The Smart T-Shirt

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The clothing of the future will have more functions than the clothing of today. Thanks to new technology, clothing will now be able to keep track of your body's health. The Georgia Technological Institute has already created the "Smart Shirt System" T-shirt that will be able to keep track of your body's health and provide many other functions.

This product was first introduced when the military and the Georgia Technological Institute wanted to create a shirt that had the ability to tell the vitals of a human while in battle. One of the main reasons why a wounded soldier dies in battle is because the wounded status is not known in time.

The Georgia Tech Wearable Motherboard (GTWM) or the Smart T-Shirt uses optical fibers to detect bullet wounds. The appropriate sensors are plugged into the motherboard using the developed Interconnection technology and attached to any part of the individual being monitored, thereby creating a flexible wearable monitoring device.

The way the Smart T-Shirt works is that one would attach sensors to his body, pulls the smart shirt on, and attaches the other end of the sensors to the shirt. The Smart T-Shirt would then act like a motherboard, with optical fibers and special fibers woven within the actual fabric of the shirt. For example, if one was shot by a bullet, the Smart T-shirt would then pinpoint the exact location of the bullet penetration. Then, a signal would be sent from one end of the plastic optical fiber to the receiver at the other end. The emitter and the receiver are connected to a Personal Status Monitor (PSM) worn at hip-level by the one. If the light from the emitter does not reach the receiver inside the PSM, it signifies that the Smart Shirt has been penetrated. The signal bounces back to the PSM from the point of penetration, helping the medical personnel pinpoint the exact location of the one's wound.

In addition to this technology, one's vital signs (heart rate, temperature, respiration) are monitored in two ways: through the sensors integrated into the T-shirt and through the sensors on the persons body, both of which are connected to the PSM. The sensors act as an EKG machine, a thermometer, and a voice recorder. Information is transmitted electronically from the PSM to a medical unit.

The Smart T-shirt also many uses other than the military. In cities across America, police and firefighters could benefit from the shirt. Police could benefit from the shirt just as it would used on a battlefield. However, the firefighter industry is really considering on investing on the shirt. A common occurance is that firefighters often die from heart attacks during a fire. The physical exertion combined with the adrenaline rush during the job mask early warning signs of a heart attack until it is too late. If we were to monitor firefighters from a command center, it would help see when firefighters are getting into trouble and pull them to safety.

The makers of the Smart T-shirt hope that the companies will be looking for mass production in few years. For now, there are only prototypes available.

WORK CITED:

http://www.gtwm.gatech.edu/

http://www.gtwm.gatech.edu/index/usatodaymore.html

http://ldt.stanford.edu/~jeepark/jeepark+portfolio/cs147hw8jeepark.html