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BOM熔铸炸药的制备与性能

Preparation and Performance of BOM Melt Cast Explosive

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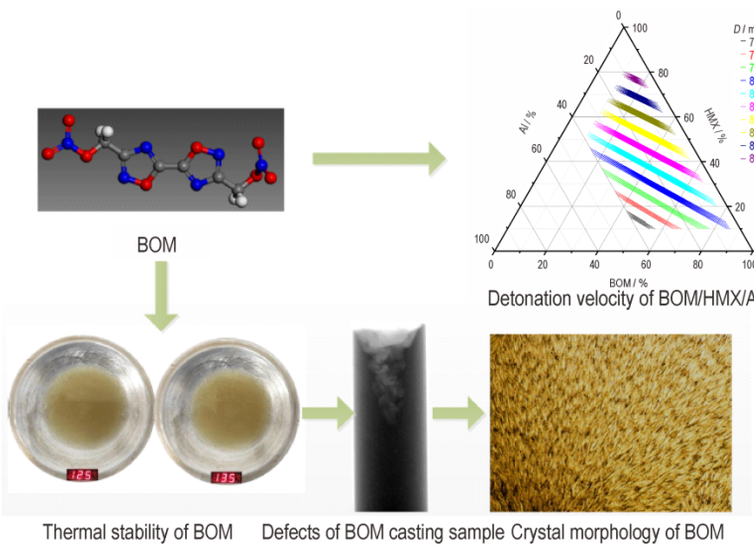
Preparation and Performance of BOM Melt Cast Explosive

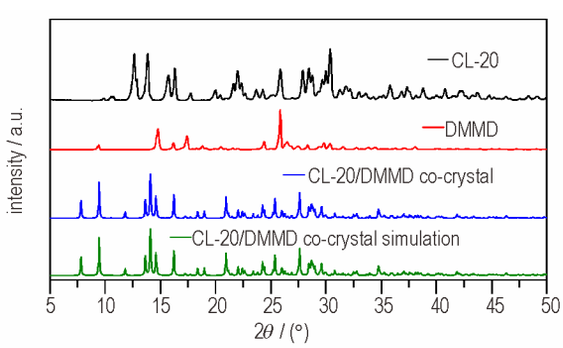


JU Rong-hui, LUO Yi-ming, WANG Xiao-feng, JIANG Qiu-li, ZHANG Meng-meng, ZHOU Yan-shui, BI Fu-qiang

Chinese Journal of Energetic Materials **(*Hanneng Cailiao*), 2021,29(9):781−789**

3, 3′-bi(1, 2, 4-oxadiazole)-5, 5′-diylbis(methylene)dinitrate (BOM) was prepared by the melting and casting process. The thermal safety, solidification performance and energy performance of BOM were studied from the perspective of melt casting explosive.

Preparation and Characterization of CL-20/DMMD Co-crystal Explosive

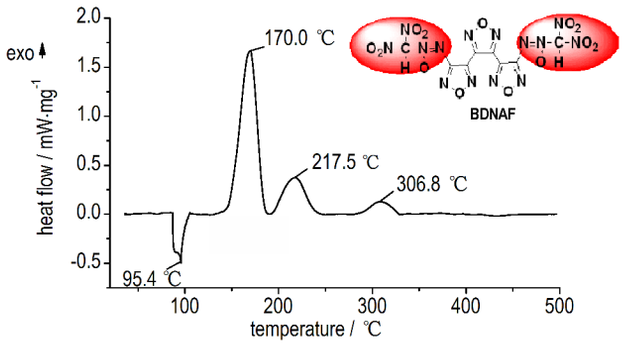


SUN Kang-bo, ZHANG Shu-hai, HAO Yong-ping, BA Shu-hong, JIANG Xia-bing

Chinese Journal of Energetic Materials **(*Hanneng Cailiao*), 2021,29(9):790−797**

The co-crystal of hexanitrohexaazaisowurtzitane (CL-20) and 2, 4-dinitro-2, 4-diazapentane (DMMD) was prepared and characterized.

A Novel Melt-Cast Explosive Bis(dinitromethyl-ONN-azoxyfurazanyl)trifurazan(BDNAF): Synthesis and Characterization

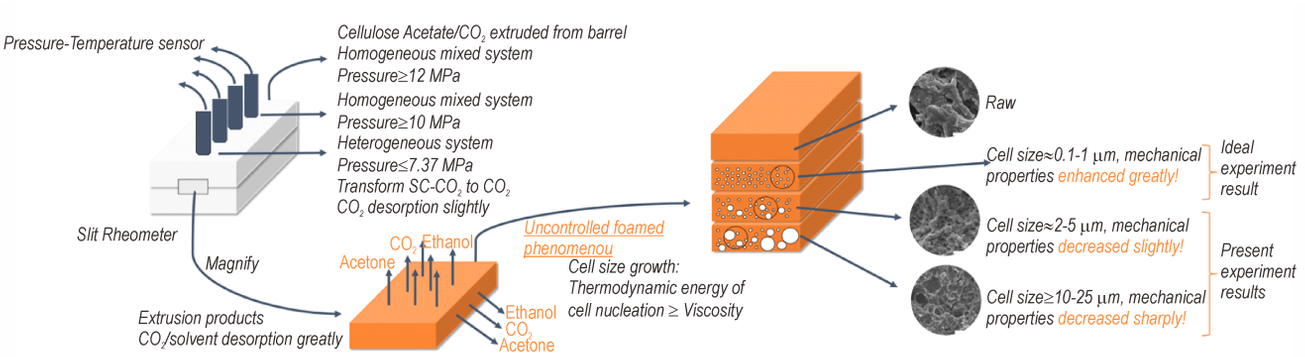


ZHANG Jia-rong, BI Fu-qiang, ZHANG Jun-lin, JIA Si-yuan, WANG Bo-zhou

***Chinese Journal of Energetic Materials* (*Hanneng Cailiao*), 2021,29(9):798-802**

A novel melt-cast energetic compound bis(dinitromethyl-ONN-azoxyfurazanyl)furazan (BDNAF) was synthesized and characterized.

Impact Strength and Rheological Properties of Propellant Substitutes Assisted with SC-CO_2

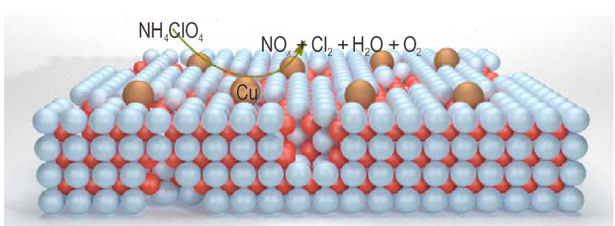


WAN Lei, ZHANG Cheng-hao, GU Han, HU Qi-peng, RUAN Jian, YING San-jiu

***Chinese Journal of Energetic Materials* (*Hanneng Cailiao*), 2021,29(9):803-810**

An uncontrolled foaming phenomenon was observed in propellant substitute extrusion assisted with supercritical carbon dioxide.

Preparation of High Loading Cu_1/Al_2O_3 Single-Atom Catalyst and its Effect on the Thermal Decomposition of AP

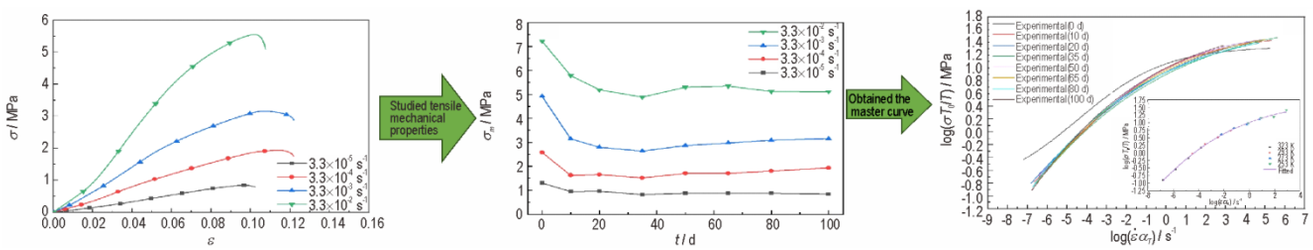


GUO Teng-long, TANG Nan-fang, WANG Ting-peng, ZHANG Jian, XU De-zhu

***Chinese Journal of Energetic Materials* (*Hanneng Cailiao*), 2021,29(9):811-818**

To improve the thermal decomposition performance of ammonium perchlorate (AP), Cu_1/Al_2O_3 single-atom catalyst with high Cu loading of 8.7% was prepared and well characterized. Its effect on the thermal decomposition of AP was also investigated. Cu_1/Al_2O_3 single-atom catalyst exhibits superior catalytic performance.

Tensile Mechanical Properties and Strength Master Curve of Thermal Aged CMDB Propellant

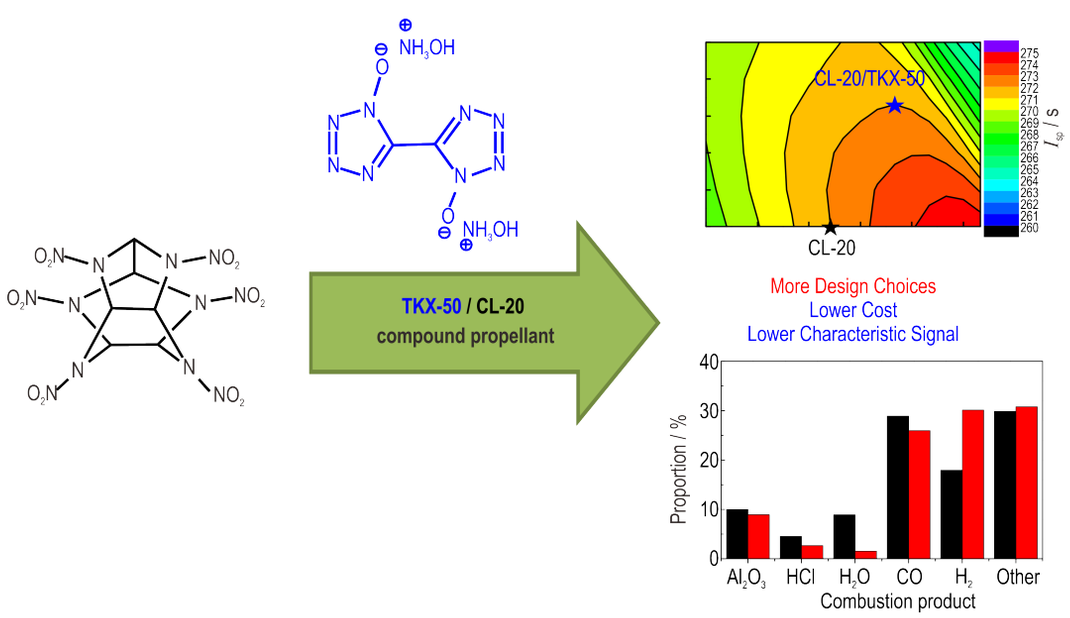


LIU Jia-ming, XU Jin-sheng, CHEN Xiong, LI Hui, FAN Xing-gui

Chinese Journal of Energetic Materials **(*Hanneng Cailiao*), 2021,29(9):819−826**

The thermal accelerated aging CMDB propellant is subjected to tensile and gas chromatography experiments. Change rules of the mechanical properties and stabilizer (MNA) content are studied, and the master curve of the maximum tensile strength of CMDB propellant is obtained.

Estimation of the Application Efficiency of TKX-50 and CL-20 Mixture in Solid Propellant

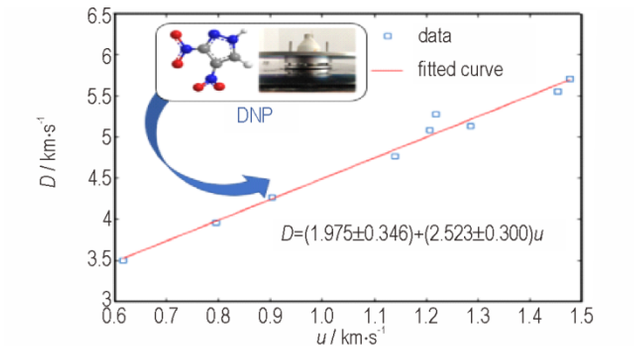


WANG Wei, WANG Jian, FU Xiao-meng, SHI Yu, LI Chun-tao, XU Guo-shu, WANG Fang, LI Wei

Chinese Journal of Energetic Materials **(*Hanneng Cailiao*), 2021,29(9):827−832**

The application feasibility of TKX-50 and CL-20 combination with high-energy solid propellant was analyzed. The application efficiency of TKX-50/CL-20/GAP-based solid propellant was also estimated.

Experimental Measurement on Hugoniot Relationship of DNP Explosive

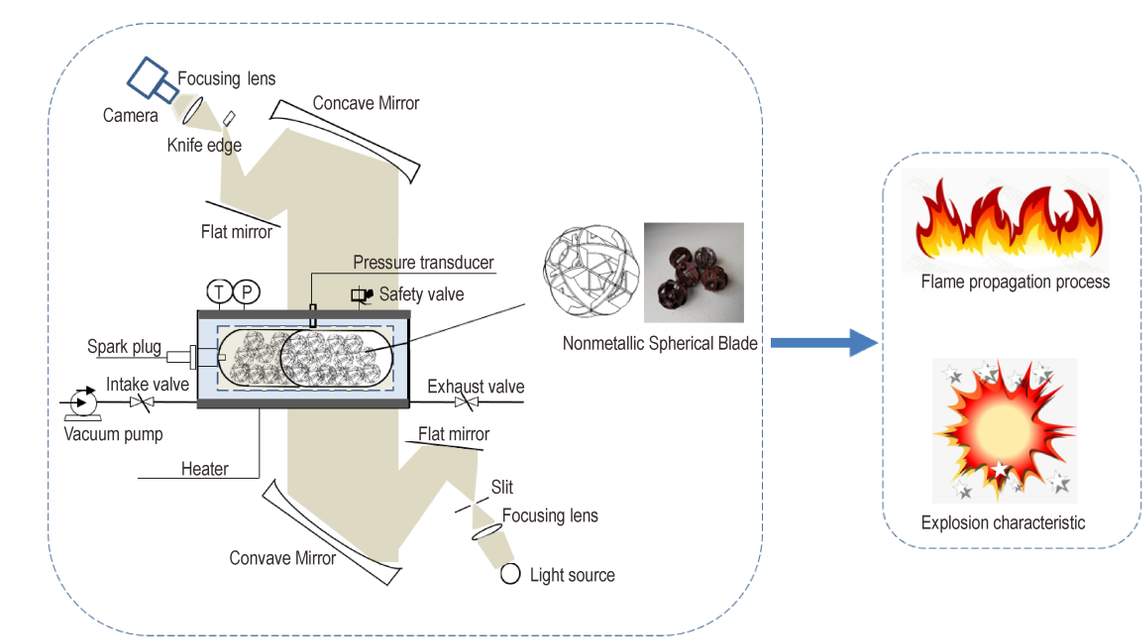


ZHOU Lin, WANG Zhao-yuan, ZHANG Xiang-rong, NI Lei, MIAO Fei-chao, JIANG Tao, ZHU Ying-zhong

Chinese Journal of Energetic Materials **(*Hanneng Cailiao*), 2021,29(9):833-839**

The Hugoniot relationship of DNP was obtained through repeated experiments using the pressure-comparison method, and the Hugoniot curve of unreacted DNP can be fitted by the experimental data under various shock wave pressures. The Hugoniot relation of DNP between shock velocity and particle velocity was obtained as linear.

Influence of Packed Densities of Nonmetallic Spherical Spacers on Propane Explosion Suppression

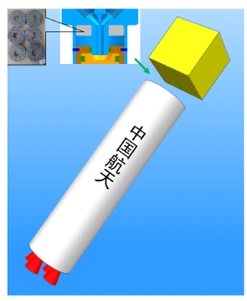


LIU Le-hai, BI Feng-rong, YU Yang-yang, ZHANG Jun-hong, MENG Xiang-de, ZHANG Xue-ling

Chinese Journal of Energetic Materials **(*Hanneng Cailiao*), 2021,29(9):840-847**

In order to study the correlation between the packed density of nonmetallic spherical spacers (NSS) and its suppression of propane explosion, a newly designed constant-volume combustion cylinder combined with high-speed schlieren photography was employed. The explosion experiments of propane-oxygen pre-mixtures with different equivalence ratios were conducted in cylinders with different packed densities of NSS.

Influence of Metal Rubber Vibration Isolator on Pyroshock Response of Pyrotechnic Separation Nuts

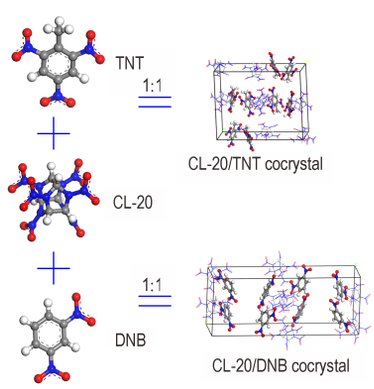


ZHAO Xiang-run, YAN Nan, GUO Chong-xing, DAI Wu-si, HUANG Jin-hong, FU Shao-bin

***Chinese Journal of Energetic Materials* (*Hanneng Cailiao*), 2021,29(9):848-854**

Low-shock separation nuts are widely used for launch escape tower separation, booster stage/lunar module separation, forward heat shield jettison, space craft/lunar module adapter panel separation, and satellite release and so on. The use of MRVI effectively reduces the pyroshock response of the separation nut and ensures the safety of the spacecraft.

Research Progress of Preparation and Application of Energetic Cocrystals

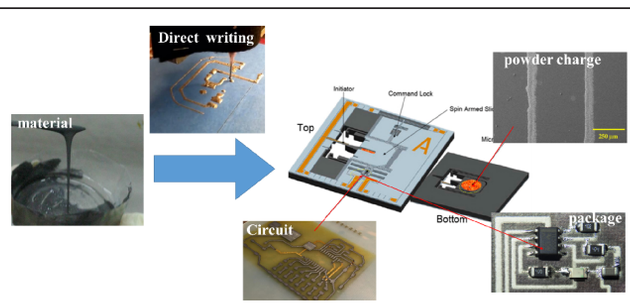


HANG Gui-yun, YU Wen-li, WANG Tao, WANG Jin-tao, SHEN Hui-ming

***Chinese Journal of Energetic Materials* (*Hanneng Cailiao*), 2021,29(9):855-870**

The research progresses of preparation and application of energetic cocrystals were summarized, including the current status, preparation and characterization methods, formation mechanism, existing problems and further development direction of cocrystal explosive.

Research Progress of Direct Writing Technology for MEMS Energetic Devices



HOU Xin-rui, CHEN Len-jian, WU Li-zhi, SHEN Rui-qi, YE Ying-hua

***Chinese Journal of Energetic Materials* (*Hanneng Cailiao*), 2021,29(9):871-882**

The possibility of using energetic ink and metal ink as raw materials to combine direct writing technology with MEMS technology to prepare MEMS energetic devices, and the method of using direct writing technology to package MEMS circuits were reviewed.
