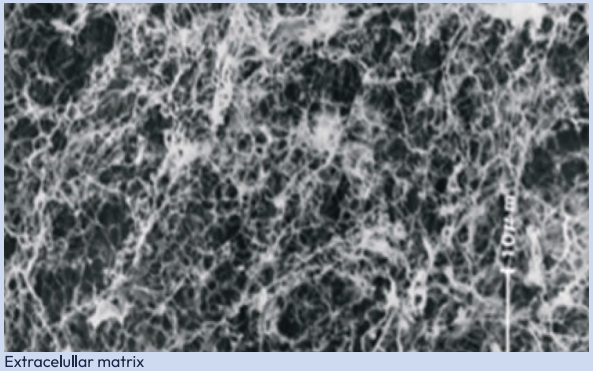
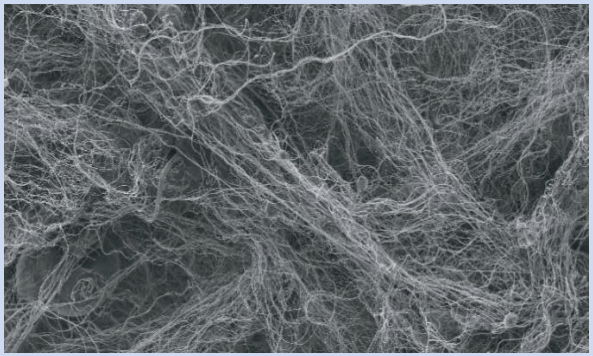
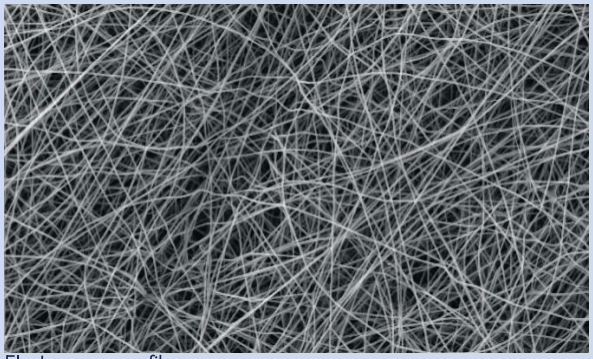
Gelatex Technologies proprietary production process enables the creation of 3D nanofibrous structures that more closely resemble a natural extracellular matrix when compared with nanofibers produced with electrospinning



Extracelullar matrix
Source: Mdpi.com, Physical Properties of the Extracellular Matrix of Decellularized Porcine Liver. Ijima, H., Nakamura, S., Bual, R., Tanoue, S. (2018)



Gelatex nanofibers
Source: Gelatex



Electrospun nanofibers
Source: Gelatex

Gelatex

Gelatex

Nanofibers for advanced medical applications

Sales inquiries

Gelatex Technologies
sales@gelatex.com
www.gelatex.com
Mahtra 30a, 138111
Tallinn, Estonia

Why nanofibers?

Smaller than a human hair, with a diameter ranging from 100 to 4 µm, nanofibers create non-woven materials of highly porous networks with vast interconnectivity, a high surface area to mass ratio, and superior mechanical performance.

Their inherent 3D nanostructure mimics the natural cellular environment and seamlessly integrates into native tissues promoting cell growth, angiogenesis, and healing.

They can be easily sterilized inside the end package using standard industry methods: radiation, dry heat, ETO, etc.

By varying the raw materials and the production process, their morphological, mechanical, and surface chemical properties can be adjusted:

- Porosity / density
- Fiber diameter
- Thickness
- Biocompatibility
- Bioabsorbability
- Hydrophilicity
- Fiber alignment
- Breathability
- Mechanical integrity
- Gelation
- Adhesion
- Antibacterial properties
- Loading capacity
- Encapsulation efficiency

Due to their unique features and the high potential for customization, nanofibers can be used in various medical applications:

- Wound dressings and protecting barriers
- Advanced wound care
- Controlled drug delivery systems
- Resorbable implants and filling agents
- Absorbable hemostats
- Tissue engineering scaffolds
- Skincare and cosmetics
- Medical filtration
- Advanced nanocomposites
- Biomedical devices
- Biosensors
- Many more!

Gelatex Technologies

Is an Estonian B2B materials technology company specialized in the custom development and mass-manufacturing of nanofibrous materials for medical applications and medical devices through its proprietary technology, **the world's fastest and most cost-effective solution-spinning nanofibers production method.**

We create bespoke solutions derived from:

- Synthetic polymers
- Bio-based polymers
- Polymer mixtures
- Drugs
- Active molecules
- Nanocomposites

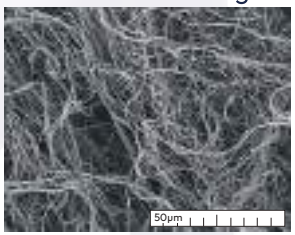
We have ample R&D and manufacturing experience with many solvents and polymers, for example:

Bio-based polymers
- Collagen
- Gelatin
- Chitosan
- Alginate
- Hyaluronic acid
- CMC
- PLA

Synthetic polymers
- PCL
- PU
- PCL
- SAN
- AIBA
- PEG
- PAN
- PA6
- PVP
- PVOH
- PVA
- PEO
- PLGA

We can work with more polymers, solvents, and active molecules than any other production method!
- Ask about your desired formulation!

Gelatex Technologies' nanofibers SEM images



Pharma-grade PCL

Pharma-grade gelatin

Our technology

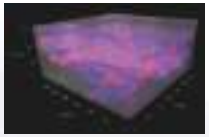
Versatile formulation
Starting from bio-based or synthetic polymers, we create materials and nano-composites with specific properties.

Cost-effective
Our process reduces up to 90% of the cost of mass-producing nanofibers compared to electrospinning.

High-speed scalable production
Our semi-industrial unit produces 5 kg/h, or 3 mt per month. Scaling up the production capacity can be done in months.

Ease of handling and storage
The material is provided in customizable rolls for easy handling, integration into automated process, and sterilization.

Unique material morphology
When compared with electrospining, our material better mimics the ECM, it is less dense, and promotes the migration of cells into the deeper layers.



BHK21 cells migrating on their own into the nanofibrous matrix after 24 h of static seeding. This cell motility is unique to our nanostructure and does not occur with electrospun materials.

Our Services

1. Contract development of medical-grade custom nanofibrous materials and nanocomposites
2. Contract manufacturing of medical-grade custom nanofibrous materials and nanocomposites
3. Active molecules/drugs loading and encapsulation into medical-grade nanofibrous materials
4. Technology consultation
5. Testing of novel polymers and polymer blends
6. Optimization of morphological properties
7. Filtration efficiency and SEM analysis
8. Material lamination and coating
9. Technology licensing and co-development
10. Many more!