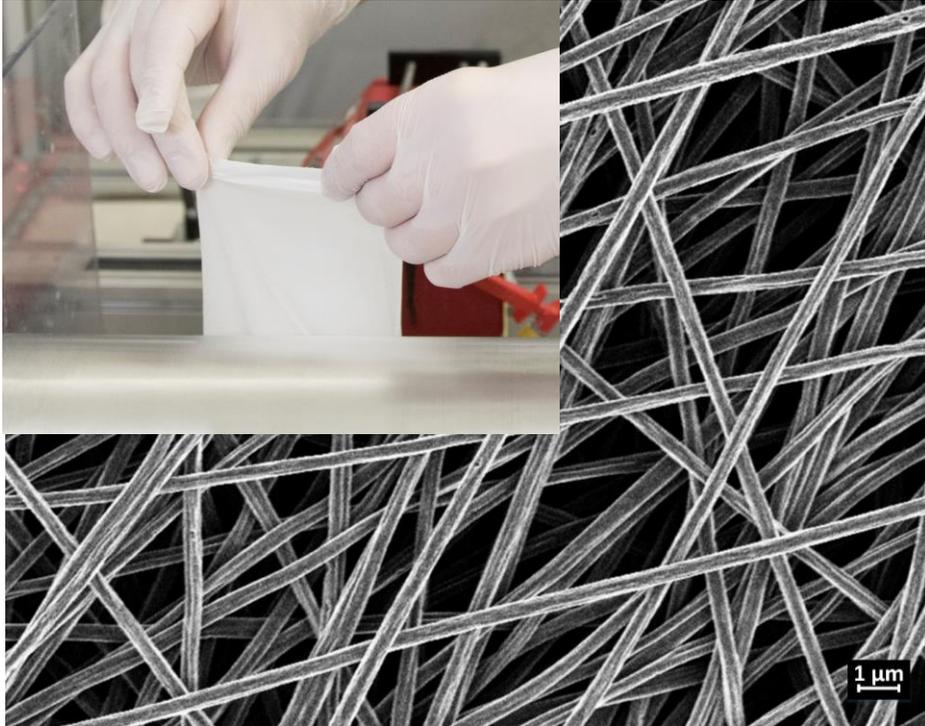


Nanoscaled fiber systems



NANOFIBERS FOR BIOLOGICAL-MEDICAL APPLICATIONS

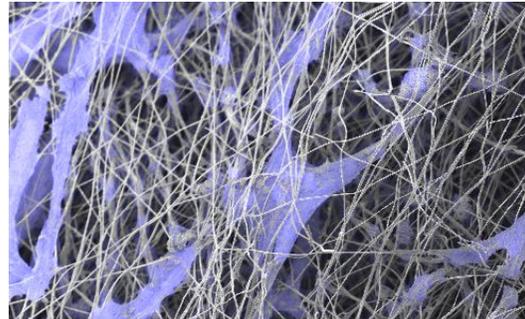
The development of biological tissues requires carrier structures whose structure is oriented towards the extracellular matrix. To mimic these tissues, **fibrous biomaterials in the nanometer scale** are necessary, which can be produced by the process of electrospinning. For this purpose we develop nanoscaled fibrous materials, which are applied for the **development of tissue models** such as skin or vessels, but also as nanostructured fibre surfaces for cell culture.

In addition to the **generation of various fiber structures** (diameter, orientation, mesh and pore size), the **development of innovative degradable nanofiber materials** based on inorganic-organic hybrid materials is focused.

Nanoscaled fiber systems



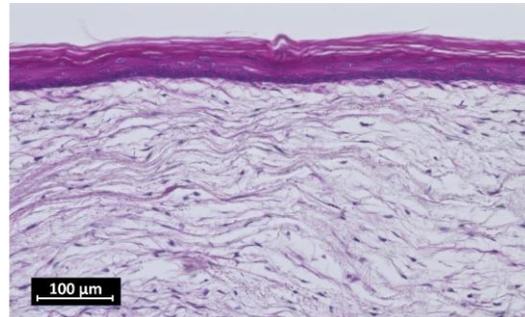
Customized electrospinning systems



Imitation of the extracellular matrix



Nanofiber fleeces for cell culture



Skin model based on a 3D nanofiber scaffolds

SERVICES

- Development of spinning processes based on electrospinning
- Process development for the generation of novel nanoscale fiber materials
- Production of various fiber and fleece structures
- Construction of electrospinning systems with unique modifications

APPLICATIONS

- Nanofiber structured cell culture surfaces
- 3D nanofiber scaffolds for 3D cell culture
- Development of nanofiber-based 3D tissue models
- Development of nanofiber-based implants

Your Contact



**Head of Business Unit
Dr. Jörn Probst**

joern.probst@isc.fraunhofer.de

Phone: +49 931 4100-300



**Project leader
Dr. Tobias Weigel**

tobias.weigel@isc.fraunhofer.de

Phone: +49 931 4100-940

Fraunhofer Institute for Silicate Research ISC

Business Unit Biomaterials | Translational Center Regenerative Therapies TLC-RT

Neunerplatz 2 | 97082 Würzburg | Germany | www.regenerative-therapien.fraunhofer.de