

PRODUCTION AND TECHNOLOGY OF POLYMERS

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ABSTRACT

In our era, when science and technology are rapidly developing, ensuring the fire safety of industrial facilities and structures with complex structural structures is one of the most urgent issues. In the developed countries of the world, great attention is being paid to the creation of highly effective fire retardants and coatings based on mineral raw materials aimed at increasing the fire resistance of construction structures and materials. In the Republic of Uzbekistan, large-scale measures are being taken to ensure the fire safety of buildings and structures by creating and improving modern fire protection devices and systems.

Keywords: science, technology, structures, complex, rain, industry, gypsum, ultrasound.

АННОТАЦИЯ

В нашу эпоху, когда наука и техника стремительно развиваются, обеспечение пожарной безопасности промышленных объектов и сооружений со сложными конструктивными конструкциями является одним из наиболее актуальных вопросов. В развитых странах мира большое внимание уделяется созданию высокоэффективных антипиренов и покрытий на основе минерального сырья, направленных на повышение огнестойкости строительных конструкций и материалов. В Республике Узбекистан проводятся масштабные мероприятия по обеспечению пожарной безопасности зданий и сооружений путем создания и совершенствования современных противопожарных устройств и систем.

Ключевые слова: наука, техника, конструкции, комплекс, дождь, промышленность, гипс, ультразвук.

INTRODUCTION

Currently, one of the urgent tasks is to create a new generation of protective equipment with complex properties based on the achievements of modern technologies in the field of fire safety of buildings and structures. According to fire statistics, fires around the world cause serious damage to people's livelihoods, economy and ecology. In our era, when science and technology are rapidly

developing, ensuring the fire safety of industrial facilities and structures with complex structural structures is one of the most urgent issues. In the developed countries of the world, great attention is being paid to the creation of highly effective fire retardants and coatings based on mineral raw materials aimed at increasing the fire resistance of construction structures and materials. In the Republic of Uzbekistan, large-scale measures are being taken to ensure the fire safety of buildings and structures by creating and improving modern fire protection devices and systems. In this field, in particular, a number of researches are being carried out on the creation of fire-preventing means that ensure the fire resistance of building structures and materials based on local raw materials, and on improving the quality of fire fighting methods and technical means.

DISCUSSION AND RESULTS

It consists of creating content and developing technology for new fire-fighting coating compositions based on local raw materials.

- Development of an effective method of obtaining fire-resistant and heat-insulating highly dispersed fillers based on GIPAN and multifunctional compositions;

- Development of methods of increasing the efficiency of flame- and heat-resistant, as well as fire-extinguishing compositions based on kaolin and liquid glass by influencing the physical state, thermal and thermal properties of GIPAN, its modified forms;

- the physical properties, structure and chemical composition of the polymer are affected by the external field (ultrasound, heat) and chemical reagents, ensuring the achievement of the given thermal and physical parameters of the refractory compositions based on GIPAN;

- development of fire protection mechanisms of wooden and inorganic building structures using the created heat-insulating compositions; Creation of effective fire-resistant coatings on the basis of GIPAN, using them to increase the fire resistance of wooden and inorganic building structures, and to develop methods of multi-level fire protection;

- creation of new compositions of heat-insulating materials based on local raw materials, analysis of their main fire-technical characteristics and development of non-combustible coatings and construction materials based on them;

- Development of stable dispersed systems based on GIPAN and creation of high-performance fire extinguishing compositions based on them, as well as

development of methods for evaluating the effectiveness of liquid fire extinguishing compositions.

- quantum-chemical modulation and analysis of the structure and properties of primary substances.

- Welding conditions with GIPAN, organosilicon substances in different proportions were studied and antiperins with high viscosity were obtained;

- the optimal composition of the polymer obtained on the basis of GIPAN and TEOS in a ratio of 50:1 with liquid glass and kaolin was selected and high-dispersion fillers were developed that are heat-resistant and fireproof;

- a method of increasing fire and heat protection functions of polymers was developed by modifying finely dispersed sodium silicate with the help of ultrasound and chemical reagents;

- in accordance with the state standard (GOST 16363-98), new compositions with a multi-level fire protection function were developed based on polymers, which ensure the transfer of wooden building materials to the group of hard-to-burn materials;

- the technology of obtaining fire-protective silicate products based on polymers was developed;

- a non-flammable and heat-insulating material based on polymers designed to be used as a fire barrier was developed;

- new liquid fire extinguishing compositions based on polymers were created and a method for evaluating the effectiveness of additional indicators of these compositions was developed.

- properties of substances in the initial and intermediate transition states were analyzed quantum-chemically, and electron distribution and charge distribution in their molecules were studied.

CONCLUSION

As can be seen from the above studies, at present, the rapid pace of scientific and technical development sharply increases the demand for thermostable and fire-resistant polymer materials. Studies show that the next direction of application of organosilicon compositions is that they can be used as heat-insulating materials for reactors, pipelines and power plants operating at high temperatures. Due to the resistance of these materials to radiation, their use in nuclear energy can be of great interest. In addition, the shielding ability of organosilicon compounds, even without

special additives, can be said to be higher than that of ordinary polymers due to the greater atomic mass of silicon compared to carbon.

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