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Summerscales, John

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RECYCLABLE STRUCTURAL COMPOSITES FOR MARINE RENEWABLE ENERGY

**John Summerscales, Yang Qin,
Jasper Graham-Jones, Richard Cullen, Maozhou Meng, Richard Pemberton**
University of Plymouth School of Engineering, Computing and Mathematics (SECaM),
J.Summerscales@plymouth.ac.uk, yang.qin@plymouth.ac.uk, jasper.graham-jones@plymouth.ac.uk,
R.Cullen@plymouth.ac.uk, maozhou.meng@plymouth.ac.uk, richard.pemberton@plymouth.ac.uk.

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The InterReg SeaBioComp project will develop and deliver demonstrators using innovative bio-based thermoplastic composite materials with mechanical properties comparable to conventional oil-based composites, durability tailored to the specific application (2 to >20 years), recycling potential, reduced CO₂ emissions and reduced microplastic and ecotoxic impact in the marine environment.

The University of Plymouth is investigating to use of manufacture by monomer infusion under flexible tooling (MIFT) with in situ polymerisation to produce natural, or glass, fibre reinforced structural composites. Following an extensive literature survey, the monomer selection has suggested two potential matrix materials: poly(methyl methacrylate) (PMMA) and poly(L-lactide) (PLA).

The conference paper will present the progress in measurement of the composite mechanical properties and correlation to models predicting the material performance.

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