

COMPOSITES UK CONFERENCE ON: BIO-MATERIALS: PLAYING A KEY ROLE IN THE COMPOSITES INDUSTRY'S NET ZERO FUTURE

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LONG TERM DURABILITY AND AGEING BEHAVIOUR OF BIOCOMPOSITES FOR MARINE APPLICATION

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ABSTRACT

This presentation will highlight some of the work performed on biocomposite durability within the INTERREG 2Seas *SeaBioComp* project. The talk will focus on three aspects:

First, the behaviour in seawater of self-reinforced PLA composite (SRPLA) will be discussed. Samples of the baseline SRPLA have been aged for over one year at different temperatures from 4 to 80°C, and detailed analysis of the degradation at 40°C will be given. Novel SRPLA manufacturing methods based on bi-component fibres are being developed within the project and some results will be described. Second, the environmental impact of this SRPLA material will be discussed, with results from microplastic formation and toxicity studies. Third, the characterization and durability test results for 3D-printed biocomposites will be discussed.

KEYWORDS

Marine; Long-term durability; Biocomposites; 3D-printing.