



RESET
Interreg Europe



European Union
European Regional
Development Fund

Water Consumption & Energy Saving

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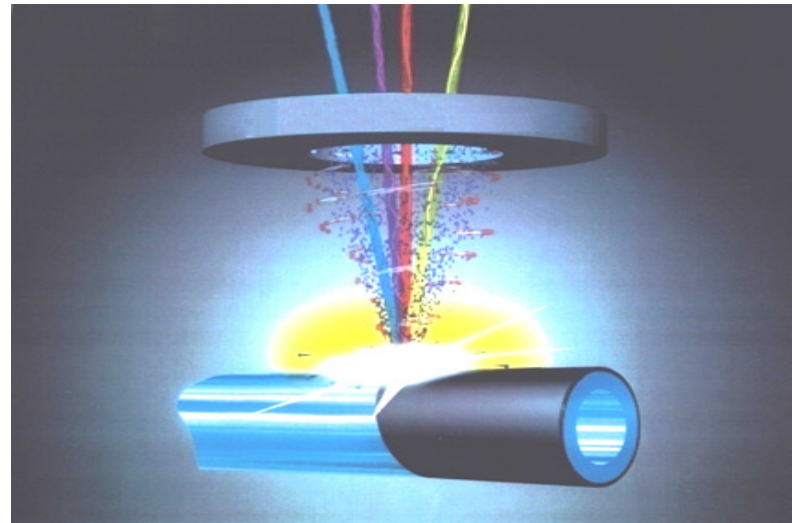
14th February 2017 | 2nd Thematic Presentation, Porto

The Development of Functional Treatments for Textile Applications utilising MLSE Synthesis Technology

MLSE Overview

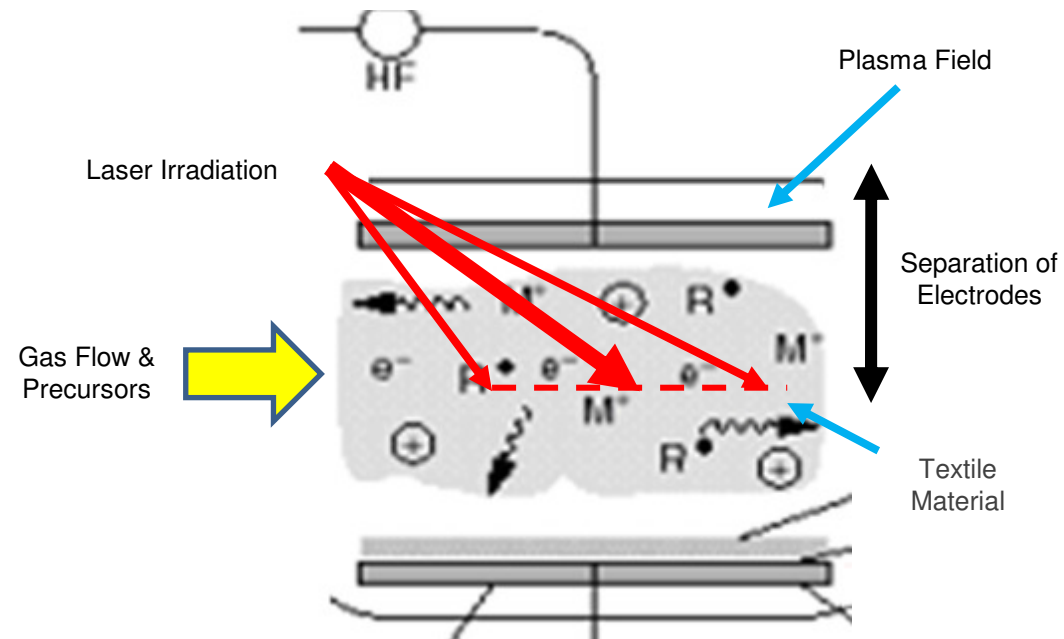
- Technology invented and developed by MTIX Ltd
- A culmination of 25 years of MLSE collaborative innovation between USA and UK to decrease the carbon footprint of processing technologies
- Automotive, Medical, Aerospace, Defence and consumer markets
- Patent protected
- 2012: industrial-scale prototype system
- 2016: production systems

MLSE Technology



Multiple energy sources brought together in the presence of environmental gases and precursors to effect structural and chemical change in the surface of the substrate

Fundamental Principles



Prototype System



Based at Textile Centre of Excellence, Huddersfield

Production System



MLSE – The Process

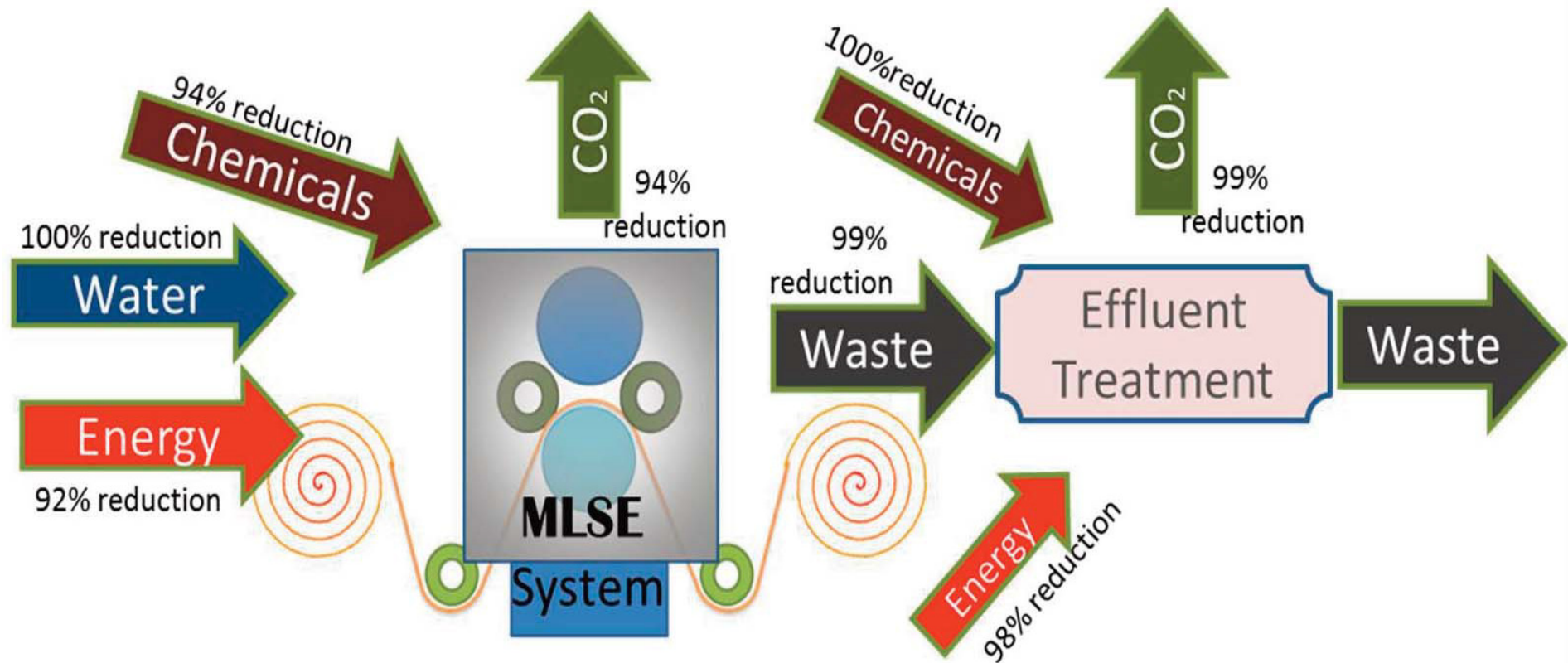


Achievable Characteristics

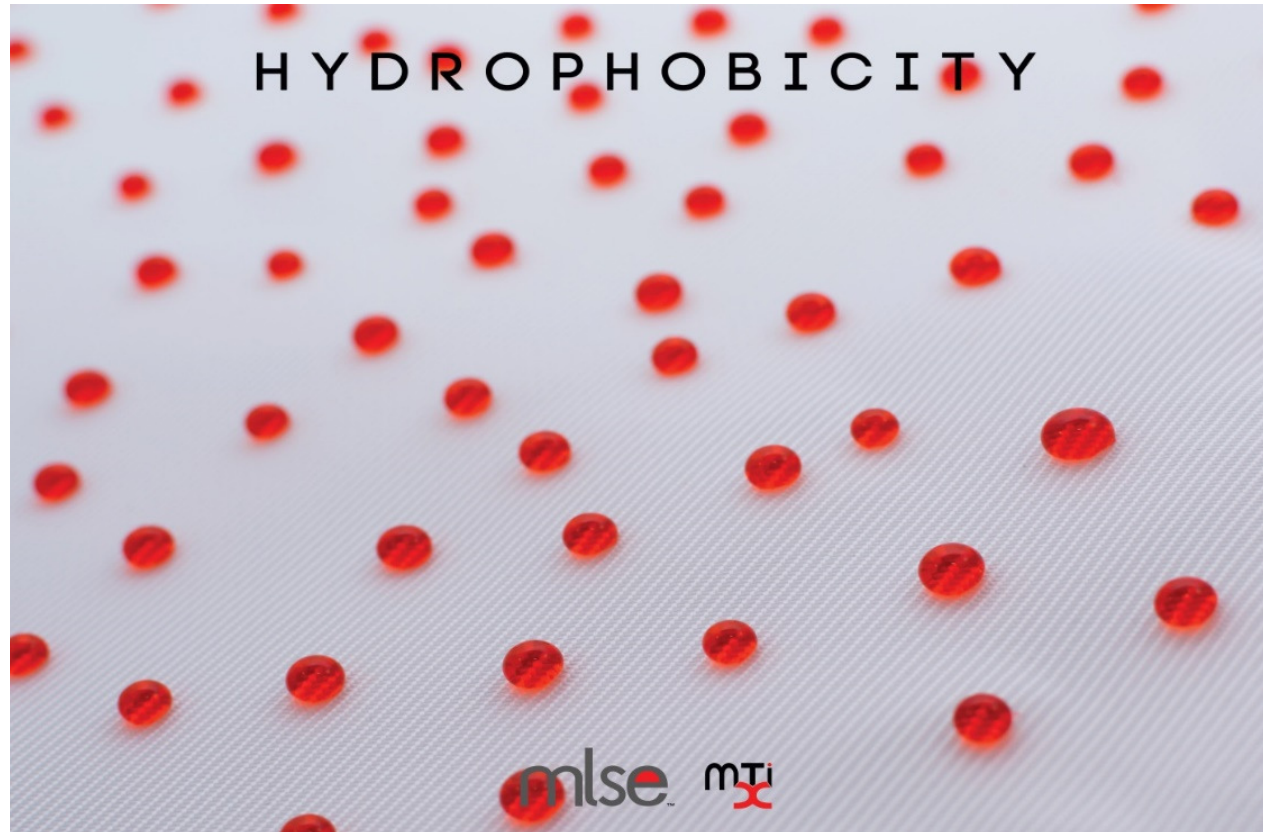
- Water proofing
- Stain resistance
- Wrinkle resistance
- Wear resistance
- Thermal resistance
- Breathable fabrics
- Enhanced adhesion
- Enhanced printability
- Improved colour fastness
- Wash cycle durability
- Texture & feel
- Impact dissemination
- Fibre strength
- Dielectric properties
- Anti-bacterial
- Surface topography management
- Opportunities for combination treatments

From Wet to Dry processing

MLSE Technology



Hydrophobicity



Hydrophilicity / Hydrophobicity / Oleophobicity – Wool

- Low water dyeing
- Low temperature dyeing
- Breathable membranes
- Waterproofing
- Oil resistance



Scouring

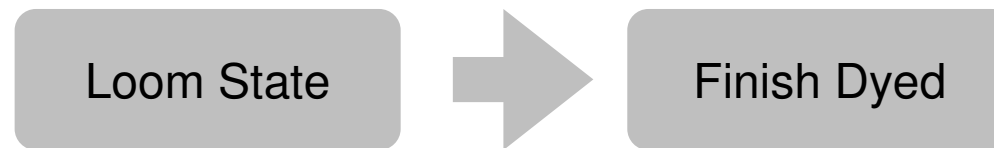
BEFORE



AFTER



Dyeing Enhancement

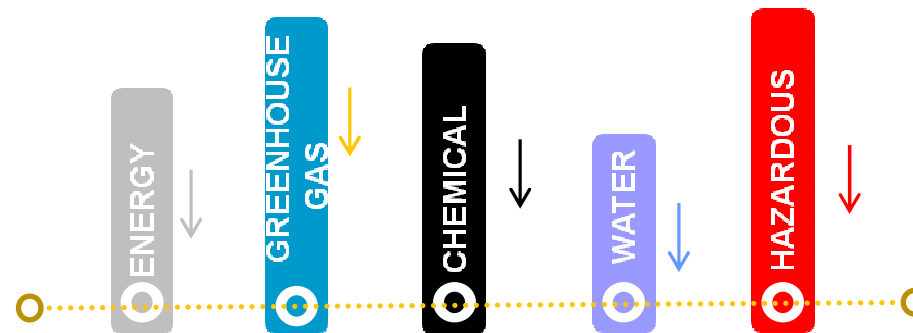


Cycle Time reduced from 120 minutes to 55 minutes

- Energy cost reduction
- Dye chemical reduction
- Reduced dye cycle time
- Dry scouring

The Environmental Impact of MLSE Technology

March
2015

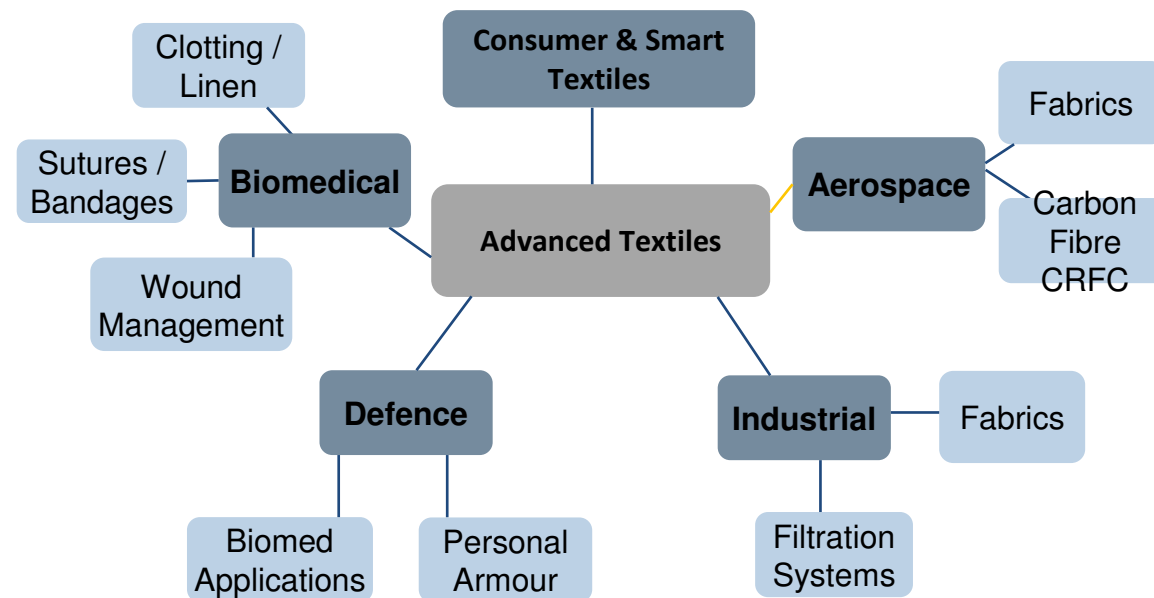


- Energy consumption reduced by 99.6%
- Greenhouse gas reduction over baseline of 90.9%
- Resource (chemical) use reduced by 94.8%
- Water consumption reduced by >75.5%
- Use of Hazardous resource (irritant/corrosive & bio-accumulative) eliminated completely

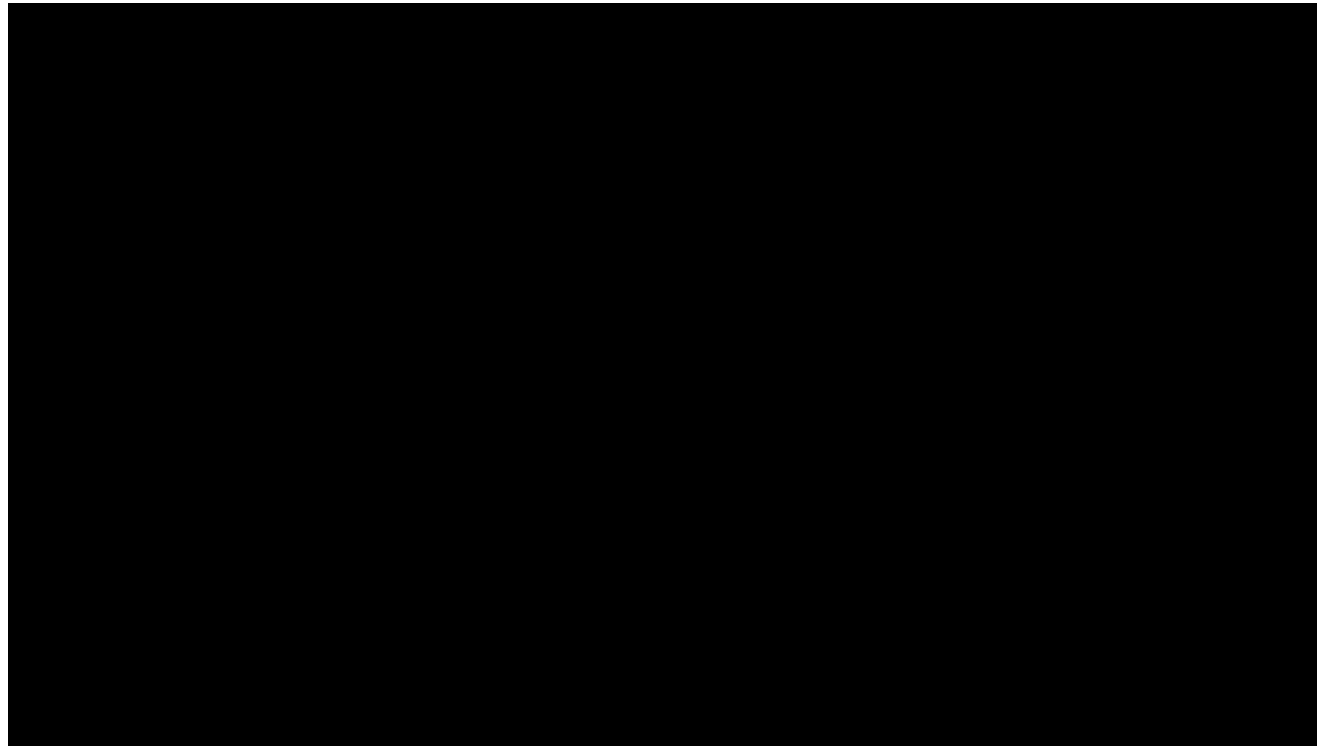
Economics

- Cost effective
- Environmentally friendly
- Repeatable
- Stable process
- Consistent treatments
- Wide process window
- Operator friendly
- Industrially robust

MLSE Markets



MLSE Production System





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Thank you!

Questions welcome



Project smedia
