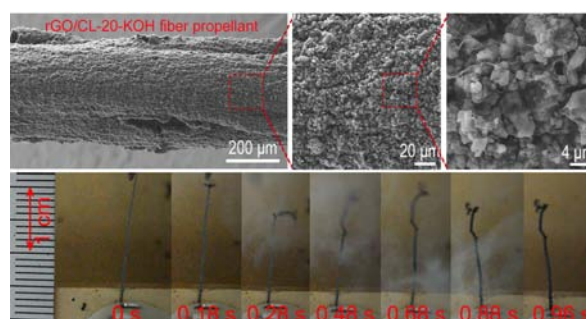


Combustion Characteristic of rGO/CL-20 Self-supporting Fiber-shaped Solid Propellant

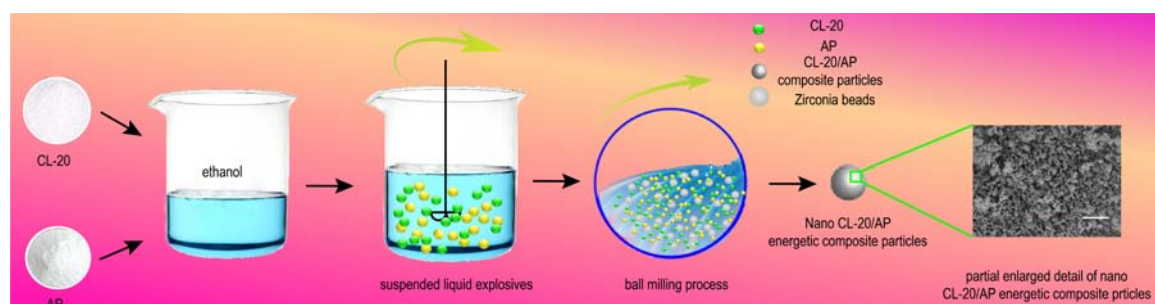
LI Xiao-dong, HUANG Bing, QIAO Zhi-qiang, CHEN Jin,
YANG Guang-cheng
Chinese Journal of Energetic Materials, 2018, 26(12):1003–1008



A self-supporting rGO/CL-20 fiber propellant with CL-20 nano-microparticles hosted in the rGO three-dimensional network is designed and prepared.

Preparation and Properties of Nano CL-20/AP Energetic Composite Particles

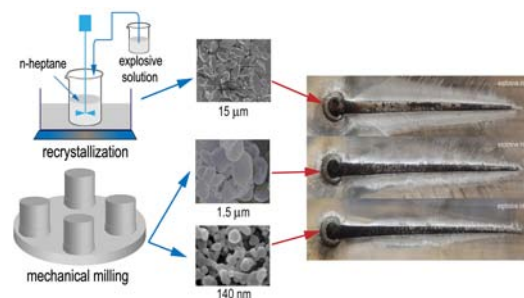
LIU Yan, AN Chong-wei, LUO Jin, WANG Jing-yu
Chinese Journal of Energetic Materials, 2018, 26(12):1009–1013



We synthesized nano CL-20/AP energetic composite particles by a one-step ball milling approach, and the toxic organic solvent with a less-toxic solvent, ethanol, to reduce environment destruction and health damage. Meanwhile, the microstructure, thermal properties and safety properties of CL-20/AP were investigated in detail.

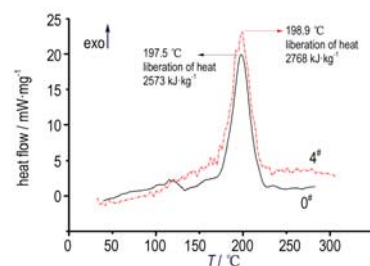
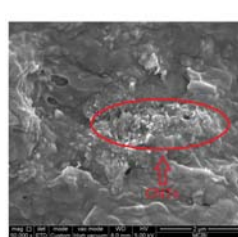
Influence of Particle Size on Critical Detonation Performance of CL-20 Explosives Ink

SONG Chang-kun, AN Chong-wei, YE Bao-yun, LI Qian-bing,
WANG Shuang, WANG Jing-yu
Chinese Journal of Energetic Materials, 2018, 26(12):1014–1018



Three different particle sizes of CL-20 explosives were prepared by mechanical ball grinding method and solvent-non-solvent-method, respectively. The CL-20-based explosive ink by micro-flow direct writing technology was prepared by a two-component adhesive system consisting of water-borne polyurethane(WPU) and ethyl cellulose (EC). The energetic inks were deposited layer by layer from a fine nozzle onto a substrate to produce 3D structures. The critical detonation thickness of CL-20 explosive ink samples with different particle sizes were tested by wedge shaped charge test.

Effect of Carbon Nanotubes (CNTs) on Combustion Properties and Mechanical Properties of Al-CMDB Propellants

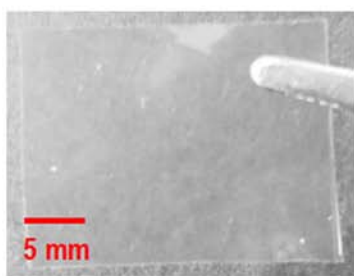


YUAN Zhi-feng, ZHAO Feng-qi, SONG Xiu-duo, ZHENG Wei,
LUO hong-yan, WANG Ke-yong

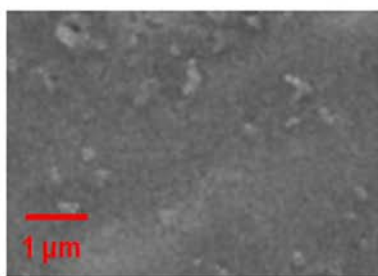
Chinese Journal of Energetic Materials, 2018, 26(12):1019–1024

The effect of carbon nanotubes (CNTs) on the combustion properties and mechanical properties of Al-CMDB propellant was investigated.

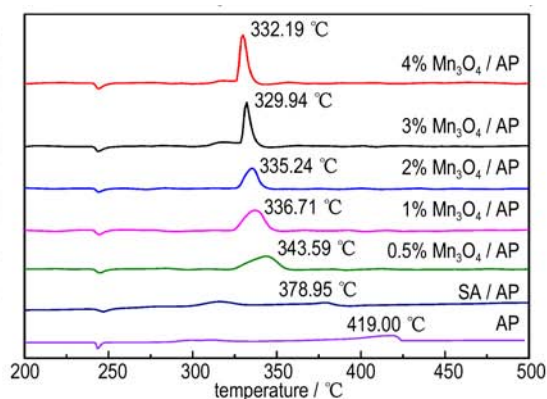
Preparation of Nano-Mn₃O₄ Composite Catalyst and Its Catalytic Effect on the Thermal Decomposition Performance of AP



MA film



nano-Mn₃O₄ composite catalyst



FENG Yang, HE Jie-xin, LU Yue-wen, YANG Lan-ting, WANG Qian,
LIU Min, GUO Chang-ping, YANG Guang-cheng

Chinese Journal of Energetic Materials, 2018, 26(12):1025–1030

The manganese alginate film was prepared by ion exchange, and nano-Mn₃O₄ composite catalyst was successfully synthesized by calcination. The catalytic effect on AP enhances with increasing the content of nano-Mn₃O₄ composite catalyst and the exothermic rate of AP also increases significantly.

Preparation of CuO/PG Nanocomposites and Their Effect on the Catalytic Decomposition Performance of AP

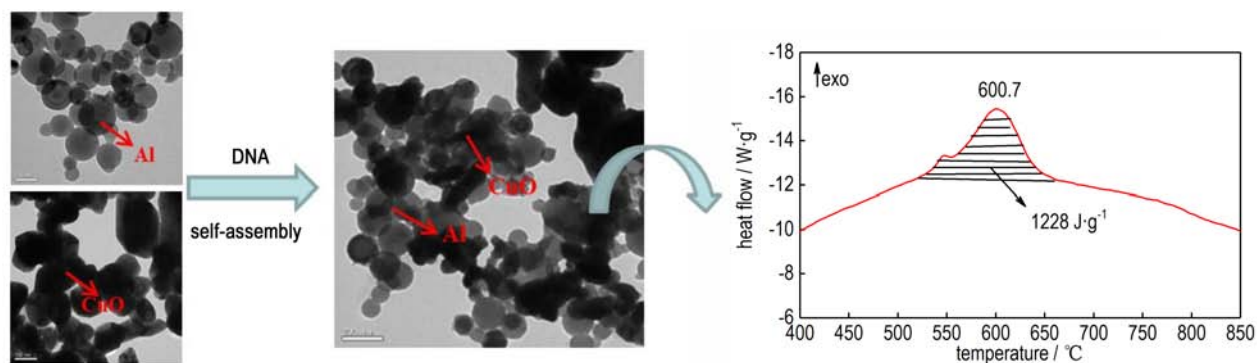


DONG Hao-xue, LI Guo-ping, ZHANG Chen-hui, LUO Yun-jun

Chinese Journal of Energetic Materials, 2018, 26(12):1031–1037

CuO/PG nanocomposites with four CuO morphologies of flakes, lines, rods and spheres were prepared by complex precipitation method and characterized, and their effects on the thermal decomposition of AP were discussed.

Preparation of CuO/Al Nanocomposite Energetic Materials by DNA Self-assembly

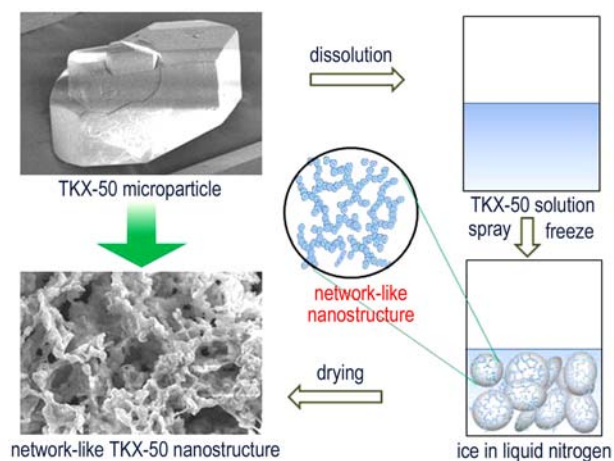


CuO/Al nanocomposite energetic materials were prepared by the principle of spontaneous complementary pairing of DNA strands method at room temperature and in water phase. The structures and thermal reaction properties of nanocomposite energetic materials were characterized by FT-IR, DLS, TEM, SEM and DSC.

WU Xi-na, XIAN Mo, CHEN Fu-shan, JIN Miao-miao

Chinese Journal of Energetic Materials, 2018, 26(12):1038–1043

Thermal Decomposition and Combustion Characteristics of TKX-50 with Network Nanostructure Fabricated by Rapid Freeze-drying Method

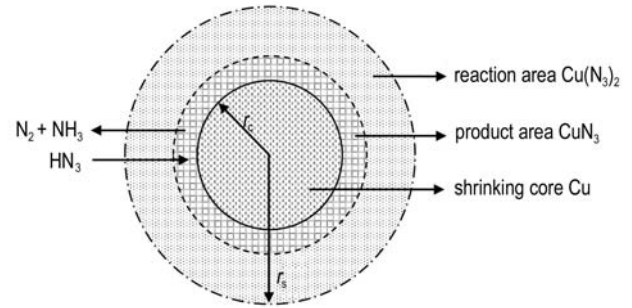


CAO Xiong, YANG Li-yuan, WANG Hua-yu, SHANG Yi-ping,
HU Shuang-qi, DENG Peng, HU Li-shuang

Chinese Journal of Energetic Materials, 2018, 26(12):1044–1048

TKX-50 samples with network-like nanostructures were prepared by rapid freeze drying method.

Kinetic Study of Reaction of Copper Azide Based on Shrinking Core Model

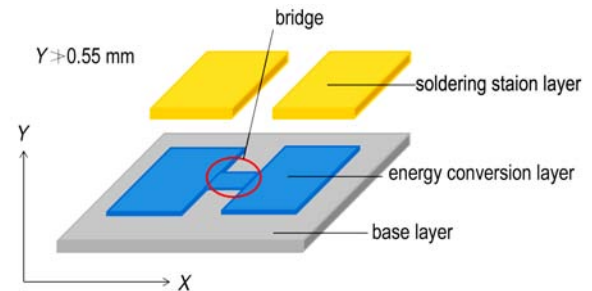


ZHANG Lei, ZHANG Fang, WANG Yan-lan, JIANG Yuan-yong, YANG Li, CHEN Jian-hua, ZHANG Rui

Chinese Journal of Energetic Materials, 2018, 26(12):1049–1055

Through the analysis of two-dimensional shrinking core model, the best matching condition for the synthesis of copper azide from porous copper precursor with different particle size, porosity and charge height can be given more accurately.

Simulation Design and Experimental Study for Microstructure Energy Conversion Components with Different Bridge Shapes

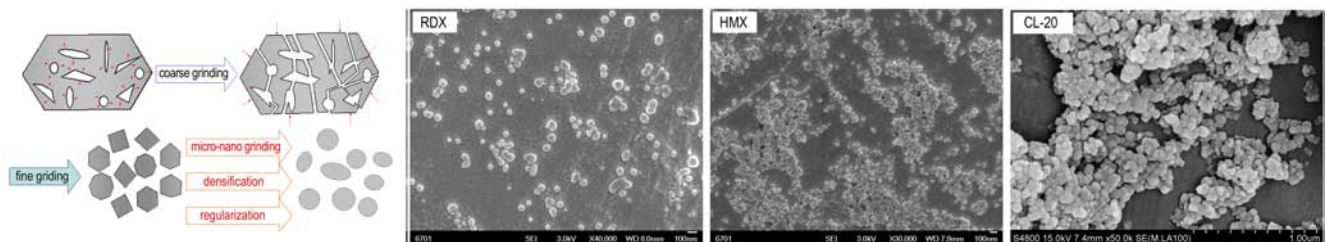


ZHANG Bin, REI Wei, CHU En-yi, ZHAO Yu-long, YIN Ming, LI Hui

Chinese Journal of Energetic Materials, 2018, 26(12):1056–1060

The bridge-shaped structure of energy conversion components has a significant effect on the performance of its functions, therefore, the microstructure energy conversion components with different bridge shapes were studied.

Advances in Micro-nano Energetic Materials

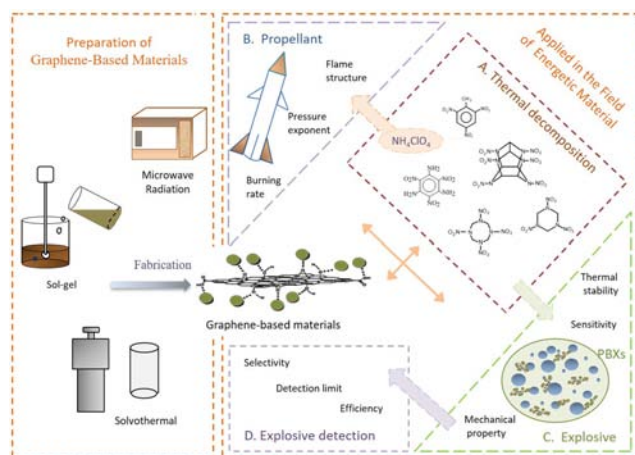


LI Feng-sheng, LIU Jie

Chinese Journal of Energetic Materials, 2018, 26(12):1061–1073

The current advances in the recrystallization technologies and pulverization technologies used in the preparation of micro-nano energetic materials at present, and the drying technologies, characterization methods of particle size and morphology, mechanisms of sensitivity changed with particle size, application directions and effect etc. of micro-nano energetic materials were summarized.

Advances in the Effects of Graphene Based Materials on Properties of Energetic Materials



Graphene-based materials are fabricated using solvothermal, sol-gel and microwave radiation methods. Effects of graphene-based materials on thermal decomposition, combustion, mechanical and safety performances of energetic materials were systematically reviewed. Besides, researches on the application of doping graphene materials in the field of explosive detection were also summarized.

ZHANG Ming, ZHAO Feng-qi, YANG Yan-jing, QU Wen-gang, LI Na,
ZHANG Jian-kan

Chinese Journal of Energetic Materials, 2018, 26(12): 1074–1082

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