

## The theoretical research of the stress condition of shaft in the single-cylinder and dual-cylinder single-chamber saw gin

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There are actual to increase the capacity of ginning with the reduction of the wear-out worker parts. The worker chamber saw cylinder and fire-grate are worker parts of gin. Substantially, the gross of saw cylinder and teeth of the saws are subjected by the wear-out.

It is necessary to reduce steady-state and dynamic load on shaft for the prevention of the wear-out of saw cylinder. There are two ways of the prevention of the wear-out and preservation of fiber's natural quality.

- The reduction of saws quantity and worker length of saw cylinder
- The division of the dynamic load on two areas not reducing the amount of the saws

There are two saw cylinders in the new design of gin with like parameters which are located in one worker chamber. When worker chambers consume cotton, it appears loosening and in lengthened oval form. This allows reducing the density and accelerating the process of ginning and getting a qualitative fiber.

After maximum values of moments for dangerous sections of the shaft and the moments of normal stresses as well as maximum sagging of gross were calculated. The toughness of dangerous sections of the shaft has been tested by the third hypothesis of toughness. The winding fluctuations of the shaft were explored depending on quantity of saws as well as own weight of cotton which are acting on saws.

Finally the new dual-cylinder gin production half as much again as single-cylinder one and its toughness characteristic 1,7 times more.

### Biography

Karimov Abdusamat has completed his Ph.D. at the age of 32 years from Institute of Mechanics of the Academy Sciences of Uzbekistan. He is a scientific researcher and teacher of Mathematics and Mechanics at the Namangan Institute of Engineering and Technology. He has published more than 40 papers in reputed journals of Uzbekistan, Kazakhstan, Latvia and USA. He has 3 patents in Mechanical Engineering for Textile Industry. He participated in 3 research and fundamental studies grants of the Republic of Uzbekistan.

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## Microparticle characterization in thrombosis

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Thromboembolism is a major healthcare problem causing significant morbidity and mortality. An intense inflammatory response occurs with venous thromboembolism associated with the production of procoagulant microparticles (MP). Circulating cell-derived MP contribute to coagulation and amplification of thrombosis, they are present in the blood of healthy individuals and have been shown to increase in thrombotic diseases. In recent years, circulating MPs have received attention as potential biomarkers in the diagnosis and prognosis of disease and are prevalent in thrombosis.

We have recently characterized and imaged pro-thrombotic microparticles separated using a novel procedure with nanopore filters. The nanopore filtration technique is focused on the development of novel methodologies to isolate and characterize blood circulating microparticles that can be used in conjunction with other methodologies. However, novel materials are needed to produce improved membranes for microparticle filtration and separation. In addition, development of novel methods to mark and identify microparticles without targeting or blocking the surface of the microparticles are needed, for example, by internalization of fluorophores, magnetic nanoparticles or others, including quantum dots and cell-targeting peptides. Developing methods for this type of intraparticle conjugation is critical for blood microparticle identification and tagging. The ultimate goal is the standardization of these filtration and penetrating techniques into assays with clinical or research relevance in venous thrombosis.

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