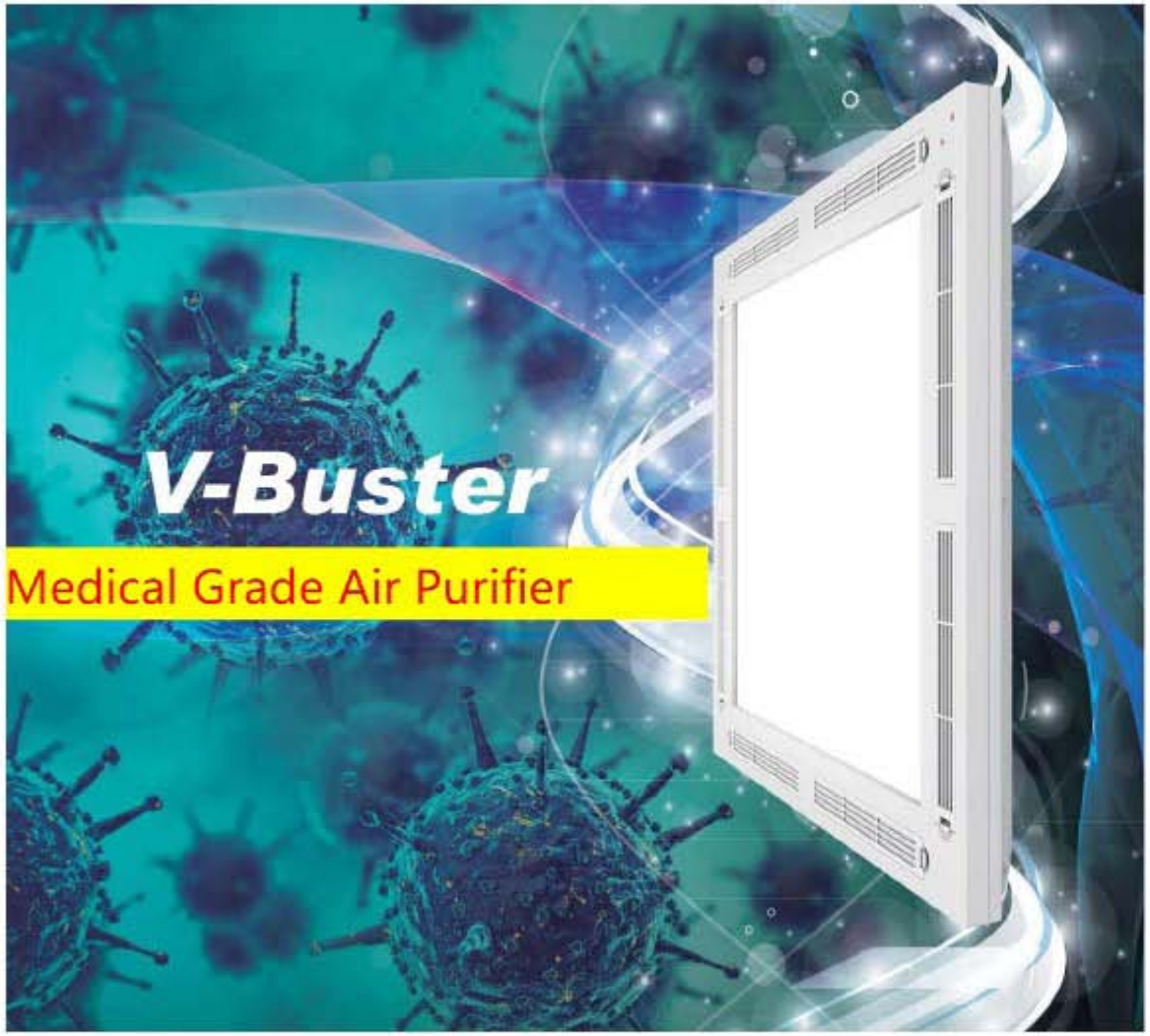
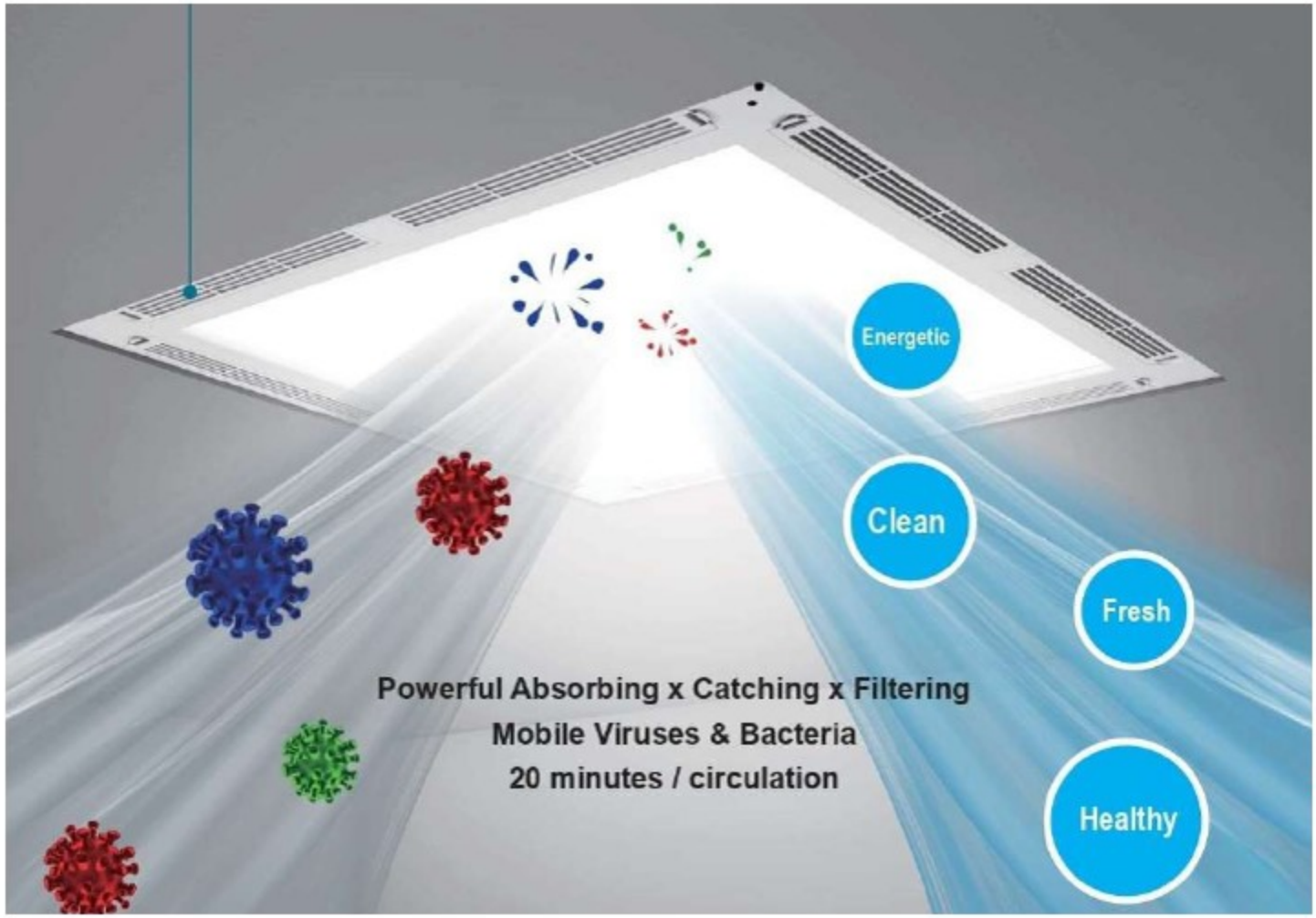



# How It Works ?

# V-Buster




Catching

Filtering

Absorbing

Decomposing

Harmless by-products
$CO_2$ & $H_20$


# Air Purification – 4 Combined Technologies

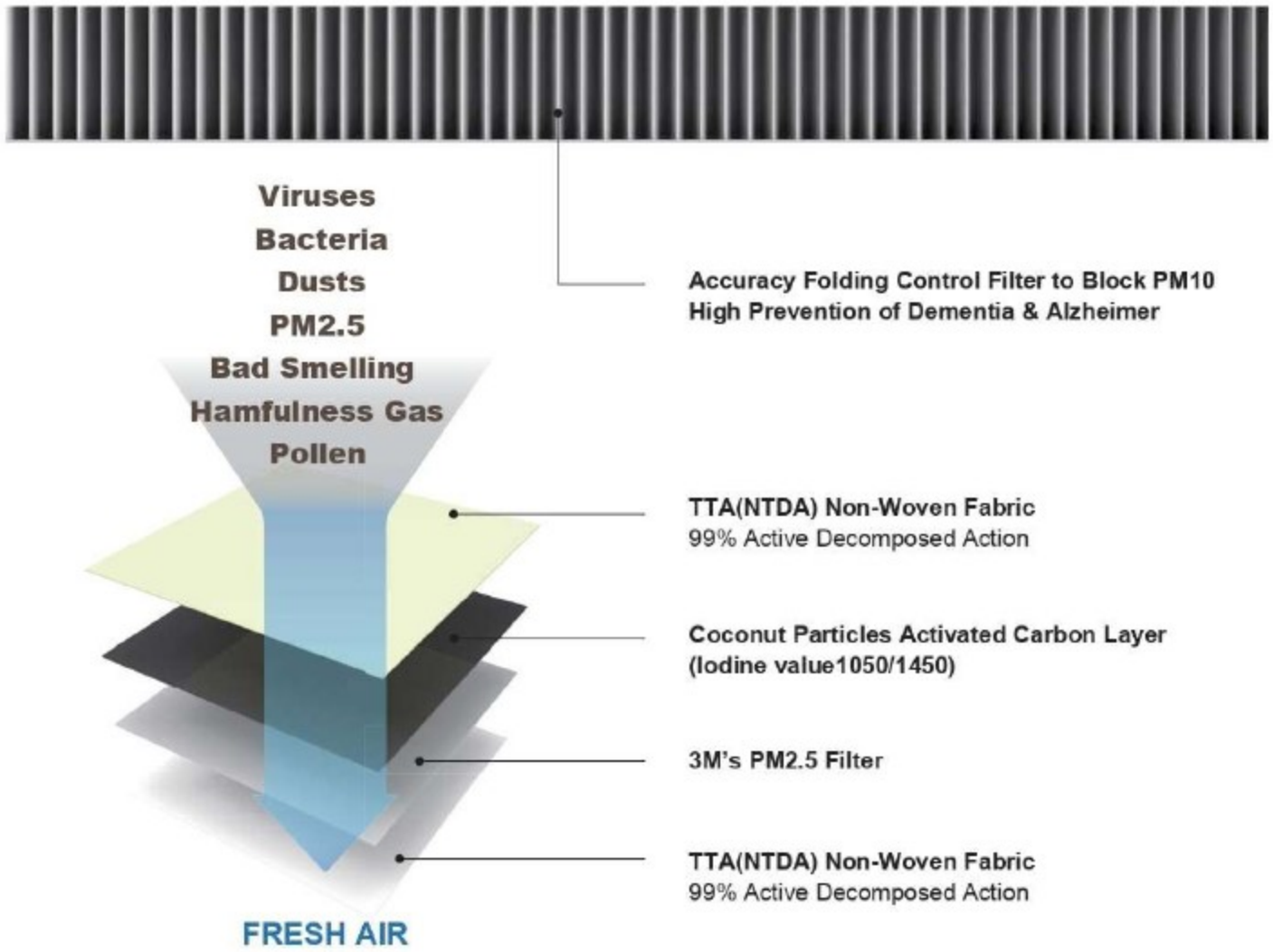
*HEPA Standard Filters

*Activated Carbon Technology

*TTA / NTDA *Pattented* Technology

*UV Technology

# Filters inside V-Buster




PM10 filter

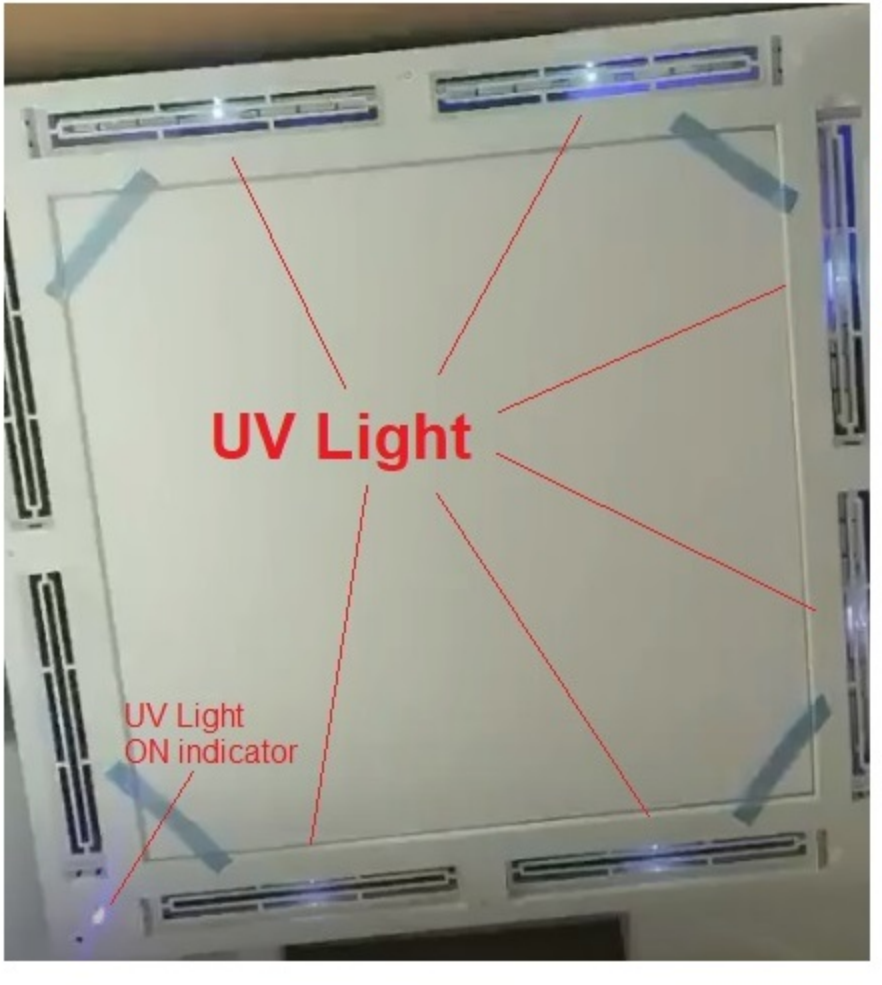
UV

NTDA filter

Activated Carbon

PM2.5 filter

NTDA filter




Photocatalyst must be exposed to ultraviolet light to function.

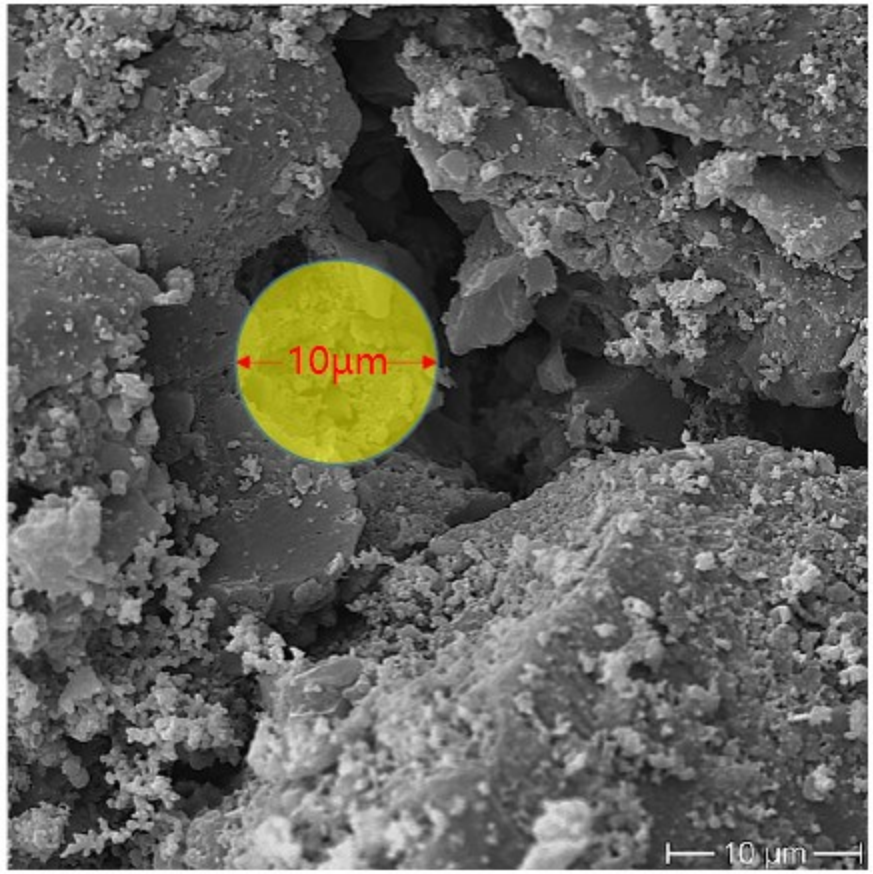
The choice of UV lamp should be 254nm or 365nm.

The V buster use the UVA - long wave

# Air Purification

*Activated Carbon Technology

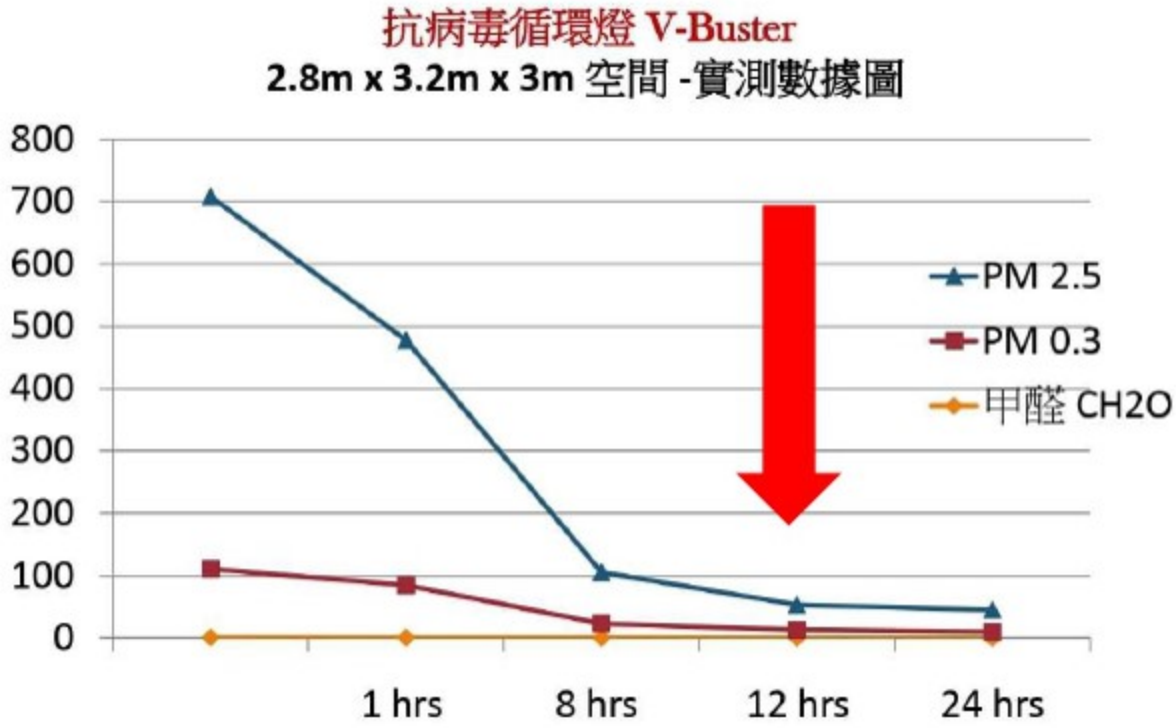
- Many molecular sized pores
- Capture VOCs, gases, tobacco smoke and odors etc.
- Not for dust and pollen etc.
- Not for bateria and viruses etc.
- Low efficiency



# V-Buster

## Simulation at factory for 24 hours

| | 甲醛 CH2O | PM 0.3 | PM 2.5 |
|---|---|---|---|
| 汙染指數 | 0.91 PPM | 110 ug/m3 | 597ug/m3 |
| | 啟動 V-Buster 風速100% + 最大亮度 | | |
| 1 hrs | 0.71PPM | 84ug/m3 | 393ug/m3 |
| 4 hrs | 0.62PPM | 35ug/m3 | 156 ug/m3 |
| 8 hrs | 0.41PPM | 23ug/m3 | 82ug/m3 |
| 12 hrs | 0.28PPM | 7 ug-13ug/m3 | 26ug -40ug/m3 |
| | 風速60% + 關燈 | | |
| 24 hrs | 0.16PPM | 5ug-10ug/m3 | 21ug – 35ug/m3 |
| | 82.4% | 90.9-95.5% | 94.1-96.5% |



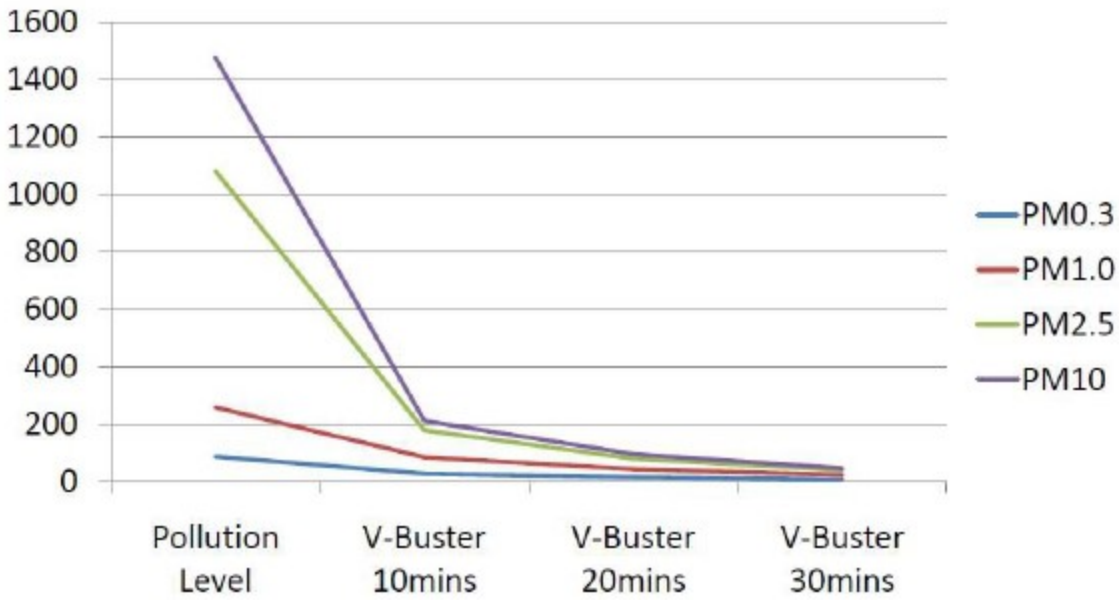
# V-Buster

## PM Level Testing as per SGS Testing Lab

30 Minutes After V-Buster is Running (Full Mode)
The Pollution Level has Dropped Significantly Again

| Starting V-Buster | Before | 10mins After | 20mins After | 30mins After |
|---|---|---|---|---|
| PM 0.3 | 86 | 27 | 14 | 7 |
| PM 1.0 | 259 | 84 | 43 | 23 |
| PM 2.5 | 1083 | 179 | 79 | 39 |
| PM 10 | 1477 | 212 | 95 | 46 |

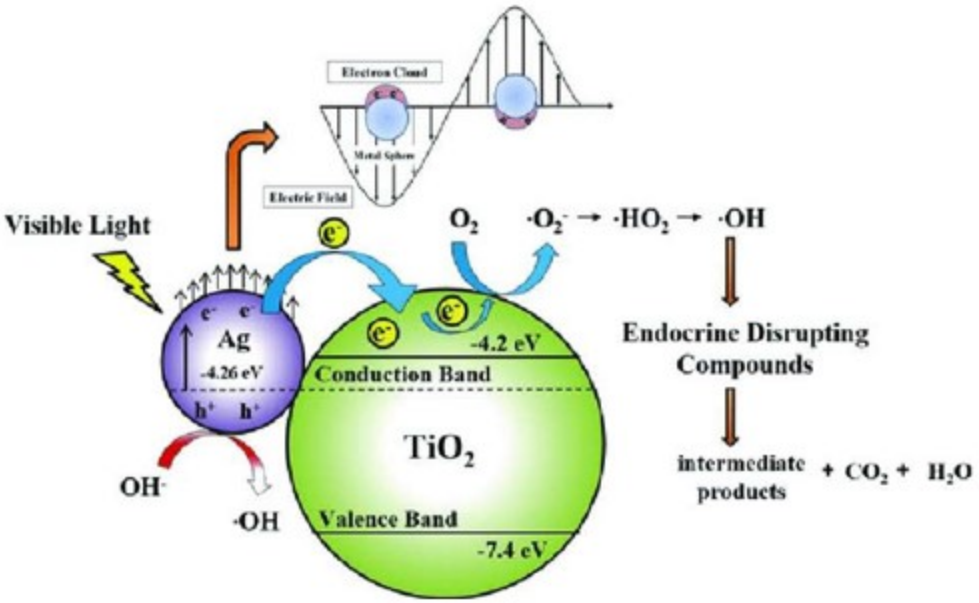
The Data Shows that
**V-Buster can Efficiently Blocks PM03-PM10**

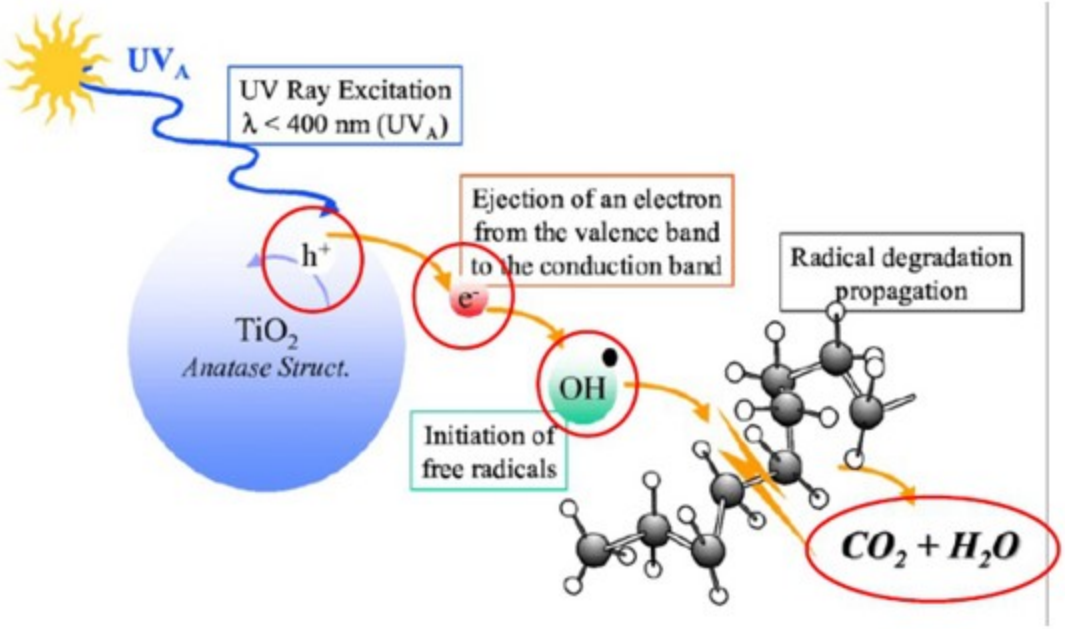


# NTDA

## Nano Titanium Dioxide doped with Ag+ (Patented)

### *NTDA Photocatalysis



# LAB TESTs

MICROBAC® MicroBioTest Division

## FINAL REPORT

## VIRUCIDAL SUSPENSION EFFICACY TEST
## Influenza A Virus (H1N1)

**TEST AGENT**
**Nanocomposite Material**

**Author**
**Zheng Chen, M.S.**

**Performing Laboratory**
**MicroBioTest**
**Division of Microbac Laboratories, Inc.**

**105 Carpenter Drive**
**Sterling, Virginia 20164**

**Laboratory Project Identification Number**
**852-101**

**Sponsor**
**JM Material Technology Inc**
**O. 5F.-3, No. 40-2, Sec. 1, Minsheng N. Rd.**
**Guishan Township,Taoyuan County 333**
**Taiwan (R.O.C.)**







### RESULTS (continued)

**Table 2**
**Neutralizer Effectiveness/Viral Interference and Cytotoxicity Controls**

| Dilution of the Neutralized Sample | Neutralizer Effectiveness/Viral Interference Control (with UV-A) * | Cytotoxicity with Control (with UV-A) * |
|---|---|---|
| 10^-1 | virus detected in 4 out of 4 wells | no cytotoxicity observed |
| 10^-2 | virus detected in 4 out of 4 wells | no cytotoxicity observed |
| 10^-3 | virus detected in 4 out of 4 wells | no cytotoxicity observed |

* Sample was processed by Sephacryl column.

**Table 3**
**Reduction Factor**

| Test Agent | Contact Time | Initial Viral Load ($Log_{10}TCID_{50}$) | Output Viral Load ($Log_{10}TCID_{50}$) | $Log_{10}$ Reduction | Percent Reduction (%) |
|---|---|---|---|---|---|
| Nanocomposite Material | 20 minutes | 5.78 | ≤ 1.61 | ≥ 4.17 | ≥ 99.99 |

### CONCLUSIONS

MicroBioTest personnel performed the inactivation procedure using Influenza A Virus (H1N1) (A/California/04/09) to spike the test agent solution. Samples were taken and titrated by 50% tissue culture infectious dose ($TCID_{50}$) endpoint assay using MDCK cells.

Table 3 reports the individual $Log_{10}$ virus reduction factor for the test article treatment procedure. All of the controls met the criteria for a valid test. These conclusions were based on observed data.

# LAB TESTs

| Lab | Bacterium / Virus | Results (Inhibitation) |
|---|---|---|
| Hospital / Lab in U.S.A | Influenza A virus H1N1<br>A型流感病毒 | 98.74%<br>>99.99%<br>Reduction |
| Hospital | Enterovirus<br>腸病毒 | 99.68% |
| Hospital | Mycobacterium tuberculosis<br>結核菌 | 80.8% |
| Hospital | Respiratory syncytial viruses<br>呼吸道融合病毒 | 90.00% |
| Independent Lab | Streptococcus pneumoniae<br>肺炎鏈球菌 | 99.88% |

國泰綜合醫院
Cathay General Hospital

**Test results**

Influenza A virus (H1N1)

| Group | Viral load ($Log_{10}TCID_{50}$) | | |
|---|---|---|---|
| | 1st | 2nd | 3rd |
| Virus strains | 4.0 | 5.7 | 5.7 |
| Virus strains +JM | 2.5 | 3.2 | 4.0 |
| Cell strains | None | None | None |
| Cell strains +JM | None | None | None |

Calculation of viral inhibitory efficacy:
Substituting the mean of the three test results obtained the following results:

Influenza virus inhibition percentage = [1-10^ (- ( 5.1–3.2 ) )] x 100 = **98.74**

**Conclusion**

The experiment results show that a 0.625% concentration of the JM nanomaterials inhibit cellular infection of influenza A virus. The percentage of viral inhibition was **98.74%**.

國泰綜合醫院
Cathay General Hospital

**Test Results**

Respiratory Syncytial Virus

| Group | Viral load ($Log_{10}TCID_{50}$) | | |
|---|---|---|---|
| | 1st | 2nd | 3rd |
| Virus strains | 3.0 | 4.5 | 4.7 |
| Virus strains + JM | 2.5 | 4.0 | 3.7 |
| Cell strains | None | None | None |
| Cell strains + JM | None | None | None |

Calculation of viral inhibitory efficacy:
Substituting the values of the third test into the formula obtained the following results:
Respiratory syncytial virus inhibition percentage
= [1 - 10^ (- (4.7 - 3.7)] × 100 = **90.00**

**Conclusion**

The experiment results show that a 0.625% concentration of the JM nanomaterials inhibit cellular infection of respiratory syncytial viruses. The percentage of viral inhibition was **90.00%**.

國泰綜合醫院
Cathay General Hospital

**Test Results**

Enterovirus

| Group | Viral load ($Log_{10}TCID_{50}$) | | |
|---|---|---|---|
| | 1st | 2nd | 3rd |
| Virus strains | 6.7 | 7.5 | 6.7 |
| Virus strains+JM | 4.5 | 4.3 | 4.7 |
| Cell strains | None | None | None |

Calculation of viral inhibitory efficacy:

Substituting the mean of the three test results obtained the following results:

Enterovirus inhibition percentage = [1-10^ (- ( 7.0–4.5 ) )] × 100 = **99.68**

**Conclusion**

The experiment results show that a 0.625% concentration of the JM nanomaterials inhibit cellular infection of enterovirus. The percentage of viral inhibition was **99.68%**.

國泰綜合醫院
Cathay General Hospital

**Conclusion**

The experiment results show that the JM nanomaterial is able to inhibit tuberculosis when the *Mycobacterium tuberculosis* is diluted $10^5$-fold. The percentage of *Mycobacterium tuberculosis* inhibition was 80.8%.

# LAB TESTs ... cont'd

| Lab | Bacterium / Virus | Results (Inhibitation) |
|---|---|---|
| Independent Lab | Staphy lococcus aureus<br>金黃色葡萄菌 | 99.71% |
| Independent Lab | Escherichia coli BCRC 11634<br>大腸桿菌 | 99.52% |
| Independent Lab | Legionella pneumophila<br>退伍軍人桿菌 | 99.92% |

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委託試驗報告
TEST REPORT

| | | | |
|---|---|---|---|
| 委 託 者：<br>Applicant | 京程科技股份有限公司 | 報告書號碼：<br>Report No. | 2014CT050 |
| 取 樣 者：<br>Sampler | 京程科技股份有限公司 | 收件日期：<br>Date Received | 2014/02/25 |
| 物品名稱：<br>Name of Article | 奈米新型複合材料(散裝) | 簽發日期：<br>Date Issued | 2014/03/11 |

| 試 驗 項 目 (Items) | 結 果 (Results) |
|---|---|
| 抗菌試驗 | 依據「TN-050 奈米銀抗菌衛生陶瓷器驗證規範」之評估標準，奈米新型複合材料（散裝）樣品對金黃色葡萄球菌（*Staphylococcus aureus* BCRC 10451）之抗菌率為 99.71%，樣品對大腸桿菌（*Escherichia coli* BCRC 11634）抗菌率為 99.52%。<br>試驗內容，詳如附件。<br>以下空白 |

簽 發 者：
Authorized Representative :

備註
Note :
1. 本分析結果，僅對委託者所送樣品負責。
The results in this report are valid only to the sample sent by the applicant.
2. 委託者所送樣品是否適用於人體(接觸、吸入、食用等)，非本試驗之範圍。
Whether the sample sent by the applicant can be applied to human in any way (contact, inhalation, ingestion, etc.) is beyond the scope of this test.
3. 本報告所載事項，僅做參考資料，若貴公司／單位擬做為廣告、公證或商業推銷用途，應經本所同意。
This report is for reference only, if it is used for advertisement, sales promotion, or notarial use, please consult FIRDI first.

T-CS-011

# More Lab Tests

京程科技股份有限公司
JM Material Technology Inc.

## 國泰醫學中心
## 成人幹細胞毒性測試報告

JM奈米新型複合材料TTA對成人幹細胞
未呈現細胞毒性反應



## 中國科學院理化技術研究中心

## 國泰醫學中心
## 新生兒幹細胞毒性測試報告

JM奈米新型複合材料TTA對新生兒幹細胞
未呈現細胞毒性反應



## 中國疾病預防控制中心 皮膚及口服毒性測試


JM奈米新型複合材料TTA
通過皮膚無毒及口服毒性測試



## 中國國家建築材料測試中心