

P³i – the future of innovative design

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Research from P³i could change the way that people live in the future.

Intelligent self-repairing clothing and sensors that can detect the potential onset of an epileptic seizure sound like the stuff of science fiction but Northumbria University designers and engineers are turning them into reality.

The cutting-edge of design and engineering visions for the future will be showcased at the launch of Northumbria's new P³i research group at the Royal Academy of Engineering (RAE) in London this month.

P³i is a design research initiative that aims to accelerate the development of printable, paintable and programmable intelligent (P³i) [materials](#) capable of creating intelligent products, services and experiences.

Research from the innovative centre could change the way that people live in the future. Northumbria already has a strong reputation for producing world-changing graduates in the design field, such as Sir Jonathan Ive, of Apple, who has created revolutionary new technologies including the [iPhone](#) and [iPad](#) which have now become consumer staples.

The University's investment in new technologies – including a £135,000 bioplotter machine which is capable of printing multi-component [three-dimensional structures](#) and a £65,000 [Atomic Force Microscope](#) to look at materials at the [nanoscale](#) – demonstrates the ambition to be at the forefront of future breakthroughs.

Melding design with science, technology, engineering and mathematics (STEM) disciplines, P³i brings together leading designers and engineers to find technology-based solutions for society's needs and future ways of living. The centre will engage in a design-led exploration of emerging materials and technologies in, on and around the human body in the 21st Century.

As part of the 2012 London Design Festival, Northumbria's P³i members will become designers in residence at the RAE from 18-21 September, showcasing some of their innovations in the Towards Future Ways of Living exhibition.

Visitors to the exhibition will be introduced to the group's core values exploring the materials used to create products that matter to people. The P³i team will present an unexpected and unorthodox exhibition featuring four interactive rooms that will display glimpses of new materials and fabrication technologies.

Future products and services that combine innovative materials and fabrics with biological functions will be explored in P³i's laboratories

and studio facilities. Staff are currently at the forefront of research into anticipatory medical devices, such as the development of 'smartware' – fabrics that treat chronic wounds caused by diabetes and leg ulcers; 'senseware' – motion sensors embedded in textiles that can detect the onset of [epileptic seizures](#) and alert medical professionals; and 'bioware' – technology-embedded materials and surfaces in the home and on the body.

Professor Raymond Oliver, Chair of P³i and professor of active and interactive materials, said that 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.

He added: "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."

Provided by Northumbria University

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