

The Global Market for Wearables and Smart Textiles to 2027

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Abstracts

The number and variety of wearable electronic devices and smart textiles has increased significantly in the past few years, as they offer significant enhancements to human comfort, health and well-being. Wearable low-power silicon electronics, light-emitting diodes (LEDs) fabricated on fabrics, textiles with integrated Lithium-ion batteries (LIB) and electronic devices such as smart glasses, watches and lenses have been widely investigated and commercialized (e.g. Google glass, Apple Watch). There is increasing demand for wearable electronics from industries such as:

Medical and healthcare monitoring and diagnostics.

Sportswear and fitness monitoring (bands).

Consumer electronics such as smart watches, smart glasses and headsets.

Military GPS trackers, equipment (helmets) and wearable robots.

Smart apparel and footwear in fashion and sport.

Workplace safety and manufacturing.

Advances in smart electronics enable wearable sensor devices and there are a number of devices that are near or already on the market. Textile manufacturers have brought sensor based smart textiles products to the market, mainly for the collection of bio-data (e.g. heart-rate, body temperature etc.) and in workplace safety. The use of textiles as the smart devices themselves also presents significant advantages over watches and

wristbands in terms of long-term use. Despite considerable R&D investment, most current wearables do not use flexible or printed components; instead they rely on conventional components from mobile devices. Most currently available wearable technology is based on rigid components. Flexible electronics offers conformable, adaptable, and immersive wearable devices. Recent advancements in flexible and stretchable electronics enabled by advanced materials provides viable solutions to bio-integrated wearable electronics.

Printed electronics and energy harvesting technologies are evolving to meet the demands of new, wearable formats. Next-generation wearables will rely on active fabrics made by weaving conductor, insulator and semiconductor fibers sparsely into textile yarn. Fabrics woven from such yarns will enable electronic functions that seamlessly integrate into every day, comfortable, lightweight clothing. Sensor tattoos and wearable motion charging devices are now in early commercial stages.

Included in this report:

Market drivers and trends for wearables and smart textiles

How advanced materials are applied in wearables and smart textile

In-depth analysis of current state of the art and products in wearables and smart textile

Over 250 wearables and smart textiles product developer profiles

Market revenues for wearables and smart textile across all sectors

Market challenges.

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