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Contemporary Issues in the Fashion Industry BUF 4700

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Module 3: Smart Textile Classification

Normally a textile is an object made by weaving threads or yarns into a fabric. Originally, these yarns were made from an animal or out of plant-based fibers. as technology developed over time synthetic fibers were manufactured in laboratories to create items that were stronger and more versatile. Technically speaking a smart textile is a cloth that has modern computer-based technology woven into it in some way. In my opinion these textiles can be grouped into two separate categories: Aesthetic and Performance enhancing. Aesthetic smart textiles are used for fashion and design purposes similar to Issey Miyake's pleated design which doesn't improve any physical capabilities but does look appealing to the eye and Performance enhancing textiles assist in human functions for example Nike (Dri-Fit) which is the activewear portion of the Nike's collections.

The best example of a Passive Smart textile would be the performance enhancing Nike Dri-Fit collection. Dri-Fit is a high-performance microfiber polyester which purpose is to wick sweat away from the individual's body, it is often combined with ventilation zones to allow for breathability and additional sweat wicking. This technology works by pushing sweat away from the body instead of trapping sweat and moisture in the garment. The moisture is than evaporated which results in a dry feeling that allows for more free range of motions while running or performing other physical activity. I believe this is a great example of Passive smart textiles because no matter where you decided to equip the Nike Dri-Fit material the fabric will wick sweat

in any environment the function does not change but if you do not sweat while wearing it there will not be an impairment in performance or movement otherwise, it would function as a normal garment.

While on the topic of Nike products they are also innovators of an Active Smart/Interactive product as well. The Nike Adapt auto lacing sneaker.

The sneaker utilizes an advanced power-lacing system, an app and updated firmware to get the technology running. When using the Nike Adapt a tension activated sensor activates the custom motor and gear train to adjust the sneaker to the foot. The FitAdapt technology allows for either by physical

touch or by using the Nike Adapt app on a phone allows wearers to change the fit setting on a whim. I believe that this product is classified as an Active textile because while it is controlled by a

device or the individual wearing it, it does not automatically respond to its environment with a range of behaviors it has an actuator function seen with the tension sensor and the app in order to make it perform its task. In other words, the Nike Adapt is reactive; interactive textile there for making it Active.

Lastly, for the Very Active textile we have another Nike product; “Civilist x Nike SB Dunk Low” Nike collaborated with the German



Figure 2 Nike Adapt BB <https://news.nike.com/news/nike-adapt-bb>

boutique Civilist to create a color-changing heat-sensitive pair of sneakers. The process of the sneakers color changing effect is a chemical reaction to different temperatures, but unlike most sneakers that utilize this effect this sneaker can also revert to its original color. When exposed to heat it reveals a thermochromic pattern that brings the shoe to life but when exposed to colder temperatures it returns to its low-profile, black leather state. I classify this sneaker as a Very Active textile because the fibers of the sneaker are conductive to the external heat and coolness of the environment with no use of a switch or actuator to cause the effect. The product could only achieve this using processing therefore has gone through very complex and active smart systems in order to create it.

In conclusion, the level of technology that we are incorporating into our textiles in the current age have been developed in a multitude of ways from being able to control the fit and the sizing of a garment from the push of a button to having the garment react to a stimuli on its own these textiles are nothing

short of the classification of “Smart”. As we continue to define and differentiate the different levels of ingenuity, we will come to an understanding of what truly makes a garment Passive, Active or Very Smart.



Figure 3 Civilist x Nike SB Dunk Low <https://sneakernews.com/2020/08/14/civilist-nike-sb-dunk-low-cz5123-001-release-info/>

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