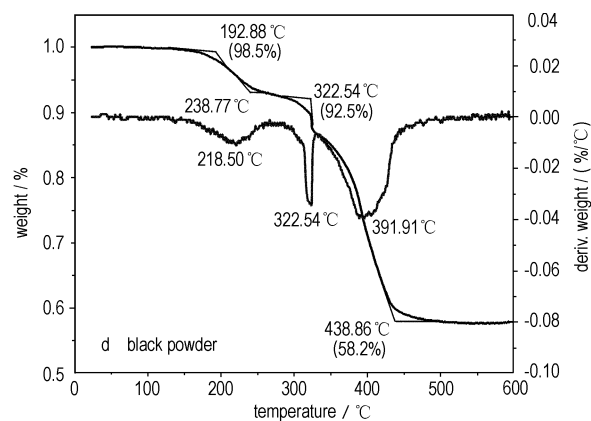


Thermal Decomposition and Kinetic Parameters of Black Powder Reaction

REN Hui, CUI Qing-zhong, JIAO Qing-jie

Chinese Journal of Energetic Materials, 2007, 15(1): 29–32

The thermal decomposition of sulphur, charcoal, KNO_3 and black powder were studied by DSC and TG techniques. The kinetic parameters were calculated with Kissinger equation.



Effect of Phenolic Resin on Laser Ablation of B/ KNO_3

YE Ying-hua, SHU Lang-ping, SHEN Rui-qi

Chinese Journal of Energetic Materials, 2007, 15(1): 33–35

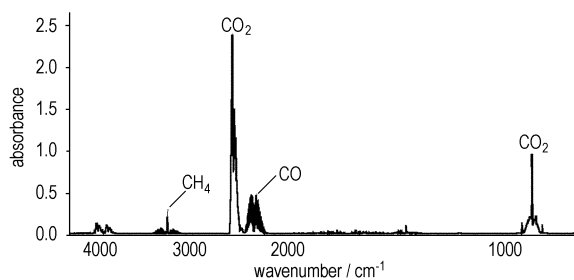
The effect of phenolic resin on laser ablation was investigated by means of sweep electron microscope, photoelectric method and differential thermal analysis. The laser ablation can effect on the laser sensitivity and the ignition delay time of B/ KNO_3 .

Determination of Combustion Gases of Gun Propellant by IR

CHEN Zhi-qun, PAN Qin, HU Lan, ZHANG Gao, LIU Shao-wu

Chinese Journal of Energetic Materials, 2007, 15(1): 36–38

A safety evaluation method was put forward for determination of combustion gases of gun propellant by IR.



Increasing the Adhesion Strength of Room Temperature Vulcanized Silicone Rubber Adhesive by Polymerization in situ Method

ZHEN Rui-yan, ZHOU Yuan-lin, HE Fang-fang, XIE Chang-qiong, XIAO Hao

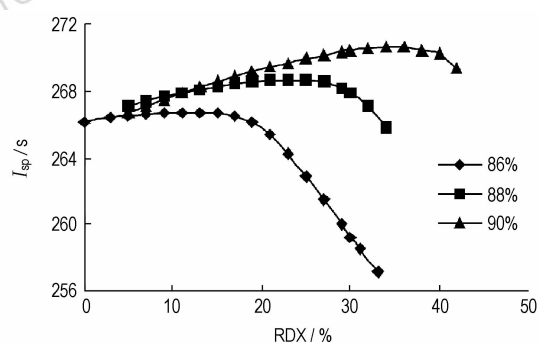
Chinese Journal of Energetic Materials, 2007, 15(1): 39–41

Silica white (2[#] and 4[#]) was used to reinforce the room temperature vulcanized silicone rubber (RTV) adhesive bonding explosive by modifying silicone rubber by methyl acrylic acid or ester in situ. The structure of reinforced RTV adhesive and dispersibility of silica white in adhesive were characterized by IR and SEM.

Characteristics of HTPB Propellant with High Solid Contents

LIU Chang-bao, LIU Yun-fei, YAO Wei-shang

Chinese Journal of Energetic Materials, 2007, 15(1): 42–46



By the use of different content and particle size distributions of oxidizer of HTPB propellant, such as AP and RDX, good results of combustion properties and mechanical properties of the propellant are given in the paper.

Correlation between Thermal Decomposition at High Pressure and Combustion Property for RDX-CMDB Propellants

REN Xiao-ning, LI Xiao-jiang, LIU Zi-ru, YIN Cui-mei

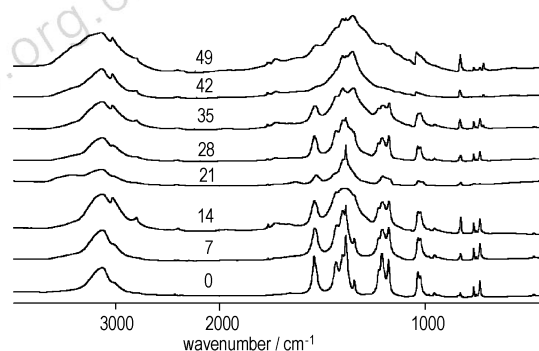
Chinese Journal of Energetic Materials, 2007, 15(1): 47–49

The thermal decomposition of the five RDX-CMDB propellants were investigated by high pressure DSC. A correlation of burning rate with the thermal analysis characteristics appears in these propellants.

Characteristic of Prilled Ammonium Dinitramide Photolyzed with Sunlight

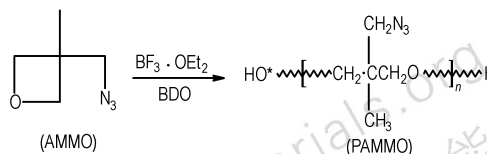
XU Hui-xiang, CHEN Zhi-qun, ZHAO Feng-qi, KANG Jian-cheng

Chinese Journal of Energetic Materials, 2007, 15(1): 50–52



In the process of photolyzing prilled ammonium dinitramide with sunlight on solid phase, the intensity of over peak at wavenumbers 2426 cm^{-1} , which belongs to ADN, weakens gradually with the increase of photolyzing time, and the intensity of characteristic peak at 2794 cm^{-1} which belongs to AN augments. So ADN photolyzes to AN slowly with sunlight.

Synthesis and Property of Energetic Binder PAMMO

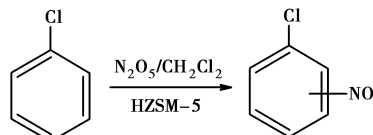


LI Na, GAN Xiao-xian, XING Ying, HAN Tao

Chinese Journal of Energetic Materials, 2007, 15(1): 53–55

3-Azidomethyl-3-methyloxetane homopolymer (PAMMO) was synthesized by the cationic polymerization. The structure and properties of PAMMO were characterized by DSC, TGA and IR.

Investigation on HZSM-5 Assisted Selective Nitration of Chlorobenzene with N_2O_5



QIAN Hua, YE Zhi-wen, LÜ Chun-xu

Chinese Journal of Energetic Materials, 2007, 15(1): 56–59

A novel nitration for preparing *p*-mononitrochlorobenzene by N_2O_5 with solid acids catalysts HZSM-5 was investigated.

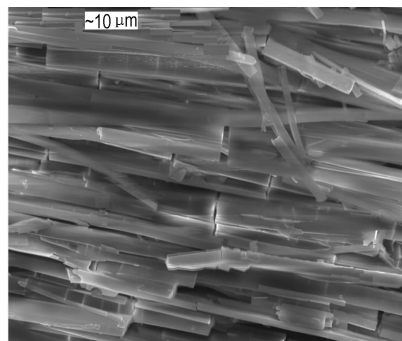
Thermodynamics Investigation on 1, 2, 4-Triazole-5-one Copper Complex

LI Na, CHEN San-ping, GAO Sheng-li, HU Rong-zu

Chinese Journal of Energetic Materials, 2007, 15(1): 60–66

According to the synthesis process of a new complex $Cu(TO)_2Cl_2$ (TO , 1,2,4-triazole-5-one), a kinetic mode was proposed and the thermodynamics parameters were obtained utilizing this mode. Furthermore, the specific heat capacity and the standard enthalpies of formation of the complex at 298.15 K were determined using a microcalorimetry RD496-III.

Preparation and Characterization of a Novel Nanotube of β -CD with $(NTO)_2Ba$



ZHANG Min, YUE Pu, LI Jian-li, WANG Ming-chang, WANG Ming, LIU Qing, SHI Zhen

Chinese Journal of Energetic Materials, 2007, 15(1): 67–69

Using β -CD recognition of $(NTO)_2Ba$, the nanotubes of inclusion complex $(NTO)_2Ba$ - β -CD were prepared. The morphology and structure of nanotubes were characterized by IR, ^{13}C -NMR, elemental analysis, flame atomic absorption spectrometry and SEM.

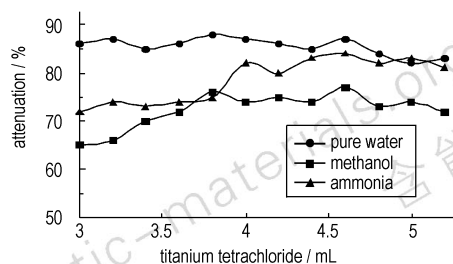
Study on anti-IR/Millimeter Wave Smoke Composition with Expansive Graphite

PAN Gong-pei, GUAN Hua, ZHU Chen-guang, CHEN Xin

Chinese Journal of Energetic Materials, 2007, 15(1): 70–72

The attenuation performance at 3 mm and 8 mm waves of expansive graphite was studied by homemade attenuation testing equipment of millimeter wave, the anti-IR/millimeter wave smoke composition with expansive graphite was designed.

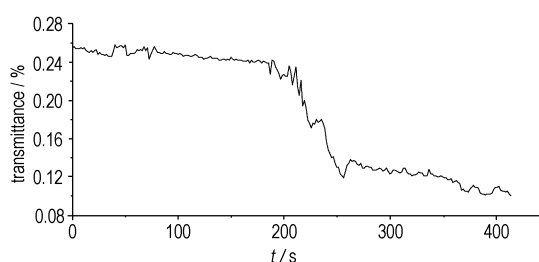
Performance of Liquid Smoke Agents Based on Titanium Tetrachloride



CHEN Xin, PAN Gong-pei, CAO Chuan-xin, ZHAO Jun
Chinese Journal of Energetic Materials, 2007, 15(1): 73–75

The acidity and infrared attenuation ability of the liquid smoke were studied. The liquid smoke was composed by water, methanol and ammonia with titanium tetrachloride.

Stability of Ultra-fine Red Phosphorus and Extinction Capability of Its Smoke Composition to 10.6 μm Laser Emission



JU Jian-feng, XU Ming, LI Cheng-jun

Chinese Journal of Energetic Materials, 2007, 15(1): 76–78

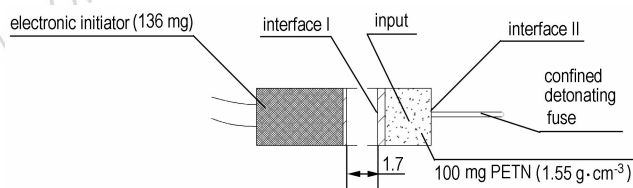
The stability of ultra-fine red phosphorus was studied by using the method of inorganic and organic microcapsulation. The laser extinction capability of the smoke composition was also studied.

Assessment Method for Reliability of Initiating Devices Based on Test Information Entropy Equivalence

CAI Rui-jiao, ZHAI Zhi-qiang, DONG Hai-ping, WEN Yu-quan
Chinese Journal of Energetic Materials, 2007, 15(1): 79–82

A new method, based on test information entropy equivalence, for assessing reliability of initiating devices is presented. The method can be used to solve the problems which exist in GJB376 and GJB377.

Design and Properties of the Input of Detonating Fuse Assembly in Short Channel Two-level Explosive Train



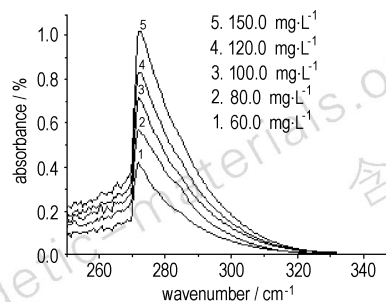
YIN Ya-xia, YU Zhen-yong

Chinese Journal of Energetic Materials, 2007, 15(1): 83–86

Based on the input structure of detonating fuse assembly in long channel three-level explosive train and factors related with boosting reliability, the input of detonating fuse assembly in short channel two-level explosive train was designed. The input was filled with PETN explosive.

Quantitative and Qualitative Analysis of Hexanitro-hexaazaisowurtzitane in Reaction Process by UV-spectrophotometry

Lü Lian-ying, WANG Jian-long, ZHANG Ping, CHNAG Yong-fang
Chinese Journal of Energetic Materials, 2007, 15(1): 87–89



A method for the qualification and quantification of HNIW by UV and FTIR was established. The crystal structure and concentration of HNIW were determined with this method.

Review on Synthesis of BDNPA/F Plasticizer and its Development

WANG Wen-hao, ZHOU Ji-yi
Chinese Journal of Energetic Materials, 2007, 15(1): 90–93

The synthetic methods and progresses of BDNPA/F Plasticizer were summarized. Environmentally friendly synthetic technology for BDNPA/F and BDNPF/DNBPF/BDNBF composition plasticizer were specially focused on.

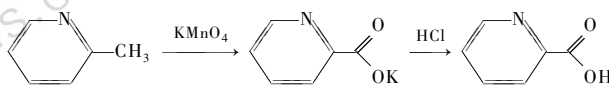
The Aerobic Biodegradation of UDMH Wastewater and Its Kinetics Research

LIAO Qi-li, WANG Li, PENG Qing-tao
Chinese Journal of Energetic Materials, 2007, 15(1): 94

The aerobic biodegradation technology of disposing waster containing unsymmetrical dimethylhydrazine (UDMH) is proposed. Its degradation kinetics is also discussed in this paper.

Oxidation Reaction Technology for 2-Methylpyridine

GAO Shi-jie, SHU Yuan-jie, LI Xu-guang, ZONG He-hou, XIONG Ying
Chinese Journal of Energetic Materials, 2007, 15(1): 95



Improvement of Synthesis for 2-Chloro-4,6-dimethylpyrimidine

LI Xu-guang, SHU Yuan-jie, GAO Shi-jie, XIONG Ying, ZONG He-hou
Chinese Journal of Energetic Materials, 2007, 15(1): 96

