PolyU scientist develop new textile materials for sportswear

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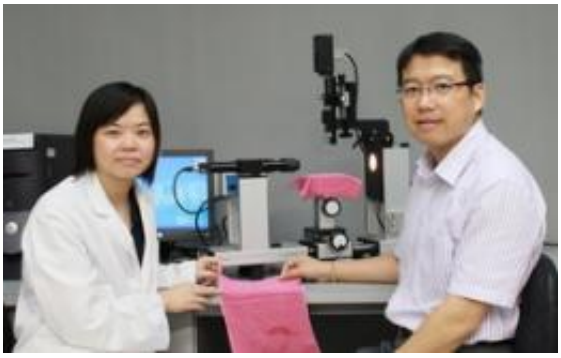

Professor John Xin, Acting Head of PolyU's Institute of Textile and Clothing, and his PhD student Miss Kong Yee-yee showing the novel fabric

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A novel type of fabric that can absorb water and perspiration on one side and transport it to the other has been invented by a team of textile scientists based at The Hong Kong Polytechnic University (PolyU). The finding was published in the latest issue of the Journal of Materials Chemistry (Issue dated 13 October 2011) of the Royal Society of Chemistry.

This ground-breaking research was done by Professor John Xin, Acting

Head of PolyU's Institute of Textile and Clothing; his PhD student Miss Kong Yee-yee; and Dr Liu Yuyang of the Stevens Institute of Technology in the US. The researchers have made the fabric hydrophilic on one side by coating it with nano titania, which gives the material photo-induced hydrophilicity. This means that its hydrophilicity can be controlled by light. The fabric becomes hydrophobic after being stored in the dark.

The fabric could be used to wick sweat away from the human skin. In the light, water can be transported in a controllable manner from the hydrophobic side (next to the skin) to the hydrophilic side and then spread out rapidly along the channels on the hydrophilic side.

This differs from other materials that do a similar thing. Current materials work by creating a surface energy gradient across the fabric by a pressure difference. Professor John Xin's work introduces nano and smart elements into the system, taking advantage of titania's properties.

A pioneering researcher, Professor John Xin and is renowned for his nano-technology breakthrough for to develop a special fabric which can be made into self-cleaning clothes. This breakthrough by Professor Xin and Dr Walid Daoud in 2004 was also reported by *Nature*.

Provided by Hong Kong Polytechnic University