

'Smartware' clothing could signal impending epileptic seizures

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Researchers and engineers at Northumbria University in the United Kingdom have developed intelligent self-repairing clothing and sensors that can emit warnings that an epileptic seizure is going to start.

This latest creation, along with a number of other innovative tools and solutions, was showcased at the recent launch of Northumbria's new P3i research group at the Royal Academy of Engineering (RAE) in the United Kingdom in September. A design research initiative, P3i seeks to speed up the development of 'printable, paintable and programmable' intelligent (P3i) materials that could then help make intelligent products, services and experiences a reality.

P3i's designers, engineers and mathematicians are providing key technical solutions that make living much better for society. The centre is going to start evaluating materials and technologies in, on and around the human body. P3i researchers gave the world a glimpse of what they do at the Towards Future Ways of Living exhibition at the RAE.

The Northumbria specialists are driving new technology development in Europe. So far, they have developed a bioplotter machine that can print multi-component three-dimensional structures, as well as an [atomic force microscope](#) that analyses materials at the nanoscale.

They are currently working on 'smartware', fabrics that treat [chronic wounds](#) that result from diabetes and [leg ulcers](#). Their 'senseware' technology, which is [motion sensors](#) found inside textiles, can give medical professionals the tools they need to detect the onset of [epileptic seizures](#). The centre's 'bioware' technology is embedded materials and surfaces found in the home and on the body.

'The work of P3i designers and engineers will place individuals at the centre of technology, devising solutions for an [ageing population](#), developing technologies that enhance life quality and creating customised products that connect with people on an emotional level,' said P3i chair Professor Raymond Oliver. 'Our aim is to be at the forefront of design-led, need-driven, technology-anchored and solutions-focused innovative products and services with a real purpose.'

More information: P3i: www.northumbria.ac.uk/sd/academic/mes/makingsense/p3i/

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