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## On-Demand Functionalized Textiles For Drag-And-Drop Near Field Body Area Networks

Tech ID: 33977 / UC Case 2021-787-0

#### **BRIEF DESCRIPTION**

This technology introduces a flexible, secure, and scalable approach to creating body area networks (BANs) using textile-integrated metamaterials for advanced healthcare monitoring.

#### **FULL DESCRIPTION**

The technology features on-demand functionalized textiles that incorporate arrays of magnetically coupled resonators to propagate magneto-inductive waves, enabling seamless near-field communication (NFC) across the human body. By integrating these metamaterials into clothing, it facilitates the creation of multi-node wireless networks without the need for batteries, supporting continuous health monitoring through wearable and implantable sensors

#### SUGGESTED USES

- Advanced healthcare monitoring systems for continuous health and wellness tracking.
- Secure and scalable networks for wearable technology in sports and fitness.
- Emergency response systems for real-time monitoring of patients and at-risk individuals.
- >> Consumer electronics for seamless integration of smart devices with clothing and accessories.

#### **ADVANTAGES**

- >> Facilitates long-distance NFC-based communication across the body without direct connection terminals.
- >> Flexible and durable integration into textiles allows for easy expansion and customization.
- » Eliminates the need for batteries, reducing user burden and enabling true continuous monitoring.
- >> Supports secure, on-demand network creation with quick pairing and high security through NFC protocol.
- >> Allows for the drag-and-drop of sensors, enhancing versatility and user-friendliness.

#### PATENT STATUS

**Patent Pending** 

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