

## The Energy Efficient Bio-based Natural Insulation (TSB funded)

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Dr Simon Tucker

**UEL partner:** Professor Chitral Wijeyesekera  
Mr Eshrar Latif

**Partners:** [The BioComposite Centre Bangor University](#)  
[Non-Woven Innovation Research Institute Leeds \(NIRI\)](#)  
[Natural Buildings Technologies \(NBT\)](#)  
[Plant Fibre Technologies \(PFT\)](#)  
[D1 Oils Plc](#)  
[Wates Construction](#)  
[Sci Tech Adhesives](#)  
[Rachel Bevan](#)

### **Background:**

The Energy Efficient Bio-based Natural insulation project runs for 36 months which commenced on May 2007.

This project research is to develop a sustainable, thin and highly efficient natural fibre insulation solution, suitable for new build as well as offering a practical solution for the refurbishment market.

### **Aims:**

- 1) The introduction of phase change aerogels into the fibre matrix to provide significantly improved thermal performance allowing for thinner products whilst maintaining all the advantages of fibre based insulants; such as flexibility, ease of use, breathability and acoustic performance.
- (2) The use of a bio-derived binder as well as natural fibres to create a wholly bio-based solution.
- (3) The use of a novel energy-efficient air blend process to allow for the efficient application of fire retardants and facilitate the use of lower cost bioderived binders to replace the high embodied energy and high cost synthetic bi-component polyester fibres currently used in all natural fibre insulants

### **UEL involvement:**

Darryl Newport and Simon Tucker: Lead Research Team and Supervisors to PhD Researcher

Professor Chitral Wijeyesekera: The Director of studies to the PhD Research Student

Eshrar Latif: PhD Research Student and MPhil Level to research and develop energy efficient bio-based natural insulation.

**Links:**

[\(T.S.B.\) Technology Strategy Board](#)

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