Northwest businessman joins a specialist European team with a quest to decarbonise the transport sector

Advanced lightweight materials for energy-efficient structures

FOREST

Funded by the European Union

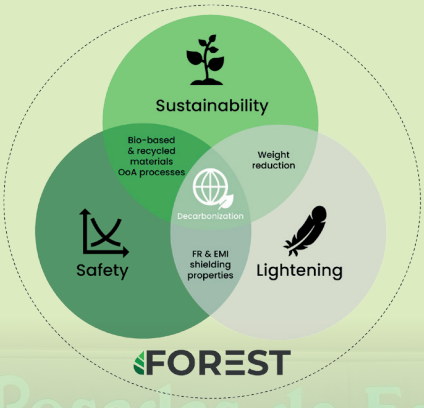
Paul H. Jones, the inventor of a broad range of innovative, reduced hazard, and bio-based speciality polymers has joined the FOREST consortium. FOREST is short for Advanced lightweight materials for energy efficient structures and is a Horizon Europe project. FOREST is a consortium that will develop innovative bio-based polymers & additives to reinforce recycled carbon fibres to produce lightweight structures that will help the transport sector move towards decarbonisation. The project has commenced and will run until May 2026. The aim of this project is fully aligned with EU 2030 Climate and Energy challenges.

The Transport sector accounts for more than 20% of the green-house emissions in Europe and has always been a key focus area for decarbonisation. Although global emissions declined because of the Pandemic and the associated impact it had on industry, the transport sector has rebounded to an all-time high in 2021. This trend is expected to continue as demand for goods to be moved increases and mitigating actions are needed now.

The FOREST project proposes a combination of three key-drivers for the future of the transport sector decarbonisation: Reduce, Recovery, Reshape.

Reduction in the structural vehicle weight of the vehicle will come through the generation of lightweight composite parts, and the matrix systems used to reinforce the fibres will be derived from sustainable feedstocks. Reducing the vehicle weight will reduce both the emissions and polluting gases of internal combustion engines and increase the efficiency of electric vehicles to meet the EU net-zero greenhouse gas emissions challenge by 2050.

PATHWAY TO MOBILITY DECARBONIZATION



Recovery of carbon fibre to allow switching virgin carbon fibres to recycled carbon fibres is also part of the program of works.

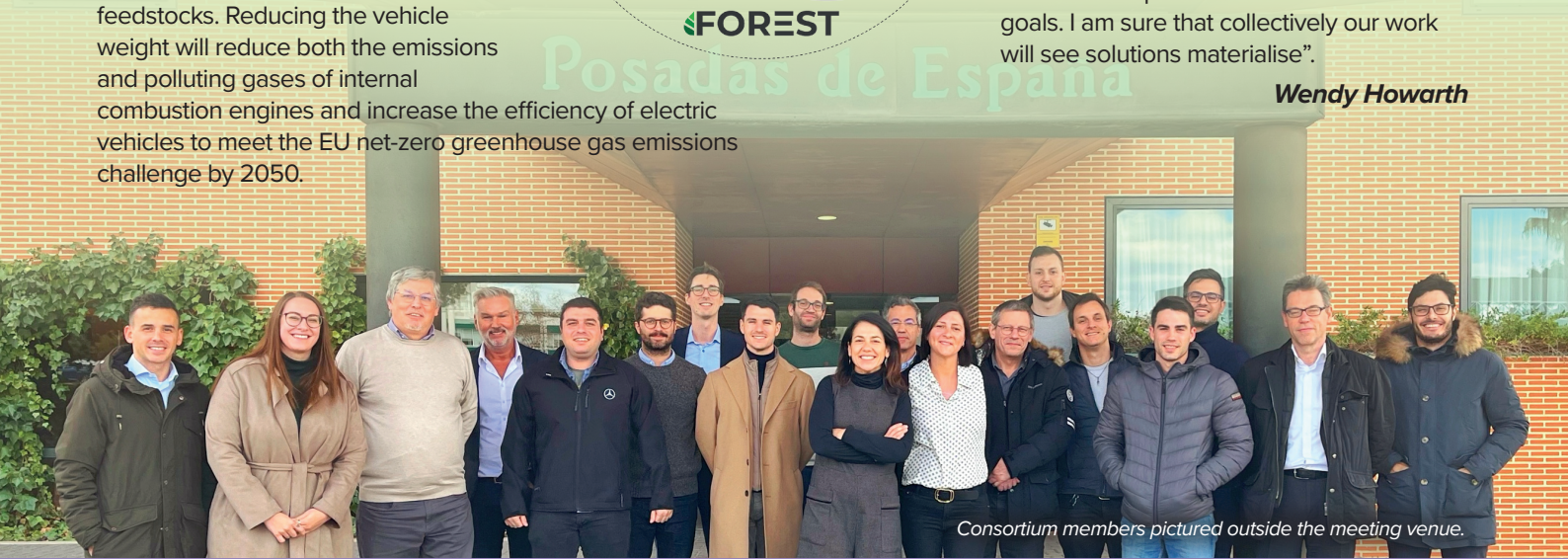
The novel polymers will be designed to adhere to the recovered Carbon and the composite part must maintain the same performance requirements in terms of the structural, safety, and reliability whilst meeting fire retardancy and electromagnetic wave absorption standards.

FOREST will lead the drive with two main approaches that consist of the development of bio-based and recycled materials. Two bio-based system resins (thermoset and thermoplastic) along with one bioadditive for fire-retardant (FR) properties. The consortium consists of industrial resin producers, raw material manufacturers and research centres.

There are three industrial resin manufacturers in the Consortia and they are charged with developing suitable matrix systems. Arkema, BASF, and Bitrez Ltd. The Forest project commenced in January when the Consortia met in Valencia, Spain for the kick off meeting and a series of presentations to outline the intended work and collaborative requirements to achieving their aims. The inaugural event ran across the 25th and 26th January and consortium partner Paul Jones, Managing Director of Bitrez attended to present some of the newly Patented Bio-Benzoxazines that he has developed and that may form part of the sustainable matrix resins employed in these future components.

Paul commented, " It is a privilege to be involved and to support such a worthy project that will target environmental and humanitarian needs through a combination of Science and Industrial pragmatism. It was a pleasure to meet fellow partners and I am delighted to be amongst such distinguished individuals in pursuit of these admirable goals. I am sure that collectively our work will see solutions materialise".

Wendy Howarth



Consortium members pictured outside the meeting venue.