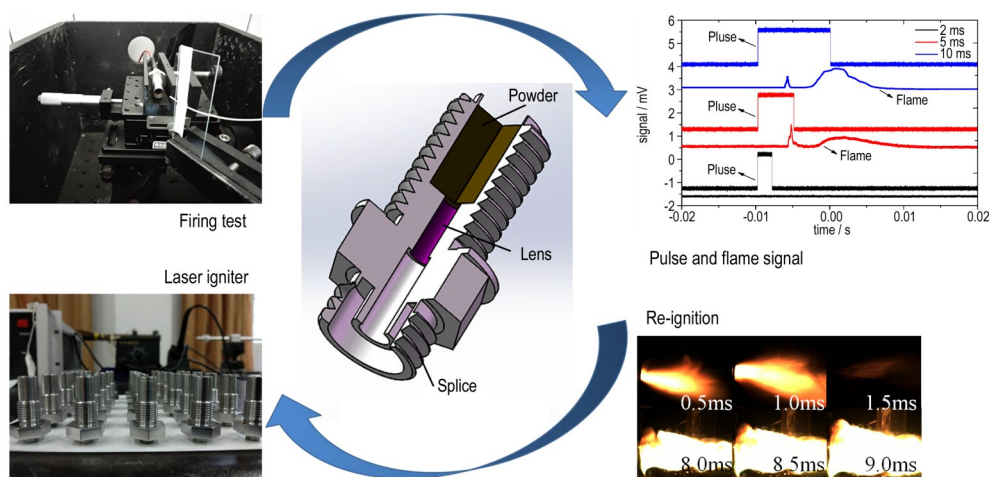


Ignition Characteristics of B/KNO₃/PF Based on Semiconductor Laser System

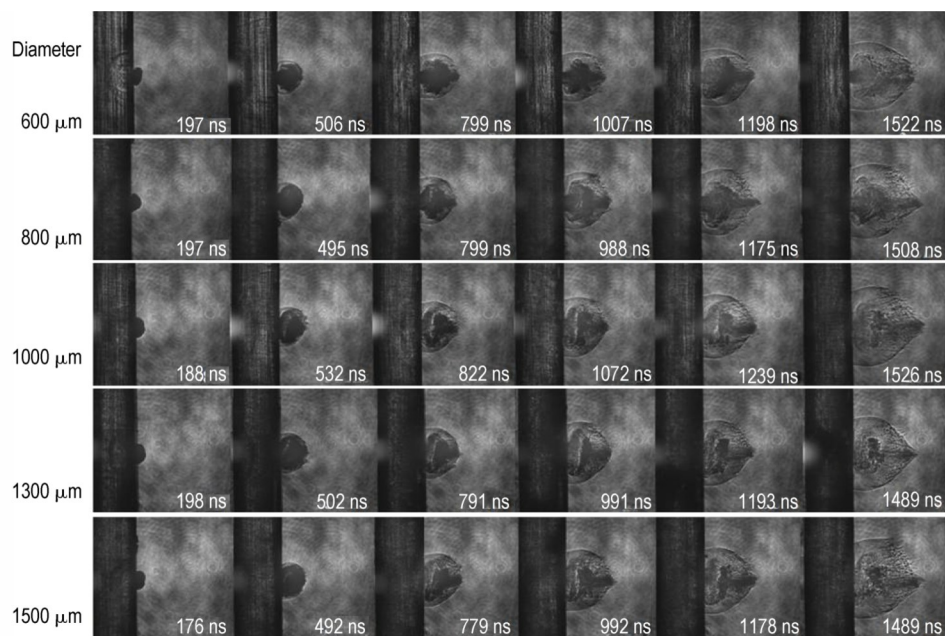


GUO Wei, CAO Jin-le, CHANG Shi-min, HU Peng, WU Li-zhi,
SHEN Rui-qi, YE Ying-hua

Chinese Journal of Energetic Materials (Hanneng Cailiao),
2020,28(2):89–98

Laser igniters filled with micron-sized B/KNO₃/PF were designed and prepared, and then ignited by a new type of semiconductor laser ignition system. The sensitivity of igniters was carried out. The ignition characteristics of igniters were studied by photoelectric sensor and high-speed camera, and the re-ignition phenomenon of igniters was first discovered.

Influence of Barrel Parameters on Velocity and Morphology of Laser-driven Flyer

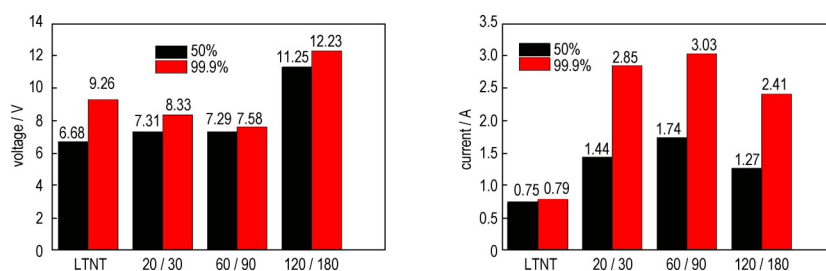


QIN Wen-zhi, WANG Zhi-hao, HE Bi, GAO Yuan, WANG Yao,
WANG Liang

Chinese Journal of Energetic Materials (Hanneng Cailiao),
2020,28(2):99–104

Shadowgraph was used to obtain the evolution process of single Al flyer by laser driven. Barrels with diameter of 600–1500 μm was designed to reveal the influence of the barrel diameter. The velocity of flyer was calculated from the shadowgraph results.

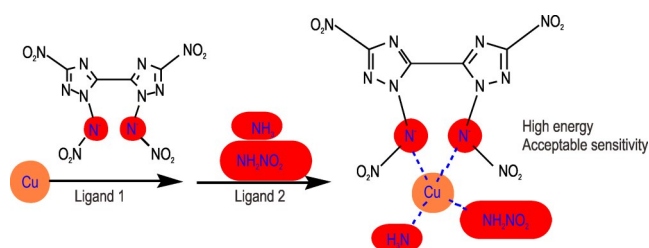
Influence of Modulation Period on the Thermal Properties and Firing Properties of Al/MoO₃ Reactive Films



NI De-bin, DANG Peng-yang, XU Dong, YU Guo-qiang, CHEN Li-kui, ZHU Ya-hong, XIE Zhan-feng, CHU En-yi
Chinese Journal of Energetic Materials (Hanneng Cailiao),
 2020,28(2):105–111

The Al/MoO₃ reactive films with three modulation period were fabricated by magnetron sputtering, and the effect of modulation period on the voltage-firing and current-firing sensitivities were also investigated.

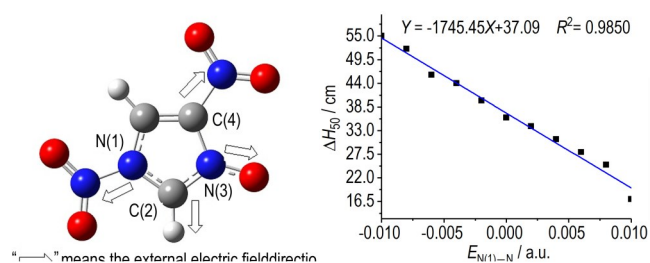
Theoretical Study on the Structure and Performance of High-energy Triazole-based Copper Complexes Cu(DNABT)(NH₃)_{2-x}(NH₂NO₂)_x



WU Qiong, YAN Gao-jie, LI Qi-di, ZHANG Ze-wu, ZHU Wei-hua
Chinese Journal of Energetic Materials (Hanneng Cailiao),
 2020,28(2):112–117

Three new nitrogen-rich energetic complexes Cu(DNABT)(NH₃)_{2-x}(NH₂NO₂)_x (x=0,1,2) with high energy and acceptable sensitivity were designed by coupling mixed ligands N, N'-dinitroamino-bi(1,2,4-triazole) (DNABT) and NH₃/NH₂NO₂ with copper.

Theoretical Prediction of the Sensitivity of 1,4-Dinitroimidazole-N-oxide in the External Electric Fields



"r—N" means the external electric field direction

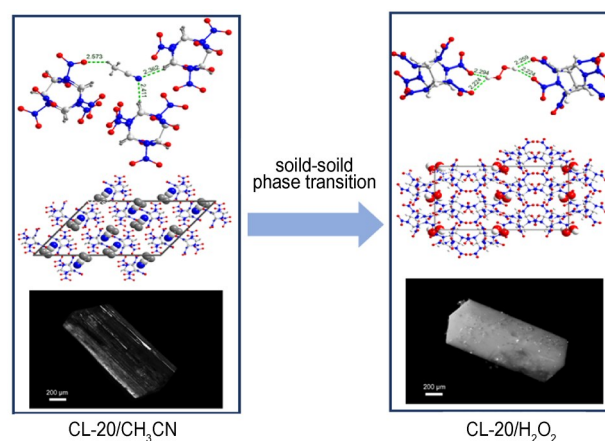
WANG Yong, REN Fu-de, CAO Duan-lin, YUAN Jun, LI Yong-xiang, WANG Jian-long
Chinese Journal of Energetic Materials (Hanneng Cailiao),
 2020,28(2):118–126

In order to introduce the external electric fields into the explosive systems safely and effectively, the bond lengths, nitro charges, bond dissociation energies of the potential trigger linkages and the impact sensitivities, electrostatic spark sensitivities as well as shock initiation pressures of 1,4-dinitroimidazole-N-oxide were investigated by the B3LYP/6-311++G(2d,p) and M06-2X/6-311++G(2d,p) levels of theory. The essence of the high sensitivity was revealed by means of the resonance theory of the aromatic ring structure.

A Mild Method for the Construction of CL-20/H₂O₂ Host-guest Energetic Material

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

Chinese Journal of Energetic Materials (Hanneng Cailiao),
2020,28(2):127-136

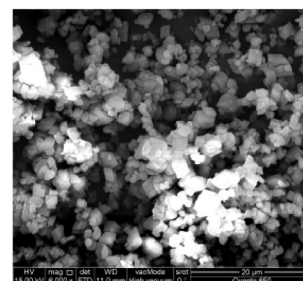


The *Pbca* CL-20/H₂O₂ host-guest energetic material with great application prospect was prepared by a mild method.

Preparation, Characterization of Ultrafine CL-20/HMX Cocrystal Explosive and Its Compatibility With the Components of Propellants

REN Xiao-ting, LU Yan-hua, LU Zhi-meng, WANG Qing-song,
HE Jin-xuan, DING Ning

Chinese Journal of Energetic Materials (Hanneng Cailiao),
2020,28(2):137-144

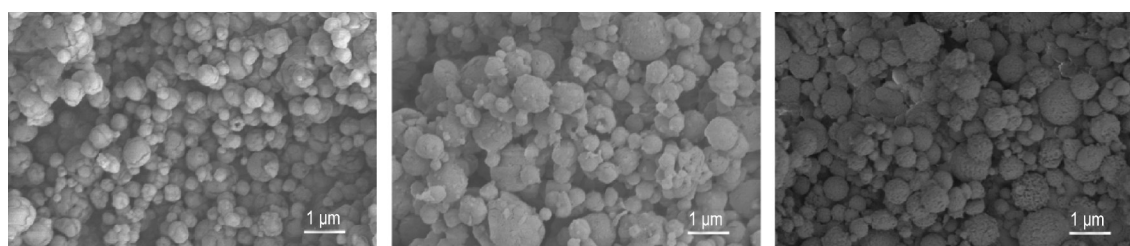


Ultrafine CL-20/HMX cocrystal explosive was prepared by ultra-highly efficient mixing method. X-ray diffraction and differential scanning calorimetry were utilized to determine whether the cocrystal explosive was prepared, and the crystal morphology, particle size, sensitivity of the cocrystal explosive were characterized.

Preparation and Catalytic Properties of Submicron Iron Tannate/Nitramine Explosive Composite Microspheres from Spray Drying Process

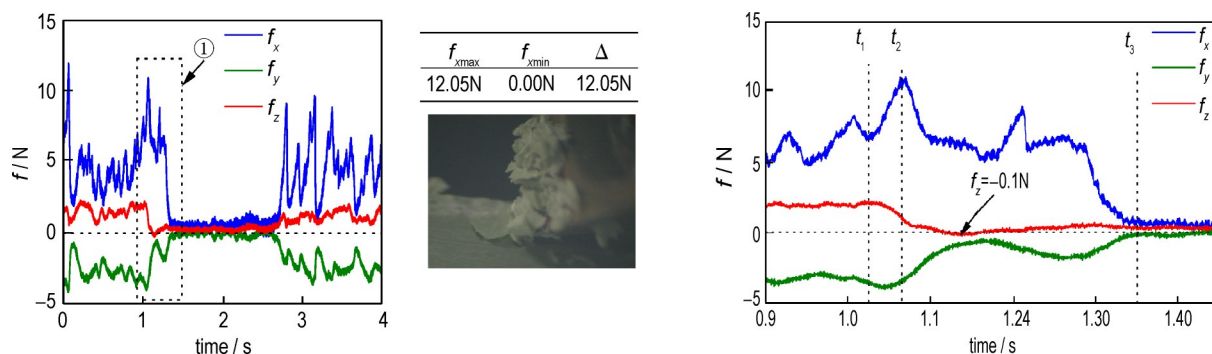
YANG Li, LI Hong-run, SONG Nai-meng, LIU Jian-chao

Chinese Journal of Energetic Materials (Hanneng Cailiao),
2020,28(2):145-150



Three submicron composite microspheres, tannic acid and iron (Ta-Fe)/CL-20, Ta-Fe/RDX and Ta-Fe/HMX, were prepared by ultrasonic spray drying to study the effect of iron tannate catalyst on thermal decomposition properties of common components in solid propellants.

Cutting Force Response of Orthogonal Cutting of Polymer Bonded Explosive Simulants

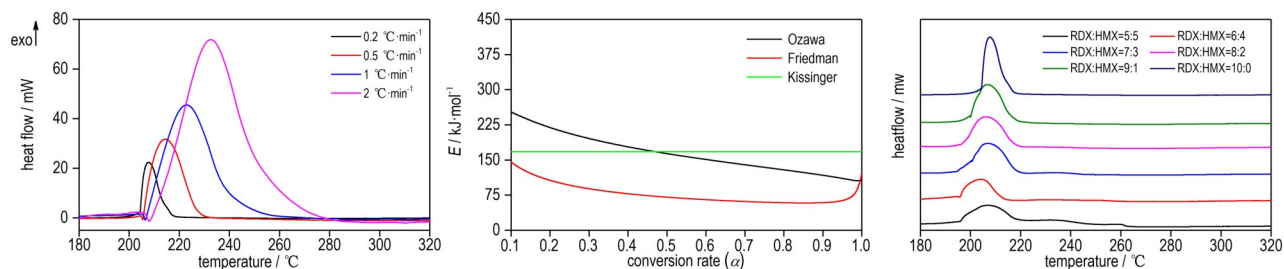


XIE Feng-ying, ZHANG Zhong-wei, HUANG Jiao-hu, LIU Wei, XIAO Cai-wei

Chinese Journal of Energetic Materials (Hanneng Cailiao), 2020,28(2):151–156

Low-speed orthogonal cutting experiments, combined with microphotography, 3D dynamometer and 3D surface profiler, were used to analyze the characteristics of instantaneous cutting force of PBX explosive simulants.

Thermo-decomposition Performance of RDX and the Effect of HMX on Its Thermo-stability

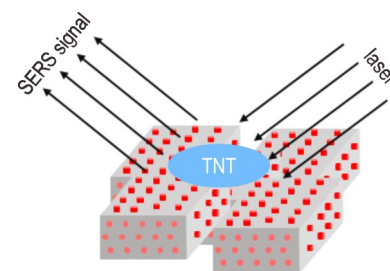


XU Ya-bei, TAN Ying-xin, CAO Wei-guo, SHANG Yi-ping, ZHANG Meng-hua, ZHANG Wei, WANG Hua-yu, TIAN Bin

Chinese Journal of Energetic Materials (Hanneng Cailiao), 2020,28(2):157–163

The thermo-decomposition performance of RDX and corresponding HMX-doping samples were studied. RDX was belonging to melt decomposition materials, the thermo-decomposition temperature and E_a of HMX-doping samples were decreased with the doping of HMX.

Construction of SERS Substrates by ZIF-8@Ag Composites and Detection of Trace TNT

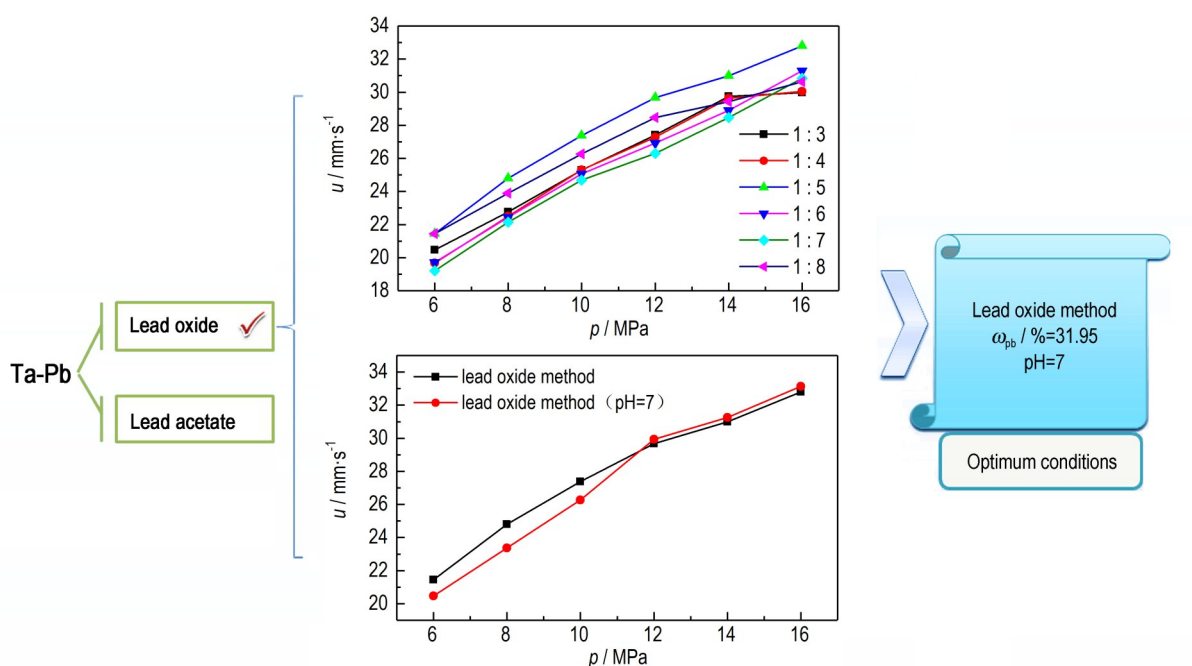


LIU Yi, YU Shu-wen, HE Xuan, HUANG Shi-liang, LIU Yu,
LI Xian-yin, WANG Dun-ju

Chinese Journal of Energetic Materials (Hanneng Cailiao),
2020,28(2):164-169

ZIF-8@Ag composites were prepared by *in situ* growth and modified with 4-ATP as efficient probe. The Raman inactive TNT initiated the high Raman scattering of non-resonated 4-ATP through the π - π conjugate between 4-ATP and TNT.

Effects of Experimental Conditions on Catalytic Efficiency of Lead Tannate on Combustion of Propellants



MA Wen-zhe, ZHAO Feng-qi, YANG Yan-jing, XU Kang-zhen,
NIU Qiu-cheng, ZHAO Jun-bo, ZHANG Jian-kan, ZHANG Ming
Chinese Journal of Energetic Materials (Hanneng Cailiao),
2020,28(2):170-176

The factors that may influence combustion-catalysis properties of Ta-Pb were studied systematically from the aspects of preparation method, Pb^{2+} content and pH value. The effects of different Ta-Pb on the combustion performance of double-base propellant have been determined.

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