The Electronic Skin Patch
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Abstract—The Electronic Skin Patch helps to address the problem where health is very important to the average person but what is available is bulky. This allows for someone to carry around all their vitals and health information at all times without carrying a bulky watch. Just need a NFC enabled device to simply transmit data to.

I. INTRODUCTION

The electronic skin patch is designed to help the average person in everyday situations. Instead of spending hundreds of dollars on a smart watch that uses a battery and is a overall burden to carry on your person everyday, one can simply buy the electronic skin patch and get it glued to their arm almost like a tattoo. This device reveals a lot of information about someone’s health, such as body temperature, blood oxygen levels, UV radiation absorption, and it can tell you whether you have a disease through the certain color changes of your skin.

II. METHODS

It is made up of four layers but is able to be changed to help find a different vital that is not currently available via the four layers. The layers start with the first layer that is an NFC die chip that transmits the data to a smartphone with NFC enabled. This also powers a coil that works by induction and powers the device when touched with the NFC device, this requires no battery. This same layer also has a temperature reading chip to read the temperature of your body. The second layer is the Oximetry layer, where a IMAgent is used to read the blood oxygen level of your blood through an IR light that is emitted through the skin then detected through a detector and read. The third layer is the four-color skin spectrometer, where the color of your skin is captured via three different color lights flashing at different frequencies and a detector picking up on the color of the skin. The fourth layer is the UV Dosimetry layer, which reads the UV light absorption levels on your skin through a silicon film that changes color based on the amount of UV light emitted.

IV. DISCUSSION

The four layers that exist in this device are able to be switched depending on what the user wants. The only things that must stay in the device are the NFC chip, the power management system, the antenna, the 8K-Bit storage, and the analog-digital conversion. Because the device is so new, only 2 month old, there isn’t much knowledge on what it can do yet. Even though they do talk about how the layers can be changed there has not been any other layers developed besides these four. Over time the device could develop so that it can do a multitude of different things to read someone’s vitals.

In the future they hope to have everyone with one of these devices. Because it is so slim and easily carried the appeal would be immense. Because the product has not been released yet and is still under testing we don’t know the exact appeal that it will have on the market. In the future they also hope to have easy doctor’s appointments. Where doctor’s can rely on this device to get readings such as blood oxygen levels and body temperature to help quicken the process for waiting in the doctor’s office.

Overall this device can solve a lot of problems that are apparent in today’s society. Eliminating the bulky, oversized smart watches for something slimmer and easier to use would be ideal for people that only use a smart watch to get health records.

REFERENCES

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