PURDUE INNOVATES | Office of Technology Commercialization

Electronic Textile Devices for Health Status Monitoring

Durable, stretchable multimodal e-textiles with sub-mm resolution for animal and human health monitoring.

Increasing demand for remote healthcare has led to the need for electronic textiles (e-textiles). However, the deployment of e-textiles in clinical practice is still limited by the lack of large-scale production of those materials. Furthermore, the current e-textiles products available in the market lacks durability, electrical connectivity, and/or fine patterning

Researchers at Purdue University have developed a novel method for e-textile fabrication, which enables the direct spray writing of multimodal sensors into commercial stretch fabrics or garments. The e-textiles created via the Purdue researchers' method presents a better pattern at submillimeter resolution and retains the wearability and durability of commercial textiles. Additionally, the e-textiles are accommodative of a variety of body sizes and shapes and fit tightly and comfortably to the skin, helping to anchor the recording electrodes in place

Advantages:

-Versatile in accommodating textiles

-High-resolution

-Durable

-Wearable

Potential Applications:

-E-textiles with tailored designs for both large animals and humans

Technology Validation: Pilot studies in a horse model demonstrate the utility of the e-textiles in ambulatory health monitoring of large animals in a minimally obtrusive manner beyond conventional measurement methods.

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