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Topic of the Speech:

Fibre-based Nanocomposites with Enhanced Micro-nano Interface for Functional Textiles

Dr. Xin Wang

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Dr. Xin Wang received his PhD from Deakin University in 2010. After a Postdoctoral Fellowship in the Hong Kong Polytechnic University, he joined in Wuhan Textile University as an Associate Professor under the 'CHUTIAN Scholar' program in 2011. He was then awarded Vice-Chancellor's Research Fellowship from the University of Southern Queensland in 2014, and he joined RMIT University as a Vice-Chancellor's Senior Research Fellow in the School of Fashion and Textiles in 2015. Dr. Wang became an academic staff titled as Senior Lecturer in the Centre for Materials Innovation and Future Fashion (CMIFF) at RMIT University in 2019. Dr. Wang is a key member of the Advanced Materials and Smart Textiles research Clusters of CMIFF, and he is a textile engineer leading a research group focusing on nanotextiles.

He has research interests in the area of advanced fibrous materials with performance and comfort applications, which has resulted in advanced textile fabrication technology, nnaocomposites and advanced functional textiles. He has also contributed to a better understanding of dynamic comfort and related testing apparatus. Dr. Wang has led several projects funded by both government and industrial sectors including the National Natural Science Foundation of China and Cotton Research and Development Corporation. He has successfully supervised more than 10 PhD and Masters students.

Dr. Wang's research has impact on a broad community of academia and industry, evidenced by patented IP of large-scale production of nanofibres from needleless electrospinning; commercialized products and technology; influence on policy-making for textile standards; and high citation records of published work (H Index = 21 and total citations of >1350, Google Scholar).

ABSTRACT SUBMISSION
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Fibre-based Nanocomposites with Enhanced Micro-nano Interface for Functional Textiles

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ABSTRACT

Nanomaterials, such as carbon nanotube, nanodiamond and graphene, have shown great potential in textile-based wearable electronics. However, textile-based flexible wearable electronics require sensitivity, stability, safety, durability and wearing comfort of the end products to ensure the function and wellbeing. Understanding the micro-nano interfacial behaviour between embedded carbon nanocomponents and fibrous materials is the key to come up with scalable but reliable fabrication technology. We have been devoting in introducing active nanomaterials into fibrous system via chemical synthesis, surface engineering of fibres, advancing yarn fabrication technique and developing textile finishing technology. The as-developed flexible wearable electronics have demonstrated the application potential in functional textiles, such as wearable electronics, protective textiles and photocatalysis. Enhancing the interface of the introduced carbon nanomaterials within the fibrous system will benefit the development of next-generation functional textiles with trustable functions and truly wearability.