CYTONIX

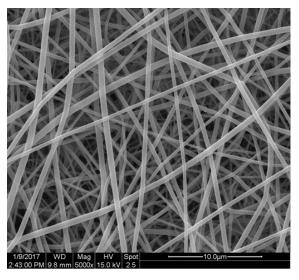
CytoPel 500 Dip Coated Nanofiber Membranes, Metal Mesh, and Oleophobicity

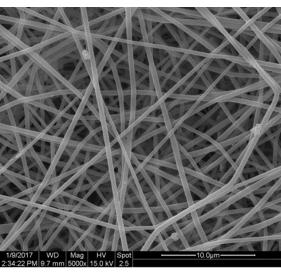
Goals

- Improve hydrophobicity (hydrostatic head) of nano fiber membranes and metal mesh
- Improve oleophobicity of nano fiber membranes and metal mesh
- Retain air permeability of membranes and mesh after coating
- Video of water repellency properties of CytoPel coated mesh

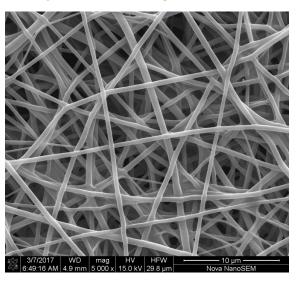
SEM analysis – sample 1.1.

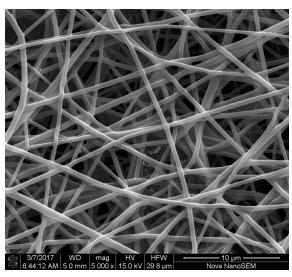
Untreated control





CytoPel 500 treated Air permeability is retained

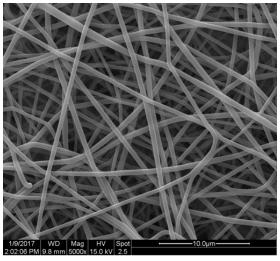


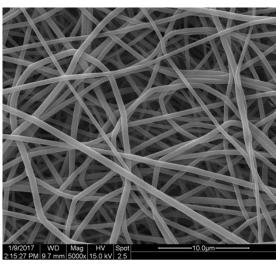


Magnification: 5000X

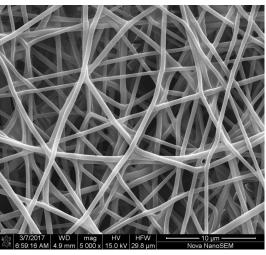
SEM analysis – sample 1.2.

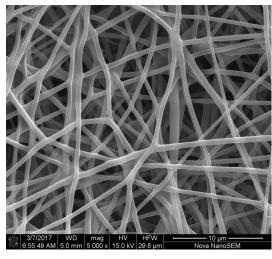
Untreated control





CytoPel 500 treated Pores are not occluded

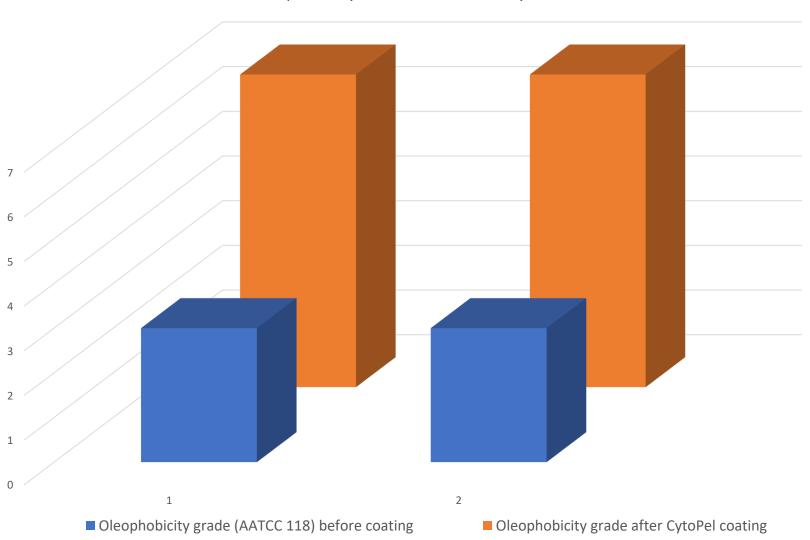




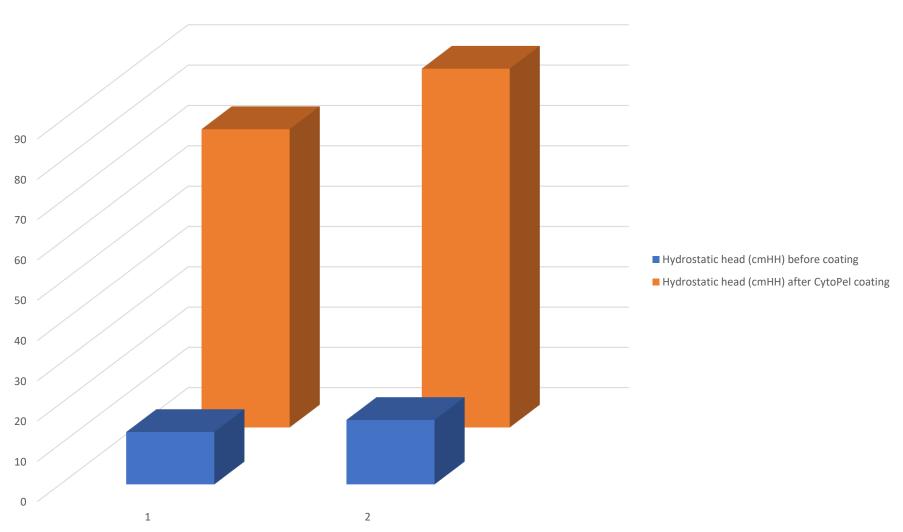
Magnification: 5000X

| | Before Coating | | | After CytoPel Coating | | |
|---|--------------------------------|---------------------|---------------------|--------------------------------|---------------------|---------------------|
| # | Air permeability | Hydrostatic head | Oleophobicity grade | Air permeability | Hydrostatic head | Oleophobicity grade |
| | I/m ² /s at 1000 Pa | cmHH | AATCC 118 | I/m ² /s at 1000 Pa | cmHH | AATCC 118 |
| 1 | 800-1200 | 13 | <3 | 1061 | 74 | 7 |
| 2 | 800-1200 | 16 | <3 | 1135 | 89 | 7 |

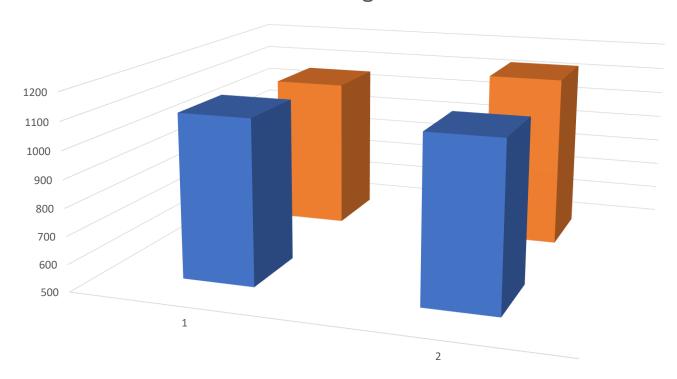
Oleophobicity of membranes and CytoPel







Air permeability of membranes is unchanged before and after coating



| | 1 | 2 |
|--|------|------|
| ■ Air permeability before coating (I/m2/s at 1000 Pa) | 1100 | 1100 |
| ■ Air permeability after CytoPel coating (I/m2/s at 1000 Pa) | 1061 | 1135 |

Properties of CytoPel on Membranes

Hydrophobicity: 113° contact angle of water (ASTM D7334-08)

Oleophobicity: 50-60° contact angle of oil (ASTM D7334-08)

Heat resistance: 175°C

Surface tension: Low

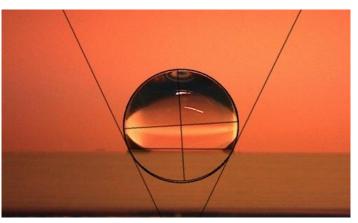
Adhesion strength: 5B (ASTM 3359-09, Tape Test)

Application: Dip and roll to roll

Hardness: Hard (pencil) > 2B

Conformality: No clogging of pores

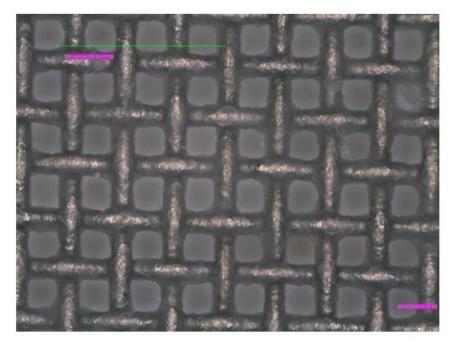


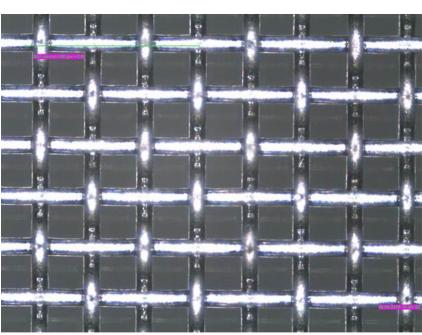


CytoPel Coated Metal Mesh Compared

Regular Coating

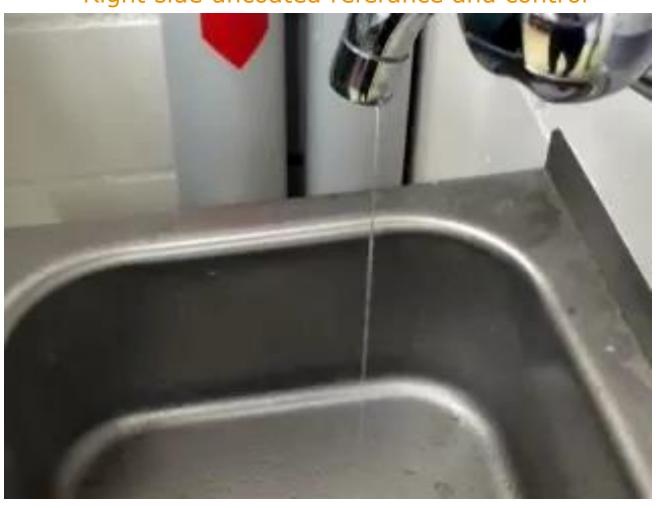
CytoPel 500 treated
Pores not occluded, air and sound permeability retained





Video of CytoPel Coated Metal Mesh and Water

- 20 mesh; W: 0.140 mm; D: 0.075 mm
- Left side coated with CytoPel 500 0.2%
- Right side uncoated referance and control



Properties of CytoPel on Metal Mesh

Hydrophobicity: 113° contact angle in water (ASTM D7334-08)

Oleophobicity: 50-60° contact angle in oil (ASTM D7334-08)

Heat resistance: 175°C

Surface tension: Low

Adhesion 5B (ASTM 3359-09, Tape Test)

Application: Cut piece and roll to roll

Hardness: Hard (pencil) > 2B

Conformality: No clogging of openings

