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Complex Process of Cellulosization of Fiber Waste of Cotton Cleaning Enterprises (PTKTCh) - Study of Effect of Different Parameters

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ABSTRACT

Obtaining its simple esters from different brands of cellulose obtained from local raw materials, as well as scientific research work on the development of new types of drilling mixes for the oil and gas industry, i.e., the main stabilizing reagent for the development of new fractions of drilling mixes for the oil and gas industry based on local raw materials is the technological extraction of cellulose assimilation of the processes is explained by showing the scientific basis of the scientific research works related to research.

In the world, a number of researches are being carried out in the following priority directions for the production of composite polymer materials based on cellulose: speeding up the production system; determine in advance the factors affecting the synthesis of the product and carry out the process with high precision; obtaining cellulose and its derivatives with a high molecular mass under the influence of various parameters, etc. Currently, the demand for simple and complex ethers of cellulose and composite polymer materials based on them is increasing. Taking into account that the need for simple and complex ethers of cellulose necessary for various fields in our republic is increasing day by day, scientific research is being organized at a high level and certain results are being achieved. In the action strategy for the further development of the Republic of Uzbekistan, important tasks such as "further modernization and diversification of the industry by transferring high-tech processing industries to a qualitatively new stage aimed at the rapid development of the production of high-added-value finished products based on deep processing of local raw materials" specified. During the synthesis of natural polymer on the basis of local raw materials, scientific work is being carried out on current issues such as elimination of various factors that lead to destructive situations and creation of products with high quality indicators. The amount of cellulose produced in our country meets only 10-12% of the demand of cellulose ethers and paper products manufacturers. In order to operate at full capacity, enterprises are importing pulp in exchange for foreign exchange. In order to meet the demand for cellulose, it is necessary to increase the possibilities of obtaining cellulose from annual and perennial plants, except for cotton lint.

In the world, promising developments on the basis of advanced innovative start-up projects, which include mechano-chemical processing of local raw materials, which are relevant to each sector of the

national economy and economically support the population, are moving forward year by year. In particular, the program of economically developed and developing countries on the exploitation of underground resources - precious ores, rare metals, bentonites of various types, oil and gas extraction - on the basis of profitable projects has already been implemented. In this regard, scientific research is being conducted at a high level.

The process of complex extraction of cellulose from fibrous waste of cotton ginning enterprises (PTKTCh) - a study of the influence of various parameters, a study of the cooking process of cellulose samples based on extracted PTKTCh (fiber pulp of textile enterprises) under the influence of the specified parameters, and the determination of brands under the influence of specified parameters, as well as physico-chemical and physico-chemical and mechanical-structural properties were studied. The program of developed and developing countries has already been implemented to develop underground resources - valuable ores, rare metals, bentonites of various types, oil and gas extraction industries on the basis of profitable projects. In this regard, operational research work is being carried out at a high level.

It is an important strategy to approach the rational and effective use of the above-mentioned underground reserves, based on high economic efficiency through mathematical modeling of various factors during the process of their development. In particular, improving the technology of obtaining the main stabilizing reagents for the production of new fractions of drilling mixtures for the oil and gas industry is considered one of the most important tasks of the industry today.

In this work, research on the extraction process of cellulose, the main stabilizing reagent raw material, was carried out in the development of new types of drilling mixtures for the oil and gas industry. The process of cellulose extraction of fibrous waste of cotton ginning plants (PTKTCh) in a complex way - the effect of various parameters was studied.

According to GOST (state standard) 6015-72, PTKTCh (fiber pulp of textile enterprises) is mainly divided into three types, i.e. cotton fluff - PM (lint), mixed waste of cotton ginning enterprises - PU (lint) and short cotton lint - PKM (pux) mixed waste [9].

Fiber slurry: Cleaned fiber waste from cotton gins, fiber cleaners of all brands, seed cleaners before the first linting, regenerators and condensers of cotton fiber for the processing of I and II grade fiber waste of raw cotton are called fiber slurry. In appearance, wavy fiber is a mass of variously overgrown, underdeveloped, small seeds (snails) with a mixture of immature adherent loose fibers, fibrous defects and litter.

Fiber wool is divided into two types depending on the type of cotton raw material, mass fraction of the pure fiber part and color: I-th - I and II types are obtained during processing of cotton raw materials;

The fiber must meet the requirements specified in the table.

1-Table

№	The names of the indicators	Standards for 1st species	Standards for 2nd species
1	The color of the general mass	white to pale yellow	creamy yellow to bright brown
2	Often the mass fraction of the fibrous part, % is not less	40	30
3	The mass percentage of waste mixtures,%	34	20
4	Normalized humidity,%	10	14
5	Nuts (underdeveloped seeds, underfilled seeds, crushed seeds and seed husks without fiber)	Not standardized	

Weeds include: leaf clippings, stalks, stems, branches and pods, whole seeds, as well as dust, soil and sand.

Reclaimed cotton fiber: Reclaimed fiber refers to the fiber obtained after processing in type 1 and 2 fiber regeneration machines in cotton ginning plants.

The regenerated fiber is characterized by a large mass fraction of defects and waste impurities, as well as length unevenness, an increase in the mass fraction of short fibers (down), and a staple length reduced by 2-6 mm compared to the length of cotton fibers of this type.

Cotton Lint: Lint and dust collected by core cyclones include: condensers of cotton linters after the accumulator and seed cleaners before the second and third lines. Cotton lint is passed through a fiber material cleaner to remove dust, debris and dirt. Cotton fibers have the appearance of short fibers that are wrapped in bundles.

Cotton is divided into two groups depending on the type of cotton raw material:

1 — obtained as a result of processing of cotton raw materials of the I and II grades;

2 - It is obtained in the process of processing raw cotton of the III and VI grades.

The normalized moisture content of cotton is decreased for:

Group 1 - 9%;

Group 2 - 12% *

The type of fiber and the group of cotton fluff are determined by their appearance, which is confirmed in the prescribed manner by comparison with samples.

In the results of the dissertation research carried out below, cellulose was isolated by complex chemical processing of cotton fluff-PM (lint), large mixed waste of cotton ginning enterprises - PU (ulyuk) and mixed waste of cotton short fluff - PKM (pux). The effect of various parameters was studied during the research. Boiling Time, Boiling Temperature, and Boiling Concentration.

Initially, some quality indicators of PTKTCh (fiber pulp of textile enterprises) fractions were determined.

2-Table. Some indicators of PTKTCh (fiber pulp of textile enterprises).

Types of PTKTCh	The degree of pollution, %	Amount of cellulose, %	The degree of polymerization	Amount of ash, %
PM (lint)	**24,8**	**77,2**	-	-
PU (ulyuk).	**31**	**56**	-	-
Cotton short fluff - PKM (pux)	**47**	**42**	-	-

The initial parameters of the fiber fractions, i.e., the level of impurities and the amount of cellulose, are reflected in Table 2.

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