

The simulation of ginning machine and working parts for fiber quality and productivity development

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The aim of the research is to determine the dynamic and technological indicators. With the help of which we model the new saw gin equipment and its working parts, which ensure the preservation of the natural length of the fiber, as well as increase productivity. We spent some of the theoretical and experimental studies. To determine provided solving these problems:

Analysis of the simulating a busy state one saw cylinder and a twin-shaft two saw cylinders saw ginning;

Definition of increasing the fiber capturing surface of saw teeth of cotton ginning machine through mathematic modeling; the results of the investigations shows the increasing the fiber capturing surface of saw teeth 1.5- 2.2 times more.

The mathematical simulation of brush drums in a dual saw cylinder chamber gin for the purpose of increasing the quantity of captured cotton fiber from saw;

The results of the investigations show increasing the quantity of captured cotton fiber from saws 1.5- 2 times more.

Analysis of the strength of the saws to the dynamic and static loads; the results of the investigations shows that the Saw wear-out occurs due to the bending of the shaft under dynamic loads.

During the gin working is low density and high density of raw cotton fibers assessment of damage; the results of the investigations shows that the high density of raw higher damage to fibers during ginning.

Assessment of the relationship quality fibers at different distances between the saws ginning; the results of the investigations shows that the Since reduction of the distance between saw with 22mm before 16mm brings about fascination mechanically damaged filaments from 19.2 to 45%, interrupted filaments from 9,3 to 18% and thin skins with filament and fuzz from 1.66 to 2.38%.

Analysis of the removal of air from the fibers of the two-chamber cylinder saw gin;

The comparison results of theoretical studies with experimental data.

Biography

Azizov Shuhrat Mamatovich has completed his Eng. Dipl. at the age of 25 years from Namangan Engineering-Economical Institute. He is the head of International Relations Department and Ph.D. researcher at the Namangan Institute of Engineering and Technology. He has published 7 papers in reputed journals and has 2 patents.

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Contact angle measurement of the vinyl ester matrix nanocomposites based on layered silicate

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Contact angle measurement was utilised in order to study the subject of the wettability and surface chemistry of the nanocomposites materials. Water and glycerol droplets were used in this study. The incorporation of layered silicate into the vinyl ester matrix helped to improve the wettability and reduced the θ values of both liquids used. The addition of 2 wt.% clay loading reduced the θ values of water and glycerol by up to 21% and 6% respectively. Likewise, the incorporation of 4 wt.% clay loading reduced the water and glycerol θ values by 49% and 38% respectively. Also this study confirms the findings in the literature regarding the relationship between the intercalation nanocomposites level and the wettability. Wide Angle X-ray Diffraction, Scanning Electron Microscopy and Transmission Electron Microscopy were utilised in order to characterise the interlamellar structure of Nanocomposites.

Biography

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