



BIORESORBABLE SURGICAL SUTURE BASED ON CHITOSAN FIBER

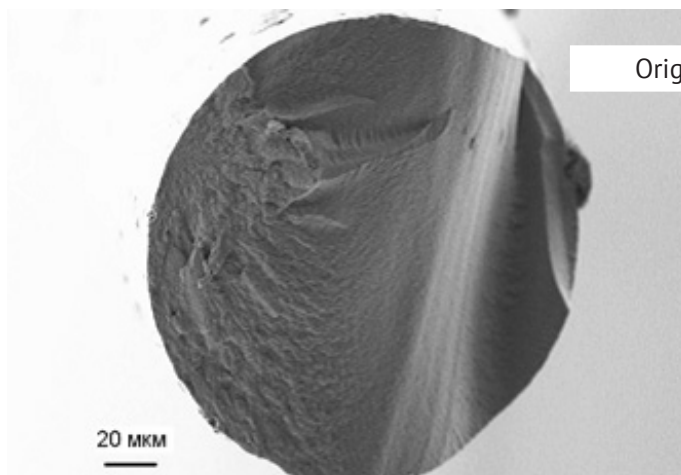
- Technology for producing fibrous materials based on chitosan (wet) coagulation method of molding is developed and optimized
- Polymer concentration, solvent and the coagulation bath composition, the parameters of the molding process are chosen
- The structure and physic-mechanical properties of the fibers have been studied in detail.
- Studies in resorption in vivo showed that the fiber is completely absorbed within 30 days.
- Cells to the matrix structure based on chitosan have high adhesion.

This is the first time that fiber composites based on chitosan and chitin nanofibrils were obtained in the world. It is shown that input of 0.3-0.5 wt.% of nanoparticles in chitin chitosan fibers allowed to increase matrix strength in one and a half times (up to 300 MPa) and to stabilize the molding process.

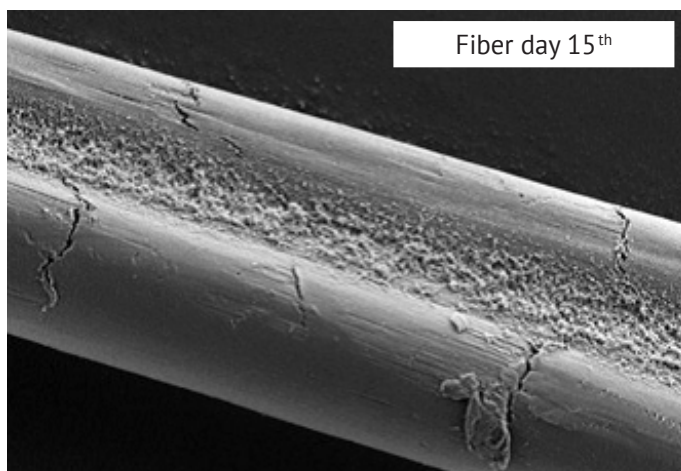
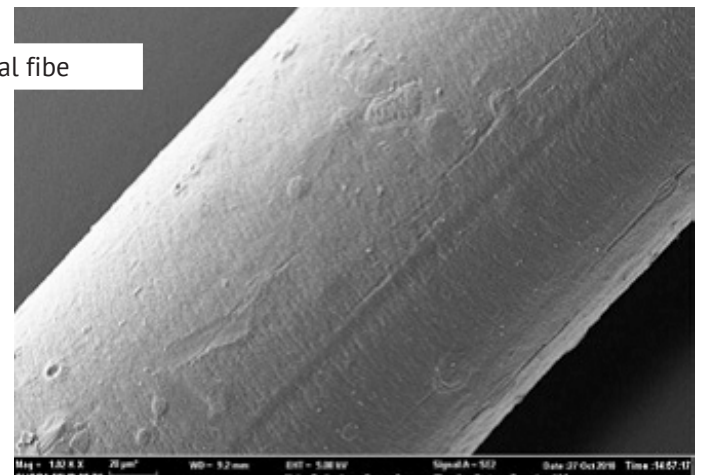
Features:

- The strength of σ , MPa – 300 ± 7 .
- Module E, GPa – 11 ± 2 .
- Elongation, $\epsilon\%$ – 8 ± 1 .

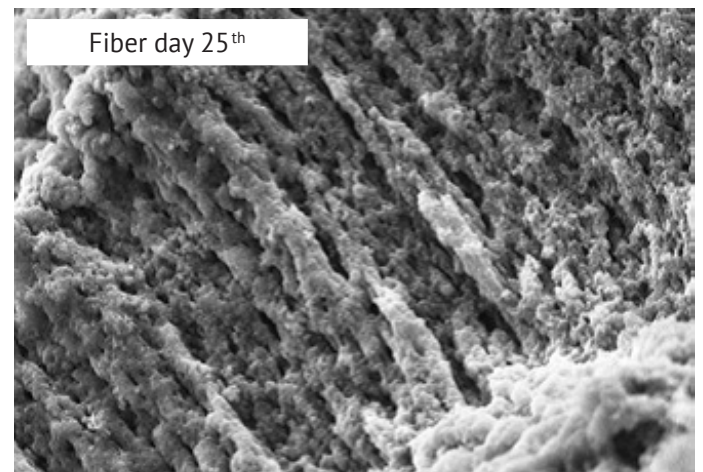
Complete resorption in 30 days.



Original fibre



Fiber day 15th



Fiber day 25th

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