What are E-Textiles and how does Lilypad Fit In? by Ewan Fisher

Article published on April 20th 2012 | Business

Lilypad is the name of a line of a piece of software created and distributed by Italian technology giants Arduino. It is used in the creation and design of E-Textiles and in order to discuss itsâ€™ uses and applications further, it is necessary to understand what E-Textiles are and what their real world applications might be.

E-Textiles are often called â€œelectronic textilesâ€• or â€œsmart textilesâ€• and are fabrics which allow co digital or electronic components to be embedded into them. This means that they can have LED lighting, sensors, sound chips or even motion sensors built into them for a variety of purposes.

Much has been done and discussed recently into the technology and theory associated with E-Textiles and the field is widely known as â€œFibertronicsâ€•, however this is a much more recent term and does little to discuss the beginnings of the practice.

In the late 1990â€™s experiments began at the Massachusetts Institute of Technology (MIT) when a group of students experimented with textiles which could play music or change colour when alerted to by sensors embedded into the fibres. The popularity and potential uses or this new technology soon began to be replicated by other noted US and worldwide universities and has since found itsâ€™ way into popular use and culture.

Uses for E-Textiles

Although the technology behind it is relatively new and there is still much to be done in the way of research and experimentation, there are many companies and researchers working on using E-Textiles for a variety of uses.

Childrenâ€™s fashion seems like the most obvious of uses, with training shoes which emit a flashing LED light upon contact with the floor to hats and gloves which light up in a variety of temperatures, childrenâ€™s E-Textiles have the power to delight and enthral.

They are also being pioneered as safety clothing for walkers, emergency services workers and traffic directors where LED or El Wire can be embedded into fibre to ensure that the individual can be seen by pedestrians and drivers.

Further experiments are starting to see E-Textiles being adapted to create high-tech sports wear which can measure heart rate (as is the case with TextronicsInc) or shoes which can adapt cushion and sole support to a particular running or walking surface (as is the case with Adidas) and even in rehabilitation for the elderly and post trauma patients who are going through physical therapy. In this case, textiles can be adapted to include motion sensors which can alert care and nursing staff to the patient falling or losing balance.

Where does Lilypad Fit In?

There is a huge market in E-Textiles, just as with any electronics or robotics, for public experimentation and this is where Lilypad fits in. Electronics manufacturers Arduino created Lilypad to enable enthusiasts and hobbyists to create their own E-Textile creations and this technology is sold in the UK by Proto-PIC who are not only authorised to distribute the machinery but also have the enthusiasm and knowledge to bring a variety of experiments to life.

Article Source:
http://www.articleside.com/business-articles/what-are-e-textiles-and-how-does-lilypad-fit-in.htm - Article Side

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Proto-Pic is one of UKâ€™s major suppliers of electronic components, starter kits and inventorâ€™s kits. T
site also acts as a respected resource for information and advice.
a Lilypad

Article Keywords:
Arduino UNO, Arduino Mega, Arduino Starter Kit, Ethernet Shield, Arduino Projects For Beginners, Digital Oscilloscope, Logic Analyser, Fez Spider

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