


# Environmental Science: Atmospheres

GOLD  
OPEN  
ACCESS

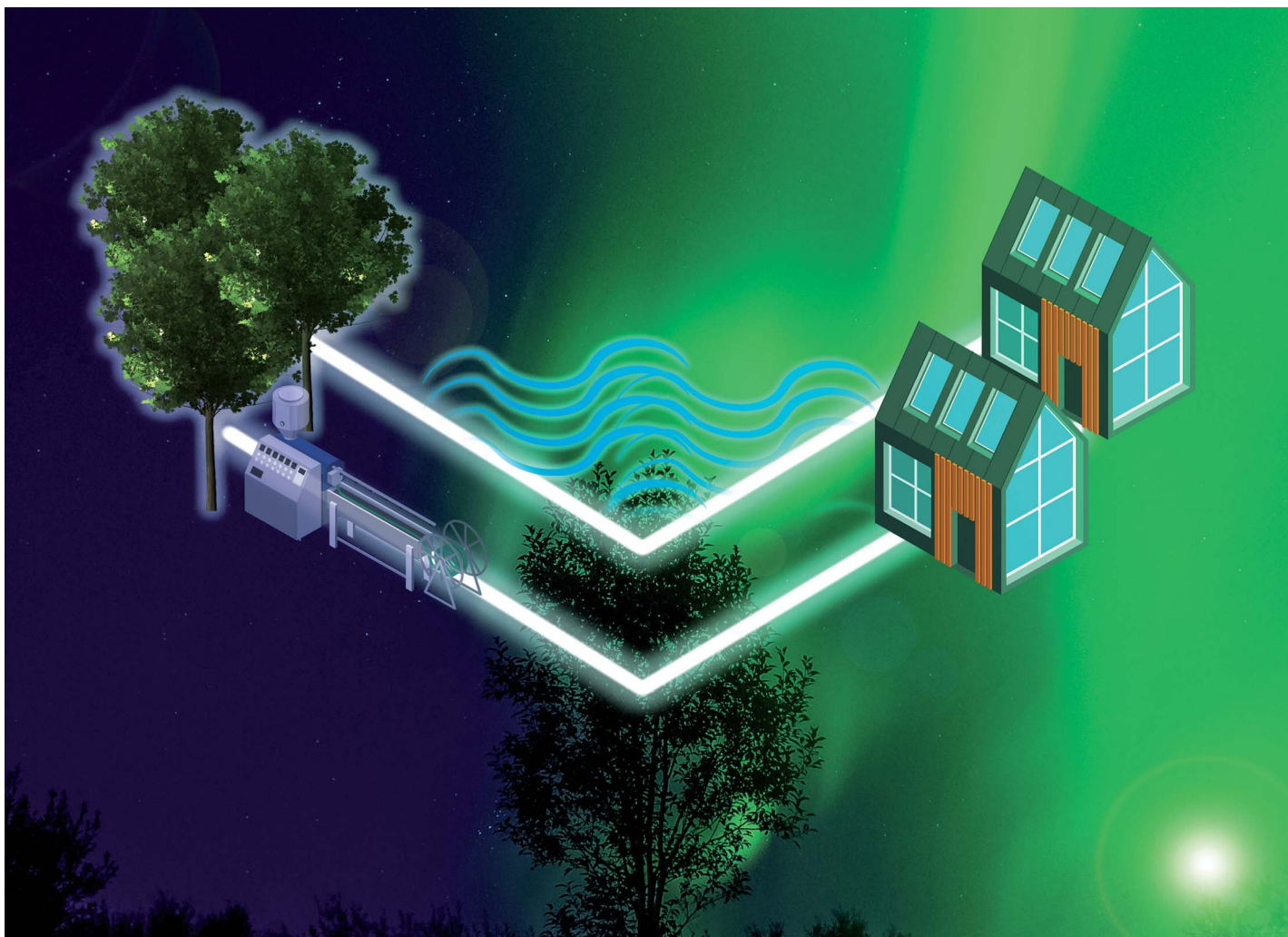
Connecting communities  
and inspiring new ideas

APCs waived until mid-2023

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Fundamental questions  
Elemental answers



Showcasing research of the Hybrid research group Biopolymer and Recycling Innovations - HyBRIt - of the University of Groningen and NHL Stenden University of Applied Sciences, The Netherlands.

The effect of size and delignification on the mechanical properties of polylactic acid (PLA) biocomposites reinforced with wood fibres *via* extrusion

This research investigates the influence of alkaline treatment on wood fiber-reinforced wood-plastic composites (WPCs). The study examines the effects of fiber length, coupling agent, and structural changes resulting from the treatment. Results indicate improved mechanical properties, including increased tensile and flexural moduli, with the addition of a coupling agent. However, alkalinized fibers show lower performance due to the removal of hemicellulose and lignin during extrusion. The research contributes to sustainable, biobased materials and aligns with UN goals for resource conservation and waste management.

As featured in:



See Renato Lemos Cosse *et al.*, *RSC Sustainability*, 2023, 1, 876.