

получать композиции с прогнозируемыми реологическими, энергетическими или экологическими характеристиками.

В рамках данной работы для нескольких типичных составов гелеобразного топлива выполнено экспериментальное исследование процессов зажигания и горения, по результатам которого установлены основные закономерности протекания физико-химических процессов и их характеристики в широком диапазоне варьирования температуры источника нагрева.

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Utilization of combustible wastes in gel fuel compositions in the Arctic and Antarctic conditions

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In recent years, in connection with the intensive development of the territories of the Arctic and Antarctic, the actual task is to develop measures for the solid and liquid combustible wastes effective utilization in conditions of sufficiently low ambient temperatures. On the one hand, it will prevent the dumping of waste into the World Ocean and it will reduce the environmental damage risks to the territories of the Far North. On the other hand, promising technology will allow preparing fuel compositions from wastes in a place where the last one were produced. Such fuels can be used as energy resources, thereby reducing costs for the disposal of waste when transporting them to the continental territory.

One of the promising solutions to the waste disposal problem is the gel fuels preparation based on solid and liquid combustible components with the addition of a small amount (about 5%) of the thickener. Such fuels are characterized by ease of preparation, storage, transportation and use as energy resources. Besides, gel fuels have a lower level of fire hazard compared to solid and liquid fuels. The composition of the gel fuels can vary over a wide range. The fuels preparation based on one type of a combustible liquid or a several liquids mixture with the finely dispersed components addition makes it possible to obtain compositions with predicted rheological, energy or environmental characteristics.

Within the framework of this work, the ignition and combustion processes were studied experimentally for several compositions of typical gel fuel. Based on the results of present work, the main regularities of

physical and chemical processes and their characteristics were established over a wide range variation of heating source temperature.

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