



BIOMIST, No 25, Jalan Kempas Utama 1/3 ,  
Taman Kempas Utama 81300, JB, Johor ,  
No Tel : 07-5953752, Fax : 07-5953753  
biomistmalaysia@gmail.com ,  
www.biomistmalaysia.com

Preservation of artifacts, relics and records are a  
**promise** we made  
to the future generation

BIOMIST, a professional biological  
damage prevention research company

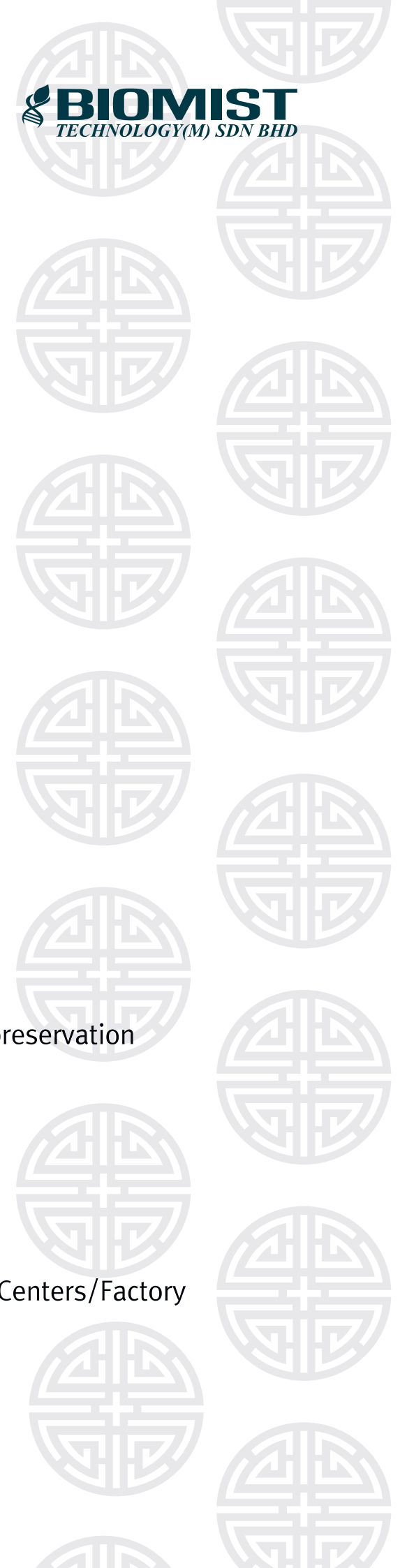
Our goal is to provide the most optimal,  
customized solutions by developing nature-friendly products  
through bio-monitoring and preliminary research and analysis,  
and by our endless effort and research for  
environmental and cultural heritage preservation

a professional biological  
damage prevention  
research company

MUZIUM NEGARA







“

BIOMIST endeavors to  
find the most optimal solution for biological  
and chemical damage through monitoring

”



## Contents

- 01 . . . . . Cultural artifacts and records preservation  
environment management
- 02 . . . . . Monitoring
- 03 . . . . . Service
- 04 . . . . . Product
- 05 . . . . . Corporate Affiliated Research Centers/Factory
- 06 . . . . . Global Business



# Cultural artifacts and recordspreservation environment management(annual management)

This is a system that prevents and manages damages to important cultural artifacts by constantly monitoring temperature/humidity, indoor air quality management and comprehensive IPM in order to prevent biological and chemical damages to cultural artifacts and essential records stored in museum, storage, gallery, and library.

## STEP 1. Preliminary consulting

- ◆ Explanation of IPM
- ◆ Field Research (relic type and environment condition examination)



## STEP 2. Surviellance and monitoring of harmful biological environment

- ◆ Measurement of floating bacteria
- ◆ Measurement of indoor air quality and investigation for harmful gas (Fine dust · NO<sub>2</sub> · O<sub>3</sub> · SO<sub>2</sub> , HCHO · TVOC, and etc.)



## STEP 3. Commencement of pest monitoring

- ◆ Installation of pest traps
- ◆ Investigation of number of pests and establishment of control methods

## STEP 4. Analysis of biological identity and toxicity

- ◆ Identification of fungi, germs, and pests
- ◆ Enzymatic and toxin production analysis



## STEP 5. Eco-friendly disinfection of cultural properties

- ◆ Intensive disinfection of storage and gallery

► Submission of comprehensive report (countermeasure proposal)

| Content                                         | Timeline |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                                 | Jan      | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Measurement of airborne bacteria                |          |     |     |     |     |     |     |     |     |     |     |     |
| Measurement of indoor air quality               |          |     |     |     |     |     |     |     |     |     |     |     |
| Installation of pest traps                      |          |     |     |     |     |     |     |     |     |     |     |     |
| Collection of pest traps                        |          |     |     |     |     |     |     |     |     |     |     |     |
| Categorization and identification of microbes   |          |     |     |     |     |     |     |     |     |     |     |     |
| Pest analysis and epidemiological investigation |          |     |     |     |     |     |     |     |     |     |     |     |
| Disinfecting eco-friendly cultural properties   |          |     |     |     |     |     |     |     |     |     |     |     |
| Monitoring Report                               |          |     |     |     |     |     |     |     |     |     |     |     |





## Bio MoniPro System

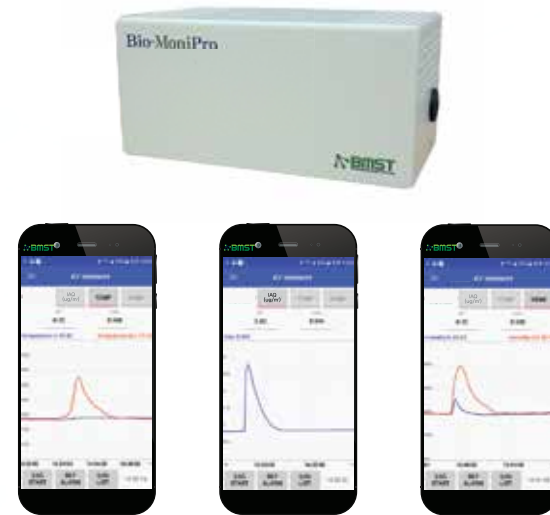
System designed to preliminarily protect essential cultural artifacts by preventing biological and chemical damages to cultural artifacts and important records through real-time monitoring of temperature/humidity and indoor air quality of museum storage, gallery, and library. (Can be monitored in real time through mobile and can be checked by monitoring through sub)

### Characteristics

- Portable indoor air quality and temperature and humidity monitoring device
- Real-time monitoring of changes in air quality and temperature and humidity on mobile
- Built-in alarm function to notify change in air quality and temperature/humidity



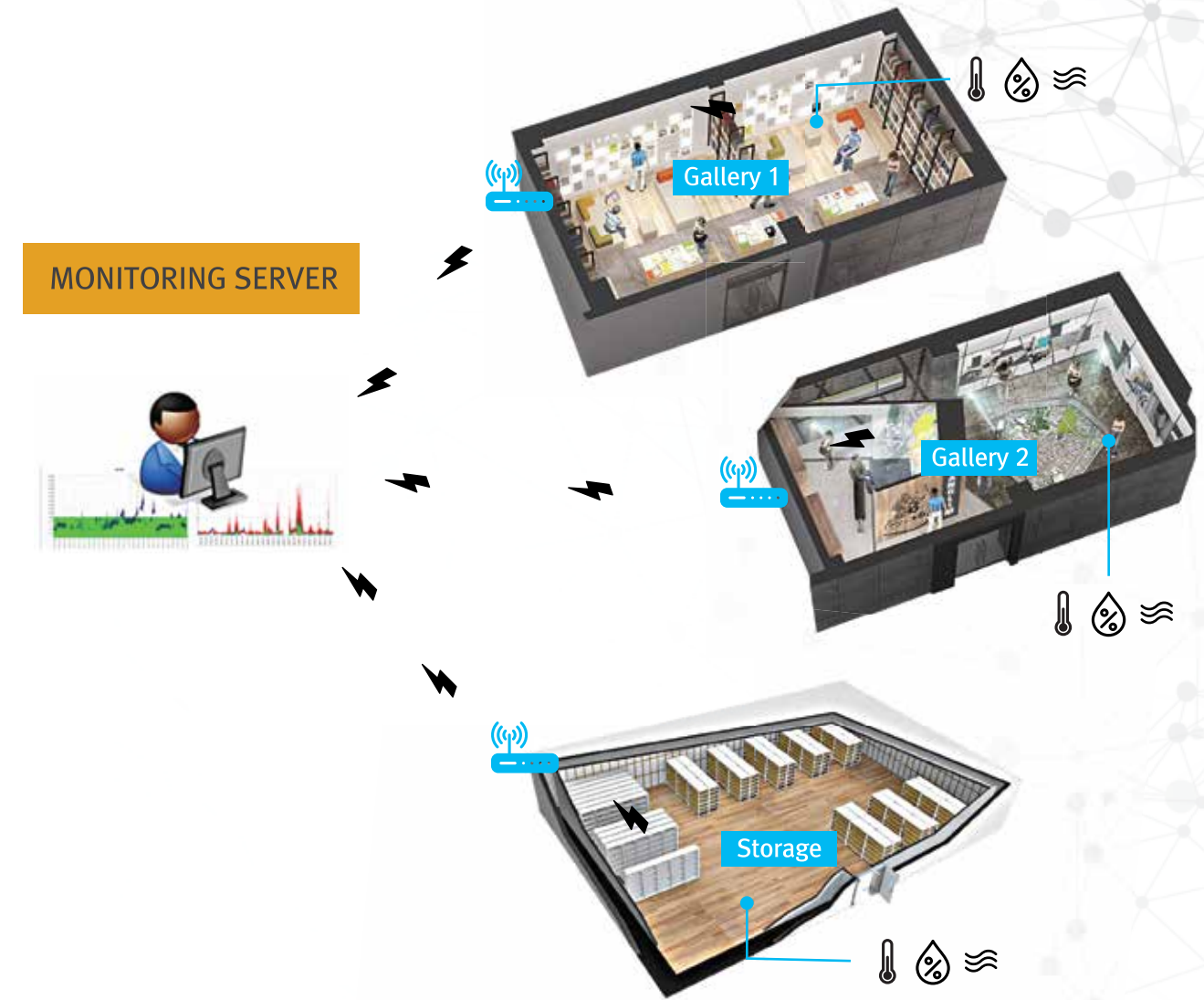
Real-time monitoring



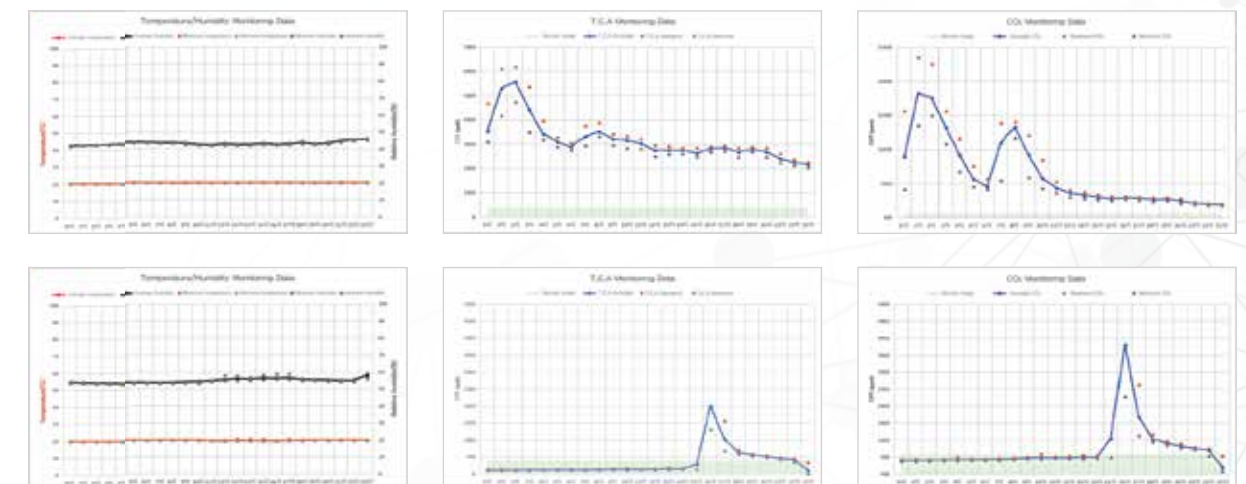
Real time air quality and temperature/humidity check on mobile



Bio-MoniPro Installation Case



### Real time indoor air quality monitoring



T./RH Monitoring

T.C.A. Monitoring

CO<sub>2</sub> Monitoring





## Bio Monitoring

System designed to prevent damages from harmful organisms through scientific analysis of pest investigation through analysis of microbes and IPM (Integrated Pest Management) of museum, archives, art gallery, library, and etc. or similar biological environmental monitoring

### Investigation of airborne bacteria

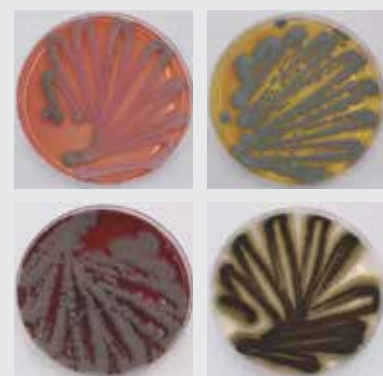
For the distribution of microbes, place the selective culture medium (PDA, NA) in the air collector based on the microbes present in the air, and collect 1000L of air at the desired location, and then analyze the number of microbes and their morphological characteristics after incubating them for 3~5 days at 27°C.



Microbial form

### Investigation of particle-attached bacteria

Analyze the characteristics of harmful microbes by collecting contaminants attached to artifacts and records on sterilized cotton swab, streaking them in selective culture medium, and analyzing the morphological characteristics of the microbes (fungi, germs) on the artifacts and the surface of records after culturing them for 3~5 days at 27°C.



Microbial form

## Integrated Pest Management (IPM)

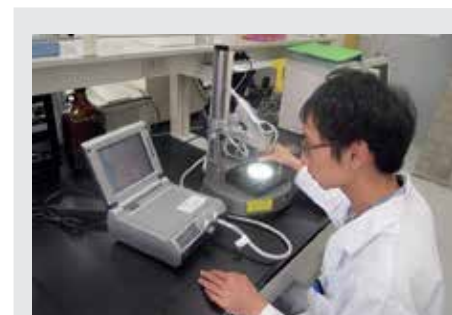
Install adhesive traps in the inventory, gallery, library, and other potential pathways of the pests in order to check the distribution and type, as well as condition, of the inhabiting pests, and their inflow routes, all to establish a safe and reasonable countermeasure through epidemiological survey.



Pest traps installation



Pest examination



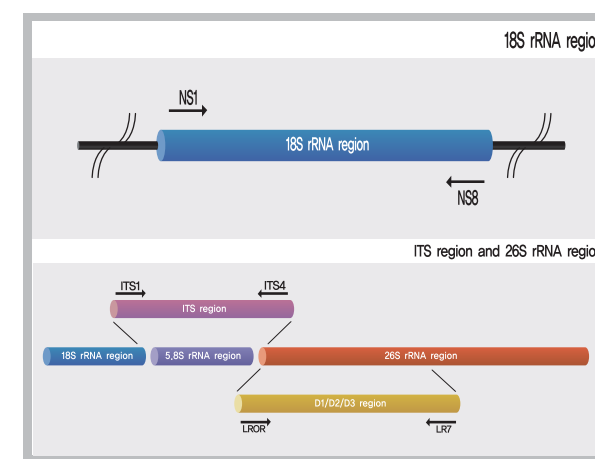
Pest analysis

## Microbe Identification

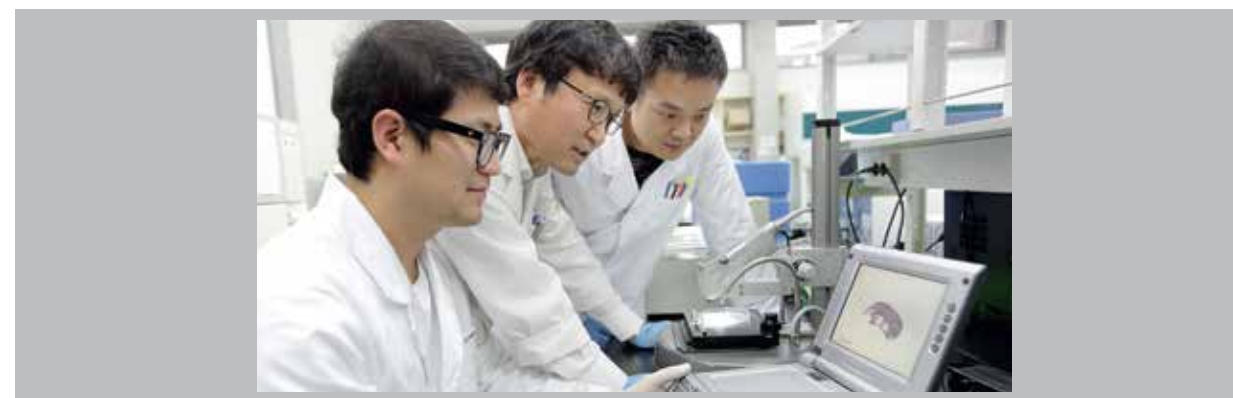
Identification and pure culture isolation of microbes  
[16S/18S/ITS & 26S rRNA Full Sequencing]

### Fungi

18S rRNA region base sequence analyzed, and analyzed over 1,600 base pairs as a result.  
ITS region (existing 18S) base sequence analyzed, and 500 base pairs analyzed.  
26S rRNA gene(D1/D2/D3 region) base sequence analyzed, and analyzed over 1,300 base pairs as a result.



## Identification of harmful pests







## Air Monitoring Examination of indoor air quality

- Examining the potentially harmful gases that may damage artifacts and records
- Items to be examined : fine dust, NO<sub>2</sub>, O<sub>3</sub>, SO<sub>2</sub>, HCHO, TVOC, etc
- Analyze the alternatives after designing a map of the indoor air quality of the storage, archives, and gallery, following the above examination
- Establish a Data Base after examining the harmful gases in the storage
- Indoor air quality standards :
  - ▶ Fine dust(PM-10) : below 50ug/m<sup>3</sup>
  - ▶ Ozon(O<sub>3</sub>) : below 0.05ppm
  - ▶ Sulfur dioxide(SO<sub>2</sub>) : below 0.05ppm
  - ▶ Formaldehyde(HCHO) : below 120ug/m<sup>3</sup>
  - ▶ Nitrogen oxide(NOX) : below 0.05ppm
  - ▶ Carbon monoxide(CO) : below 10ppm
  - ▶ Volatile organic compounds(VOC) : below 400ug/m<sup>3</sup>

### Standards for environment conservation

Our museum has total of 22 storages and the total area is 12,434.5m<sup>2</sup>.



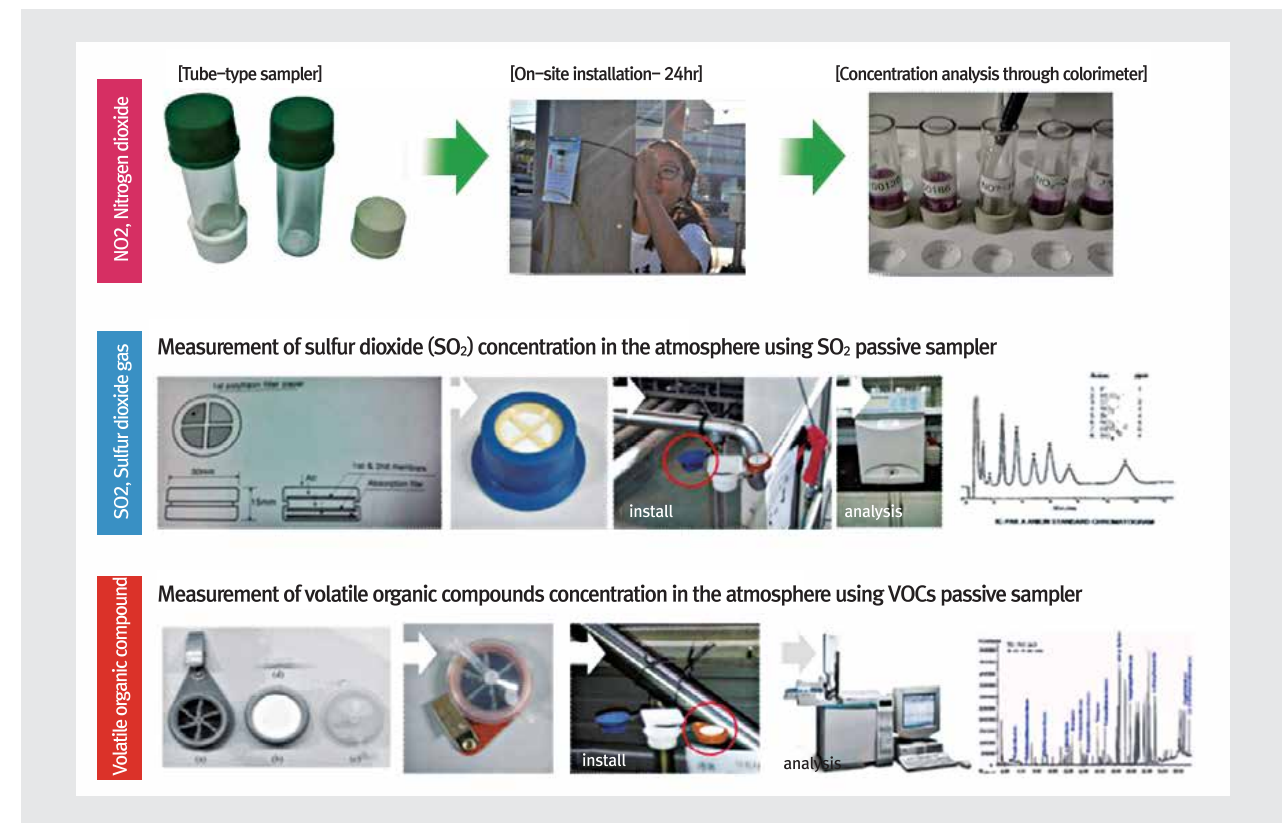
| Space and material                           | Temperature (°C) | Humidity(%) | Sulfur dioxide(SO <sub>2</sub> )(μg/m <sup>3</sup> ) | Nitrogen dioxide(NO <sub>2</sub> )(μg/m <sup>3</sup> ) |
|----------------------------------------------|------------------|-------------|------------------------------------------------------|--------------------------------------------------------|
| Metals (Iron)                                | 20±4             | Below 50    | Below 10                                             | Below 10                                               |
| Metals (non-ferrous)                         | 20±4             | Below 50    | Below 10                                             | Below 10                                               |
| Potteries, earthenwares                      | 20±4             | 40~60       | Below 10                                             | Below 10                                               |
| Stones, glasses, jades                       | 20±4             | 40~60       | Below 10                                             | Below 10                                               |
| Paintings and calligraphy collection, record | 20±4             | 50~60       | Below 10                                             | Below 10                                               |
| Fabrics                                      | 20±4             | 50~60       | Below 10                                             | Below 10                                               |
| Woods, Ivory                                 | 20±4             | 50~60       | Below 10                                             | Below 10                                               |
| Lacquerware                                  | 20±4             | 50~60       | Below 10                                             | Below 10                                               |

[National Museum Environment Preservation Standard]

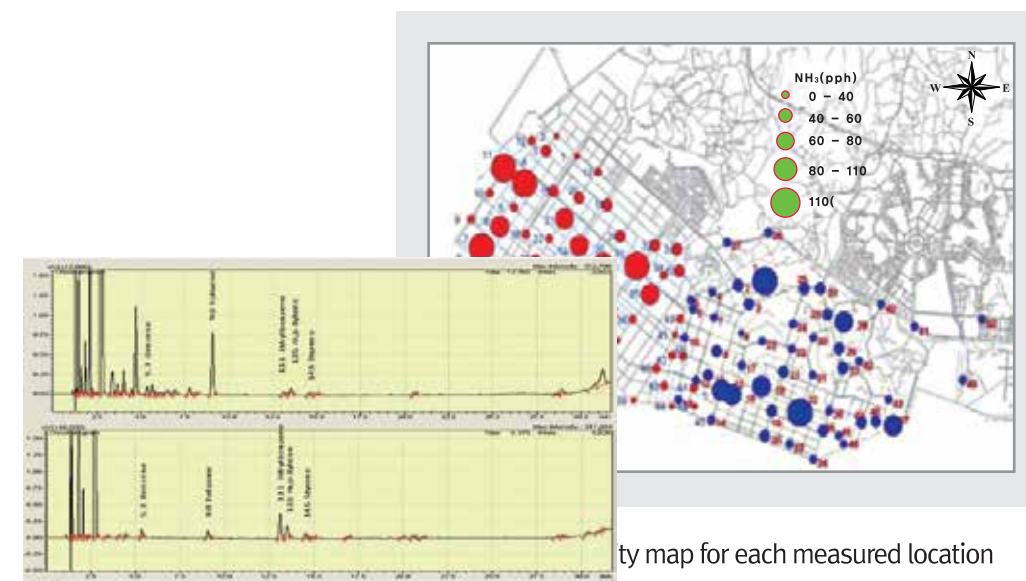


Examination of indoor air quality

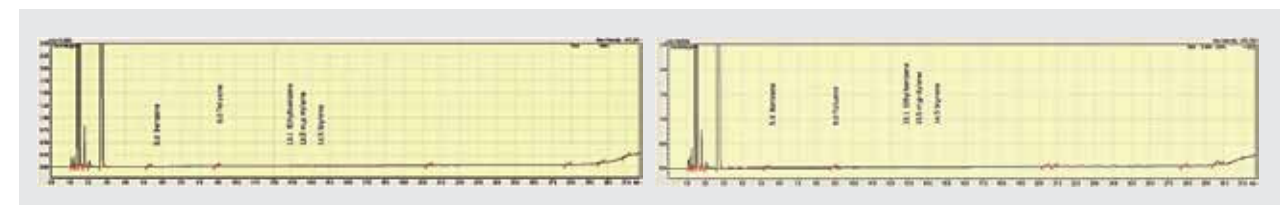
## Examination of storage and archives indoor air quality



Indoor air quality measurement method (analysis method for each gas)



Map for each measured location







## [Eco-Friendly Fumigation]

Fumigation system that disinfects with environment-friendly substances that are not harmful to human bodies in order to prevent any damage to cultural artifacts and essential records in museum, art gallery, library, and other appropriate places.

– Where to use : museum(gallery, storage), library, archives, and etc.



### Disinfection of storage



### Disinfection of library



- Environment-friendly disinfectant with chemicals not harmful to humans
- Powerful disinfection effect on various harmful microbes (germs, fungi) and pests
- No damage to artifacts
- Effective disinfection even against microbes that are immune to conventional chemical synthetic disinfectant.
- Pests are unable to grow immune due to its natural ingredients unlike against chemical pesticides.

### Pest disinfection



Dispersing the environment-friendly disinfectant in places that have pest traces.



Shooting the environment-friendly disinfectant as ultrafine particles.

### Cleaning



Eliminating fungi spores and dusts attached to exhibits in the gallery.



# 04 Bio-MukiPro

PRODUCT

Environment-friendly disinfection equipment capable of environment control according to non-harmful disinfectant and the material of the objects to be disinfected (artifacts, documents, etc) to prevent biological damages to cultural artifacts and records



Disinfection equipment: small

Disinfection equipment: large

## Equipment specification

Equipment specification : 0.5, 1, 2.5, 3, 4(m<sup>3</sup>)  
 Target : artifacts (textile, wood, oil, metal, etc), old books, etc.  
 Method : (O<sub>2</sub>-Zero System)  
 Method of control : automatic/manual (touch screen)  
 Disinfectant : Bio-SolPro  
 Type of gas : Nitrogen, Argon (up to orderer)  
 Power : 220V, 60Hz



## Patent

Cultural property disinfection equipment using environment-friendly disinfectant

## Characteristics of disinfection equipment

### 1. Environment-friendly

Uses disinfectant made of natural plant extract (Bio-SolPro)

### 2. Efficiency

Disinfection tailored to the object and its damage condition  
 Maximized the effectiveness of disinfectant toward aerobic fungi and pests with fast vaporization of disinfectant

### 3. Convenience

Location of installation not restricted thanks to its environment-friendly substances that are not harmful to human bodies or the environment  
 Adjustable disinfection options depending on the object's condition

### 4. Economical

With its environment-friendly and environment control nature, anyone can use this disinfectant  
 No need for post-treatment after disinfection  
 Economically superior



Effect of disinfection : Insecticide

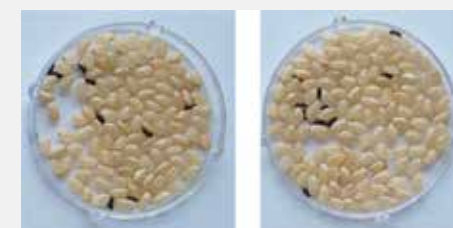
Effect of disinfection : Fungus



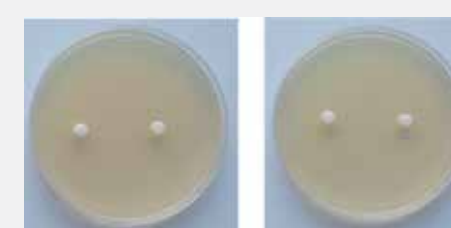
Authorized testing agency  
 (Report of Disinfection Effectiveness)

## Effect of disinfection

- Very effective against organisms that are harmful to cultural artifacts and records (99.9%)
- Excellent insecticidal effect against harmful pests (99.9%)



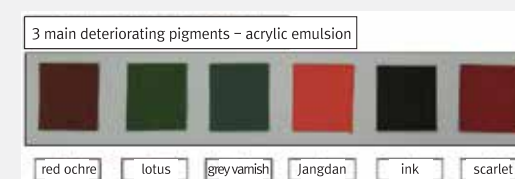
Fungicidal effect



Fungicidal effect

## Proven safety of materials

Safety test conducted on metals, feedstock, dyes, and pigments





## 04 Bio-FumiPro

Environment-friendly, hybrid low-oxygen artifact disinfectant equipment that is a safer and proven substitute for conventional chemical disinfectant methyl bromide and carcinogenic ethylene oxide which were used to prevent biological damages to artifacts and relics



Model : BFP-400

### Model : BFP-400

Disinfecting ability : 400 A-4 pages/shot  
 Exterior dimension : 2,300x1,840x2,525(mm)  
 Chamber dimension : 1,300x1,100x1,500(mm) = 2.15m<sup>3</sup>  
 Disinfection method : Environment control method (low-oxygen environment, oxygen removal system)  
 Disinfection period : 5 days  
 Power consumption : 10kw  
 Weight : 1,200kg  
 Built-in automatic fire extinguishing system

### Characteristics of disinfection equipment

#### 1. Environment-friendly

Environment-friendly disinfection device that disinfects by turning the inside of the chamber into low oxygen environment with nitrogen.

#### 3. Convenience

Location of installation not limited due to its non-harmful and environment-friendly nature, and the disinfection option can be adjusted according to the preservation state of the object.

#### 2. Efficiency

Customized disinfection depending on the object's material and damage condition. Maximized the effectiveness of disinfectant toward aerobic fungi and pests with low-oxygen environment and fast vaporization.

#### 4. Economical

With its environment-friendly and environment control nature, anyone can use this disinfectant. No need for post-treatment after disinfection. Economically superior.

### KTRCertified

Environment-friendly disinfection system

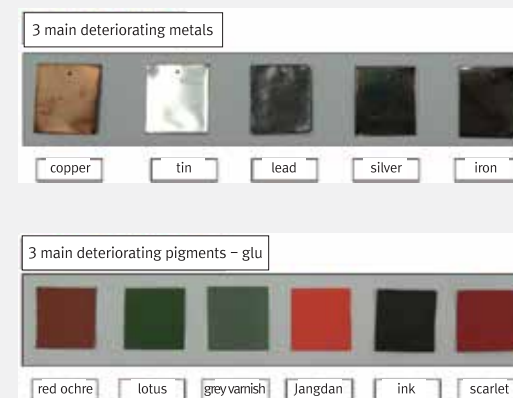


Model : BFP-700

### Model : BFP-700

Disinfecting ability : 700 A-4 pages/shot  
 Exterior dimension : 3,000x1,840x2,525(mm)  
 Chamber dimension : 2,100x1,100x1,800(mm) = 4.16m<sup>3</sup>  
 Disinfection method : Environment control method (low-oxygen environment, oxygen removal system)  
 Disinfection period : 5 days  
 Power consumption : 15kw  
 Weight : 1,800kg  
 Built-in automatic fire extinguishing system

### Safety Test to metal : Oddy Test



### Safety Test for Fiber discoloration





# 04 Bio-AirPro

An air purifier that improves the indoor air quality by eliminating harmful gases, fungal spores, and such in order to prevent damages to artifacts and important records in the storage and archives.



Bio-AirProImage of the equipment spraying

## Features

Removal of potentially harmful microorganisms within collection storage and stack rooms (equipped with HEPA filter).

1st Sterilization of Microorganisms (equipped with UV sterilizer and etc).

Indoor air quality improvement (equipped with compressed activated air filter)

[Removing fine dusts, SO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, HCHO, TVOCs and etc]

Routine sterilization/disinfection (done once a day, eco-friendly sterilization/disinfection of the equipment after the work hour).

Vermin extermination (light trap, vermin trap installation).

## System

Touch screen: PLC based.

All Data: Auto-save system.



## Cases of Installation



## Need for air purification system

Laws regarding the public records keeping

Record keeping institutions' storage facilities must follow the standards below in accordance to the article 28

- Fine Dust (PM-10) : Below 50 $\mu$ g/m<sup>3</sup>
- Sulfur Dioxide(SO<sub>2</sub>) : Below 0.05ppm
- Nitric Oxide(NO<sub>x</sub>) : Below 0.05ppm
- Ozone(O<sub>3</sub>) : Below 0.05ppm
- Formaldehyde(HCHO) : Below 120 $\mu$ g/m<sup>3</sup>
- Carbon Monoxide(CO) : Below 10ppm
- Volatile Organic Compounds(VOC) : Below 400 $\mu$ g/m<sup>3</sup>

※ Improvement of indoor air quality through the compressed active filter installation.

### Elimination of airborne microorganism in stack/collection rooms

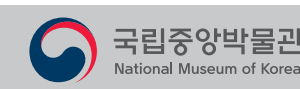
Elimination of airborne microorganism (HEPA filter equipped)  
Disinfecting of pathogenic microbes that may enter through air purifier via UV radiation.  
1st step: Spraying of eco-friendly disinfectant in ultrafine particles after all the workers have left.  
2nd step:

### Extermination of vermins within stack /storage rooms.

1st step in extermination: spray ultrafine particle disinfectant  
2nd: Complete extermination and prevention:  
Assess how the vermins get in, what they are, where they are, how wide-spread they are.  
Then choose scientific method of prevention.

## Standards for environment conservation

Our museum has total of 22 storages and the total area is 12,434.5m<sup>2</sup>.



| Space and material                           | Temperature (°C) | Humidity(%) | Sulfur dioxideSO <sub>2</sub> ( $\mu$ g/m <sup>3</sup> ) | Nitrogen dioxideNO <sub>2</sub> ( $\mu$ g/m <sup>3</sup> ) |
|----------------------------------------------|------------------|-------------|----------------------------------------------------------|------------------------------------------------------------|
| Metals (Iron)                                | 20±4             | Below 50    | Below 10                                                 | Below 10                                                   |
| Metals (non-ferrous)                         | 20±4             | Below 50    | Below 10                                                 | Below 10                                                   |
| Potteries, earthenwares                      | 20±4             | 40~60       | Below 10                                                 | Below 10                                                   |
| Stones, glasses, jades                       | 20±4             | 40~60       | Below 10                                                 | Below 10                                                   |
| Paintings and calligraphy collection, record | 20±4             | 50~60       | Below 10                                                 | Below 10                                                   |
| Fabrics                                      | 20±4             | 50~60       | Below 10                                                 | Below 10                                                   |
| Woods, Ivory                                 | 20±4             | 50~60       | Below 10                                                 | Below 10                                                   |
| Lacquerware                                  | 20±4             | 50~60       | Below 10                                                 | Below 10                                                   |

[National Museum Environment Preservation Standard]

[Attached 6] <Revision 2010.3.4>  
Storage facilities and equipment standards for record keeping institution  
(Article 00, 1st clause related)

3. Standards in regards to the facilities and equipment and environment of the permanent record keeping institution

| Classifications          | Paper records                       | Electronic records                  | Administrative records              | Related stack                       |
|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Stack area dimensions | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 2. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 3. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 4. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 5. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 6. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 7. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 8. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 9. Working space         | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 10. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 11. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 12. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 13. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 14. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 15. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 16. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 17. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 18. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 19. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 20. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 21. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |
| 22. Working space        | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm | Standards: 1000mm x 1000mm x 1000mm |

[Public Record Keeping Laws]



[Accreditation Certificate - KCL]



## PRODUCT

# Bio-AHUPro

Automated disinfecting system that sprays directly to air conditioning system with eco-friendly disinfectants to eliminate vermins and microbes that may exist within stack/storage rooms.



## Features of Bio-AHUPro system

### 1. Bio-AHUPro's Major Systems

- Fully automated processes.
- Programmable disinfecting/sterilization control system.
- Very easy use and maintenance.

### 2. Bio-SolPro™'s Features

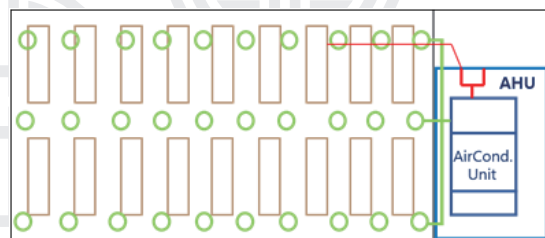
- Antimicrobial/antipest effects
- Particularly strong antimicrobial effects on germs and fungus.
- All natural, environment friendly products derived from plants.
- No toxicity and residual dangers
- Good replacement to chemical disinfectants.

### 3. Nozzle

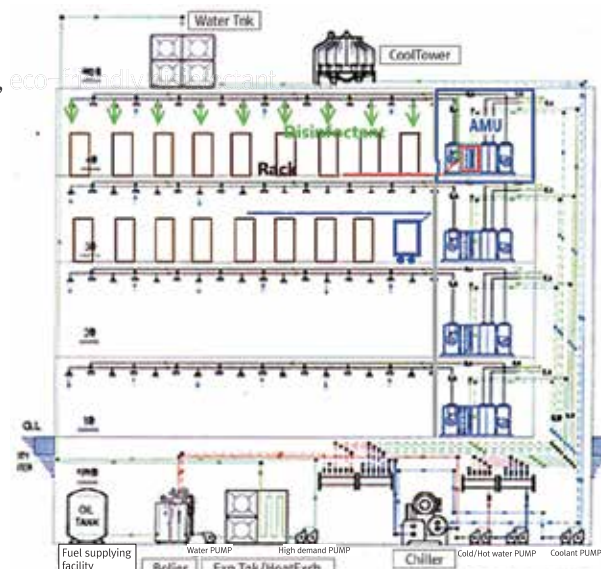
- Spray particles at 3–5μm
- Control over the strength of flow.
- High penetration

## Bio-AHUPro system's Features

- 1) Verified to be safe to the human body through non-toxic, eco-friendly disinfectant.
- 2) AHU does not affect the performance of air conditioning filter.
- 3) Does not corrode metal or duct.
- 4) No problems with fire detector.
- 5) Excels in prevention of biological hazard within stack /collection rooms.



MODEL : Bio-AHUPro – 1 set  
(for one FLOOR of Stack Room)



\* Red : location of Bio-AHUPro

## PRODUCT

# Bio-CleanPro

Mote removing device that removes dusts, mites, and fungal spores that may be present on old artifacts and records in collection/stack rooms.

## Bio-CleanPro's Features

The mote remover is specially designed to remove dusts, mites and fungal spores that may be present on the relics indoors.

UV lights and HEPA filter disinfects/eliminates the air and fungal spores that comes through the device.

The product features basic vacuum cleaner style cleaning with added prefilter to prevent the loss of relic's fragments.

We suggest Bio-CleanPro for the scientific and most efficient conservation of important artifacts and old records.



## Important Notes

Vacuum suction strength can be adjusted and to prevent the possible loss of fragments of relics during working, it is equipped with prefilter.





## 04 Bio-SafePro

Bio-SafePro prevents the damages to artifacts and important records from contaminated air in display cases and stack/collection rooms of museum by removing the contamination in the air.



### Specifications

1. Effective for: Within 1 m<sup>3</sup>
2. Effective Service Life: 3 months
3. Efficacy and Features

Eco-friendly product that is also harmless to humans. Display, stack/collection rooms air quality improvement. Verified to be safe with metals, fabrics, pigments, dyes, and papers

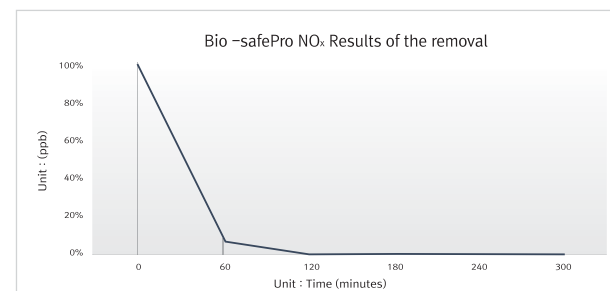
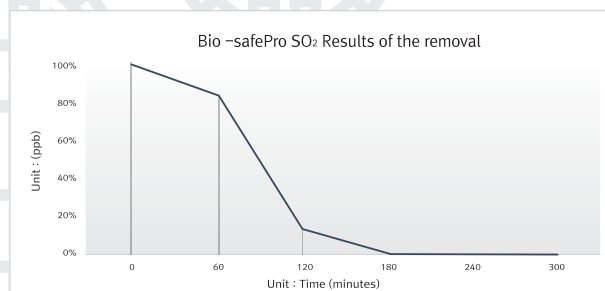
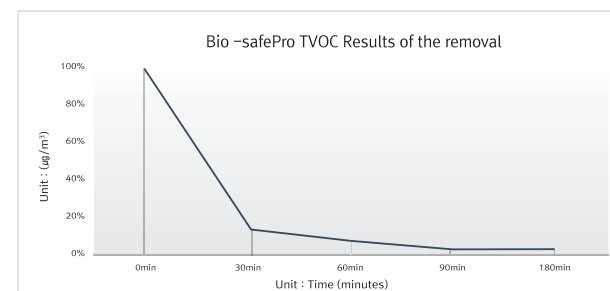
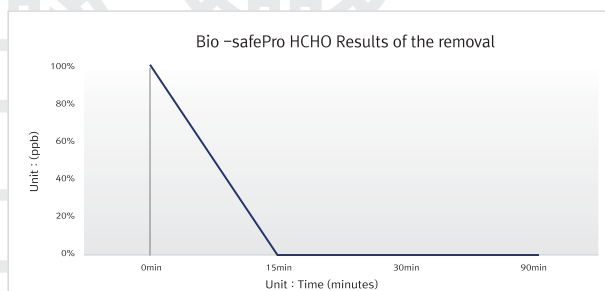
4. For use in

Display rooms, exhibition rooms, case rooms, collection/stack rooms

### Cases of Use in Exhibits

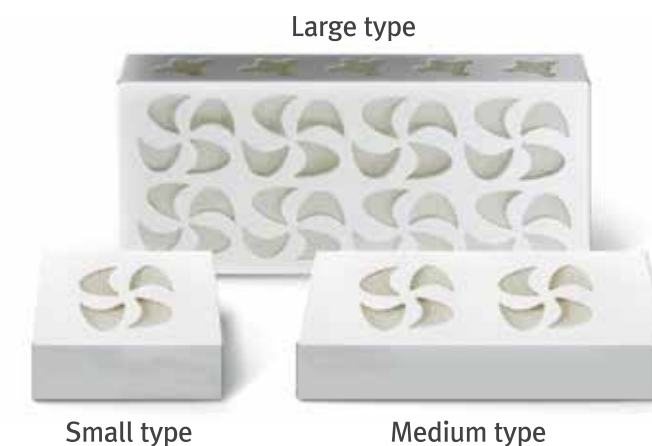


### Removal of noxious gases



## 04 Bio-Zonepro

Has antifungal effects for stack rooms, museum storages, exhibits to store important artifacts and records. Also acts as volatile organic insecticide by preventing vermins and growth of various fungi



### Specifications

1. Effective Service Life: 3 months
2. Effects and Features

Harmless to humans due to the use of eco-friendly materials used to produce. Over 95% antifungal/anti-pest effects in display/stacks/collection rooms. Passed safety checks on: pH, tensile strength, folding endurance, color change. Safe on metal, fabrics, pigments, dyes and papers.

3. Applied to

Display, exhibit rooms, archival boxes, paulownia boxes  
Storage, stack, record and ancient documents storage box and etc.

4. Product dimensions (mm)

5. Product Range

### Cases of Use





# PRODUCT

## 04 BIOMIST-sorb / Bio-SorbPro

Humidifier that can remove noxious gas in an area and help to keep the right level of humidity for spaces such as museum storages, display cases and stack rooms



### Characteristic

#### 1. Characteristic

Made from eco-friendly materials.  
Humidfire's case design applied for patent.  
Patent application for humidity control agent for preservation of artifacts

#### 2. Efficacy

Keeping the perfect level of humidity for artifacts and records' materials.  
Creates humidity level for preserving papers, paintings, fabrics and woods. / Maintaining 50~60% RH  
Maintain below 50% level to create environment for metal preservation.  
Adjust to prime humidity level depending on the relic's materials. / Eliminates noxious gas within case.

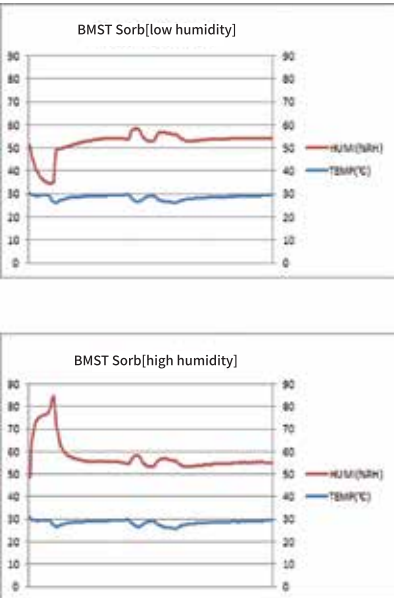
#### 5. Product range

#### 3. Applied to

Perfect for spaces such as museum storage, exhibit, display, artifact preservation box, archival box, paulownia box and etc that requires certain humidity level.

#### 4. Product Specification(mm)

### Cases of Use in Exhibits



# PRODUCT

## Bio-HandPro

Bio-HandPro is a sanitary aid product (permit 94) made from using eco-friendly materials approved by Korea Food & Drug Administration. Bio-HandPro isa hand sanitizer that elimites all pathogenic microbes without the need of water and soap from the hands of workers that work with old artifacts, records, documents and arts.



Contributed to Korean Society of Archives and Records Management (2016년)

### Characteristic

#### 1. Eco-friendliness

Eco-friendly substances such as phytoncide, Hinoki oil, Jojoba oil, and sage extracts makes the product safe to human body.

#### 2. Usage

For museum, archive, library and art gallery workers  
Use before and after handling artifacts, records, ancient documents, books, paintings, contacts with plant animal specimen and etc.

#### 3. Sanitizing Effects

Disinfects/sterilizes potentially harmful microbes on hands and skin.  
Disinfect/sterilizes without the use of water and soap.  
99.9% removal of microbes from hand.



### Typical microbes found in collection/stack rooms



### Result of sterilization test against the fungus extracted from a museum.

| No. | Species                     | Halo Zone(저지원의 직경 mm) |         |    |
|-----|-----------------------------|-----------------------|---------|----|
|     |                             | Bio-HandPro           | 기존 손소독제 | 비고 |
| 1   | Attemaria citrimacularis    | 1                     | Growth  |    |
| 2   | Attemaria consortialis      | 2                     | Growth  |    |
| 3   | Aspergillus niger           | 3                     | Growth  |    |
| 4   | Aspergillus versicolor      | 4                     | Growth  |    |
| 5   | Cladosporium sphaerospermum | 5                     | Growth  |    |
| 6   | Coniothyrium aleuritis      | 6                     | Growth  |    |
| 7   | Penicillium brevicompactum  | 7                     | Growth  |    |
| 8   | Penicillium corylophilum    | 8                     | Growth  |    |
| 9   | Penicillium paneum          | 9                     | Growth  |    |
| 10  | Penicillium polonicum       | 10                    | Growth  |    |

\*Composed of: Geranial, Cineol, Menthol and Cypress' active ingredients  
▶N-G: Growth and Development Stopped (Very Effective)  
Growth: Growth and Development Observed (Not effective)





# 05 Corporate Affiliated Research Centers/Factory

Based on the years of research and experience, we are committed to developing eco-friendly, and safety assured products that sterilizes/disinfects artifacts/relics without damaging the integrity. More over, our thoroughly tested products such as, Bio-MukiPro, Bio-FumiPro, Bio-AirPro, are widely recognized around the world for the technical finess.



## Research & Development

### Toxicity Evaluation Research

- Dermal Safety Test
- Oral Safety Test
- Inhale Safety Test

### Material Safety Evaluation Research

- Metallic Materials Test
- Paper Materials Test
- Test Against Dyes
- Test Against Pigments

### Monitoring Evaluation Research

- Airborne Microbe Test
- Surface-based Microbe Test
- IPM Test
- Air Quality Research & Analysis
- Deodorant Effects Test

### Sanitation Evaluation Research

- Disinfection/Sterilization Effect Test
- Infecticide/Anti-pest Effect Test
- MIC TEST
- MBC TEST

### Microorganism Identification

- Isolation and Identification of Fungi
- Isolation and Identification of Bacteria

### Preservation Treament Research

- Fungal Spore/Mote Removal
- Deoxidation Process
- Freeze-Drying
- Dehumidifier Humidity Analysis

## BMST Certificates, Permits and Patents







### ICA(International Council on Archives)



### Sarawak Seminar



### INTERHECO 2017



### Netherlands Exhibition



*Preservation of artifacts, relics and documents are a promise we made to the future generation.*



**BIOMIST TECHNOLOGY (M) SDN. BHD.**

No 25, Jalan Kempas Utama 1/3 ,  
Taman Kempas Utama  
81300, JB, Johor

Website : [www.biomistmalaysia.com](http://www.biomistmalaysia.com)  
email : [biomistmalaysia@gmail.com](mailto:biomistmalaysia@gmail.com)