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Topic of the Speech:

A Highly Effective π-π Stacking Strategy to Modify Fibre and Multiple Functionalization

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Dr. Xuqing Liu obtained his BS in Chemistry at the Lanzhou University, China. He went on to the Chinese Academy of Sciences to start his research in developing new synthetic lubricates and tribology chemistry and physics. After several years in LICP, he moved to the Hong Kong Polytechnic University, as a PhD student studying the smart textiles and surface grafting polymer brushes. During 2013-2014, he was a visiting PhD student at the University of Manchester. Completing his doctorate in 2015, Xuqing joined the School of Materials at the University of Manchester as an independent Research Fellow, where he investigates the Fibre Surface Molecular Engineering.

Dr. Liu is the Chairman of Chinese Textile and Apparel Society(CTAS－UK). He services as an editor for Advanced Fiber Materials, Journal of Composites Science, and Associate Editor of Journal of Fiber Bioengineering and Informatics.

More than 70 research papers from his group have been published in high-quality journals, such as Advanced Materials, Advanced Functional Materials, Nano Letters, Small, NPG Asia Materials, Chemistry-An Asian Journal, Nanoscales, and Journal of Materials Chemistry.

ABSTRACT SUBMISSION
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A Highly Effective π-π Stacking Strategy to Modify Fibre and Multiple Functionalization

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ABSTRACT (NO MORE THAN 500 WORDS:)

The functionalization of fibre surface is an important technology for the development of functional textiles and fibre-reinforced composite materials. The conventional functionalization strategy is modified by covalent bonding, but it will damage the original structure of the fibre, especially for high-performance fibres such as carbon fibre. In recent years, our research group has developed new fibre surface modification strategies, π - π stacking， using polydopamine, tannic acid and curcumin and other aromatic compounds to modify the fibre surface, and a series of results have been obtained. We developed a series of conductive fibres and advanced fibre-reinforced composite materials. And based on these new conductive fibres, a series of wearable devices are integrated through advanced textile technology, including gesture control gloves, wearable inductive sensors, voice recognizers, and rehabilitation medical equipment. Our research provides a new type of functional fibre surface molecular engineering that can be industrialized in the future.