

Intelligent textile for dynamic thermal adaptation and healthcare monitoring

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Abstract

Traditional textiles struggle to effectively respond to thermal changes, offering limited regulation and functionality. Notably, these textiles demonstrate a lack of responsiveness to the primary thermal regulation cue, perspiration. Moreover, in certain instances, these fabrics exhibit reduced air permeability after absorbing moisture from perspiration, which could hinder their effectiveness in cooling the body efficiently. The wearers may feel discomfort when transitioning into a cooler or warmer environment. In this study, we introduce an intelligent textile for both thermal regulation and health monitoring. This textile swiftly reacts to perspiration, efficiently absorbs moisture, and adjusts its structure to bolster heat dissipation. Additionally, its colorimetric sensing capabilities enable rapid detection of various health signals such as body temperature, UV radiation levels, and sweat pH values.

Biography

Chow Lung is presently a Ph.D. candidate under the supervision of Prof. Xinge Yu in the Department of Biomedical Engineering at City University of Hong Kong. His research focuses on wearable electronics and smart materials.

ALL are Welcome!