

Textile **Futures**

# Textile Innovation Programme

## Nano Functional Fibres



Project Part-Financed  
by the European Union  
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# Background

- o Initial Feasibility Study considered conductivity, antibacterial properties, flame retardancy and enhanced colouration
- o 5 different nano-particulates were tested in the study: carbon black, carbon nano-tubes, milled carbon fibres, nanoclay and nano silver
- o A capillary rheometer was added to the University of Leeds facility to determine the behaviour of the polymers and additives
- o Encouraging results were gained with recycled carbon fibres, nanoclay additives and biocomponent spinning

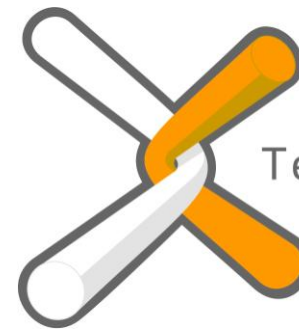


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## Current Situation

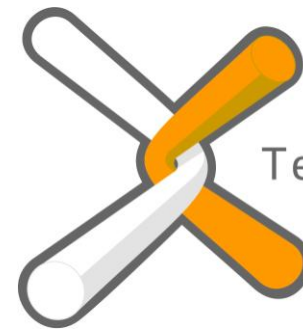
- o TIP Workshop on 10th November discussed UV stabilisation and medical applications
  
- o 4 specific applications identified through 'Expressions of Interest'
  - Novel Fibres for thermoplastic composites
  - Suture plus – high strength resorbable sutures
  - Flame retardant fibres
  - Improved abrasive and colourfast properties
  
- o Proposal developed for TIP Feasibility Study to create collaborative activity with 10 companies, led by FET and working with the University of Leeds



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# Issues



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- o Need to identify and quantify potential commercial applications in sectors including furnishing, 'performance fabrics', automotive composite fibres and medical devices and yarns
- o Need to identify and quantify potential benefits including environmental impact, extended product lifecycles, performance improvement and production costs
- o Detailed review of existing and proposed nano technology applications ('state of the art' review)
- o Development of company performance requirements in standard format, using standard definitions
- o Identify current capital equipment capabilities and future equipment requirements



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