

From chemical engineering to the catwalk

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Seamless fabric that can be sprayed on to skin and other surfaces to make clothes, medical bandages and even upholstery will be demonstrated this Thursday, in advance of the Science in Style spray-on fashion show next week at Imperial College London.

Dr Manel Torres is a Spanish fashion designer and academic visitor at Imperial, where he has collaborated with Paul Luckham, Professor of Particle Technology from the Department of Chemical Engineering, to create a seamless material called Fabrican Spray-on fabric that can be sprayed directly onto the body, using aerosol technology. The spray dries instantly to make innovative clothes that can be washed and re-worn.

At the press preview, Dr Torres will demonstrate the Fabrican Spray-on fabric on models, creating clothes from scratch to show how this technology can be applied in the fashion industry. He will also be showcasing his 2011 Spring / Summer Collection of spray-on haute couture next Monday evening at the Science in Style fashion show at the College. The event will celebrate design-led technology at Imperial, and will coincide with London Fashion Week and the London Design Festival.

The Fabrican Spray-on fabric consists of short [fibres](#) that are combined with polymers to bind the fibres together, and a solvent that delivers the fabric in liquid form and evaporates when the spray reaches a surface. The spray can be applied using a high pressure spray gun or an aerosol can. The texture of the fabric can be changed according to what fibres are used (such as wool, linen or acrylic), and how the spray is layered.

"When I first began this project I really wanted to make a futuristic, seamless, quick and comfortable material," says Dr Torres. "In my quest to produce this kind of fabric, I ended up returning to the principles of the earliest textiles such as felt, which were also produced by taking fibres and finding a way of binding them together without having to weave or stitch them. As an artist I spend my time dreaming up one-off creations, but as a scientist I have to focus on making things reproducible. I want to show how science and technology can help designers come up with new materials."

Fashion is just one of the uses of this technology. Dr Torres has set up the spin-out company Fabrican Ltd with Professor Luckham to explore other applications, such as medicine patches and bandages, hygiene wipes, air fresheners and upholstery for furniture and cars.

Professor Luckham adds: "The fashion application of spray-on fabric is a great way of advertising the concept, but we are also keen to work on new applications for the medical, transport and chemical industries. For example, the spray-on [fabric](#) may be produced and kept in a sterilised can, which could be perfect for providing spray-on bandages without applying any pressure for soothing burnt skin, or delivering medicines directly to a wound."

Provided by Imperial College London

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