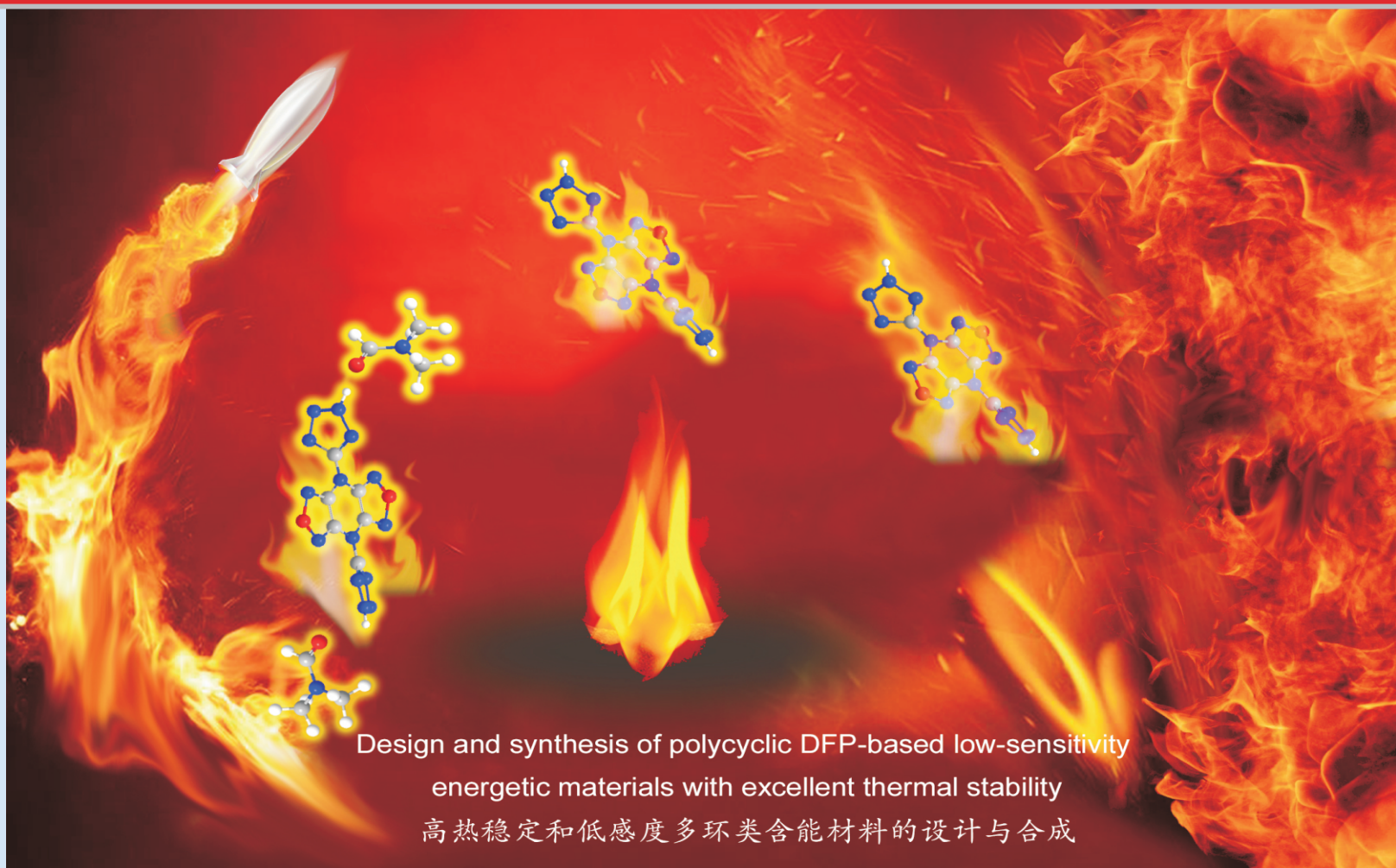


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含能材料

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Design and synthesis of polycyclic DFP-based low-sensitivity
energetic materials with excellent thermal stability
高热稳定和低感度多环类含能材料的设计与合成

合成专辑

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- 945 LI Jie, ZHANG Guo-jie, MA Qing, TANG Shui-hua, FAN Gui-juan **Crystal Structure and Thermal Stability of the Novel Low-Sensitive Energetic Material *N*-(2-fluoro-2,2-dinitroethyl)-1,5-diaminotetrazole-1*H***
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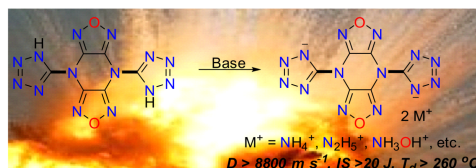
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Design and Synthesis of Polycyclic DFP-based Low-sensitivity Energetic Materials with Excellent Thermal Stability

LI Wei, WANG Yi, QI Xiu-juan, SONG Si-wei, WANG Kang-cai, JIN Yun-he, LIU Tian-lin, ZHANG Qing-hua

Chinese Journal of Energetic Materials, 2018, 26(11): 901–909

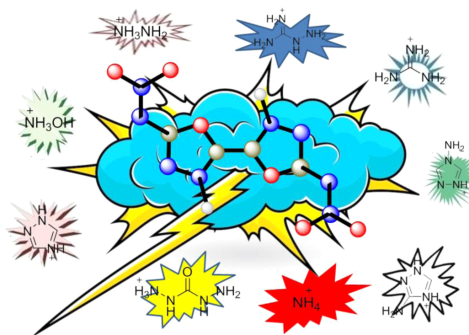


A series of tetrazole-linked 4,8-dihydrodifurazano[3,4-b,e]pyrazine (DFP) based energetic salts, which demonstrates excellent comprehensive properties like high detonation velocities, low impact and friction sensitivities, have been synthesized and fully characterized.

Synthesis of Energetic Salts Based on 5,5'-Dinitroamino-2,2'-bi(1,3,4-oxadiazole)

XIONG Hua-lin, YANG Hong-wei, CHENG Guang-bin

Chinese Journal of Energetic Materials, 2018, 26(11): 910–918

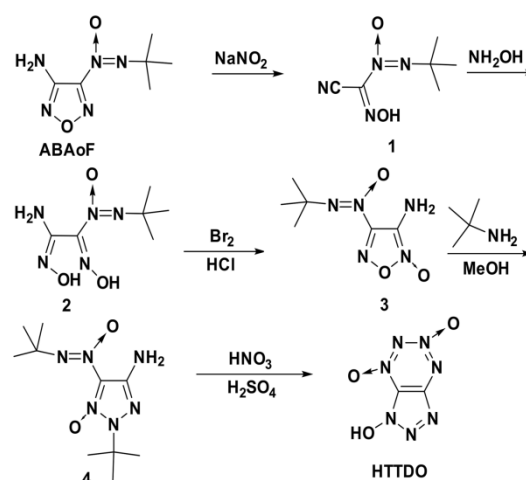


A series of energetic salts based on 5,5'-diamino-2,2'-bi(1,3,4-oxadiazole) were synthesized and fully characterized. The thermal stability was determined by differential scanning calorimetry (DSC). Most of the compounds are thermally stable and insensitive towards impact and friction.

Synthesis, Crystal Structure and Performance of 1-Hydroxy-1H-[1,2,3]triazolo[4,5-e][1,2,3,4]tetrazine 5,7-dioxide

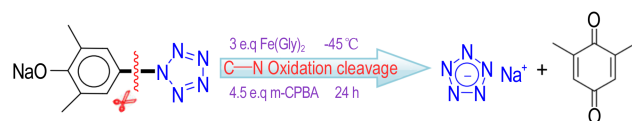
LUO Yi-fen, BI Fu-qiang, ZHAI Lian-jie, LI Xiang-zhi, ZHANG Jun-lin, WANG Bo-zhou

Chinese Journal of Energetic Materials, 2018, 26(11): 919–924



HTTDO was synthesized by using 3-amino-4-(tert-butyl-NNO-azoxy) furazan (ABAoF) as starting material. The single crystal of $\text{HTTDO} \cdot 4.5\text{H}_2\text{O}$ was cultivated and it crystallized in the orthorhombic space group $Pna2(1)$.

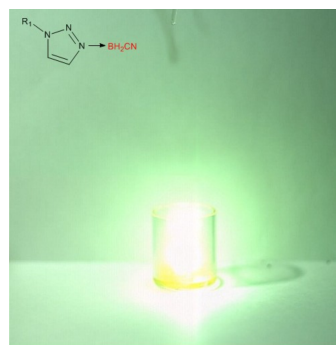
Preparation Process and Mechanism of Cutting off the C—N Research of Sodium Pentazole Salt



SHAO Yan-li, WANG Qian, WANG Peng-cheng,
ZHANG Xiao-peng, JIANG Zhen-ming, LU Ming
Chinese Journal of Energetic Materials, 2018, 26(11): 925–930

The reaction conditions of sodium pentazole salt were optimized, and the mechanism of oxidizing cleavage of the C—N bond in arylpentazole by *m*-CPBA and Fe(Gly)₂ was speculated.

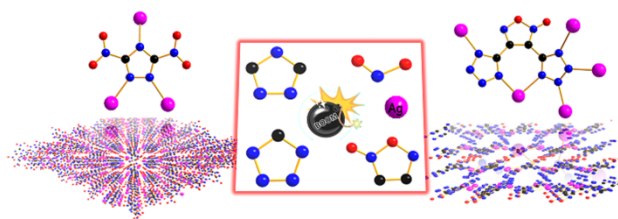
Synthesis and Properties of *N*-alkyltriazole-cyanoborane Propellant Fuels



WANG Chen-bin, LI Xing-ye, CHEN Fu-xue
Chinese Journal of Energetic Materials, 2018, 26(11): 931–936

Five new hypergolic *N*-alkyltriazole-cyanoborane propellant fuels were synthesized from 1,2,3-triazole via halogenation, salt formation and replacement reaction with NaBH₃CN. They were fully characterized by IR, NMR and HRMS. The thermal stability was tested by DSC.

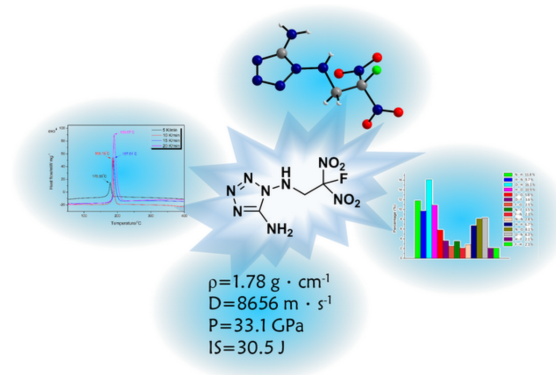
Preparation, Detonation and Safety Performance of the Solvent-Free Energetic Ag(I)-MOFs



QU Xiao-ni, ZHAI Lian-jie, XIA Zheng-qiang, WANG Bo-zhou,
YANG Qi, XIE Gang, CHEN San-ping, GAO Sheng-li
Chinese Journal of Energetic Materials, 2018, 26(11): 937–944

Two solvent-free energetic Ag(I)-MOFs with 3,5-dinitro-1-*H*-1,2,4-triazole and 3,4-bis(1-*H*-5-tetrazolyl)furoxan as energetic ligands were successfully synthesized respectively. Their crystal structures, thermostability, sensitivity and detonation performance were tested.

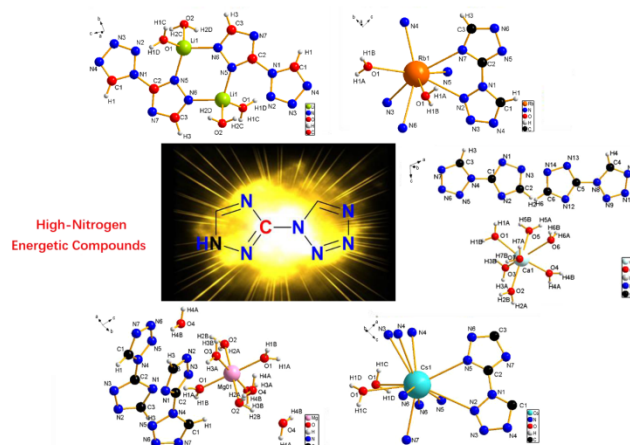
Crystal Structure and Thermal Stability of the Novel Low-Sensitive Energetic Material *N*-(2-fluoro-2,2-dinitroethyl)-1,5-diaminotetrazole-1*H*



The single crystal of *N*-(2-fluoro-2,2-dinitroethyl)-1,5-diaminotetrazole-1*H* was obtained for the first time. Its crystalline properties, thermal stability and hirshfeld surface analysis were further investigated.

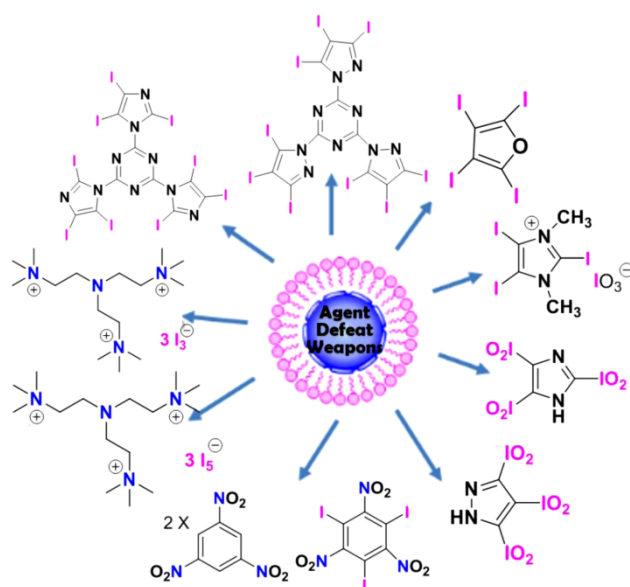
LI Jie, ZHANG Guo-jie, MA Qing, TANG Shui-hua, FAN Gui-juan
Chinese Journal of Energetic Materials, 2018, 26(11): 945–950

Synthesis and Properties of C—N linked Azole-based High-Nitrogen Energetic Compound: Metal Salts Based on the 1-(1*H*-1,2,4-Triazole-3-yl)-1*H*-tetrazole



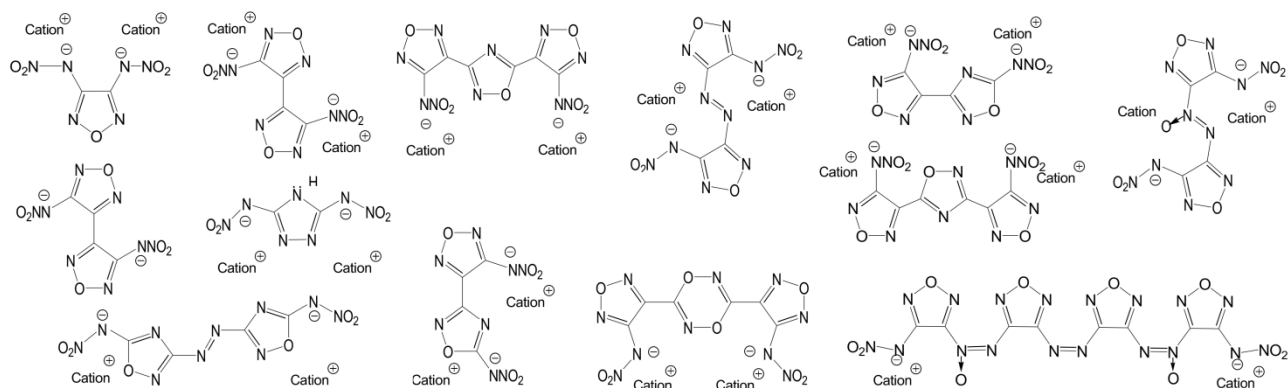
WU Le, HE Piao, MEI Hao-zheng, ZHANG Jian-guo
Chinese Journal of Energetic Materials, 2018, 26(11): 951–957

Research Progress in Iodine-based Energetic Biocidal Agents



CHEN Peng, DOU Hui, FEI Teng, HE Chun-lin, PANG Si-ping
Chinese Journal of Energetic Materials, 2018, 26(11): 958–966

Research Progress in Synthesis of Energetic Salts



ZHOU Yi-fei, WANG Tao, WANG Qiu-xiao, GAO Hai-xiang
Chinese Journal of Energetic Materials, 2018, 26(11): 967–982

Fused-ring Nitrogen-rich Heterocycles as Energetic Materials: Maintaining A Fine Balance Between Performance and Stability

ZHANG Ji-chuan, WANG Zhen-yuan, WANG Bin-shen,
LIANG Yi-hong, PAN Guang-xing, ZHANG Jia-heng
Chinese Journal of Energetic Materials, 2018, 26(11): 983–990

The synthesis, detonation properties, stability and outlook of nitrogen-rich fused-ring energetic materials were reviewed.

Recent Advances in Full-Nitrogen Pentazole Compounds

LI Jue-cheng, JIN Yun-he, DENG Mu-cong, ZHANG Wen-quan,
ZHANG Qing-hua
Chinese Journal of Energetic Materials, 2018, 26(11): 991–998

This work reviews the theoretical calculations, organic syntheses, structural characterization, and the perspectives on pentazole compounds.

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