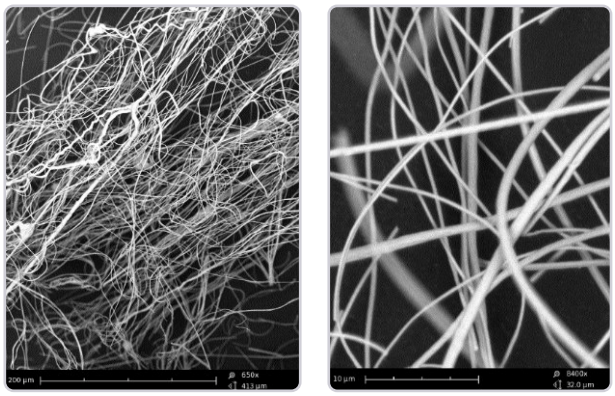
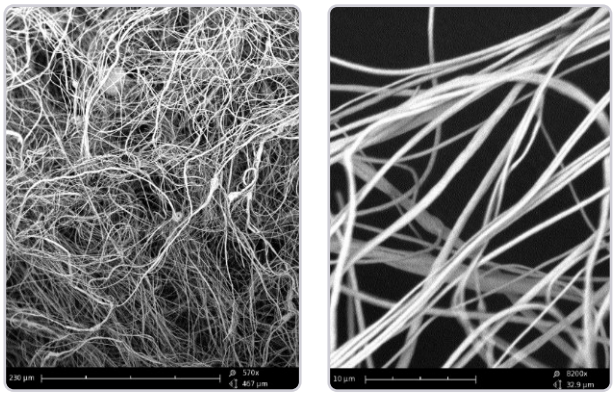
NnF CERAM® - TiO_2

Titanium dioxide nanofibers are a ceramic material developed and produced by PARDAM NANO4FIBERS s.r.o. in the Czech Republic. These products are based on a ceramic titanium dioxide matrix enriched with a small amount of porous particles of the same material. The specific properties that are due to the nanofibrous structure and the chemical properties of titanium dioxide predispose TiO_2 nanofibers to a wide range of applications in various industries. TiO_2 nanofibers can also be used as a carrier for various catalytic nanoparticles (e.g., Pt, Pd, Ag, Fe), which are incorporated into the porous structure of the nanofibers in a single manufacturing step, without the need for subsequent coating.



Anatase



Anatase-rutil

APPLICATIONS

ANATASE

- Photocatalysis - decomposition of organic compounds in wastewater
- Inorganic membranes
- UV absorber
- White pigment

ANATASE-RUTIL

- UV absorber
- White pigment
- Inorganic membranes

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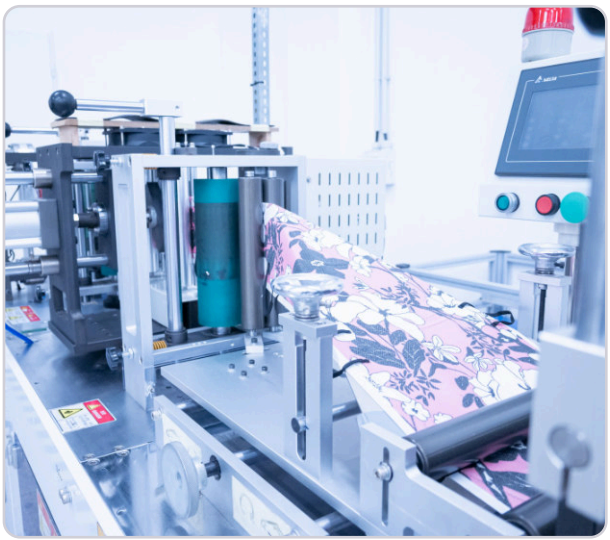
PHYSICAL PROPERTIES

	ANATASE	ANATASE-RUTIL
Structure	Nanofibrous structure Polycrystalline nanofiber	Nanofibrous structure Polycrystalline nanofiber White pigment
Crystalline phase	Tetragonal	Tetragonal
Form and structure	3D structure	3D structure
Typical fiber diameter	270 - 990 nm (±100nm)	270 - 990 nm (±100nm)
Fiber length	2 to hundreds of µm Fiber length can be modified by grinding to a dimension of 2 - 12 µm (80%). If you need any material modification, please do not hesitate to contact us.	
Specific surface area	15 - 19 m^2/g	10 - 15 m^2/g
Melting point	1 560 °C	1 855 °C
Thermal conductivity	Medium thermal conductivity 6,5 $Wm^{-1}K^{-1}$	
Electrical conductivity	Semiconductor	Semiconductor
Optical properties	High refractive index 2,5 High photocatalytic activity	High refractive index 2,6 Lower photocatalytic activity

MATERIAL DOPING

Titanium dioxide nanofibers can be doped with various additives to optimize its specific properties.



IMPORTANT NOTICE

All statements, technical information and recommendations in this document are based on tests carried out by the team of PARDAM NANO4FIBERS s.r.o.

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