Field-Adaptable, Functionalized Textile For Battery-Free Body Area Networks

Tech ID: 33670 / UC Case 2023-728-0

BRIEF DESCRIPTION

This technology revolutionizes health monitoring by integrating smart textiles with body area networks for real-time biometric data collection.

FULL DESCRIPTION

Researchers at UC, Irvine have developed technology that uses functionalized textiles equipped with magnetically coupled resonators and various sensors to create battery-free body area networks (BANs) for continuous health monitoring. These smart textiles are capable of performing cross-body measurements, including motion, respiration, blood pressure, and heart activity, through wireless communication.

SUGGESTED USES

- Healthcare monitoring systems, particularly for chronic conditions like congenital heart disease.
- Fitness and wellness tracking.
- Remote patient monitoring solutions.
- Research and development in wearable health technologies

ADVANTAGES

- Battery-free operation, enhancing wearability and convenience.
- Real-time health monitoring, allowing for immediate data collection and analysis.
- Flexible and adaptable design, suitable for various physical measurements and conditions.
- Secure and reliable communication through body area networks.
- Easy integration with clothing, ensuring comfort and continuous wear.

PATENT STATUS

Patent Pending

RELATED MATERIALS

- Hajiaghajani A, Rwei P, Afandizadeh Zargari AH, Escobar AR, Kurdahi F, Khine M, Tseng P. Amphibious epidermal area networks for uninterrupted wireless data and power transfer. Nat Commun. 2023 Nov 18;14(1):7522. doi: 10.1038/s41467-023-43344-6. PMID: 37980425; PMCID: PMC10657464.

CONTACT

Ben Chu
ben.chu@uci.edu
tel: .

OTHER INFORMATION

CATEGORIZED AS

- **Communications**
  - Networking
  - Wireless
- **Materials & Chemicals**
  - Textiles
- **Sensors & Instrumentation**
  - Biosensors

RELATED CASES

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5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683