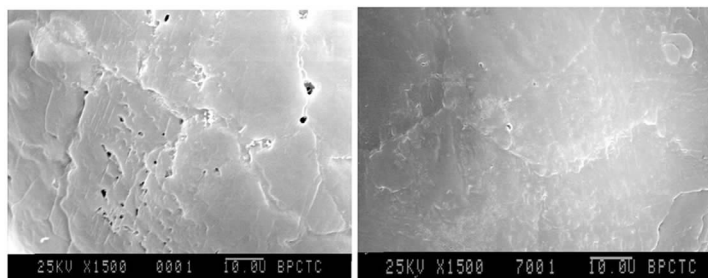


### Study on Surface Properties of Coated Ammonium Nitrate

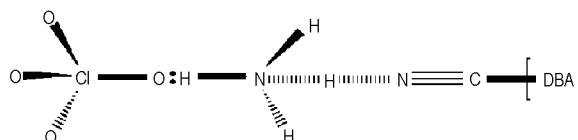
ZHANG Jie, YANG Rong-jie  
*Hanneng Cailiao*, 2004, 12(1) : 1



Ammonium nitrate (AN) particles were coated by surfactant, coupling agent and polymer, respectively through spraying-drying technique. The surface properties of pure and surface-coated AN particles were studied. Scanning electron microscopy photograph showed the porous surface of a pure AN particle and the non-porous surface of a coated AN particle.

### Study on Interaction between AP and Dendritic Bonding Agent

PAN Bi-feng, LUO Yun-jun, TAN Hui-min  
*Hanneng Cailiao*, 2004, 12(1) : 6



In order to improve the mechanical property of solid propellant, dendritic bonding agent (DBA) is reported for the first time, and the interaction between DBA and AP is investigated in this paper. Results show that H-bond is formed between DBA and AP.

### Way of Improving the Stability of High Burning Rate Propellant

HENG Shu-yun, PAN Tong-xue, LIU Zi-ru,  
SUN Li-xia, ZHANG Lin-jun  
*Hanneng Cailiao*, 2004, 12(1) : 10

The thermal stability and safe storage life of high burning rate propellant were studied by DSC, methyl violet test, weight loss test and thermal accelerated aging test.

### Coordination Complexes as Inorganic Explosives for Initiation Systems

Ilyushin M A, Tselinsky I V, Zhilin A Yu,  
Ugryumov I A, Smirnov A V, Kozlov A S  
*Hanneng Cailiao*, 2004, 12(1) : 15

The synthesis of coordination compounds in the series of perchlorates of d-metals containing polynitrogen heterocyclic ligands is presented in this paper.

### Study on Low Vulnerability of Cast-cured PBX Aluminized Explosive

LUO Guan, HUANG Hui, ZHANG Ming,  
GUAN Li-feng, LI Shang-bin

*Hanneng Cailiao*, 2004, 12(1) : 20

A series of safety tests such as small scale impact sensitivity test, bullet test, Susan test for the studied aluminized explosive formulations had been performed. Results showed that adding some more insensitivity explosive as NQ or NTO to partially replace RDX could effectively improve the vulnerability of aluminized explosive. Factors of affecting vulnerability of aluminized explosive were also discussed.

### Study on Recrystallization of Nitroguanidine by Orthogonal Experiments

LIU Yun-chuan, RUI Jiu-hou, CHEN Xing

*Hanneng Cailiao*, 2004, 12(1) : 23

The experimental aim was to transform needled nitroguanidine into spheroidal nitroguanidine. The experiment was performed according to orthogonal experimental design. Methyl cellulose and polyvinyl alcohol, used as retarding agent of crystal growth, played the primary role for the growth of spheroidal crystal in the solution.

### Study on Desensitizing Effect of TATB, Wax and Graphite

HU Qing-xian, Lü Zi-jian

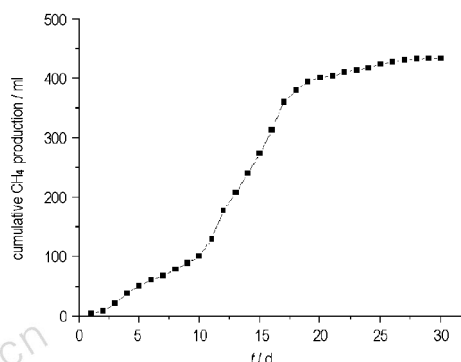
*Hanneng Cailiao*, 2004, 12(1) : 26

Desensitizer can decrease the mechanical sensitivity of explosives. The desensitizing mechanism and effect of TATB, wax and graphite on mechanical sensitivity were discussed. Experimental results of the drop hammer and Susan test were also analyzed.

### Study on Treatability of Wastewater Containing RDX by Bioprocess

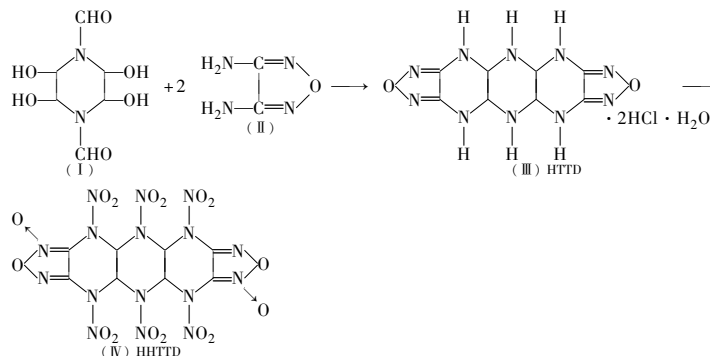
AI Cui-ling

*Hanneng Cailiao*, 2004, 12(1) : 30



The characteristics of hybrid dynamite of RDX wastewater are analyzed, and its anaerobic biodegradability is researched. Results show that this wastewater can use anaerobic biotreatment and degradation rate of RDX is very high.

### Synthesis of Hexanitrohexaazatricyclotetradecanedifuroxan



YU Zhi-yu, CHEN Bao-hua,

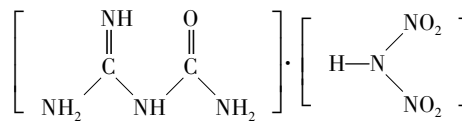
YU Jiang-yong, LI Wen-jie

*Hanneng Cailiao*, 2004, 12(1) : 34

HHTD (III) was synthesized by acid-promoted condensation of 3,4-diaminofurazan with diformyltetrahydroxypiperazine. HHTD (IV) could be formed from nitration of HHTD (III).

**Synthesis and Characterization of FOX-12**

YANG Tong-hui, HE Jin-xuan, ZHANG Hai-lin  
*Hanneng Cailiao*, 2004, 12(1) : 36



FOX-12, a new energetic material was synthesized. Some properties of this compound were characterized.

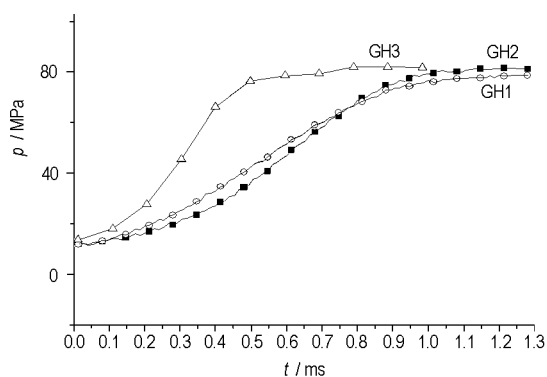
**Study on Properties of FOX-12**

WANG Bo-zhou, LIU Qian, ZHANG Zhi-zhong,  
 JI Yue-ping, ZHU Chun-hua  
*Hanneng Cailiao*, 2004, 12(1) : 38

The properties of N-guanylurea dinitramide(FOX-12) have been studied.

**Study on the Combustion Characteristics of RDX with Different Particle Sizes**

ZHU Ming-shui, LONG Xin-ping,  
 JIANG Xiao-hua  
*Hanneng Cailiao*, 2003, 11(4) : 219



The smaller the particle size of RDX is, the quicker it burns out. And that is more obvious, when the particle size is reduced to some extent.

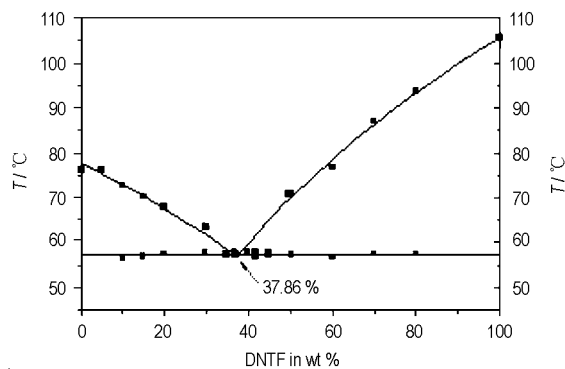
**Preparation of HMX with Nanometer Particle Size and Narrow Particle Distribution**

HE De-chang, ZHENG Bo, TAN Zheng  
*Hanneng Cailiao*, 2004, 12(1) : 43

HMX with nanometer particle size and narrow particle distribution was successfully prepared by impinging method. Effect of dispersants on the particle size and distribution was discussed. The results of HMX particle size distribution in different dispersant were given.

**A New Melt-cast Explosive Formulation**

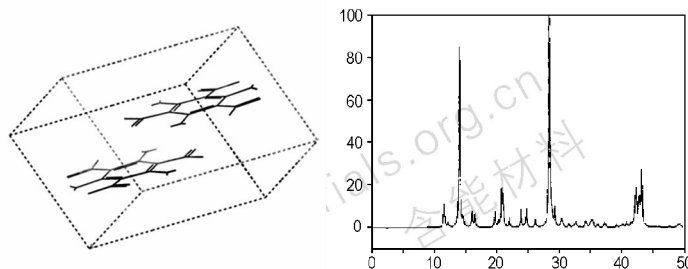
WANG Qin-hui  
*Hanneng Cailiao*, 2004, 12(1) : 46



High energy density material DNTF can form eutectic mixture with TNT. The mixture with high DNTF content could be used as the fundamental formulation for explosive loading.

### Prediction of the Crystal Structure of TATB by Polymorph Predictor Method

ZHANG Chao-yang, SHU Yuan-jie,  
ZHAO Xiao-dong, LI Hai-bo, LI Jin-shan  
*Hanneng Cailiao*, 2004, 12(1) : 48



The crystal structure of TATB was simulated by Polymorph Predictor Method and the XRD spectrum was obtained. All values of simulation are close to those of experiment.

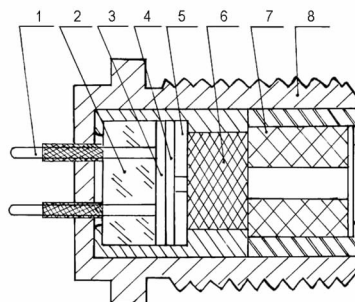
### Development of HTPB Liner for Double-based Propellant

ZOU De-rong  
*Hanneng Cailiao*, 2004, 12(1) : 52

The liner for double-based propellant was prepared from HTPB, toluene diisocyanate, diisooctyl sebacate, 1,4-butanediol and mica. The effects of dosage of each material on bonding and mechanical properties were studied. The stability of liner was carried out by aging test at 70 °C. The grains were coated by the liner and were tested in motor successfully at high and low temperature.

### Study on Exploding Foil Igniter

YANG Zhen-ying, CHU En-yi, Lü Qiao-li,  
REN Xi, GAO Fu-ping, REN Ling  
*Hanneng Cailiao*, 2004, 12(1) : 56



The exploding foil igniter consists of slapper igniter and ignition composition cup. The in-line ignition train permit composition was used in the charge. The performance was studied. The ignition joint test to rocket motor ignition composition was successful.

### Study on the Fragment Velocity Measurement after Explosion of Detonator

HAO Jian-chun, YU Jin-liang  
*Hanneng Cailiao*, 2004, 12(1) : 59

A simple but practical technology named 'target wires' measurement was described, which proves to be efficient and convenient in measuring the fragment velocity of detonator.

### Synthesis of Energetic Bingers from Substituted Oxetanes

HU Zhong-bo, GAN Xiao-xian  
*Hanneng Cailiao*, 2004, 12(1) : 62

Effects of different substituent groups in 3,3-disubstituted oxetane monomers on the condensed state of its homopolymer were analyzed. The energetic oxetane-based binder will be liquid when two substituent groups are different at 3,3-place of oxetane. It was pointed out that introduction of cyano group into chain of the energetic binder could improve mechanical properties of solid propellant.