BELARUSIAN-RUSSIAN PROJECT "DEVELOPING OF PILOT MACHINE FOR HYDROCELLULOSE FIBRE PRODUCTION FROM POLYMER SOLUTION)"

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Brief process description:

New technology for hydrocellulose fiber production without carbon disulfide is based on phosphoric acid as a solvent for cellulose and other high-molecular compounds as well as aqueous solutions of isopropyl alcohol as of precipitation bath.

A pilot machine for fibers production from polymer solutions is developed.

Novelty and topicality:

Our approach, which is of undoubted scientific interest, is carried out for the first time.

Environmental issues of outdated viscose industries initiate researches in finding out new cellulose solvents.

The advantage over similar:

Non-toxic and almost completely regenerated solvent makes the process environmentally friendly.

The main features of the new process are lack of gaseous emissions and low water consumption (more than 100 times).

Purpose: hydrocellulose fiber production, in particular flame retardant fiber.

Sphere of application:

The results obtained can be used for the viscose enterprises modernization.

Main technical and economic indicators:

A pilot machine for fibers production makes it possible to obtain up to 4 liters of spinning solution with the possibility of forming a continuous or periodic mode.

Physical and mechanical properties of fibers: the strength 15-28 cN/tex, elongation 9-25%, modulus of elasticity 600-1000 cN/tex.

Oxygen index is 28-40 (for composite fiber).

Application:

A pilot machine is installed in the Research Institute of Physical and Chemical Problems.