

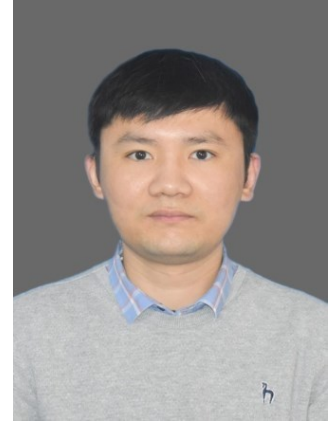


Topic of the Speech:

Innovation and Entrepreneurship Based on Digital Twin Textile Supply Chain Platform

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Dr. Zhangchi Liu, With a specialization in textile performance, digital textile industry chain, industry business 4.0 business model and big data technology platforms in his PHD at the University of Manchester, Zhangchi Liu played a vital role in the Textile Industry Chain Big Data Platform EU Horizon2020 project.

He has extensive experience in communicating and coordinating large scale projects involving several international fashion apparel companies, lectured and received awards at international conferences and published high quality papers at international journals and patents.

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ABSTRACT (NO MORE THAN 500 WORDS:)

The EU project, funded by the European Commission, is creating a digital technology platform for enabling small series innovative high value fashion and functional garments manufacturing and e-commerce, through a fully connected and data-driven local supply chain in the EU, to meet consumer's personalized needs in terms of fashion and functional performances (FBD_BMODEL, 2021). Based on this platform, a novel B2B2C business model has been built, which create high customization of small series product for consumers, and dynamically organize design and production at the time of analysis of fashion and functional performance of product according to consumer's personalized needs (Pal, 2019). Based on the project, we further introduce digital twin concept to enable an open innovation digital twin platform. Digital twin is a digital replica of a physical object, which is connected through the digitalized information. In the textile digital twin world, we need to firstly create digital format at all stages of the product life cycle process: from fibers, yarns, fabrics, design and manufacture, garment products, and consumers. Secondly, establish the data flow between physical objects of the textile supply chain and their digitalized information, also build the data flow connection between these digital objects. In this way, the physical supply chain is not physically connected with the material and finance flow, but also interconnected through the connections of their digital format objects. The data flow connection is established based on the modelling and simulation of fashion (fitting) and functional (thermal comfort, hand feel and skin comfort) performance of garment product, which closely linked with the material properties, product design and structure information and consumption scenarios. Since current research of digital twin in textiles filed is isolated and fragmented focus on production system or material(product) traceability. Few studies have been reported to extend the scope of digital twin concept to product life-cycle stage, not to mention in-depth practice study. In this study, we first introduce the concept "digital twin textile supply chain platform" to fully connects different actors in the textile supply chain. Then we propose new business model archetype and toolbox based on the providing data services from digital platform. After that we adopts business cases study to discuss related business and industrial strategies form the digital twin textile supply chain platform. At the last, pilot operations of real-life online shopping cases have been adopted to validate the business model archetype.