



**Topic of the Speech:**  
Regenerate Material from Textile Waste

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**Dr. Lei Yao** obtained her Bachelor of Science from Zhejiang Medical University and Master of Science in Zhejiang University, China. Dr Yao received her PhD in Textile Technology from The Hong Kong Polytechnic University, Hong Kong.

Her current research interests centre around: textiles-human interactions, textile technologies and industry sustainability. She is now leading a research team and doing applied research on high-performance textiles, water-less textile technologies and post-consumer textile recycle.

She has considerable research experience of textile and clothing and insight into applied research, R&D roadmap and innovation strategy.

## ABSTRACT SUBMISSION

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### Regenerate Material from Textile Waste

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#### ABSTRACT (NO MORE THAN 500 WORDS:)

Textile waste is an issue that indicates huge raw material, energy resources consumption and greenhouse gas emission. But it can also be a resource for regenerate material which has high value-added. Development approaches include: 1) transfer cellulose waste to super absorption polymer that can retain 30 times of water as its body weight; 2) apply the cellulose particle harvest from textile waste as additive of composite material to enhance the energy absorption function for stab resistance material; 3) cellulose waste as material to produce regenerate cellulose fibre with similar fibre strength as cotton, and 4) further enhancement of regenerated cellulose fibre with FIR and UV protective function. These outcomes provide the possibility for us to utilize textile waste as a valuable material resource. We are exploring methods to refine these technologies and systems to support the industry and society.