

**ACADEMY OF SCIENCES
OF THE REPUBLIC OF UZBEKISTAN**

**S.Yu. Yunusov Institute of the
Chemistry of Plant Substances**



Journal of Chemistry of Natural Compounds

Society of Chemists of Uzbekistan

**"ACTUAL PROBLEMS OF THE CHEMISTRY OF
NATURAL COMPOUNDS»**

SCIENTIFIC CONFERENCE OF YOUNG SCIENTISTS

Dedicated to the memory
of Academician Sabir Yunusovich Yunusov

March 17, 2022

TASHKENT



**ACADEMICIAN
SABIR YUNUSOVICH YUNUSOV
(1909-1995)**

Topics OF CONFERENCE

1. Chemistry, technology and pharmacology of natural compounds.
2. Biotechnology and organic chemistry.

Organizing Committee

Chairman:	Prof. Sagdullaev Sh. Sh.
Co-Chairman:	Prof. Abdullaev N.D.
Secretary:	Mamatkhanova M.A.
	Prof Elmuradov B.J.
	Dr. Vinogradova V.I.
	PhD. Eshboev F.B.
	Prof. Batirov E.Kh.
	Dr. Nishanbaev S.Z.
	Prof. Gusakova S.D.
	Dr. Tursunkhodzhaeva F.M.
	Dr. Sasmakov S.A.
	Dr. Okmanov R.Ya.
	Prof. Rakhmanberdieva R.K.
	Dr. Satimov G.B.

Executive Committee

Abdurakhmanov J.M.	Okhundedaev B.
Nasriddinov Kh.Z.	Usmanov D.
Ibodov Sh.Kh.	Kalbaeva G.K.
Makhnyov A.A.	Baymirzaev A.B.

Acad. S.Yu. Yunusov Institute of the Chemistry of Plant Substances,
77, Mirzo-Ulugbek Str., Tashkent, 100170, Uzbekistan

PHYSICAL AND MECHANICAL PROPERTIES OF SCREENED YARN BASED ON MODIFIED STARCH

Niyozov Erkin Dilmurodovich, Norov Ilgor Ilhomovich

Bukhara State University, ilgornorov@gmail.com

The study of the dependence of the viscosity of the composition containing 5-7% starch, 0.4-0.7% HPAN and 0.03-0.06% Na-CMS showed that all the studied solutions have the required viscosity. In this case, changing the concentration of Na-CMS from 0.03% to 0.06% significantly affects the structural and mechanical properties of starch-based compositions [1-3,6].

For example, the yarn breaking under force is 391 N in the presence of 6% -starch, HPAN-0.5% and 0.04% - Na-CMS, with an increase in the concentration of starch to 7% and Na-CMS to 0.05% force the break increases to 398 N [4, 9]. Thus, the study of the dependence of the physicochemical and physicomechanical properties of sized yarn on the chemical nature and concentration of the components satisfies the requirements for adhesive and film-forming components of modified starch with HPAN and Na-CMS.

As can be seen from Table 1, the physical and mechanical properties of modified starch yarn meet all the requirements for the weaving process.

1-table

Comparative physical and mechanical characteristics of yarn according to the composition of the sizing component

Technological indicators	Types of sizing components		
	Corn starch	rice starch	Modified Starch
Sizing viscosity, Pa.s: In the Chanda sizing bath	1,40	1,20	1,50
Breakage, %	0,38	0,50	0,35
Average strength,N:	262	250	267
Softly sized	383	373,7	393
Medium elongation, %	2,80	3,00	2,65

The treatment of yarn with the proposed compositions increases their technological characteristics, i.e. allows you to reduce the number of breaks on the loom by 8-12%.