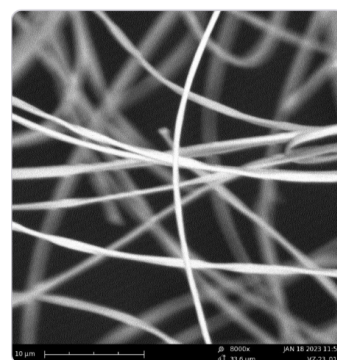
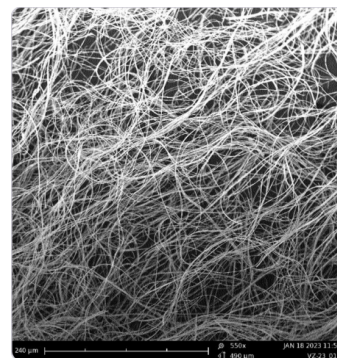


NnF CERAM®

ZrO₂

 Zirconium dioxide nanofibers

Zirconium 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 Zirconium dioxide matrix enriched with a small amount of porous particles of the same material. The combination of nanofibrous morphology and specific properties of zirconium dioxide predispose ZrO₂ to a wide range of applications in various industries. ZrO₂ 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.



Original microscopy imagery

APPLICATIONS

- Electro-ceramics
- Catalysis
- Oxygen sensors
- Abrasives
- Thermal barrier coatings
- Refractories
- Ionic conductors
- Materials for high temperature chemical processes
- Inorganic separator

NnF CERAM®

ZrO₂

Physical properties and material notes

PROPERTY	Value
Nanofibrous structure	Polycrystalline nanofibers; high strength; high ionic conductivity
Crystalline phase	Monoclinic; tetragonal at higher temperatures (1 175 °C); cubic at very high temperatures (2 350 °C).
Form and structure	3D structure
Typical fiber diameter	200 - 900 nm (±100 nm)
Fiber length	2 to hundreds of µm. Fiber length can be modified by grinding to 2 - 12 µm (80%). Contact us for material modifications.
Specific surface area	6 - 12 m ² /g
Melting point	2 700 °C
Thermal conductivity	Low thermal conductivity 1.95 W m ⁻¹ K ⁻¹
Electrical conductivity	Low electrical conductivity; electrically conductive above 600 °C
Optical properties	Refractive index 2.2

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.