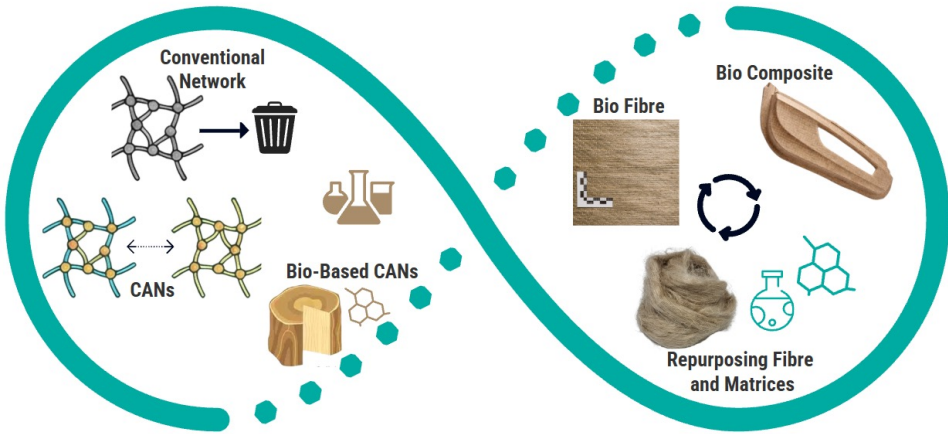
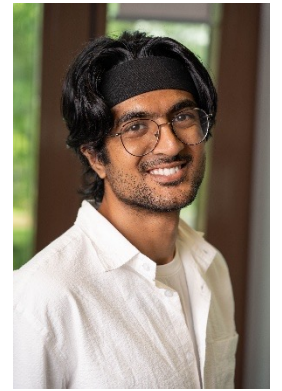


Sustainable Multifunctional Lignin Bio-fibre Composites Made Of Plant Fibres And Biomass-derived, Non-toxic, Repairable-recyclable Epoxy Polymer

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start in Oct. 2025



Key Objectives:

- Develop plant fibre-reinforced **lignin-derived epoxy polymer** composites suitable for structural application
- To assess their moisture sensitivity and durability
- To determine the influence of moisture absorption on the shear stress at the interface between matrix and reinforcement
- To evaluate their recyclability and the performance of the recycled composites
- To investigate the industrial feasibility of the most promising plant composite
- *Currently, establishing the benchmark parameters for comparative evaluation against the in-house synthesized vitrimer matrix*

Methodologies

- **Preliminary studies:** Static tensile, flexural and ILSS testing
- **Durability:** Fatigue, accelerated weathering and creep
- **Recycling:** Imine-based and transesterification routes
- **NDT methods:** Vibration and damping testing on composites

