E-Textile Market Growing at 7.4% CAGR to Hit $721.8 million | Growth, Share Analysis

The E-Textile Market Size was valued at $367.20 million in 2021, and is estimated to reach $721.8 million by 2031, growing at a CAGR of 7.4% from 2022 to 203

E-textile market

DELAWARE, WILMINGTON, UNITED STATES, April 3, 2024 /EINPresswire.com/ -- According to a new report published by Allied Market Research, titled, "E-Textile Market," The E-Textile Market Size was valued at $367.20 million in 2021, and is estimated to reach $721.8 million by 2031, growing at a CAGR of 7.4% from 2022 to 2031.

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There have not been many commercial successes with e-textiles up to this point. This is attributed to the healthcare industry's unwillingness to invest in academic or research endeavors in favor of a wait-and-see attitude. Some manufacturers have substituted wellness/sports sector in its place, where repercussions of a false signal are significantly less severe.

However, with chronic diseases such as diabetes, heart disease, cancer, and respiratory disorders continuing to rise in many parts of the world, older populations living longer, and increase in the number of surgeries performed in important healthcare markets such as Europe and the U.S., e-textile developments are on the rise to utilize cutting-edge electronics and medical technology. In some clinical studies, smart clothing has demonstrated the ability to guard against infectious diseases, sense the wearer's health status, and aid in the prevention, treatment, and management of health.

E-textiles must continue to evolve in terms of dependability, liability, and certification to overcome obstacles. Device producers and researchers face additional difficulties with

regulatory approvals because getting FDA approval might take years. Then comes the challenge of receiving certification and permission from insurance companies. The development of the several smart clothing concepts that have been proposed would take three to five years. Many experts predict that this turning moment will occur around 2020.

University-level research shows great promise for the future of patient care technology among those creating e-textiles for the healthcare business.

The VTT Technical Research Center in Finland is working on an intriguing project where researchers have developed smart fabric that can be worn as clothing or blankets and determine whether a patient needs to be warmed or cooled based on initial data measured from person and environment. Thegear adapts to body's temperature during surgery, hence it might also be utilized by doctors who feel too warm during an operation.

The ElectroScience Laboratory at Ohio State University is developing useful e-textiles that gather, store, or transmit digital information by weaving antennas into objects such as brain caps that sense brain activity to help treat conditions such as epilepsy or addiction. These antennas use platforms such as the Intel Edison development platform. Researchers are also developing a smart bandage that can communicate with a doctor about the state of surrounding tissue's healing without having to remove it.

While this is going on, researchers at the University of Bristol are developing soft robotic clothing that could prevent falls in people who are vulnerable by supporting them while they walk and provide bionic strength to people who need it to get from a sitting to a standing position or climb stairs. Nanotechnology, 3D printing, electrical stimulation, and full-body monitoring technologies are all used in creation of smart clothes. As per opinions of various researchers this technology could ultimately lead to potentially freeing wheelchair-bound people from having to use the devices.

The Empa research institute in Switzerland has developed a fitted cap that measures heart rates and is incorporating optical fibers into e-textiles to monitor skin circulation and avoid bed sores. Hospitals find the clothing to be perfect as it can endure a disinfecting wash cycle.

This technique, according to researchers, may one day be used to gauge tissue pressure, respiration rate, or oxygen saturation. To examine bodily fluids or gases, e-textiles could also be made into chemical or biological sensors such as those provided by Maxim Integrated. Based on a series of ultra-low power ARM® Cortex®-M microcontrollers from Maxim, ultra-low power and secure development boards are available. These ARM Cortex-M4F 32-Bit MCUs combine ultra-low-power, high-efficiency signal processing functionality with user-friendliness, making them perfect for the growing category of wearable medical and fitness applications. The integrated pulse oximetry and heart-rate monitor module from Maxim, the MAX30102 Pulse Oximeter & Heart-Rate Sensor, has inbuilt LEDs, photodetectors, optical components, low-noise electronics with ambient light rejection, and it also has low-power electronics.

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Even though many of these research projects are progressing and working toward commercialization, new developments in microelectronics and high-tech fabrics are expanding the potential applications for healthcare-related e-textiles.

Some of these concepts and early pilot projects include t-shirts that treat chronic back pain, shirts with stretch sensors to track respiratory rates in people with chronic lung disease, soft all-day belly bands to track fetal heart rate and uterine contractions in pregnant women, pressure monitor stockings for people with diabetes, or even a shirt that shocks people with severe heart problems.

According to some experts, shirts that monitor heart rate, blood pressure, oxygen saturation, and other metrics will eventually totally replace bedside monitoring in hospitals.

With the Google-Levi Project Jacquard commuter jacket for cyclists, the concept of using gesture detection in smart clothing has recently gained prominence. There are currently much more affordable and well-established technologies that will be difficult to surpass in the next five years, despite the fact that many experts believe gesture recognition could find its way into clothing for healthcare-possibly for use by paraplegics, elderly who have suffered strokes or heart attacks, or elderly in the home who fall.

It can be easily shrunk and does not require moving mechanical elements, haptic feedback, or the use of touch in a user interface design, hence holds a lot of potential for e-textiles. To engage a patient's muscles, haptic feedback, which can be anything from a slight tickle to a powerful force input, is employed in electric muscle stimulation (EMS). To stimulate muscle movements or for rehabilitation, smart clothing with haptic feedback technology might be worn on any region of the body at any hour of the day. Prototypes of haptic feedback-based projects, like those from Novasentis, are now being created for use in medical apparel and should be available later this year.

The e-textile market is segmented on the basis of type, product, application, functionality, and region. On the basis of type, the E-Textile Industry is bifurcated into classic electronics and modern electronics. By product, it is classified into passive, active, and ultra-smart. On the basis of application, it is categorized into defense, sports & fitness, healthcare, household textiles, fashion & entertainment, transport, protection & military, architecture and others. On the basis of functionality, it is classified into sensing, energy harvesting, luminescence & aesthetics, thermoelectricity, and others. Region-wise, theE-Textile Market is analyzed across North America, Europe, Asia-Pacific and LAMEA.

The players operating in the global e-textile market have adopted various developmental

strategies to increase their E-Textile Market Share, gain profitability, and remain competitive in the market.

The key players included in the E-Textile Market Analysis are-
• CARRÉ TECHNOLOGIES Inc.,
• Chronolife.,
• E. I. DU PONT DE NEMOURS AND COMPANY ,
• INTERACTIVE WEAR AG,
• Mitsufuji Corporation,
• Myant Health ,
• Outlast Technologies GmbH ,
• sanSirro GmbH ,
• Schoeller Textile AG,
• SENSING TEX, S.L. ,
• Sensoria Inc. ,
• SunstarTaiwan ENT. CO., LTD. ,
• Tex-Ray Industrial Co., Ltd.,
• TORAY INDUSTRIES, INC.,
• Vista Medical Ltd.,
• Vulpés Electronics GmbH,
• Xenoma Inc.

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Key findings of the study
• On the basis of product type, the classic electronics segment is projected to witness the major E-Textile Market Growth with the CAGR of 6.5%, in terms of revenue, during the E-Textile Market Forecast period.
• On the basis of product, the ultra-smart segment E-Textile Market Size is expected to dominate the market from 2022 to 2031.
• On the basis of application, the defense segment has the high E-Textile Market Trends and is expected to grow at a significant CAGR during the forecast period and has myraid E-Textile Market Opportunity.
• On the basis of functionality, the sensing functionality segment dominated the global market in the 2021, with a E-Textile Industry share of more than 30%.
• Region wise, Europe dominated the global market in 2021. This is attributed to expansion of new wholesale fabrics companies and surge in E-Textile Market Demand for apparel and textile machinery exports for e-textiles.

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