

Interactive textiles get 'in the groove'

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CSIRO's Dr Richard Helmer demonstrating the wearable body mapping sleeve.
Credit: CSIRO

Top Australian netball and basketball players are using CSIRO-developed interactive textiles to get 'in the groove' when shooting goals.

CSIRO Textile and Fibre Technology scientist, Dr Richard Helmer, is working with the Australian Institute of Sport (AIS) to develop new interactive textiles – 'wearable body-mapping garments' – designed to help athletes improve their skills.

As part of that process the Australian netball team is utilising an interactive sleeve which embraces the arm and hand they use to shoot goals.

To help players find their ideal shot-making rhythm and motion the system plays a series of beats in-sync with their arm and wrist movements as they take a shot.

The beats are triggered as the limbs move through certain positions. If the motion is ‘correct’ – ie, indicative of a more successful natural action – the beats, which sound like parts of a disco drum rhythm, describe a recognisable pattern. This enables the netballer to maintain the dynamics of her natural shot-making action in stressful situations simply by repeating the rhythm in her head.

AIS skills acquisition specialist, Dr Damian Farrow says the system allows athletes to move ‘in the groove’. “While we now have the capability to provide real-time feedback of athlete movements, more importantly we can control the feedback content and delivery to optimise the athletes’ rate of learning, thanks to our ability to work with CSIRO scientists,” Dr Farrow says.

Interactive garments of this kind first captured the world’s imagination when Dr Helmer, demonstrated his ‘Air Guitar’ shirt technology – a long-sleeved shirt which, depending on the movements of its wearer, produces a range of guitar chord sounds from a remote computer.

Dr Helmer says interactive textile devices have significant scope for applications involving entertainment, education, sport, military, rehabilitation and medicine.

“These devices can often be embedded in conventional garments like the ‘Air Guitar’ Wearable Instrument Shirt and typically have the sensor

signals bussed via very fine highly conductive fibres in the body of the garment to a common wireless connection which transfers the data to a digital infrastructure capable of intelligent interpretation,” he says.

Source: CSIRO

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