

Recycling Face Masks for Manufacturing FlaxPP Eco-Composites

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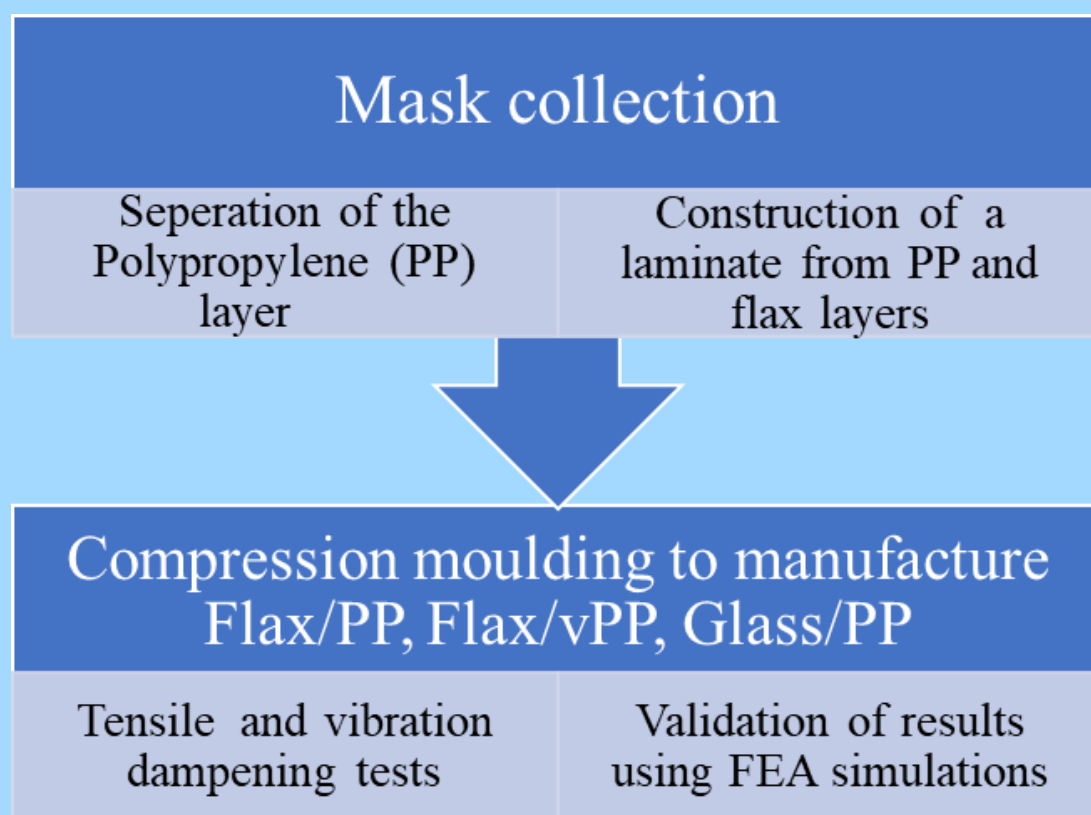
Introduction:

- Providing an innovative engineering solution to the issue of discarded plastic face masks.
- Recycling the primary plastic, polypropylene to manufacture an eco-composite by reinforcing it with natural flax fibres.
- The project aims to combine the three pillars of SDG through an engineering perspective.
- The mechanical properties of the FlaxPP material were analysed using software simulations and mathematical calculations.
- Manufacturing of FlaxPP to test mechanical properties, specifically the favourable vibration properties.



**YES,
There is an
antidote to the
face mask
pandemic!**

Methodology:



Results:

Figure 1: Tensile Testing

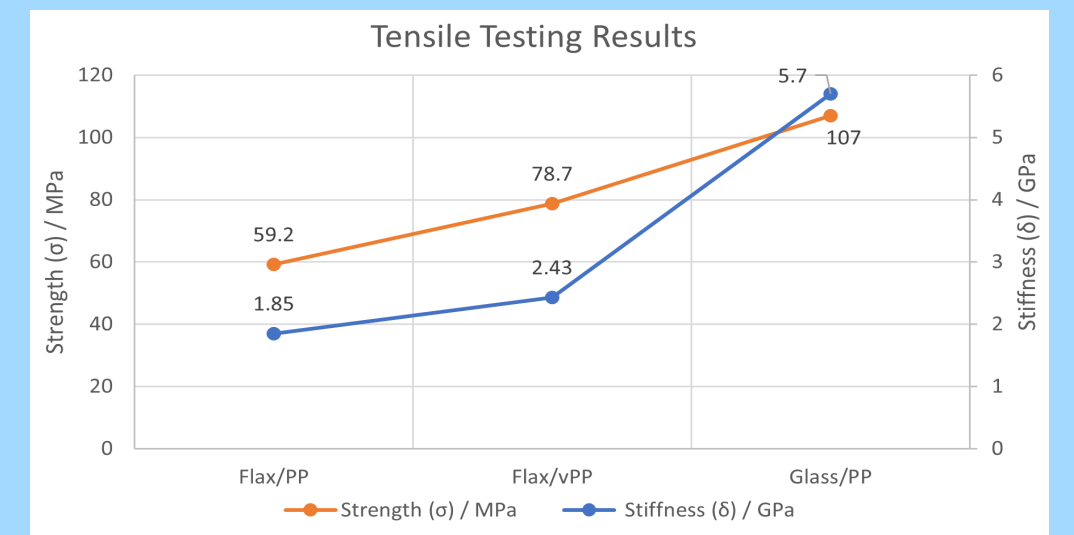
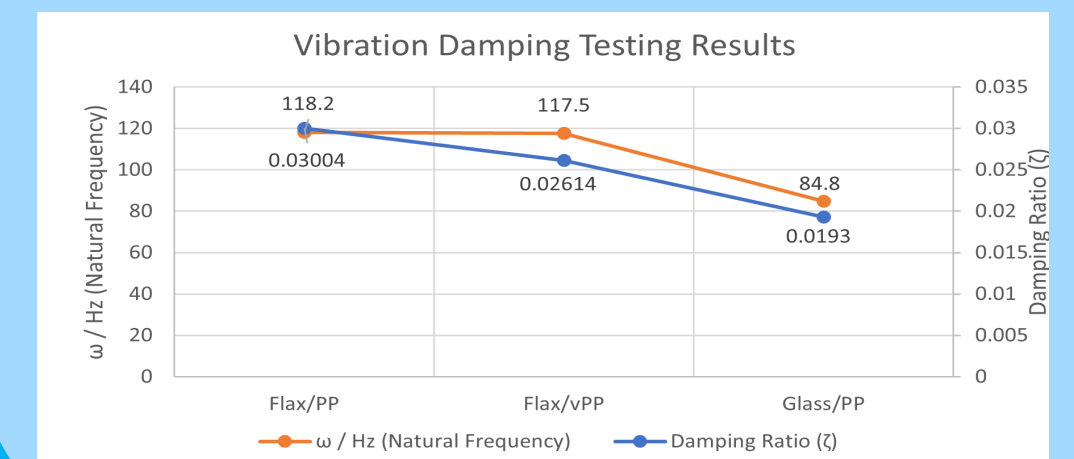
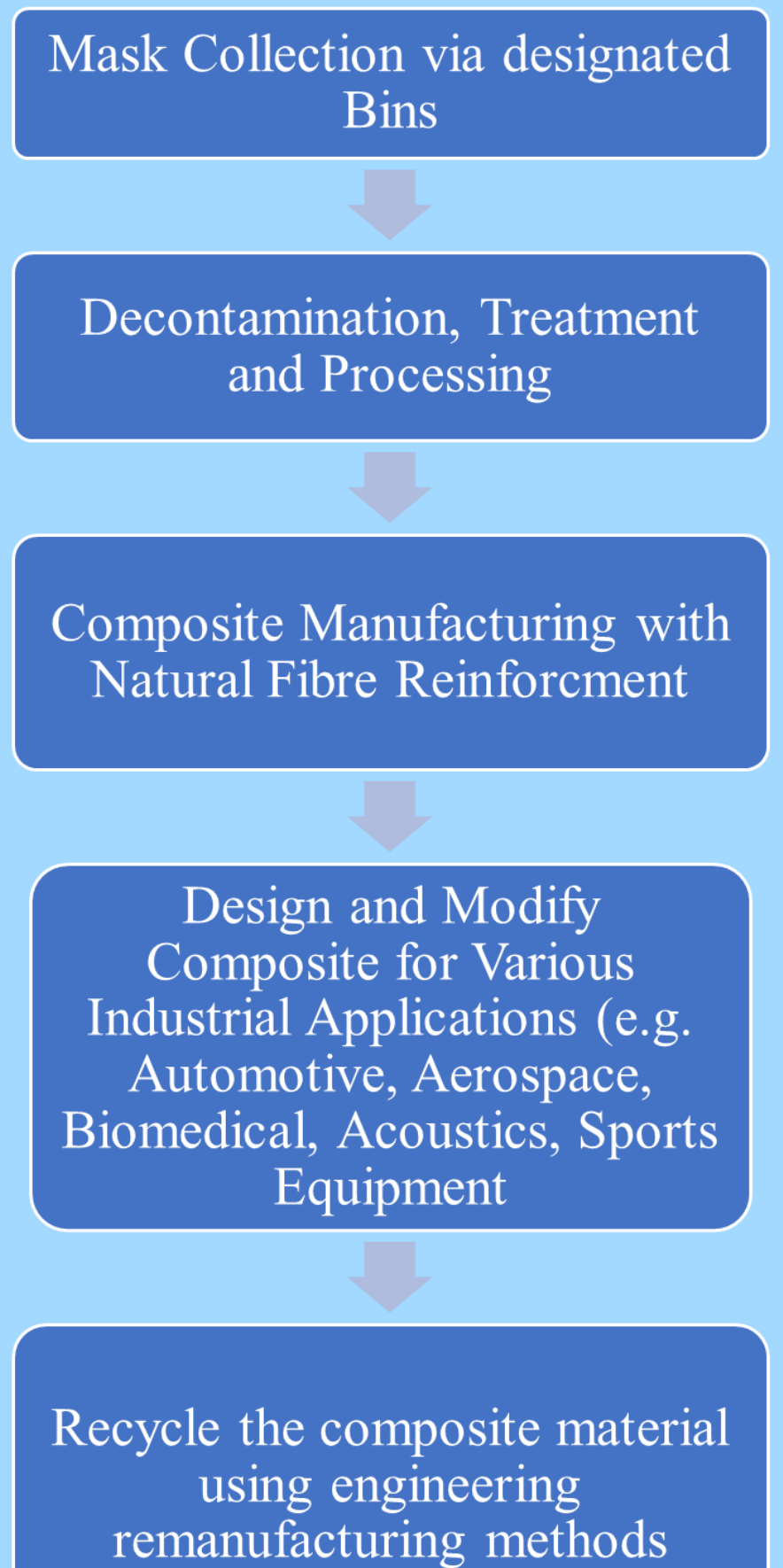


Figure 2: Vibration Testing



Proposed recycling method:



Conclusion & Recommendations:

FlaxPP could help improve global resource efficiency by diversifying recycling paths and encouraging more sustainable

Policy level recommendations include:

- Setting up synergies between local governments and the manufacturers to recycle masks for a financial and environmental incentive.
- Offering a sustainable alternative to help reduce the environmental effects involved in manufacturing such as mining, deforestation and emitting greenhouse gases.