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THE POWER OF SMART MATERIALS

VIDEO TRANSCRIPT

Ben Greenspan:

Hi my name is Ben Greenspan, and I'm a researcher here at Accenture Labs within our Future Technologies R&D group. I'm excited to show you some of our most recent innovations with smart materials. Smart materials are materials that can respond to external stimuli like pressure or temperature and they actually have a molecular change in the material itself. We've been exploring a whole range of these materials, but let's start by looking at one specific example. Velostat is a pressure sensitive film. So when you put pressure on it, the conductivity changes. We've also used Velostat to create a prototype smart shoe that can record and analyze running patterns embedded underneath the sole of the shoe. There are five different pressure sensors that can detect where force is being applied. This data is read by a small microcontroller and powered by a lithium-ion battery, for now. The applied force is translated into lights on the shoe or it can be viewed in an app that can help runners prevent injury and improve their form.

Ben Greenspan:

We're also working on other types of textile energy storage technology. As you can see, the potential of this smart material is huge. Seamless, unobtrusive, pressure sensitive inputs have a whole range of applications in other industries. The automotive and entertainment industries are two examples. In the automotive industry, we can use Velostat to create new ways of controlling features in the car. In home automation and entertainment, we can detect objects from any surface and transform full walls in interactive installations.

Ben Greenspan:

Another great example of the potential of smart materials has arisen as a result of the current pandemic. How will we keep surfaces clean in high traffic public spaces? To address that need, at Accenture Labs, we are combining in-house research with academic and nonprofit partnerships to transform smart materials into self-cleaning materials, nanoparticle coatings, and embedded LEDs on fabrics and hard surfaces can promote continuous, efficient and cost-effective self-cleaning. As a result, smart materials can play a vital role in the design, restoration and reimagination of public spaces, such as movie theaters, theme parks, and even rideshare vehicles and cruise ships. This is definitely an area you're going to be hearing much more about in the years to come.