Methods for the Production of Fluoropolymer Fibers

This invention introduces a method to create hydrophobic fiber, yarn, and hydrophobic nonwoven mat. The present material is water repellent, with non-stick properties, good buoyancy for floating in water, self cleaning application, prevention of frosting accumulation, among others.

Problem

Currently there is no documentation of a steady process for the preparation of ultrafine fluoropolymers (such as pure Teflon AF fiber) through electrospinning or any other technique.

Solution

This invention was able to create 100% PTFE fibers by centrifugally forcing a fluorinated solution in a designed spinneret. Having 100% PTFE fibers provides several advantages such as smaller diameters, porosity control, higher contact angles, ease of manufacturing, and lower cost.

Competitive Advantages

- Ease of manufacturing
- Low cost
- Porosity control
- Smaller diameter fibers
- Higher contact angles

Status of Development

- Prototyping stage

IP Status

- Patent # US10087554, JP6042355, RU2598584
- Other patents pending
- Licensing available

Water droplets deposited on a thin film of a nonwoven hydrophobic mat

For further information regarding this Technology please contact:

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