

# W-Matrix

## 織物型無線風壓傳感器陣列測量系統

### Fabric based wind pressure sensing system with wireless data acquisition and transmission

專利申請編號及國家：12/712,123 (美國)

織物壓力傳感器是測量三維表面壓力的理想選擇。本項目已研發出可用於風壓測試的系列新型織物壓力傳感器。織物型風壓傳感器陣列測量系統採用了無線數據採集和傳輸技術。

PERFORMANCE 性能		OBTAINED VALUE 已達到技術參數
Static 靜態	Measuring range 測量範圍	20Pa – 200Pa
	Applicability 應用領域	wind pressure 風壓
	Overload 過載	5X
	Accuracy 精度	±4%
Stability 穩定性	Zero stability (Month) 零點穩定性(月)	±1%
Dynamic 動態	Loading response time 響應時間(加載)	0.1s
	Unloading response time 響應時間(卸載)	0.2s
Temperature 溫度	Working range 補償範圍	0°C – 60°C

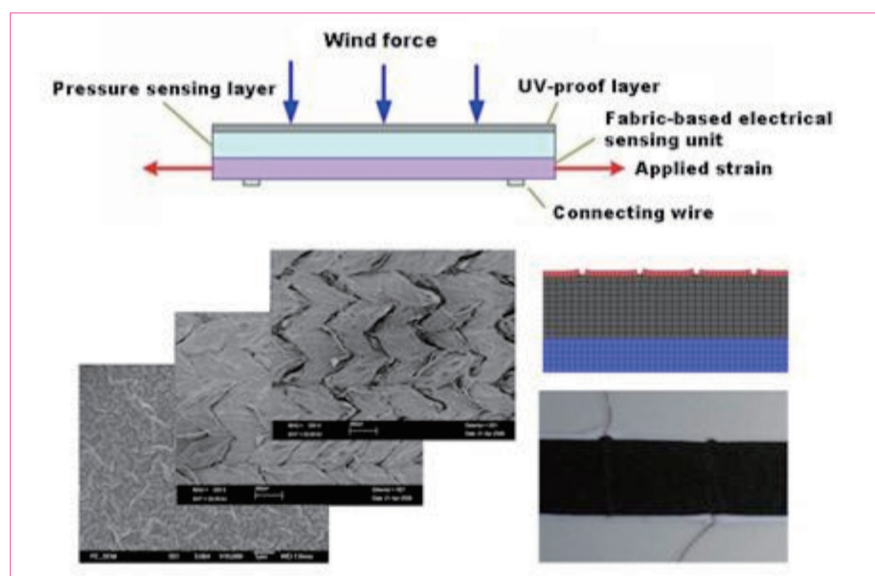
織物型風壓傳感器性能參數  
Performance of fabric pressure sensor

#### 特色與優點

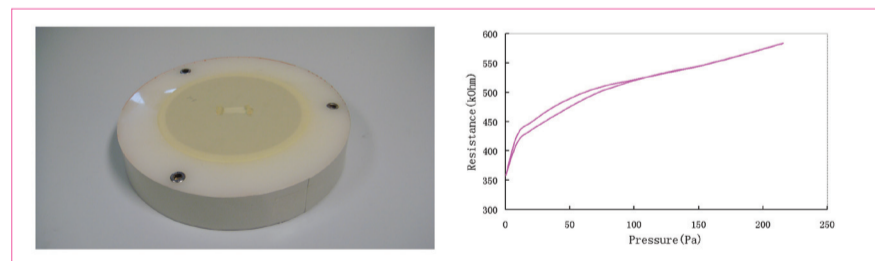
- 高靈敏度
- 適應性強和輕巧
- 較長的使用壽命和較好的抗紫外性能
- 適用於大面積測量的風壓傳感器陣列
- 一次組裝、可折疊式結構、操作方便
- 無線數據傳輸和實時顯示
- 較低的材料和生產成本

#### 應用

- 建築物維護
- 體育運動場館
- 礦場通風
- 公共場所通風
- 氣候環境



基於織物型傳感元件的風壓傳感器設計  
Wind pressure sensor with fabric-based electrical sensing unit



織物型風壓傳感器  
Fabric based single wind pressure sensor

Fabric pressure sensors are ideal candidates for measuring pressure on three dimensional surfaces. A new family of fabric based sensors for three-dimensional pressure mapping has been created for wind pressure sensing with wireless data acquisition and transmission capacities.

#### Principal Investigator

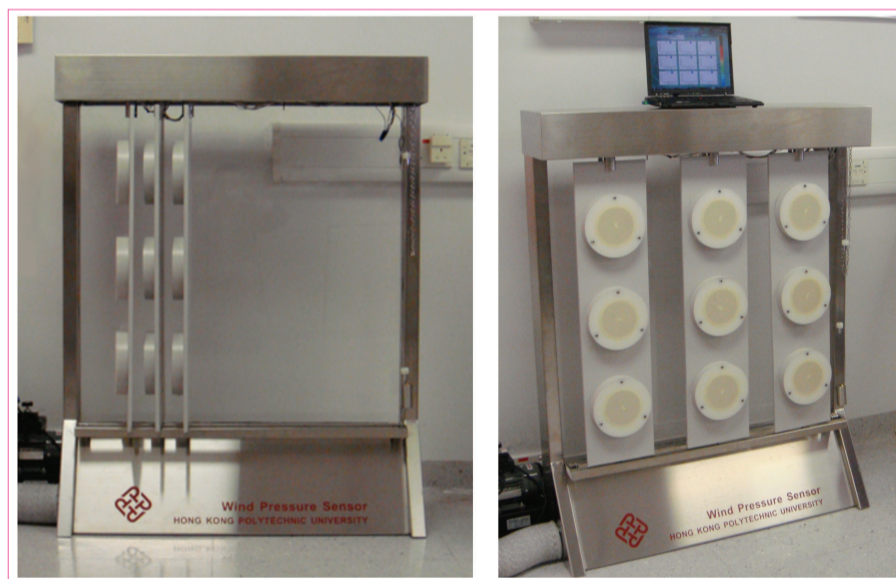
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Fabric based wind pressure sensing system with wireless data acquisition and transmission

Patent Application No.:12/712,123 (US)

#### Special Features and Advantages

- High sensitivity
- Good flexibility and light weight
- Long service life and resistance to UV
- Array for distribution of large area
- One-time assembly and foldable panel structure for easy handling
- Wireless transmission and real-time display
- Relative low material and production cost

#### Applications

- Wind pressure measurement in building service
- Wind pressure measurement in stadiums and gymnasiums
- Mine ventilation
- Ventilation in public places
- Climatic environment

香港紡織及成衣研發中心研發項目  
A research project of HKRITA