

TECHNOLOGY PERSPECTIVES FROM NIAMH MCKENNA

VIDEO TRANSCRIPT

Hi my name is Niamh McKenna, today I want to talk about one of the hot new trends I see in technology. And I know it's always very risky talking about tech trends and which one is the one to spot, but this one I firmly believe is one to watch. And that's smart textiles.

So, smart textiles are based on nano technology, microscopic technology being incorporated into fibres and textiles, which then can have a whole wide range of applications. This market is huge. And it's really innovative, changing, pretty much every week I see a new announcement. It's forecast to be \$2.9 billions by 2022 - that's just five years time.

If we look at some of the origins of this market, I think graphene was a really interesting start. So, graphene is a single atom carbon layer, and has a whole bunch of applications such as solar, medical and so on. The challenge we had with graphene a few years ago - it was one of the most expensive materials on Earth. But actually in the last couple of years, scientists have found a way to produce sheets of graphene very cheaply. Which means you can start incorporating that into textiles like cotton, and make things like smart t-shirts. And those smart t-shirts can then monitor things such as your heart rate.

DuPont for example, have brought out a material called Intexar, which they're saying is the 'no bumps smart textile' - highly smooth - and they want to use it for high-performance athletics. The difference between that and a wearable device, is that you can curve it round a body, so you can actually track how muscles are moving, which is far more information than you get from your standard wearable.

So if you think about the application of this, it's not just something that's going to be useful for athletes, but it could have huge amounts of implications. Imagine premature babies that are in very vulnerable situations - trying to attached large monitoring devices to them might be very difficult. But actually, put a little baby grow made of a smart material that can track everything that's going on with that baby. So huge amounts of potential there.

The other one that I've seen recently which I love, which is a material called twistrion. It's a twistable yarn - what's so cool about a twistable yarn? - this one generates electricity. So actually, again, you think about the applications of that. At the moment it's in prototype, it can light-up an LED. But think about places and times where you don't want to replace batteries. Here's a material that will generate its own power and be able to again, transform people's lives.



There's a product that's being prototyped at the moment, which is for people suffering from autism. It's a hoodie, and that hoodie has a huge of different tech inside it. So for example, you can put up the hood and it will play music that individual would find soothing. It can sense an elevated heart rate and then put pressure on that individual, gentle pressure which again, can be very calming. So huge amounts of application there.

So, I think there's a convergence of a few things here. We've got the cost of that technology shooting down, we've got start-ups coming up with new and innovative ways to apply this technology, and we've also got big business investing in it. And I think with all those three things combined, we're not just gonna see a move from the manufacturer to the catwalk or high street fashion. I think what we're really gonna see now is a move to medical, and that's where I think this smart-textile-nano-technology has the power to really make an impact and save people's lives.

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