



Innovate  
UK

# Welcome





Innovate  
UK

# Wool Innovation Showcase

## 'A smart technical fibre'

Circular Economy Innovation Network – Wool

Lucy Mather and Debbie Tully, Knowledge Transfer  
Managers (Agrifood) for Innovate UK KTN

# Housekeeping

- Please keep yourself on mute throughout the webinar
- Use the Q&A box to ask the panel questions
- Use the chat box for networking
- The webinar will be recorded, excluding the breakout session

# Agenda

## 1 Welcome to the Wool Network

10:00 - 10:15 Lucy Mather and Debbie Tully, Innovate UK KTN  
Kate Drury, Sustainable Rope Ltd

## 2 'Wool Innovation – What's happening now?'

10:15 - 10.45 Angela Morris – WoolCool, session chair  
John Parkinson – iinouio, Ross Barry – LMB,  
Beki Gilbert – Natural Fibre Company

## 3 'Wool Innovation – What's coming?'

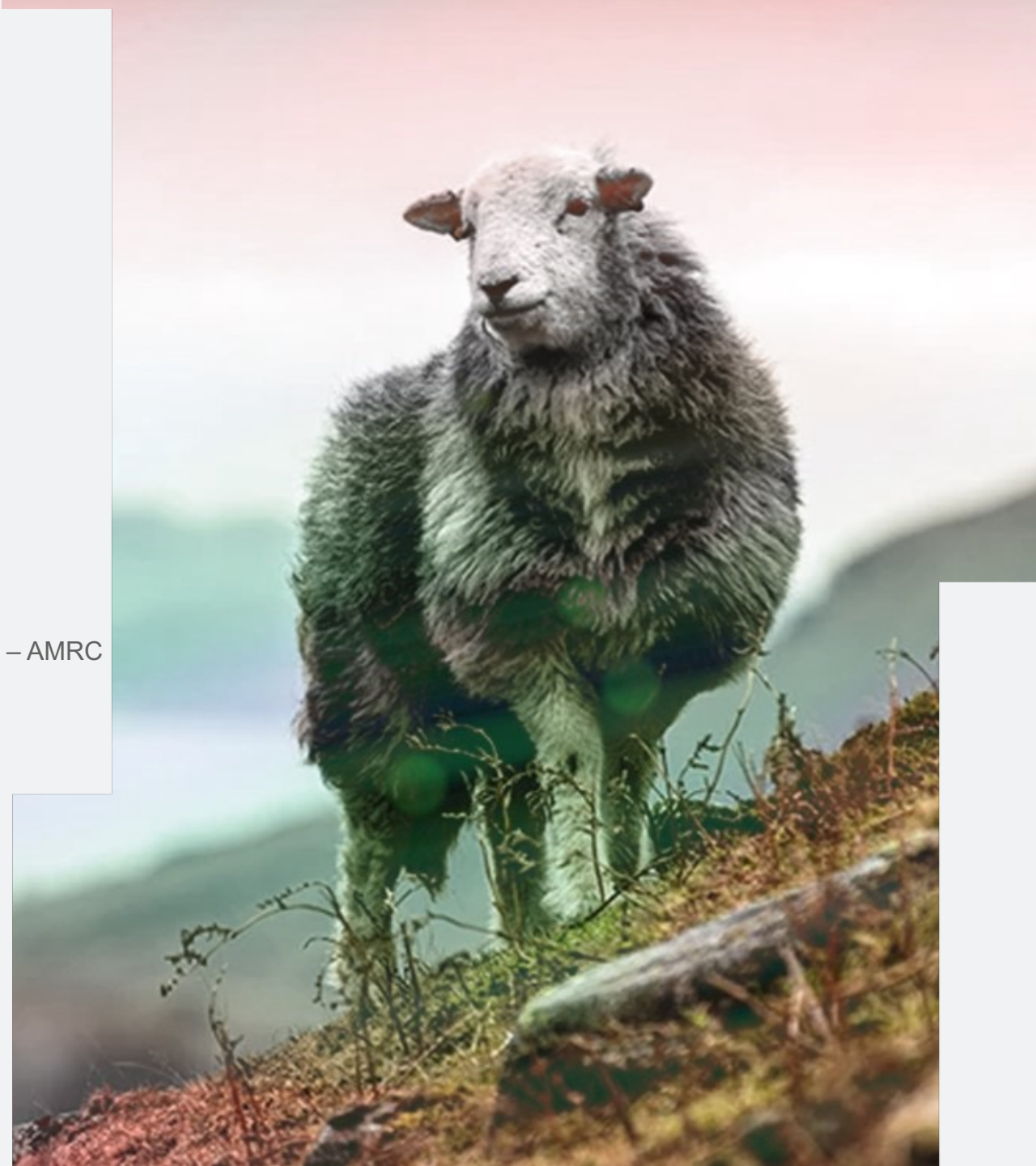
10:55 - 11:25 Emma McKenna – IUK KTN, session chair  
Brian Mcilwaine – Future Humanity Venture and Andrew Martin – AMRC

## 4 Wool Innovation showcase

11:25 - 11:40 2-minute pitches

## 5 Networking session – Breakout groups

## 6 Funding and Support





# About us

Innovate UK KTN exists to connect innovators with new partners and new opportunities beyond their existing thinking.

Accelerating ambitious ideas into real-world solutions.



# Our vision

Wool to be **valued as a smart technical fibre** and used in multiple industries to reduce our reliance on oil-based products, encouraging a shift from linear to **circular** and sustainable systems in which resources are re-used, nutrients recycled, by-products reduced and what remains recycled.





# CEIN Wool Action Plan

Developed in conjunction with 3 steering groups closely connected to the wool community

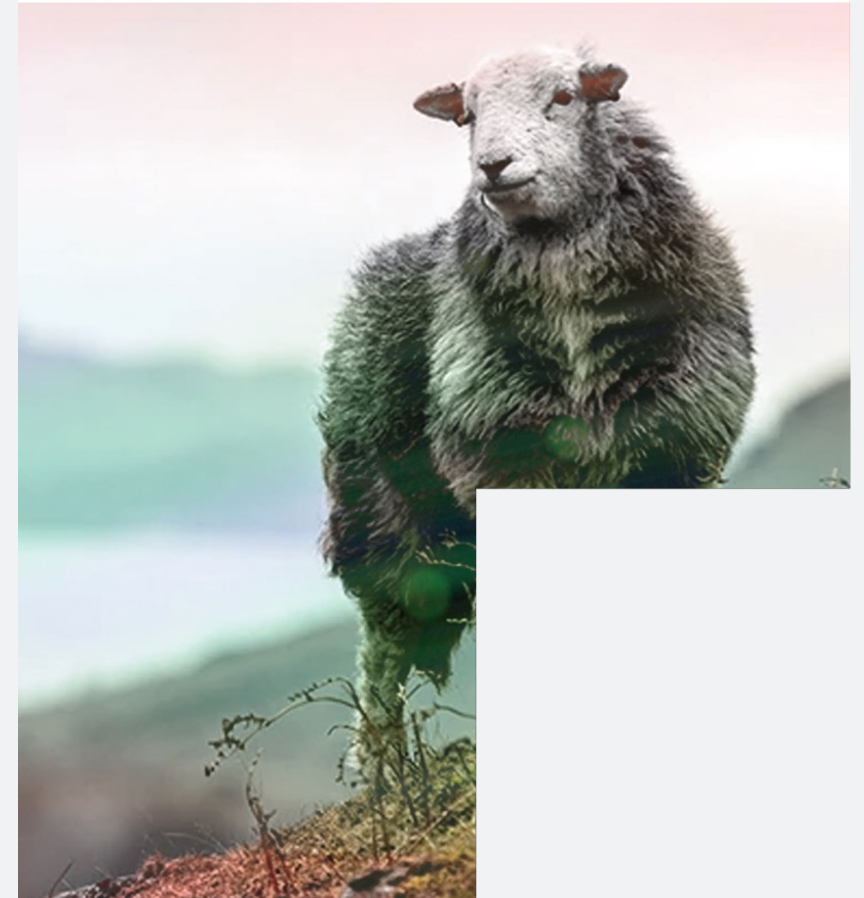
Three grand challenges:

1. Low technological innovation within the supply chain to support circularity
2. Identify needs to adapt processing and/or grading to meet standards for wider scale uses of wool in other sectors. Wool innovators unable to access new markets
3. Need for improved traceability and LCA data to demonstrate the circular economy credentials of wool products to end users

## Wool innovation action plan to support a circular and sustainable future

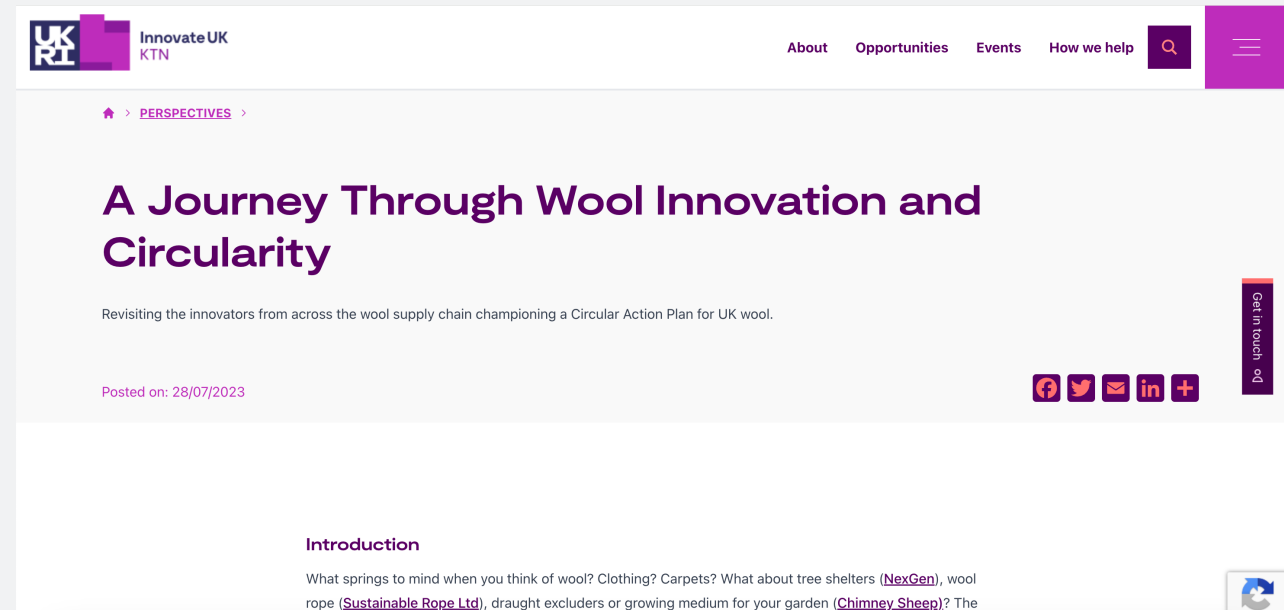
Circular Economy Innovation Network

Dr Jo Gosling, Knowledge Transfer Manager - Aquaculture and Livestock  
Debbie Tully, Knowledge Transfer Manager - Food



# CEIN Wool, what else have we been up too?

- Sandpit event
- Learning Journey – British Wool
- Wool in Construction webinar
- Perspectives Article
- Demo Day – 8<sup>th</sup> Feb 2024



The screenshot shows the top of a webpage from Innovate UK. The header includes the UKRI logo, the text 'Innovate UK KTN', and navigation links for 'About', 'Opportunities', 'Events', and 'How we help'. A search icon and a menu icon are also present. Below the header, there is a breadcrumb trail: '★ > PERSPECTIVES >'. The main heading of the article is 'A Journey Through Wool Innovation and Circularity'. Below the heading is a sub-headline: 'Revisiting the innovators from across the wool supply chain championing a Circular Action Plan for UK wool.' The article is dated 'Posted on: 28/07/2023'. There are social media sharing icons for Facebook, Twitter, Email, LinkedIn, and a plus sign. A vertical button on the right side says 'Get in touch with us'. The article content begins with an 'Introduction' section, which starts with the text: 'What springs to mind when you think of wool? Clothing? Carpets? What about tree shelters ([NexGen](#)), wool rope ([Sustainable Rope Ltd](#)), draught excluders or growing medium for your garden ([Chimney Sheep](#))? The



# CEIN Wool, Impact delivered

- Over **£700,000** worth of projects funded to date
- 10 projects currently live, with more in the pipeline
- Partnerships & collaborations initiated
- Over 100 members in the CEIN Wool LinkedIn group
- CEIN Wool Community of nearly 500 members, representing the full supply chain



Innovate  
UK

# Kate Drury Sustainable Rope Ltd



Innovate  
UK

# Wool Innovation: What's happening now?

Angela Morris, WoolCool - chair

John Parkinson, iinouio

Beki Gilbert, Natural Fibre Company

Ross Barry, LMB



Innovate  
UK

# Wool Innovation: What's coming?

Emma McKenna, IUK KTN – chair

Brian McIlwaine, Future Humanity Venture

Andrew Martin, AMRC



FHV



**FUTURE HUMANITY VENTURES**  
One Planet, One Humanity, One Formula

Why:

- The need for more sustainable end-user products to protect the planet while still meeting performance functions.
- Inspiring people and companies to buy and use these sustainable products and materials.
- Protecting the social economic interests of the British wool community.

How:

- Applying agile technology methods and mentality from motorsport.
- Accelerating product development and market entry.
- Achieving social, economic, and environmental benefits through this approach.

What:

- Developed ReWOOL™ as a bio-reinforcement material and BioWOOL™ as a bio-composite material.
- Strategic partnerships under the product brand 'Nature Matrix'.
- Focusing on end-user bio-product solutions using wool composite technology.
- BioCranium project focusing on global impact protection, with recent Innovate UK grant win.
- Ongoing product development activities in the sustainability venture studio include BEBUS, T-ONE ACOUSTICS, and BIOBUILD.



An aerial photograph of London, England, showing the River Thames flowing through the city. The Tower Bridge is the central focus, with its two towers and suspension cables clearly visible. To the left, the Shard skyscraper stands tall. Other modern buildings like the Gherkin and the Walkie-Talkie are also visible. The sky is clear and blue, and the water reflects the sunlight.

FHV

FUTURE HUMANITY VENTURES

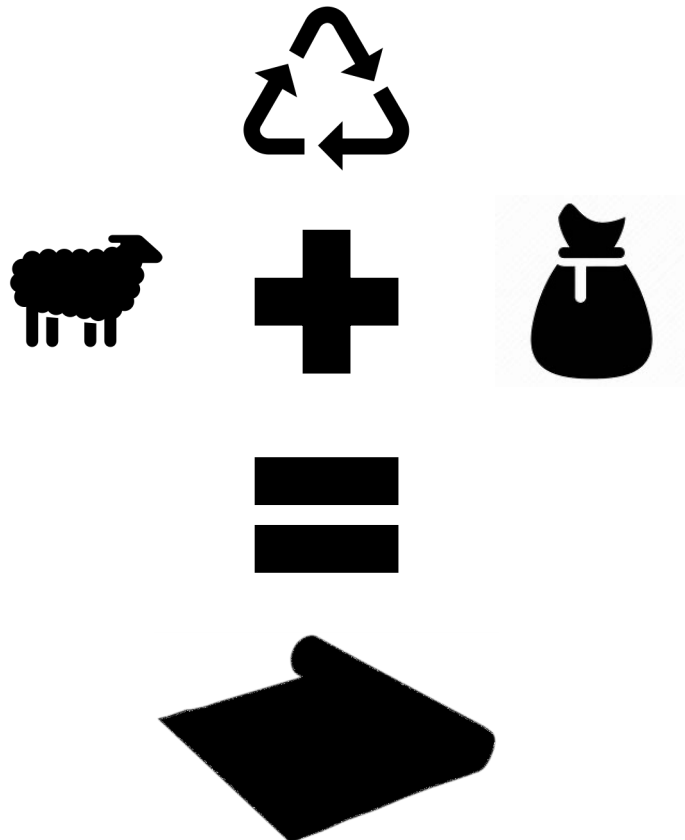
One Planet, One Humanity, One Formula



Innovate  
UK

# Wool Innovation pitch session

Liz Carrasco, Kaitlin Ramsay,  
Sikiru Ismail, Martin Brambley,  
Tom Lind, Elizabeth Gaston



Compostable, Recycled, Non-Petroleum based solutions for:

Agriculture

Construction

Horticulture



# Circular approaches to wool waste: A woolly big problem



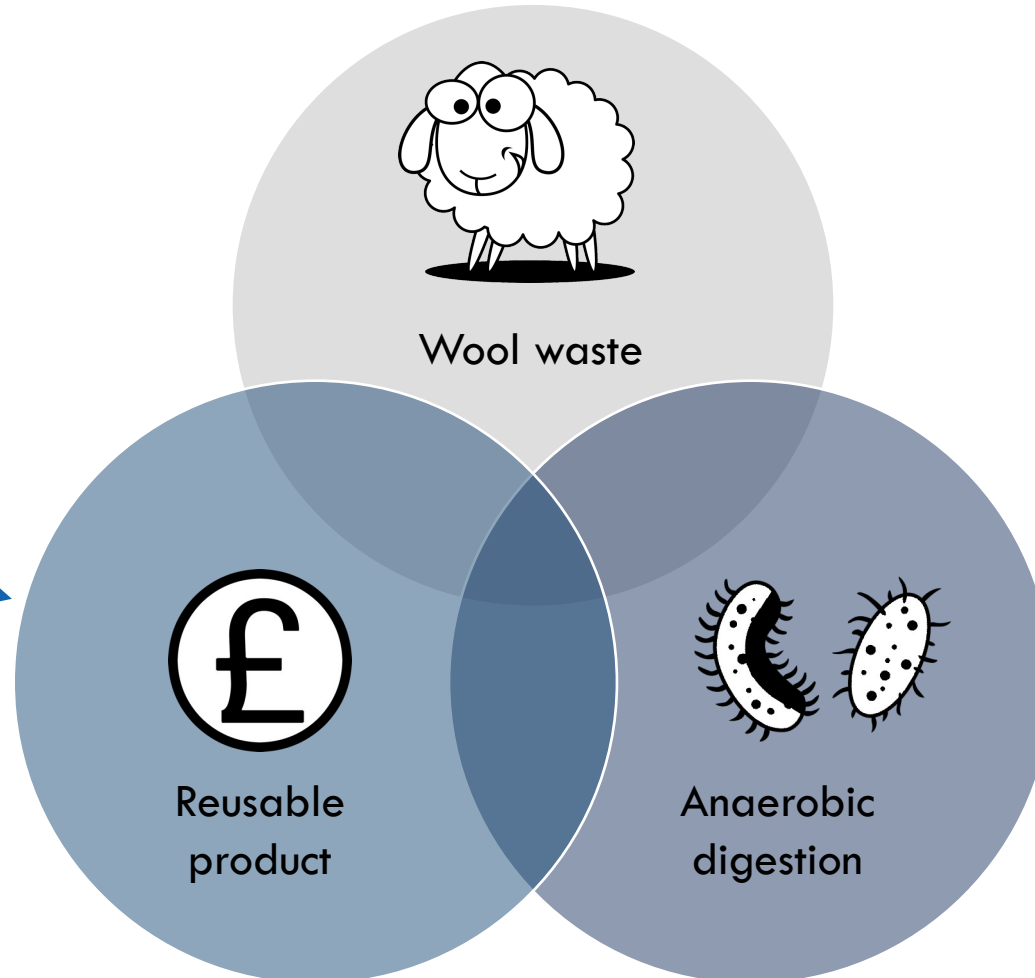
Dr Joanne Roberts

[Joanne.Roberts@gcu.ac.uk](mailto:Joanne.Roberts@gcu.ac.uk)



Dr Kaitlin Ramsay

[Kaitlin.Ramsay@gcu.ac.uk](mailto:Kaitlin.Ramsay@gcu.ac.uk)





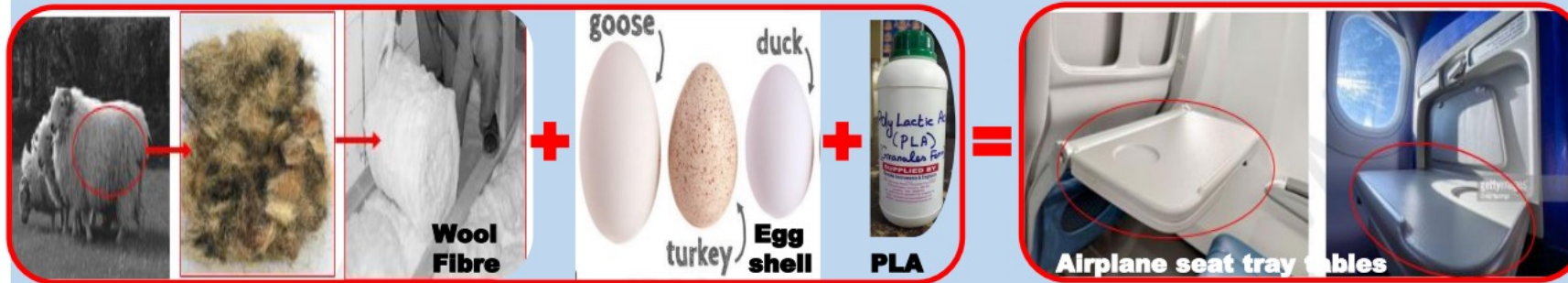


# Dr Sikiru O. ISMAIL

ND, BEng (Hons), MSc, PhD, PGCE, MASME, MASC, CEng MIET, MIMechE, FRSA, FHEA; E-mail: [s.ismail3@Herts.ac.uk](mailto:s.ismail3@Herts.ac.uk)  
**Senior Lecturer in Manufacturing Engineering & Advanced Materials.** Tel. No: 070 17 0728 5213

## Principal Interest and Expertise:

- **Materials Manufacturing:** Sustainable hybrid/biocomposites with improved properties or tailored/specific applications.
- **Development of green wool FRP biocomposite structures for aerospace application**



## Relevant Publications:

- ✓ Development of sustainable biodegradable lignocellulosic hemp fiber/polycaprolactone biocomposites for lightweight applications, *Composites Part A: Applied Science and Manufacturing*, 2018, 113, 350-358.
- ✓ Evaluation of mechanical, thermal and water absorption behaviors of *Polyalthia longifolia* seed reinforced vinyl ester composites, *Carbohydrate Polymers*, 2020, 248, 116748.
- ✓ Sustainable Composite for Lightweight Applications, 1<sup>st</sup> Ed., 2020, Vol. 1, Issue 1. Cambridge, UK: Elsevier Woodhead Publisher.
- ✓ Animal fibre characterisation and fibre loading effect on mechanical behaviours of sheep wool fibre reinforced polyester composites, *Journal of Natural Fibers*, 2020, 19(11), 4007-4023.
- ✓ Assessment on jute/coir fibers reinforced polyester hybrid composites with hybrid fillers under different environmental conditions, *Construction and Building Materials*, 2021, 301, 124117, 1-9.

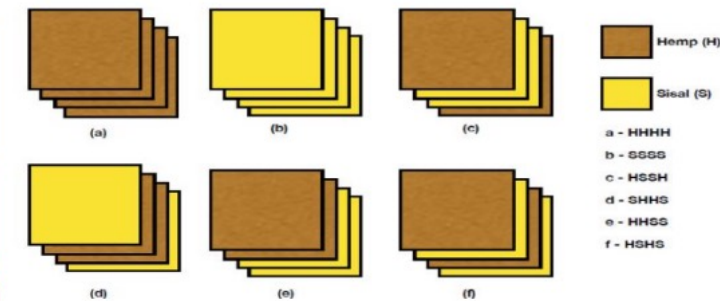


Fig. 1. Different layering/stacking sequences of natural fibre mats.

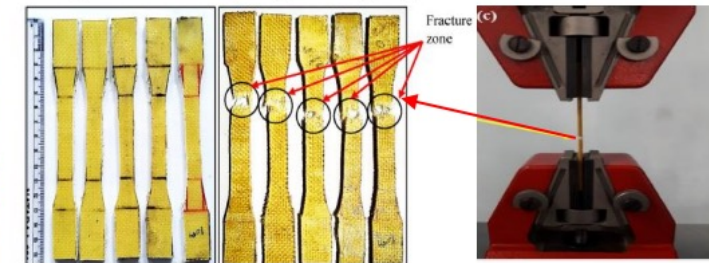


Fig. 2. (a) Before test, (b) after test and (c) tensile experimental set-up.

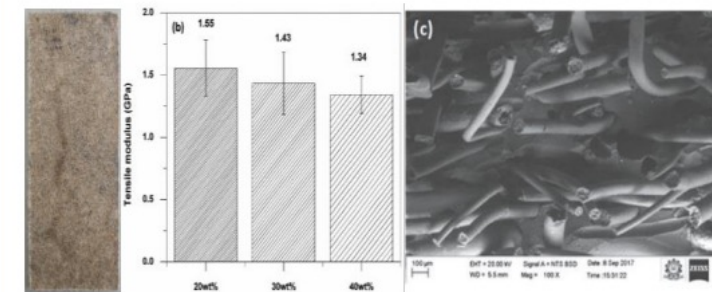


Fig. 3(a) Sheep wool FRP sample, its (b) tensile modulus & (c) SEM image.





Ponder.er

AW/22 / HC-JTE-1



Cloudwool sample books available online



**cloudwool**<sup>®</sup>

-  green & clean
-  available at scale
-  cost-efficient
-  new in fashion



**M·I·E**  
X  
**CLOUDWOOL**

  
**GRENSON**  
ENGLAND 1866



Grenson S/S 23 / PC-WOOL-3



Samuel Gui Yang

AW/22 / PC-SPEK-1

**Pure, local wool is back.**

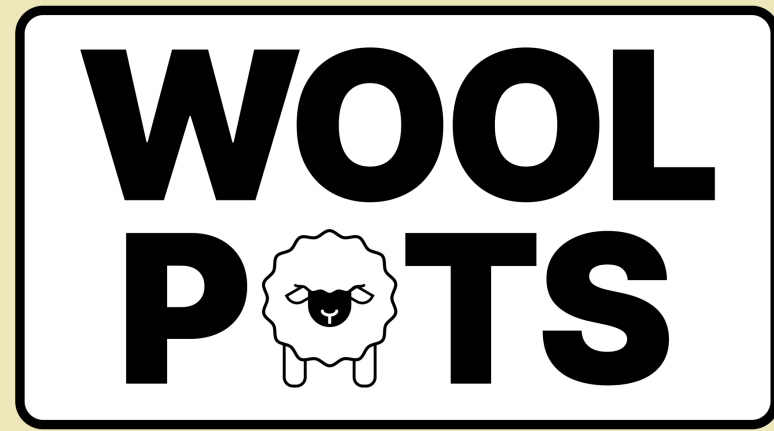
**And it is better than ever.**

[www.cloudwool.co.uk](http://www.cloudwool.co.uk)

Linkedin: Doppelhaus Ltd.

**Martin Brambley**

[martin@doppelhaus.co.uk](mailto:martin@doppelhaus.co.uk)



Wool Pots are a zero waste environmentally friendly alternative to plastic pots.

500 million plastic plant pots are sent to landfill in the UK every year, we are burying a time bomb for future generations.

Our company's aim is to reduce plastic use in horticulture and help the planet.





Elizabeth Gaston  
Jane Scott

[Elizabeth.Gaston@Northumbria.ac.uk](mailto:Elizabeth.Gaston@Northumbria.ac.uk)  
[Jane.Scott@Newcastle.ac.uk](mailto:Jane.Scott@Newcastle.ac.uk)







Innovate  
UK

# Breakout sessions

Two 8-minute speed networking sessions

Randomly assigned

Please have your camera on

KTN Agrifood colleagues will join us



Innovate  
UK

# Funding and Innovate UK KTN Support

# Funding Opportunities

SMART FIS (Wales)

**SMART Grant**

Creative catalyst

Launchpad: Agri-  
tech and food tech  
Eastern England

DEFRA FIP –  
Research Starter /  
Large R&D

**IUK Edge £15k  
catapult grants**

**KTPs**

REforMM

Innovation loans

EUREKA

**Innovation  
Exchange (IX)**

EIT Impact Funding



Sign up for the AgriFood newsletter: [bit.ly/AgriFood\\_Newsletter](https://bit.ly/AgriFood_Newsletter)



# Innovate UK KTN Support

- Market insight – all sectors
- Help with finding project partners, making connections
- Innovation Canvas Tool
- Reviewing of funding applications
- Join our CEIN Wool LinkedIn group
- Join the CEIN Wool Community
- Sign up to a short calendly session – 6th and 10th November
- Receive our monthly newsletter – **for all opportunities**



Innovate  
UK

# Thank you

lucy.mather@iuk.ktn-uk.org  
debbie.tully@iuk.ktn-uk.org

iuk.ktn-uk.org/agrifood  
@IUK\_AgriFood

Sign up for the AgriFood newsletter: [bit.ly/AgriFood\\_Newsletter](https://bit.ly/AgriFood_Newsletter)