

# Waterproof and moisture-proof solution for communication base station and wind power

What is a waterproof breathable membrane?

Waterproof breathable membranes (WBM) resist water penetration and easily transport water vapor, thus revolutionizing many fields, including protective textiles, wearable devices, and water desalination systems. WBM is divided into fluorinated and non-fluorinated membranes.

What are WPU nanofiber membranes used for?

The WPU nanofiber membranes are non-toxic and environmentally friendly and have excellent waterproof and breathable properties as well as strong mechanical properties. We envision large applications of in smart wear, outdoor clothing, and medical products. Zhang Haitao: Visualization, Supervision.

Why do WPU nanofiber membranes have good hydrophobicity despite low PDMS content?

Concurrently, a substantial quantity of PDMS was released from the PU intermolecular forces and migrated to the nanofibrous membrane surface. This was attributed to the introduction of D-A bonds during WPU synthesis. This phenomenon endowed the WPU nanofiber membranes to have good hydrophobicity despite a low PDMS content.

Are hydrophobic nanofibrous membranes waterproof and breathable?

The developed hydrophobic nanofibrous membranes with tiny pores and high porosity could resist water penetration and transmit water vapor/air easily, demonstrating exceptional waterproof and breathable capabilities (Fig. 6 a).

How to improve water-resistant nanofiber membrane?

During the coating treatment, the water-resistant is effectively improved by introducing low surface energy chemicals (e.g. superhydrophobic silica, polydimethylsiloxane, amino silicone oil, etc.) on the nanofiber membrane surface.

Are electrospun nanofiber membranes a good choice for fluorine-free porous WBMS?

Recently, there has been a growing interest in electrospun nanofiber membranes due to their high porosity, adjustable porous structure and enhanced wettability, opening the door for fluorine-free porous WBMS.

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