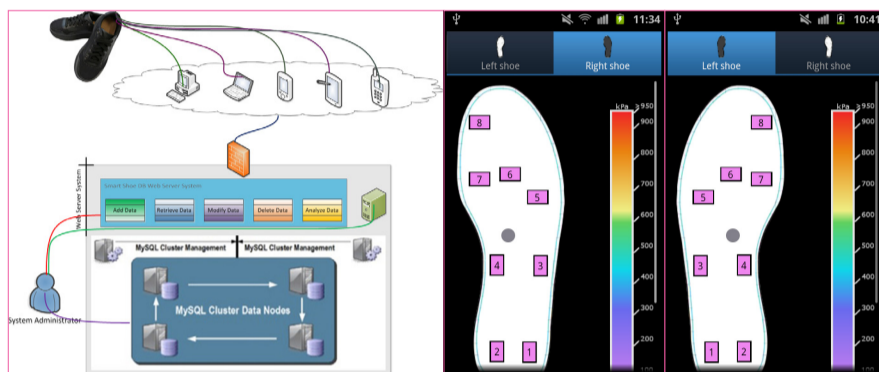


織物壓力感測器 Fabric Sensing Technology

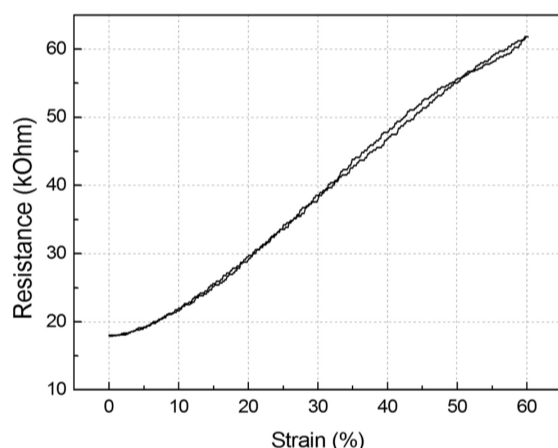
柔性可穿戴健康監控感測器

An innovative soft wearable sensing technology for health monitoring

織物壓力感測器是一種基於紡織材料開發的創新技術，包含應變感測器和壓力感測器兩種。這種傳感器具有應變範圍大（60%），壓力範圍廣（0-2000kPa），靈敏度高、彈性好、低模量、穩定性與長期疲勞性能好的特點，而且材料體系安全，非常適合醫療保健、運動、工業測量等領域應變與壓力的測量。基於此技術，目前已開發出用於體征監控的健康產品。



智慧鞋系統與移動應用
Smart Footwear System and Apps



織物壓力感測器輸出示例
Typical Output of fabric sensors



呼吸監控系統
Respiration Monitoring System and Apps

Fabric sensors are an innovative technology based on fabric materials. The core of technologies comprises two key components strain sensor and pressure sensor. The features of the sensors are large workable strain (60%) and wide pressure range (0-2000kPa), high sensitivity, flexibility, low modulus, environment friendly, long time stability, higher fatigue properties, etc which can be used in various applications for strain or pressure sensing and measuring in medical, healthcare, sports and industry. Based on this technology, health-care products have been developed for health monitoring.

特色與優點

- 大應變—可達60%，滿足大應變需求的應用
- 彈性好—適合三維曲面
- 柔軟性—剛度小、柔軟性好，模量在 MPa級，適合人體互動式紡織服裝的應用
- 耐疲勞—疲勞壽命大於百萬次
- 材料系統安全

應用

- 體征監控
- 運動訓練
- 康復治療
- 體感遊戲
- 工業測量

Fabric Sensors Specifications

Dimension	10× 10, 10× 15mm ² ; 16× 10× 3 mm ³
Strain /pressure range	0 - 60%/0-2000kPa
Linearity	±5% FSO
Repeatability	±5% FSO
Gauge factor	2-200
Working temperature	0°C - 60°C
Hysteresis	±5% FSO
Fatigue	> 1 million cycles
Output resistance	5 - 100kΩ
Excitation voltage	3-15 V

織物壓力感測器主要指標
Fabric Sensors Specifications

Special Features and Advantages

- Large workable - 60%
- Flexibility – 3D comformability
- Softness- modulus in MPa
- High fatigue resistance > 1,000,000 cycles
- Safety materials system

Applications

- Health monitoring
- Sports training
- Rehabilitation
- Interactive games
- Industry measurement

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

