

TN 纳米防尘网

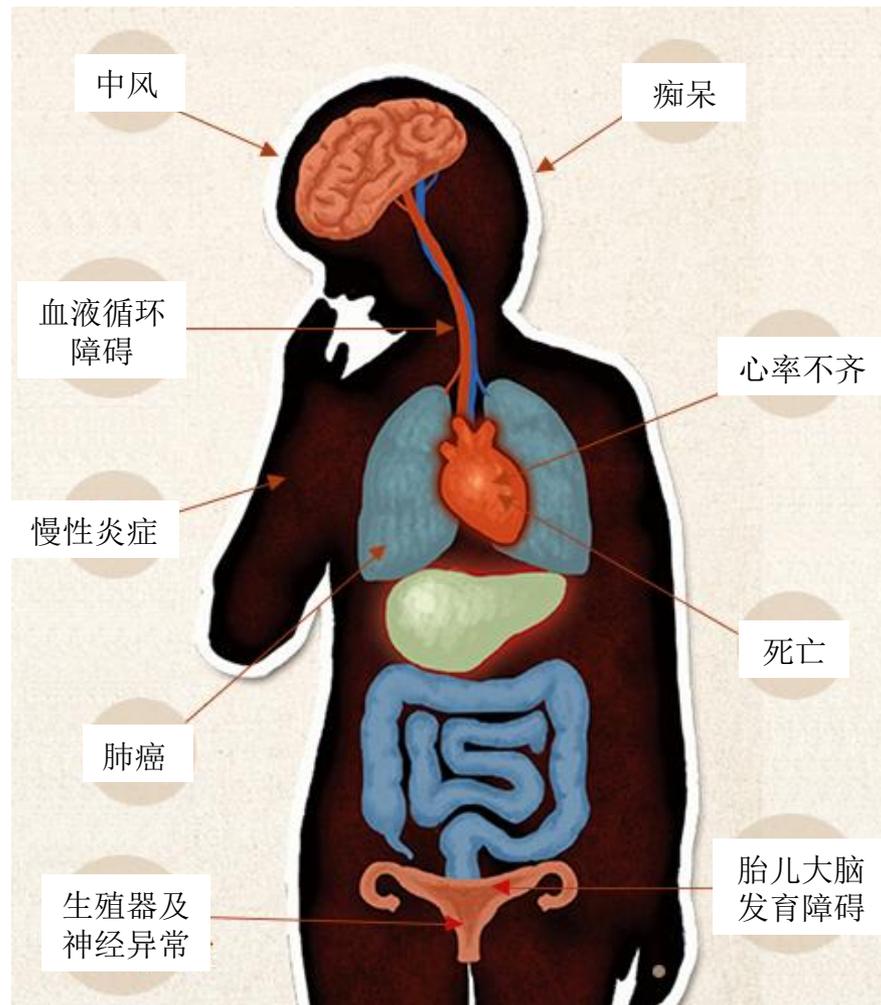


粉尘的影响

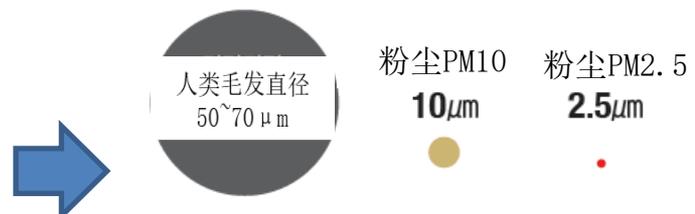
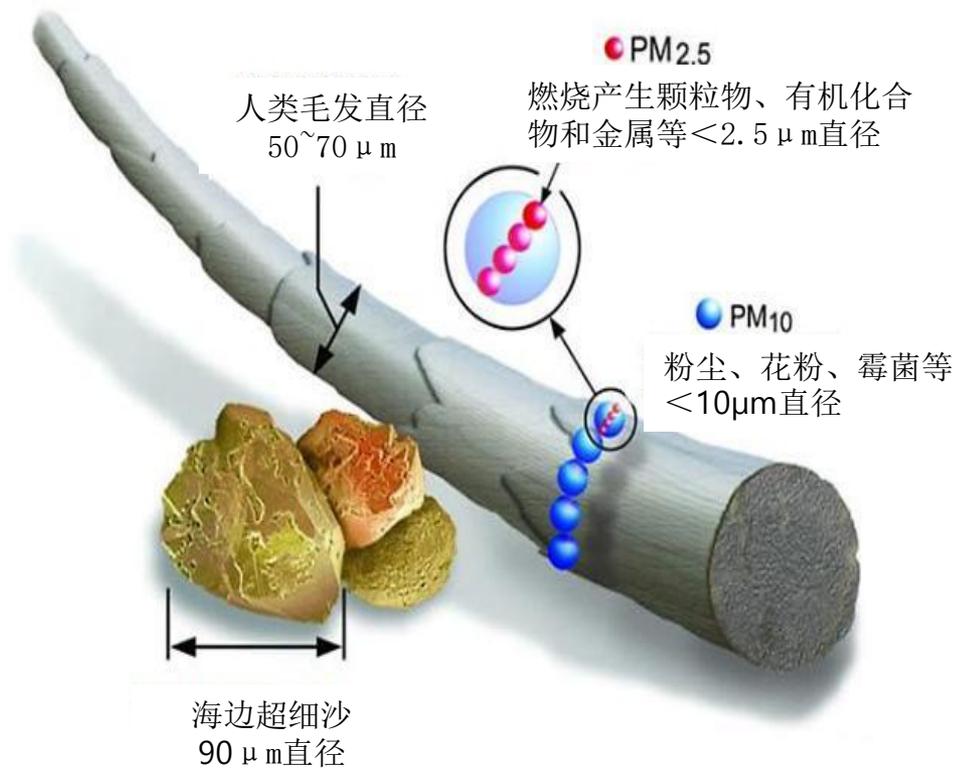
体外可见症状



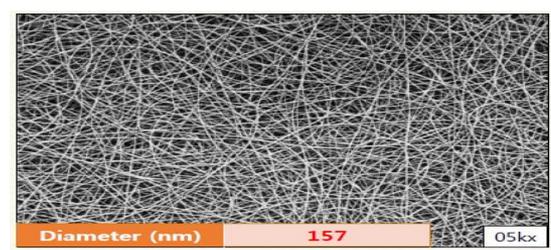
体内症状



粉尘粒径和纳米过滤器



〈微细粉尘的相对尺寸比较〉



〈纳米过滤器孔径大小 PM 0.05~0.1〉

➡ 纳米过滤器可高效过滤粉尘，但可以无阻碍地通过空气。

纳米纤维防尘网

(涂层纳米纤维的防虫、防花粉、防微尘的
过滤网)

Innovative Functional Window Screen Filter
Ventilating, Pollen or Dust Barrier, Outlooking Mesh

应用领域: 纱窗滤网、建筑工地窗户防尘、婴儿车防尘网等

防尘

透气

高透光

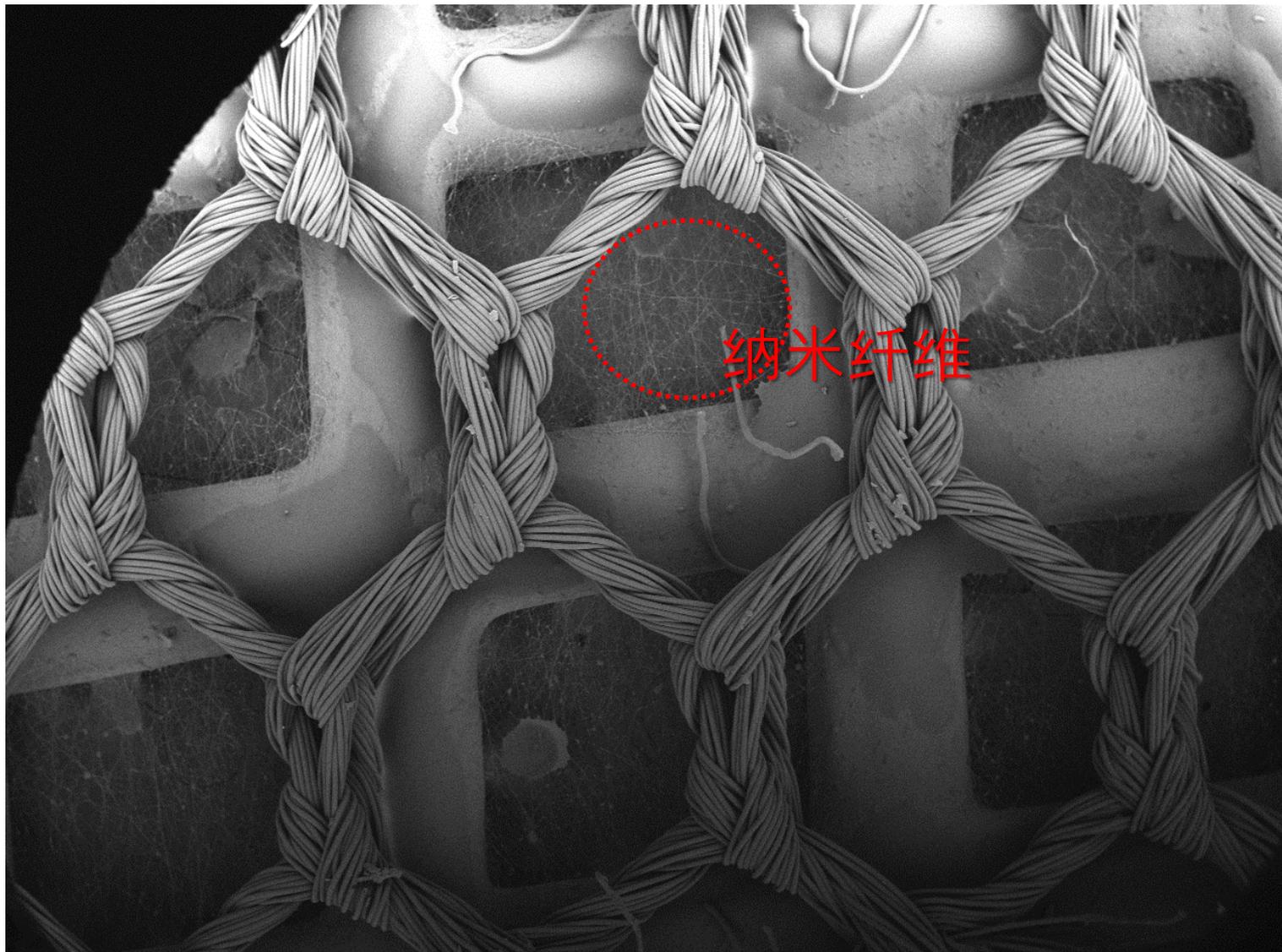
防水

可清洗

自净功能

疏水性

纳米纤维滤网结构



Huviswater

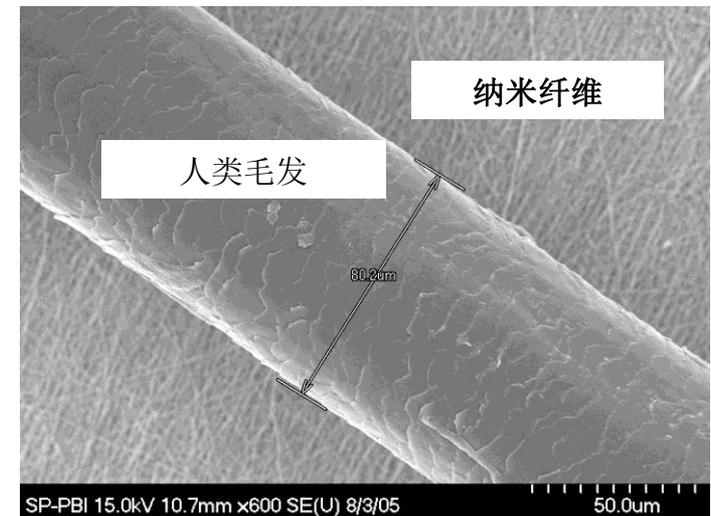
2017-05-24

L x60

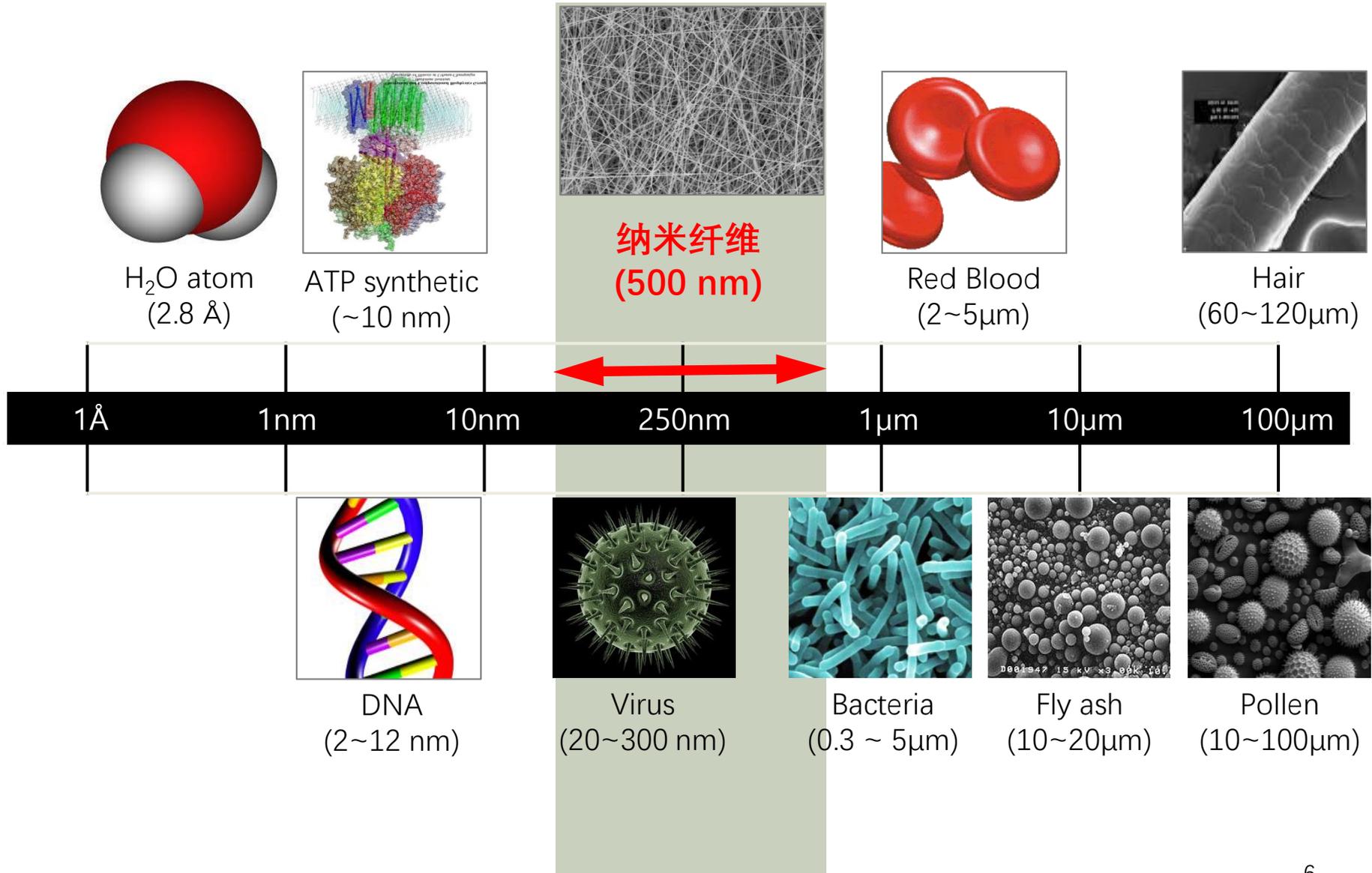
1 mm

为什么使用纳米纤维?

- 超高过滤效率 (流量95%以上)
- 超大表面接触面积 (Large Surface Area)
- 非常窄的孔径分布 (Narrow Distribution)
- 高孔隙率, 可达80~85% (High Porosity)
- 三维开孔结构 (Through Pore Structure)
- 良好的均匀性 (Uniformity)
- 卓越的防水、防气雾和防细菌能力
(Excellent Water Tightness and Vapor/
Bacteria Resistance)
- 超轻性 (Ultra-light:一般滤网的 25%左右)
- 超薄性 (Thinner:一般滤网的 50%左右)



纳米纤维尺寸



纳米纤维滤网

■ 纳米防尘网的必要性

- 中国大城市的持续雾霾
- 换气时可防止雨水、粉尘和飞虫的进入

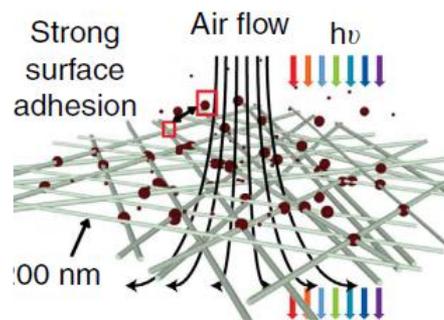


■ 传统防虫网

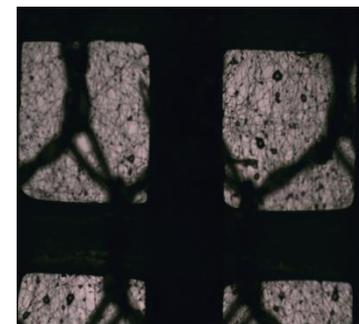
- 孔径为1mm左右的铝、不锈钢和PVC等材质滤网
- 无法过滤花粉、微尘、飞虫和雨水等

■ 纳米防尘网

- 在主网和保护网中间涂层纳米纤维
- 与传统防虫网的安装方式相同
- 可有效过滤黄沙、微尘等
- 适用于家庭、医疗设施和办公室等



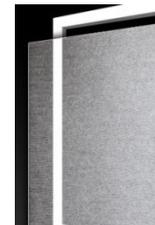
Transparent air filter



〈显微镜图片〉

纱窗滤网比较

| | 纳米纤维 防尘网 | T司 (韩国) | P司 (美国) | T司 (德国) | S司 (美国) | T司 (日本) |
|--------------|---|----------------------------------|--------------------------------|-------------------|-----------------------------|----------------------------------|
| 构成 | Fiberglass, AL,SUS Mesh+ Nanofiber | PP,PET, Nylon Mesh + 涂层 | PET Mesh + 涂层 | PET Mesh + 涂层 | Pleated Film+AL frame | Fiberglass mesh+ Nanofiber |
| 品牌 | 纳米纤维 防尘网 | 紧密滤网 | Clean air Windows Screen | 5plus dust evo | 自然换气 系统 | Window sm ask |
| 透气性 | 可调节 | 良好 | 良好 | 良好 | 良好 | 良好 |
| 微尘 捕集率 | 良好 | 差 | 差 | 差 | 良好 | 良好 |
| 安装 | 简便 | 简便 | 简便 | 简便 | 简便 | 简便 |
| 透光性 (能见度) | 良好 | 差 | 良好 | 良好 | 差 | 良好 |
| 耐久性 | 良好 | 差 | 差 | 差 | 良好 更换 | 良好 |
| 清洗 | 自清洗 (水) | | - | - | | 自清洗 (水) |

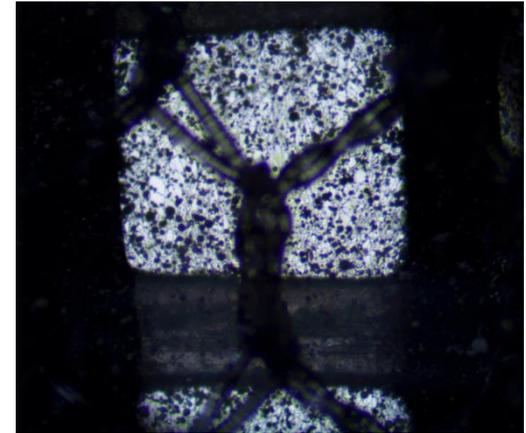


防尘网安装图片及显微镜照片

■ Initial – 1 Month – Cleaning



<显微镜照片(安装前)>



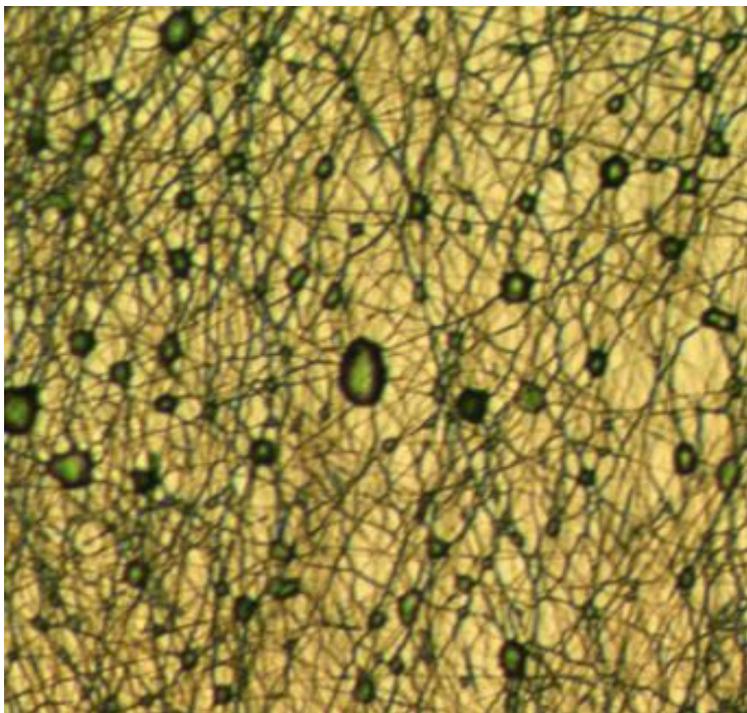
<显微镜照片(安装1个月后)>



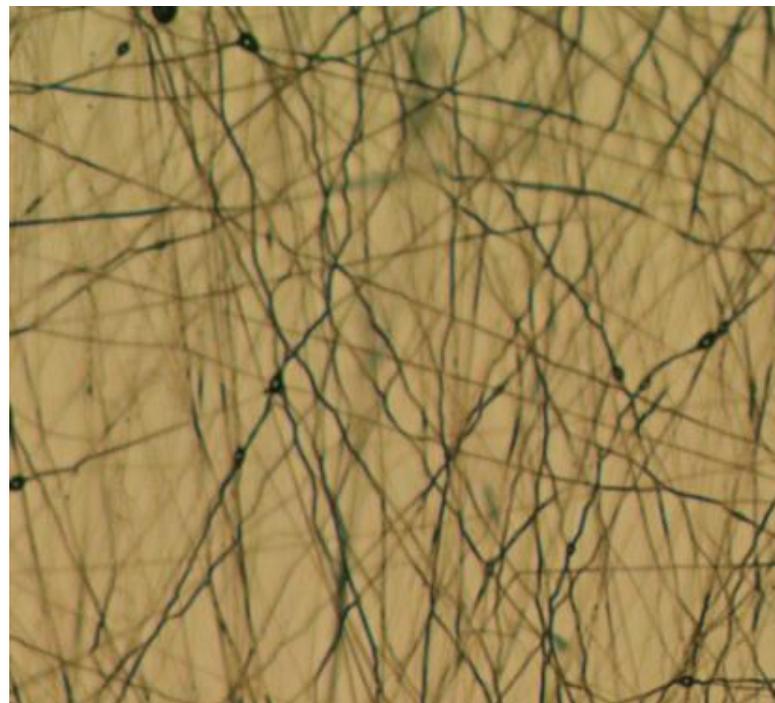
<窗户安装>

纳米纤维防尘网的特点

- 安装简便，无需专业人员。
- 主网（PVC、聚酯和不锈钢等）和面网间涂层纳米纤维。
- 过滤效率 - PM 1以下
 - 微尘：>85% (ASHRAE 52.1 Mass Method 1m/s)
 - 昆虫：>99%
 - 花粉：>97%
 - 雨水：>95%
- 空气通过率
 - 350cm³/cm²/s (JIS L 1096 A @38cm², 125Pa)
- 清洗方法
 - 喷水或雨水自然清洗
- 包装
 - 宽度：最大150cm以下，长度：100~300m（根据客户要求）
- 网孔尺寸：16×18，18×20，20×22 per inch
- 网状材料：底网 - 涂层不燃或普通PVC的玻璃纤维或聚酯
面网 - 轻质聚酯或树脂
- 主要用途：医疗和疗养设施、办公室、幼儿园、住宅等
- 其他：根据用途可选择高效或普通产品



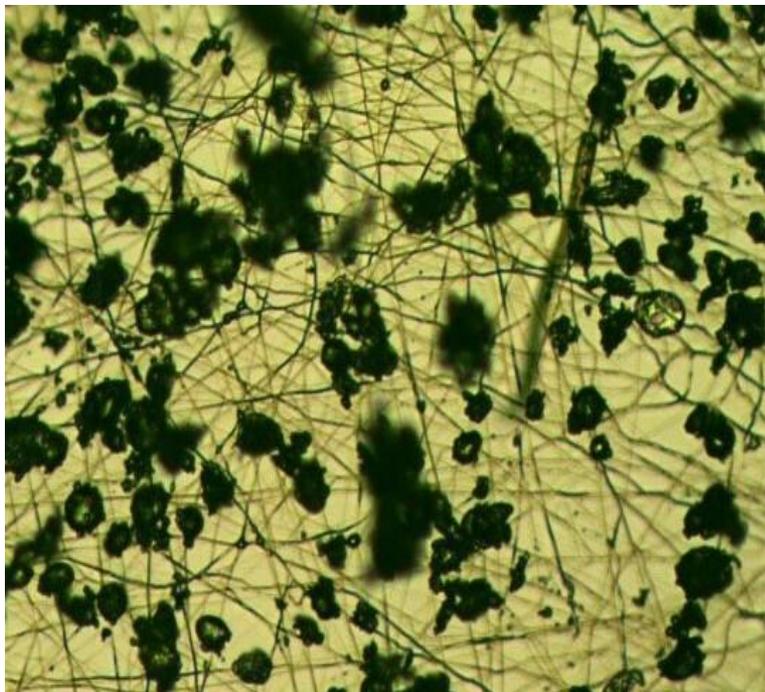
〈高效率防尘网显微镜图片〉



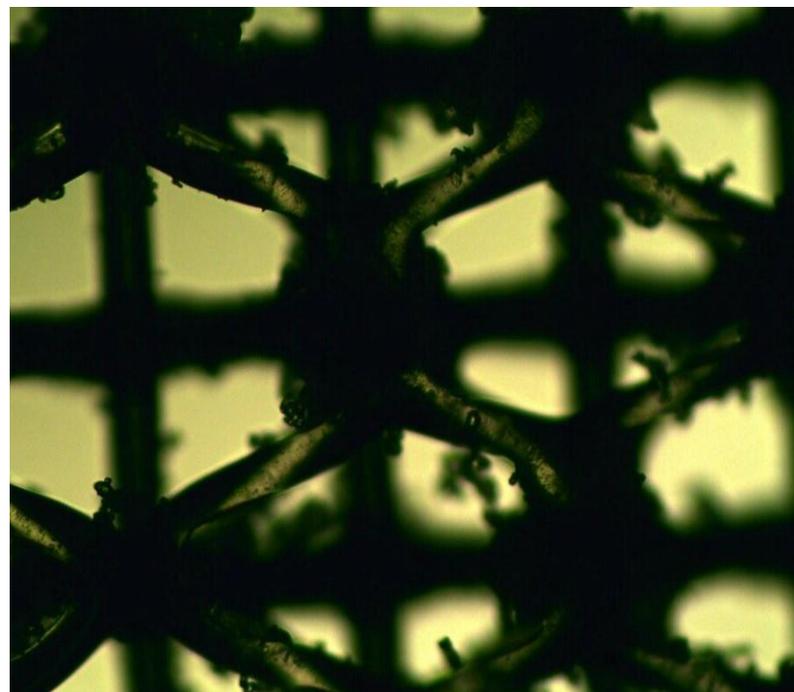
〈高通气性防尘网显微镜图片〉

不同除尘方式的除尘效率

* 优于静电除尘的高效除尘

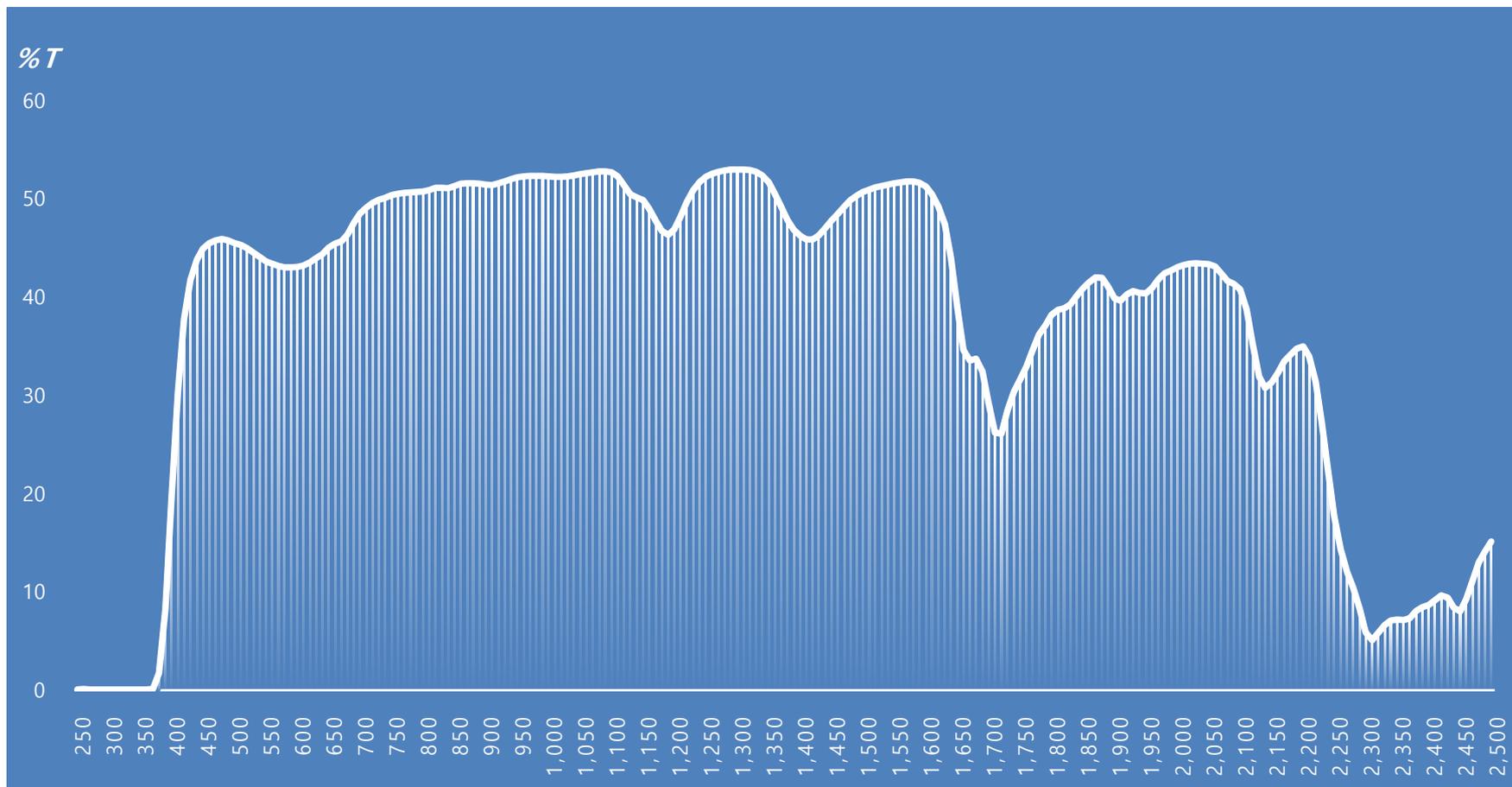


纳米方式的防尘网



静电方式的防尘网

防紫外线功能



简便的安装方式



纳米防尘网应用效果监测



性能评价基准：ASHARE 52.1重量法

粉尘组成：0.97~22 μm 76% + 44~176 μm 24%的混合气体72%，约1 μm 粉尘23%，微小纤维粉尘5%

试验风速：1m/sec

终端压力损失：76mmaq



(41755) 455, Vianjong-ro, Seo-gu, Daegu, Korea
Tel : 053-551-2150 Fax : 053-551-2145

TEST REPORT



APPLICANT : TN SOLUTION Co.,Ltd. REPORT NO. : T271-18-01984
 SAMPLE RECEIVED DATE : 2018-04-19
 TEST STARTED DATE : 2018-04-19
 REPORT ISSUED DATE : 2018-04-20
 PAGE : 1 OF 2

DESCRIPTION : ONE(1) PIECE OF SUBMITTED CUTTING SAID TO BE SCREEN.

ITEM : TN WINDOW SHIELD

TEST CONDUCTED : AS REQUESTED BY THE APPLICANT, FOR DETAILS PLEASE SEE ATTACHED PAGES.

01. WEIGHT ARRESTANCE (ASHRAE STANDARD 52.1, SYNTHETIC DUST WEIGHT ARRESTANCE) : %

| | |
|--|------|
| | #1 |
| | 88.7 |

NOTE) TEST AIR FLOW : 1.0 m/s
 FINAL RESISTANCE : 76 mmAq

02. AIR PERMEABILITY (JIS L 1096 : 2010, TESTER METHOD A) : cm³/cm²/s

| | |
|--|-------|
| | #1 |
| | 326.0 |

NOTE) TEST AREA : 38 cm²
 PRESSURE DROP : 125 Pa

** End of The Report **

PREPARED AND CHECKED BY
 FOR FITI

Kim Jong Bum

JONG BUM, KIM
 QUALITY MANAGER

AUTHORIZED BY
 FOR FITI

Kyung Yoon Son

KYUNG-YOON SON
 PRESIDENT

※ Report Verification No. : 2ZZ3-TSFZ-1EAX ※
 (You can see the authenticity of your test report through the above "Report Verification No." at FITI homepage.)

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The test results contained in this report are limited to results on the sample(s) that is provided by client and are not necessarily indicative or representative of the qualities of the lot from which the sample(s) was taken or of all products. Results contained in this report are not based on the quality certification of sample by the FITI quality certification program unless specifically requested by the client. Further use of the results of this report is prohibited unless allowed under a separate agreement set forth in an official document that is established between the client identified on this letter and the FITI.

01. WEIGHT ARRESTANCE (ASHRAE STANDARD 52.1, SYNTHETIC DUST WEIGHT ARRESTANCE) : %

| | |
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| | #1 |
| | 88.7 |

NOTE) TEST AIR FLOW : 1.0 m/s
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| | |
|--|-------|
| | #1 |
| | 326.0 |

NOTE) TEST AREA : 38 cm²
 PRESSURE DROP : 125 Pa

** End of The Report **

KAKEN

Kaken Test Center GENERAL INCORPORATED FOUNDATION

2-5-19, Edobori, Nishi-ku, Osaka, 550-0002, Japan
Tel: +81-(0)6-6441-0315, Fax: +81-(0)6-6441-2420

Kaken Test Center is formerly named as "Japan Synthetic Textile Inspection Institute Foundation(JSTIPI)".

No. 1/2

Certificate No. : OS-17-043339(1)
(82171201127389)

Date : **October 5, 2017**

TEST CERTIFICATE

Requested : TN CO., Ltd
Test Samples : TN WINDOW SHIELD 1 Sample
Test Items : Evaluation of the Filtration Efficiency of Sanitary Face Mask Materials,
Using Pollen grains
Received : October 2, 2017

This is to certify that the results of laboratory test applied on the sample are as follows:

1. Test Results

| Test Item | Test Results | |
|--|--------------|------|
| Filtration Efficiency of Pollen grains (%) | 1 | 97.1 |
| | 2 | 95.9 |
| | 3 | 97.7 |
| | Average | 96.9 |

Kaken Test Center General Incorporated Foundation
Osaka Laboratories

Inspector : T. Oida
T. Oida

(To be continued on No.2/2)

Kaken Test Center
GENERAL INCORPORATED FOUNDATION
Lab Address: 2-5-19, Edobori, Nishi-ku, Osaka,
550-0002, Japan
Tel: +81-(0)6-6441-0315
Fax: +81-(0)6-6441-2420

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1. Test Results

| Test Item | Test Results | |
|--|--------------|------|
| Filtration Efficiency of Pollen grains (%) | 1 | 97.1 |
| | 2 | 95.9 |
| | 3 | 97.7 |
| | Average | 96.9 |



(28115) 21, Yangcheong-3gil, Ochang-eup, Cheongwon-gu, Chungbuk, Korea
Tel : 043-711-8876 Fax : 043-711-8804

TEST REPORT



APPLICANT : TN SOLUTION Co.,Ltd. REPORT NO. : M271-18-02576
 SAMPLE RECEIVED DATE : 2018-02-22
 TEST STARTED DATE : 2018-02-22
 REPORT ISSUED DATE : 2018-03-05
 PAGE : 1 OF 2

DESCRIPTION : TWO(2) PIECES OF SUBMITTED CUTTING SAID TO BE MESH.

ITEM : #1 TN WINDOW SHIELD, #2 STAINLESS STEEL SAFETY SCREEN

TEST CONDUCTED : AS REQUESTED BY THE APPLICANT, FOR DETAILS PLEASE SEE ATTACHED PAGE.

01. BURSTING STRENGTH (KS K 0350 : 2011) : N

| | #1 | #2 |
|--|-------|-------|
| | 487.0 | 114.0 |

** End of The Report **

PREPARED AND CHECKED BY
FOR FITI

SEONG-KEUN, JANG
QUALITY MANAGER

AUTHORIZED BY
FOR FITI

KYUNG-YOON SON
PRESIDENT

※ Report Verification No.: WMV2-2DPQ-FY7X ※
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01. BURSTING STRENGTH (KS K 0350 : 2011) : N

| | #1 | #2 |
|--|-------|-------|
| | 487.0 | 114.0 |