

# YOUR CLOTHES CAN CHANGE THEIR COLOUR WITH A SMALL TAP

By Maitri Gandhi



## Summary

What if you could change the colour and pattern of your clothes right away? Engineers at the University of Central Florida are weaving a new kind of smart fabric that is wired to every corner of the material and can be programmed to change colors. This is just one of the latest ways technology can merge with the fashion industry. The technology is woven into the fabric itself, and the app allows you to change colors and patterns at the push of a button. The actual fibres that weave the product physically change colour.

We are still in the early stages of technology merging with the fashion industry. Asimina Kiourti says, “Looking into the future, I see a lot of smart garments that people can use to interact with technology, May that be like augmented reality games or virtual reality. So the ability to interact either with gaming or smart home devices just by wearing your clothes or moving accordingly is the aim.” The future of fashion promises a new function but also a lot of fun.

**W**hat if you could change the colour and pattern of your clothes right away? Sounds crazy, but it’s real. Engineers at the University of Central Florida are weaving a new kind of smart fabric that is wired to every corner of the material and can be programmed to change colours. This is just one of the latest ways technology can merge with the fashion industry.

The technology is woven into the fabric itself, and the app allows you to change colours and patterns at the push of a button. Let’s say you wish to go

to the beach and also be trendy with your outfit. With the help of buttons on your phone, you can set a striped pattern from the plain one on your tote bag. It’s really cool!

It looks shiny but has no screen or lights. The actual fibres that weave the product physical-ly change colour. This is done by a technical mix of colour-changing pigments, micro wires, and electricity. The fabric is woven by traditional machines, but the threads used for weaving are special and unusual as they are all conductive. Inside

the strands, there is a very fine copper wire covered with a material made of a special pigment that changes colour as the temperature changes.

Let's look back on your childhood to better understand the mechanism. Have you ever played with toys that change colour with hot and cold water? The reason for this is that the material resembles a solid at low temperatures and tends to change to a liquid crystal state when heated. Liquids, unlike solids, reflect light in a unique way. As the frequency of the reflected light changes, so does the color of the toy.



In this case, the chemistry is very similar. Instead of using water to create this temperature change, the electric current produces heat in the yarn itself. A computer chip is attached and programmed to pass current through various threads to create a pattern. All are powered by rechargeable lithium-ion batteries. Researchers also said

that the product requires only one wire, and for aesthetic reasons, the chip will be smaller. They also added that everything could be removed for proper cleaning if needed. In addition to the stripes, more complex patterns and other patterns are possible. You can mix up to 4 different colours. The possibilities are limitless. The UCF team has made this technology scalable so that it can be mass-produced using a process called textile spinning. The next step for the UCF team is to make dresses in different colours by collaborating

with fashion designers. The technical challenge is to make the fibres thinner and thinner, but not to lose its strength. This will increase the balance and flow of the dough.

We are still in the early stages of technology merging with the fashion industry. There is a lot of trial and error that happens before a product hits the market. Many early ideas that initially sound crazy and impossible end up getting implemented using strong leadership and management skills. Recently, Google has partnered with Levi's to create a chic denim jacket that lets you control your music with the tap of an area on your sleeve. Samsung is also experimenting with several clothing items. They sell smart suits with NFC built into the wrist buttons. Few other companies use smart exercise devices to track their activity. Researchers at Ohio University are developing antennas and power supplies that can be sewn on anything. However, the goal is to make the technology easy to clean. These devices can also be used to transfer data, improve mobile phone reception, and even control video games.

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The future of fashion promises a new function but also a lot of fun. The possibilities are endless. It would surely be fun to see the fashion industry evolving in the greatest ways and I'm sure the upcoming fashion weeks will be full of such innovations. The post-pandemic world is surely going to be a different world altogether but as long as we are having fun with it, we will be fine.