

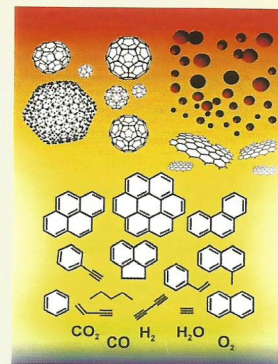
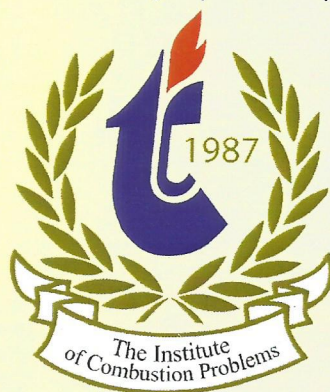
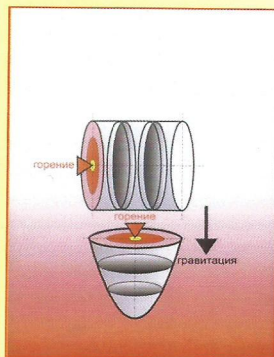
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ЭЛИМИНАЦИЯ МОЧЕВОЙ КИСЛОТЫ УГЛЕРОДНЫМИ БЛОКАМИ СОТОВОЙ СТРУКТУРЫ ФУНКЦИОналиЗИРОВАННЫМИ УРИКАЗОЙ
Ж.М. Жандосов, А.Ж. Байменов, З.А. Мансуров,
А.Т. Оразбеков, С. А. Howell, S.V. Mikhalovsky.....217

ПОСТЕРНЫЕ ДОКЛАДЫ

A STUDY OF THE LOCAL AROMATICITY OF FULLERENES WITH
HEPTAGONAL RINGS
Ablikim Kerim, N. Erezhep.....223

ПЛАЗМОХИМИЧЕСКИЙ СИНТЕЗ НАНОПОРОШКОВ КАРБИДА КРЕМНИЯ
А.С. Аньшаков, Э.К. Урбах, В.А. Фалеев.....224

ВЛИЯНИЕ МЕХАНИЧЕСКОЙ АКТИВАЦИИ НА ХАРАКТЕРИСТИКИ ГОРЕНИЯ
СМЕСЕЙ ПОЛИМЕРНОГО СВЯЗУЮЩЕГО, МАГНИЯ И БОРА
А.Н.Алипбаев, Р.Г.Абдулкаримова, С.М.Фоменко, З.А.Мансуров,
В.Е.Зарко, О.Г.Глотов, М.А.Корчагин, Г.С.Суродин.....227

ИЗУЧЕНИЕ ХИМИЧЕСКОГО ВЗАИМОДЕЙСТВИЯ ВОДНЫХ РАСТВОРОВ
КИСЛОТ И РАЗЛИЧНЫХ СОЛЕЙ С Cr_2O_3 И MgO ДЛЯ ПОЛУЧЕНИЯ
НАНОСВЯЗУЮЩИХ МАТЕРИАЛОВ
Акишев А.Х., Абишева А.К., Жунусов С.М., Фоменко С.М.....231

ЭЛЕКТРОГИДРАВЛИЧЕСКАЯ УСТАНОВКА ДЛЯ ПЕРЕРАБОТКИ СЛОЖНЫХ
МОЛЕКУЛ
Абдикаримов М.С., Елемесова Ж.К., Мирталипов Р.Т., Бодыков Д.У.,
Салахов Д.У., Алиев Е.Т., Мансуров З.А.....235

GAS GENERATORS ARE BASED ON CARBONACEOUS MATERIALS
М. К. Atamanov, Tursyn S., M.I. Tulepov, D.A. Baiseitov, A.R. Kerimkulova,
Y.V. Kazakov, Z.A. Mansurov.....239

ПРОЦЕСС ГОРЕНИЯ И ТЕМРИЧЕСКИЙ АНАЛИЗ СИСТЕМЫ НИТРАТА
АММОНИЯ И КАРБЕНИЗИРОВАННОЙ РИСОВОЙ ШЕЛУХИ
Атаманов М.К., Томиоши Шотаро, Итояма Нобору, Рашид Амроуз, Кейти Хори,
Алиев Е.Т., Мансуров З.А.....243

ПРОЦЕСС ГОРЕНИЯ И ТЕМРИЧЕСКИЙ АНАЛИЗ СИСТЕМЫ НИТРАТА
ГИДРОКСИЛАММОНИЯ И КАРБЕНИЗИРОВАННОЙ РИСОВОЙ ШЕЛУХИ
Атаманов М.К., Томиоши Шотаро, Итояма Нобору, Рашид Амроуз, Кейти Хори,
Алиев Е.Т., Мансуров З.А.....248

ПЛАЗМЕННЫЙ ПАРОВУГЛЕКИСЛОТНЫЙ РИФОРМИНГ МЕТАНА
А.Н. Братцев, В.Е. Попов, С.Д. Попов, Е.О. Серба, Д.И. Субботин, А.В. Суров.....250

GAS GENERATORS ARE BASED ON CARBONACEOUS MATERIALS

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Abstract

In this paper the results concerning development of energy-intensive materials on the base of KNO_3 and carbonaceous materials in gas-generating chemical cartridges were applied. Shows the results of investigation non-explosive destroying mixture based on local materials promoting expansion force in the closed volume 30 MPa was developed. Described carbonaceous materials which are used in gas-generating chemical cartridges, proposed the investigations about sensitivity to mechanical influences and degree of emission of gaseous and condensed products.

Keywords: gas generator chemical cartridge (GCC), gas generator composition, non-explosive destroying mixture.

Introduction

Gas generating compositions are the compositions which during burning produces a relatively minimal amount of solid-particles and relatively liberal amount of gas. For investigation of gas generator systems the law of "gasification" is applied. This characteristic relation, making relation between pressure, temperature and specific volume of gas, allows in future to apply the obtained dependences for definition of necessary parameters under working conditions of gas generator [1].

Recently, gas generating compositions have been widely applied both in military and in civilian sphere. Also, when laying different communications, during destruction of concrete brick-built structures in circumstances where compact planning, the efficiency and security considerations are very relevant, is necessary to use the substances which creating the pressure in the hole due to reaction of deflagration combustion instead explosion. Generally, their use is always accompanied by great risks [2]. Largely, the gas generating mixture consists of: a) the fuel is easily generating in gas; b) an oxidizer; c) binders [3].

Researchers pay great attention for the development of energy fuel, it is one of the main objects for research of gas generating compositions [4]. Useful combustibles must have a maximum degree of transition to the gaseous phase at thermal decomposition. We should not forget about the environmental side and the impact of gas generators combustion products to the human body. The authors of this research were worked out with carbonaceous materials on the basis of mineral and vegetable raw materials [5].

Carbonaceous materials have been developed for the use in gas-generating chemical cartridges (GCC). As the result of undertaken studies, it has been found that the range of fragments distribution of concrete is depending on quantity of gas-generating composition as well as chemical composition. If the breakable block is covered with armor the fragment distribution is absent. The use of this type of device for installation of various communications, the destruction of concrete bricks which are densely built-up to each other in residential areas that provides the security guarantees. This article presents the introduction to the study of gas generating compositions of