See The Clothing That Shows How Bad Smog Is in Your Neighborhood

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Human Sensor artist Kasia Molga. (Photo: Nick Harrison)

Garments made for the Human Sensor project have tiny sensors that measure particulate matter.

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The sneaky thing about dirty air is that we inhale it all the time, even when we don't realize it. Sure, a thick plume of grayish-black exhaust spewing from the tailpipe of an old car driving by provides a momentary visual reminder. But unless folks have an asthma attack or constantly walk around with an app that displays hyper-local air quality, it's easy to forget that air pollution can kill.

Perhaps in the future, our clothing will remind us—and the people around us—just how much air pollution we're being exposed to. That's the idea behind the Human Sensor, a set of high-tech garments that light up and change color depending on the air quality around the people wearing them. The project will make its debut on July 23 with live models donning the futuristic-looking outfits as they walk the streets of the birthplace of the industrial revolution: Manchester, England.

“If the air quality is poor, this is displayed to the wearer but also to people in the nearby vicinity,” the project’s creator, London-based technologist, designer, and artist Kasia Molga, wrote in an email to TakePart.

“My aim is to empower people to get involved with the very real problems with air pollution, and to put pressure on governments and policy makers for more accessible information, and new solutions. We need to ensure that what we are breathing will not harm us or future generations,” she wrote.

(Photos: Nick Harrison)

Molga spent the past year designing the Human Sensor in collaboration with researchers at King’s College London and Invisible Dust, a U.K.-based nonprofit that commissions scientists and artists to create work that turns a spotlight on the environment. “We decided to launch in Manchester because it is the 2016 European City of Science and there’s a huge festival happening there, which we are part of,” Molga explained.

As seen in the video below, when the models take to Manchester’s streets, the sensors sewn onto their garments and face masks will be activated when they breathe. “The result is that LED lights embedded in the wearable react (fade in and out) to the rhythm of breath of the wearer, making the ephemeral and intimate act of breathing visible,” Molga wrote. A mini Raspberry Pi computer embedded in the garments serves as a hub for the air quality data.

“The data dictates what is happening with the display on the wearable,” she wrote. Air that is clean causes the garment to light up white and blue, but when a vehicle spewing particulate matter drives by, levels of air pollution increase. “Almost all lights turn red, the more pollution—the greater number of flashing red spots—all reacting all the time to the rhythm of breath.” Real-time geolocated data from the garments will be transmitted to a website created for the project and displayed on billboards around Manchester.

But the project is personal for Molga too.

“I realized that as an asthma sufferer I am way more sensitive to air quality than other people. This was the beginning of the idea—my body’s sensitivity as an environmental indicator for poor air quality,” she wrote. “I was suddenly able to see myself and other asthma/COPD sufferers as ‘superheroes’ because of our special ability to detect airborne compounds and chemicals that are bad for us—much faster than ‘healthy’ people.”

Along with causing asthma attacks, air pollution kills as many as 8.2 million people around the world each year, according to the World Health Organization. Although people read news stories about how the Eiffel Tower is sometimes not visible because of smog or how dangerous it is to breathe in the exhaust on Oxford Street in London, Molga wrote that it’s tough for the average person “to know what we can do to change the situation.”

Being able to see the problem is a first step, so using art and design to raise awareness about air pollution “will ultimately help to create a paradigm shift in society, forging new ways of thinking about the environment,” she wrote.

“I hope people will have an increased awareness of the air we breathe—what we are taking in every day, how it affects our bodies and our health, and how we can change our behavior to ensure that clean air is available to everyone.”

Click here to watch “Invisible Dust presents Human Sensor”: https://youtu.be/FjWGJoGsiSQ