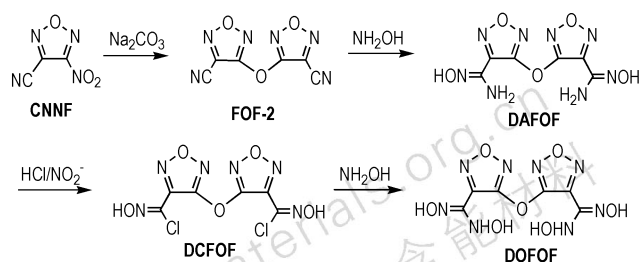


Synthesis and Disproportionation Reactions of 3,3'-Bis(*N*-hydroxy amidoxime) difurazanyl Ether

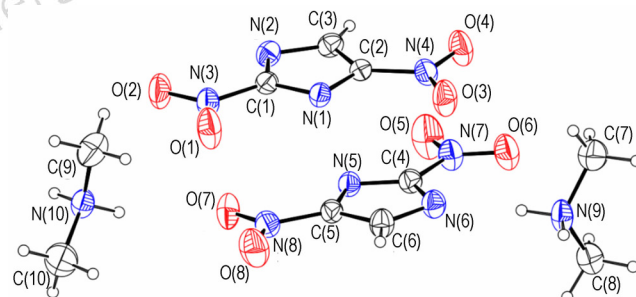


ZHAI Lian-jie, WANG Bo-zhou, HUO Huan, LI Hui,
LI Ya-nan, HUAGN Xin-ping, LIU Ning

Chinese Journal of Energetic Materials, 2013, 21 (6) : 697 – 701

3,3'-Bis(*N*-hydroxy amidoxime) difurazanyl ether was synthesized with a yield of 51.0%, and its disproportionation reaction was also discussed.

Preparation and Crystal Structure of *N,N*-dimethyl Ammonium Salt of 2,4-Dinitroimidazole

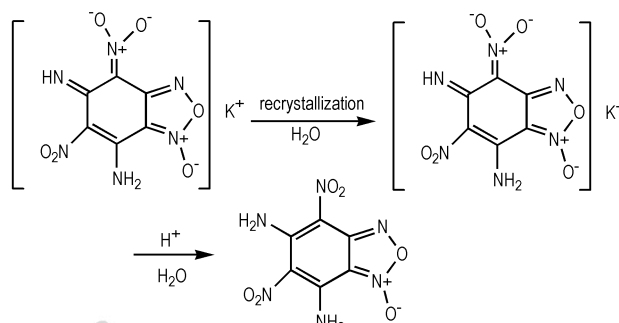


JING Mei, SHU Yuan-jie, WANG Jun, ZHANG Xiao-yu,
MA Qing, HUANG Yi-gang

Chinese Journal of Energetic Materials, 2013, 21 (6) : 702 – 705

A novel salt of 2,4-DNI was synthesized, and its crystal structure and thermal property was measured and analyzed.

Effect of Refining on the Properties of 5,7-Diamino-4,6-dinitrobenzenefuroxan

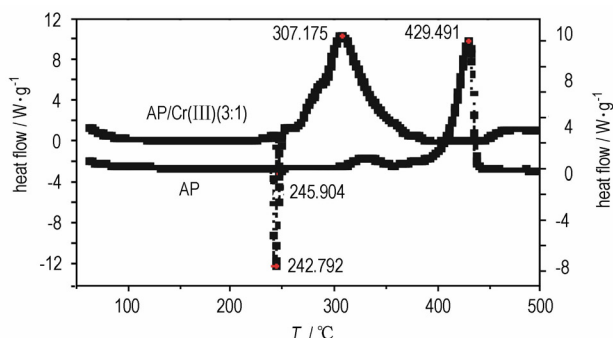


DONG Yan, LIU Zu-liang

Chinese Journal of Energetic Materials, 2013, 21 (6) : 706 – 710

CL-14 was refined through recrystallization by potassium salt of CL-14, acidification at high temperature and acid elimination under heating.

Synthesis and Catalytic Properties of ANPyO Cr(III) and Zn(II) Energetic Complexes

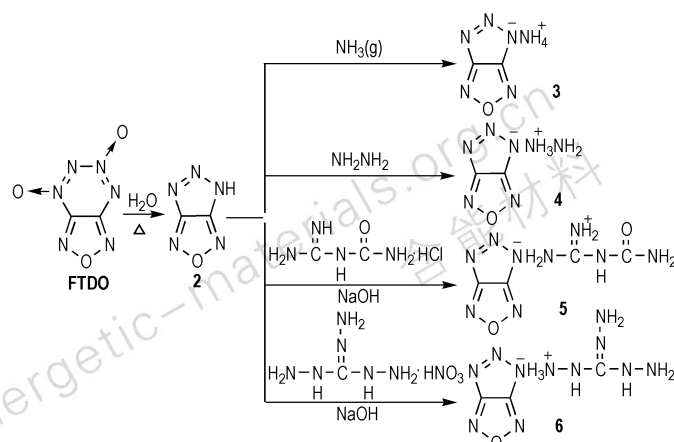


LIU Jin-jian, LIU Zu-liang, CHENG Jian, FANG Dong

Chinese Journal of Energetic Materials, 2013, 21 (6) : 711 – 716

Two transition metal complexes with ligand 2,6-diamino-3,5-dinitropyridine-1-oxide (ANPyO) were synthesized. Their thermal decomposition processes and the catalytic behavior on the thermal decomposition reaction of RDX, HMX and AP were studied.

Synthesis of 5H-[1,2,3]Triazolo[4,5-c][1,2,5]oxadiazole and Its Energetic Derivatives

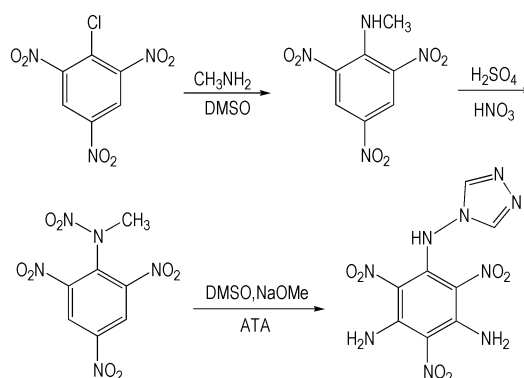


LI Xiang-zhi, WANG Bo-zhou, LI Ya-nan, LI Hui,
ZHOu Cheng, ZHANG Ye-gao, LIAN Peng

Chinese Journal of Energetic Materials, 2013, 21 (6) : 717 –720

An energetic material 5H-[1,2,3]triazolo[4,5-c][1,2,5]oxadiazole and its four novel energetic derivatives were synthesized from [1,2,5]oxadiazolo[3,4-e][1,2,3,4]tetrazine 4,6-di-N-oxide (FTDO).

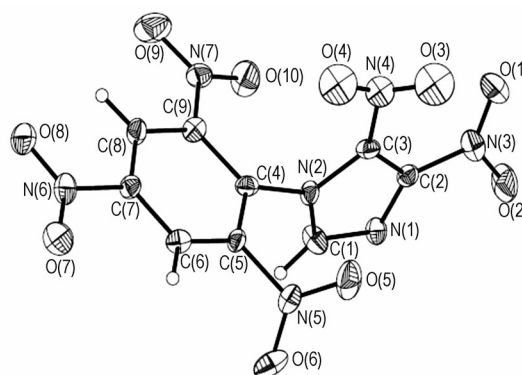
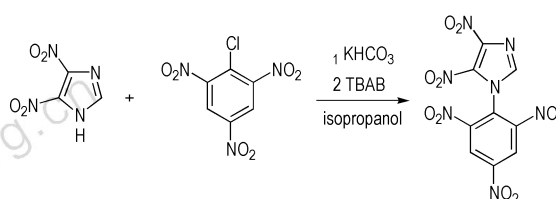
Synthesis of 2,4,6-Trinitro-3,5-diamino-N-(1,2,4-triazole-4)-aniline



XU Hai-feng, WANG Juan, LI Yong-qiang, ZHANG Jing,
ZHOu Xin-li

Chinese Journal of Energetic Materials, 2013, 21 (6) : 721 –725

Synthesis and Properties of 1-(2',4',6'-Trinitrophenyl)-4,5-Dinitroimidazole

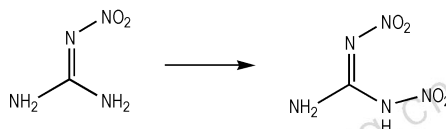


HOU Ke-hui, LIU Zu-liang

Chinese Journal of Energetic Materials, 2013, 21 (6) : 726 –729

1-(2',4',6'-Trinitrophenyl)-4,5-dinitroimidazole was prepared, and its thermal behavior was studied by DSC and TG.

Synthesis and Thermal Properties of 1,2-Dinitroguanidine

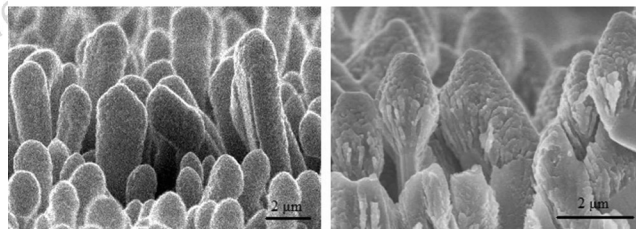


1,2-Dinitroguanidine (DNG) was synthesized via the nitration reaction using nitroguanidine (NQ) as raw material and 100% nitric acid/20% oleum/ammonium nitrate as nitrating system. The structure of DNG were identified by IR, ^1H NMR, ^{13}C NMR and MS. The thermal behavior of DNG was also studied using TG and DSC.

JIA Huan-qing, HU Bing-cheng, JIN Xing-hui

Chinese Journal of Energetic Materials, 2013, 21(6): 730–733

Preparation and Influence Factors of Al/MoO₃ Nano-arrays via Flame Method



The highly ordered MoO₃ nanobelts array was synthesized by a flame method. The possible factors which may affect the morphology of MoO₃ nanobelts, such as different substrate, growing time, and the flame source, were also studied.

ZHAO Na, SHEN Jin-peng, LI Rui, YANG Guang-cheng, HUANG Hui

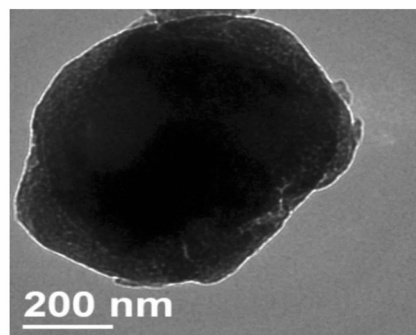
Chinese Journal of Energetic Materials, 2013, 21(6): 734–737

Preparation of Spherical Ultrafine CL-20 by Mechanical grinding

ZHANG Pu, GUO Xue-yong, ZHANG Jing-yuan, WANG Zheng-hong, LI Shi-wei

Chinese Journal of Energetic Materials, 2013, 21(6): 738–742

Preparation and Characterization of Al/HTPB Energetic Composite Particles

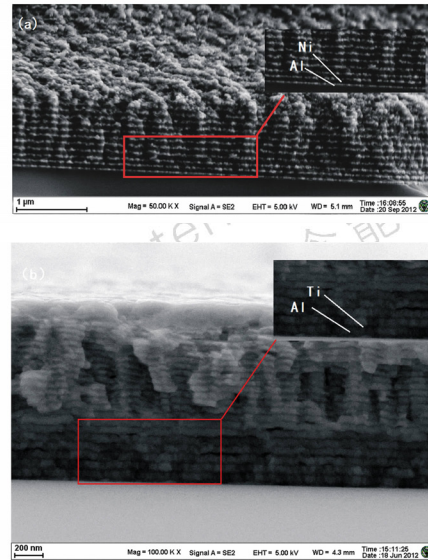


Hydroxyl-terminated polybutadiene (HTPB) and isophorone diisocyanate (IPDI) were used to coat the activated superfine aluminum powder. Effects of Al powder modified by silane coupling agent and different coating quantity on the morphology and composite particle size of coated Al powder were also investigated.

LIU Song-song, YE Ming-quan, HAN Ai-jun, CHEN Xin, PAN Gong-pei

Chinese Journal of Energetic Materials, 2013, 21(6): 743–748

Fabrication and Characterization of Al/Ni and Al/Ti Multilayer Nanofilms

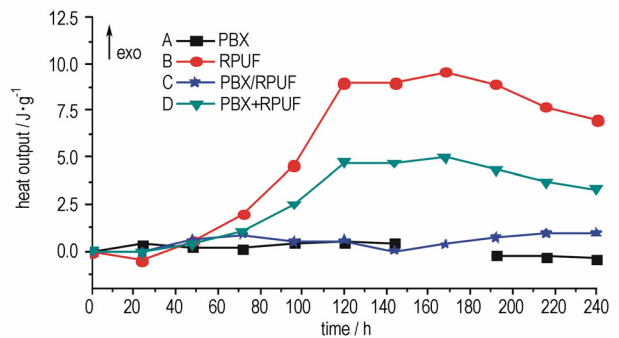


LI Dong-le, ZHU Peng, FU Shuai, SHEN Rui-qi, YE Ying-hua, HUA Tian-li

Chinese Journal of Energetic Materials, 2013, 21(6): 749–753

Al/Ni and Al/Ti multilayer nanofilms were prepared by magnetron sputtering method and characterized by Field emission scanning electron microscope (FESEM) AFM, XRD and DSC.

Compatibility of TATB Based PBX Explosive and Rigid Polyurethane Foam

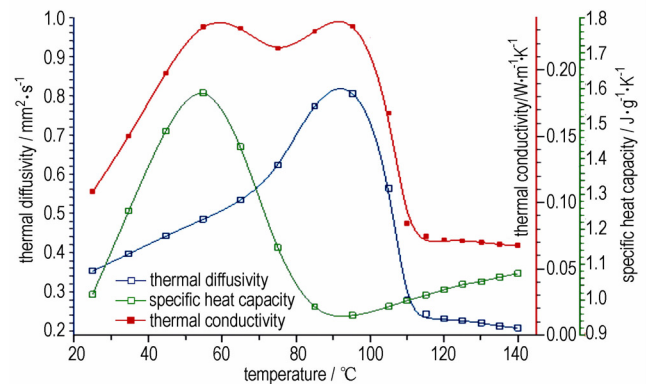


ZUO Yu-fen, CHEN Jie, XIONG Ying, CHI Yu, WANG Lin, HAO Xiao-fei

Chinese Journal of Energetic Materials, 2013, 21(6): 754–759

The reactivity and compatibility between TATB based PBX and rigid polyurethane foam were studied by microcalorimetry, XPS and IR.

Measurement and Analysis of Thermal Physical Parameters on Nitrocellulose Energetic Materials



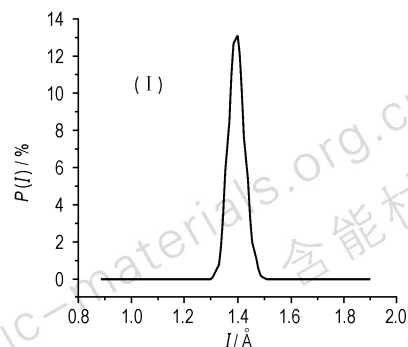
PENG Ya-jing, WANG Yong, LIU Yu-qiang, ZHANG Wei, YANG Yan-qiang

Chinese Journal of Energetic Materials, 2013, 21(6): 760–764

Thermal diffusivity, specific heat capacity, and thermal conductivity of nitrocellulose with nitrogen content 12% were obtained from 25 to 140 °C by laser flash and DSC methods.

MD Simulation on the Structure and Properties of Different Models for HMX Crystal

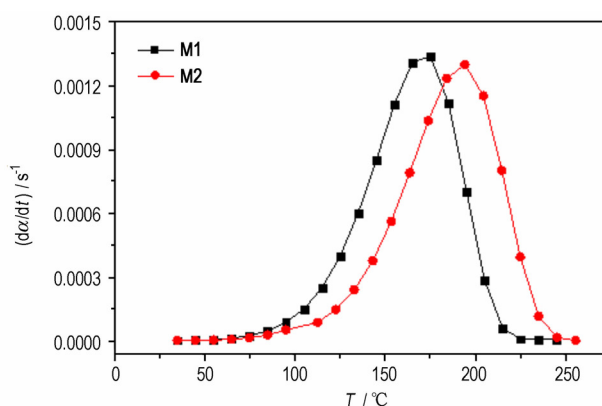
LIU Dong-mei, XIAO Ji-jun, CHEN Jun, JI Guang-fu, ZHU Wei, ZHAO Feng, WU Qiang, XIAO He-ming
Chinese Journal of Energetic Materials, 2013, 21 (6) : 765 –770



Six different β -HMX crystalline models were simulated at 295K by molecular dynamics (MD) using COMPASS force field in the isothermal-isobaric (NPT) ensemble. The trigger bond length, the interaction energy between two atoms of trigger bond and the mechanical properties of the HMX crystal were presented and analyzed.

Effect of HTPB with Different Molecular Weights on Curing Kinetics of HTPB/TDI System

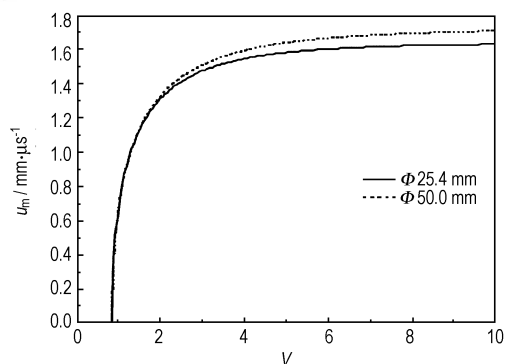
CHEN Chun-yan, WANG Xiao-feng, GAO Li-long, ZHENG Ya-feng
Chinese Journal of Energetic Materials, 2013, 21 (6) : 771 –776



Curing processes of hydroxy-terminated polybutadiene (HTPB) with different molecular weight (M1:1500; M2:2800) / 2,4-toluene diisocyanate (TDI) systems were measured by rotational viscometer and non-isothermal differential scanning calorimetry.

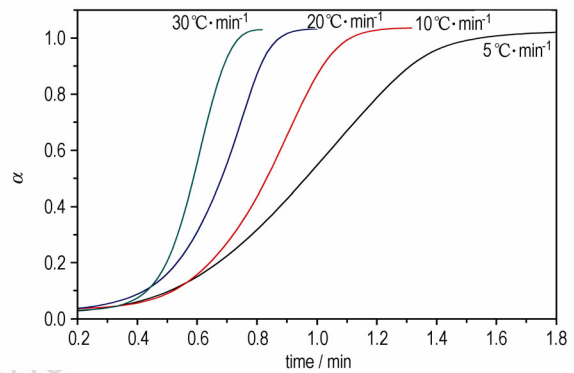
Different Diameter Cylinder Tests and Numerical Simulation of RDX based Aluminized Explosive

SHEN Fei, WANG Hui, YUAN Jian-fei, TIAN Qing-zheng, YANG Kai
Chinese Journal of Energetic Materials, 2013, 21 (6) : 777 –780



The cylinder tests with diameters of 25.4 mm and 50.0 mm of the RDX-based aluminized explosive were performed, and their results were contrasted. The parameters of JWL equation of state and the reaction rate of the aluminized explosive were determined.

Melting Kinetics of Eutectic Based on Methyl-nitroguanidine

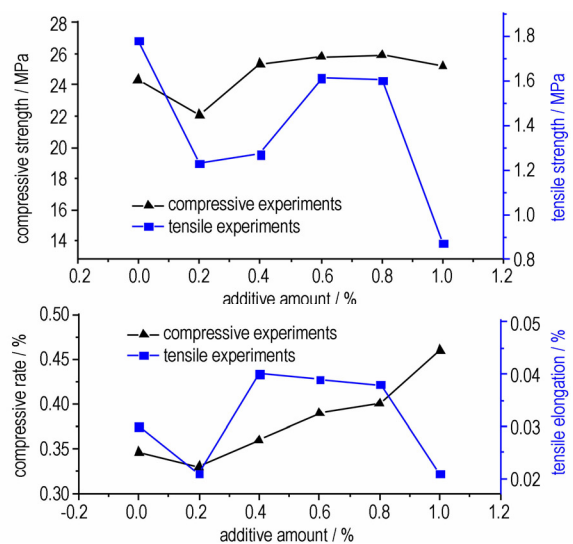


CHEN Ling, XU Rui-juan, XU Tao, DENG Jian-guo,
WANG Xin-feng, HUANG Bo-yong, SHU Yuan-jie

Chinese Journal of Energetic Materials, 2013, 21 (6) : 781 – 785

The melting process of eutectic based on methyl-nitroguanidine (MeNQ) was studied by differential scanning calorimetry at 50 ~ 150 °C under different atmosphere (static state and N₂) and heating rates (5, 10, 20, 30 °C · min⁻¹).

Mechanical Reinforcement on the Melt-cast Explosive of RDX/TNT by Chopped Fibers

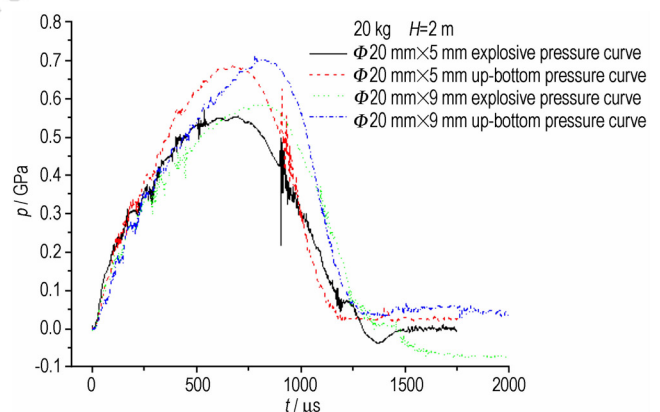


ZHENG Bao-hui, WANG Ping-sheng, LUO Guan,
HUANG Yong

Chinese Journal of Energetic Materials, 2013, 21 (6) : 786 – 790

With four kinds of chopped fibers as mechanical property modifier, the influence of type, content and length of chopped fibers on mechanical property was studied through compressive and tensile experiments.

Response Character for PBX-2 Explosive in Shear Test

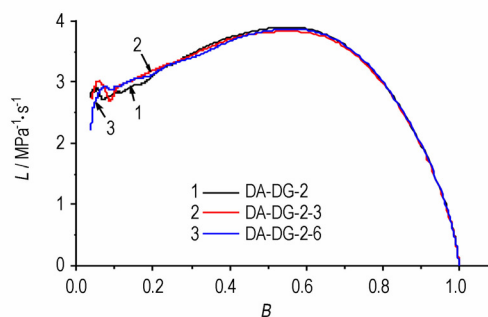


DAI Xai-gan, WANG Juan, HUANG Qian, HUANG Feng-lei,
XIANG Yong, ZHENG Xue

Chinese Journal of Energetic Materials, 2013, 21 (6) : 791 – 794

Shear device for explosive bill was designed by ANSYS/LS-DYNA. Shear tests with different thickness PBX-2 were carried out. Response character was analyzed for Φ20 mm × 5 mm and Φ20 mm × 9 mm PBX-2.

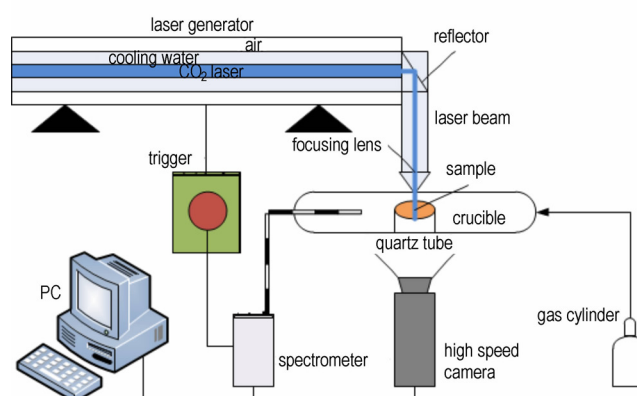
Modulating Technology for Combustion Performance of Azidonitramine Gun Propellant



Azidonitramine gun propellant was deterred with its surface layer coated permeably by small-molecule multiple alkynyl compound (TPTM) which was used as deterrent precursor with rotating-drum spraying technique. The effect of deterrent was characterized by closed-bomb test, thermal-aging test and 14.5 mm machine gun test. The interior ballistic properties was checked by the 30 mm gun tests. Burning behavior of the deterred propellant in closed bomb is invariable after thermal-aging three month and six month at 50 °C.

HUANG Zhen-ya, JIA Yong-jie, CUI Peng-teng, FAN Jian-fang
Chinese Journal of Energetic Materials, 2013, 21 (6) : 795 –799

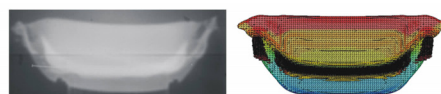
Effects of Particle Size and Crystalline Form on the Ignition and Combustion Characteristics of Boron Particles



To reveal the influence mechanism of the particle size and crystalline form on the combustion of boron, experimental studies were carried out by a laser ignition system. Ignition delay time, combustion efficiency, burning flame and emission spectrum were measured and analyzed.

AO Wen, ZHOU Jun-hu, LIU Jian-zhong, YANG Wei-juan, WANG Yang
Chinese Journal of Energetic Materials, 2013, 21 (6) : 800 –805

Experimental and Three-dimensional Numerical Simulation for Influence of End Constraint on Jet Formation of Cuneiform Cover Cutter



The Three-dimensional full-scale model of charge was established with ANSYS/LS-DYNA program. The jet formation photographs of different time was studied by X-ray.

WU Shuang-zhang, GU Wen-bin

Chinese Journal of Energetic Materials, 2013, 21 (6) : 806 –811

Review on the Mechanical Properties of Cast PBXs

TANG Ming-feng, LI Ming, LAN Lin-gang

Chinese Journal of Energetic Materials, 2013, 21 (6) : 812 –817

Focusing on the mechanical properties of cast PBXs, research status of continuous deformation characteristics cast PBXs were mainly reviewed. Two hot-spots and difficulties were pointed out. The research trends were also outlined.

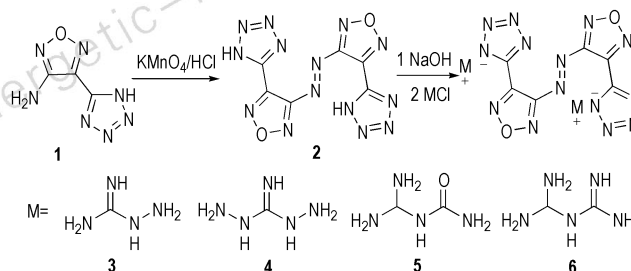
Safety Performance of Modified Nitramine Double Base Propellant by Screw Extrusion Subject to Mechanical Stimulus

LIU Suo-en, ZHAO Xiao-min, ZHAO Mei-ling, ZHANG Jing-lin, ZOU Wei-wei, Lü Chun-ling

Chinese Journal of Energetic Materials, 2013, 21(6): 818–820

The impact sensitivity, friction sensitivity and shooting sensitivity of modified nitramine double base propellant with RDX were studied according to the national military standard methods.

Synthesis and Thermal Properties of 3,3'-Bis(tetrazol-5-yl)-4,4'-azofurazan and Its Energetic Salts

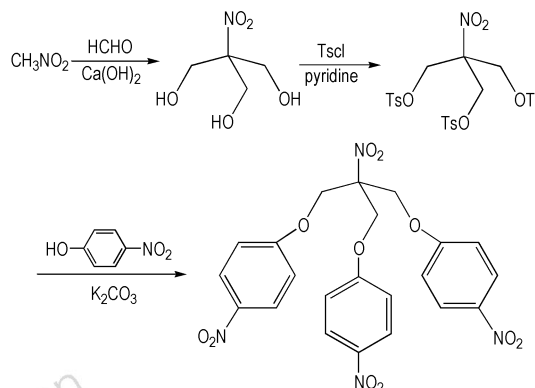


LI Hui, YU Qian-qian, WANG Bo-zhou, LAI Wei-peng, GE Zhong-xue, LI Ya-nan, LIU Ning

Chinese Journal of Energetic Materials, 2013, 21(6): 821–824

3,3'-Bis(tetrazol-5-yl)-4,4'-azofurazan (DTZAF) and its energetic salts were synthesized from 3-amino-4-(tetrazol-5-yl) furazan. In addition, the thermal properties of DTZAF and its energetic salts were studied.

Synthesis and Thermal Behavior of Tris(para-nitrophenyloxymethyl) nitromethane



LU Chun-hua, WANG Juan, ZHOU Xin-li

Chinese Journal of Energetic Materials, 2013, 21(6): 825–828

Tris(para-nitrophenyloxymethyl) nitromethane was synthesized via condensation, esterification and substitution reaction using nitromethane as starting material.

Executive editor: WANG Yan-xiu JIANG Mei; Computer typesetter: ZHANG Gui-hong