

Covalent adaptable networks for reprocessable composite materials

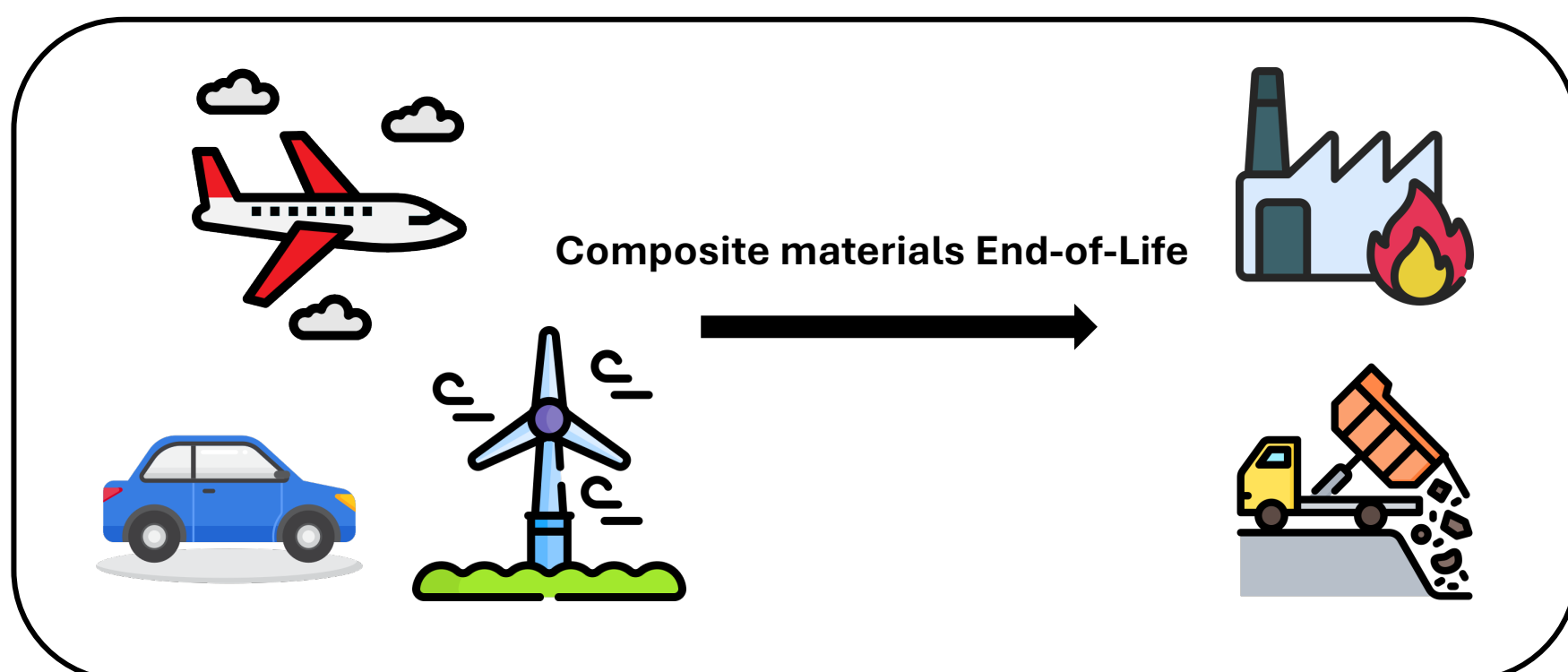
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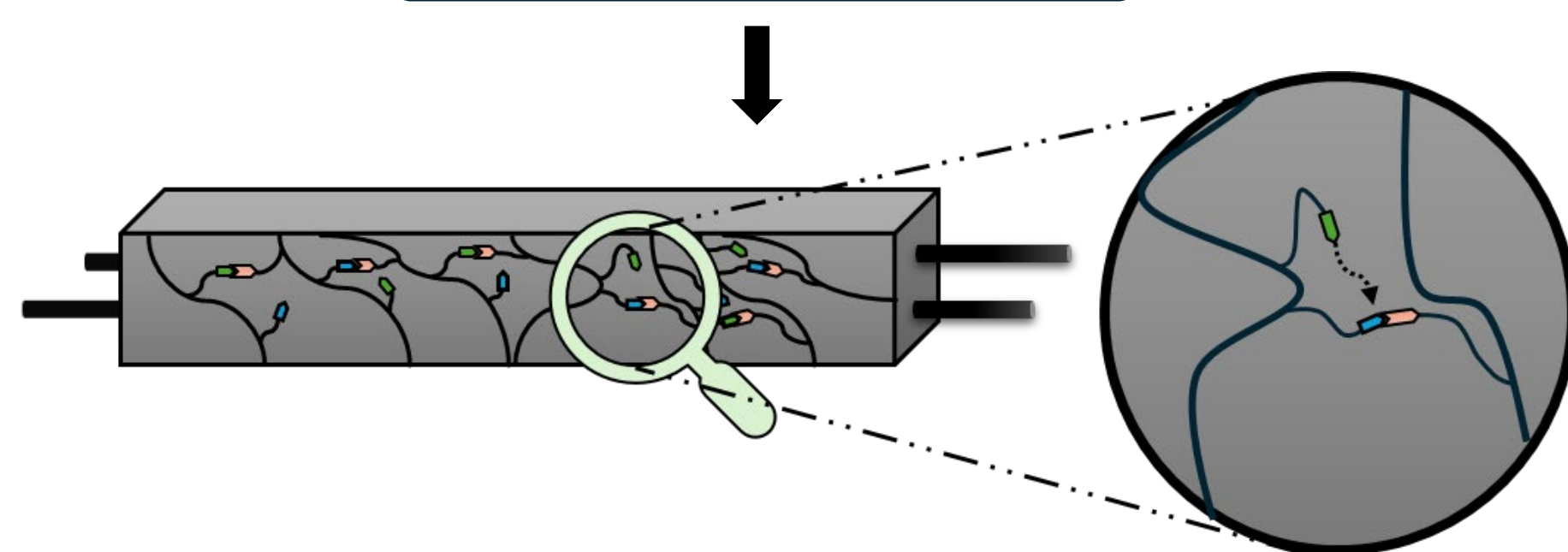
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Vitrimerers as composite matrices

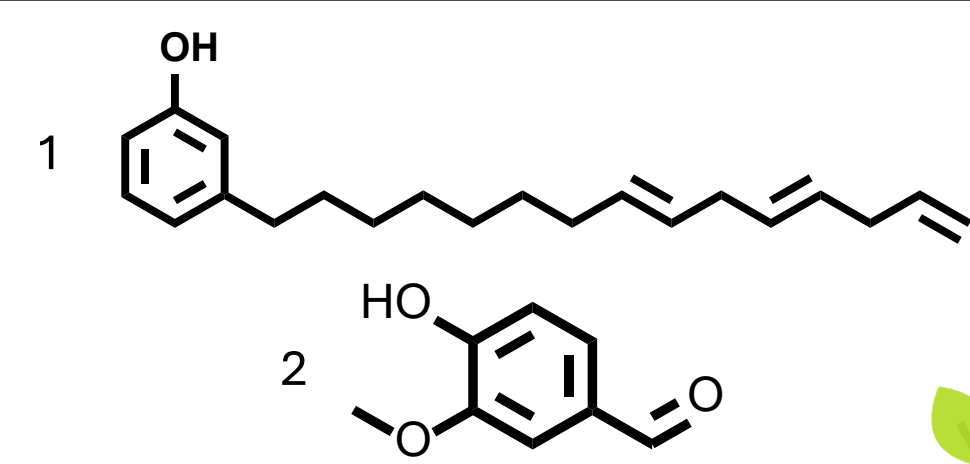


Vitrimerers as a viable solution

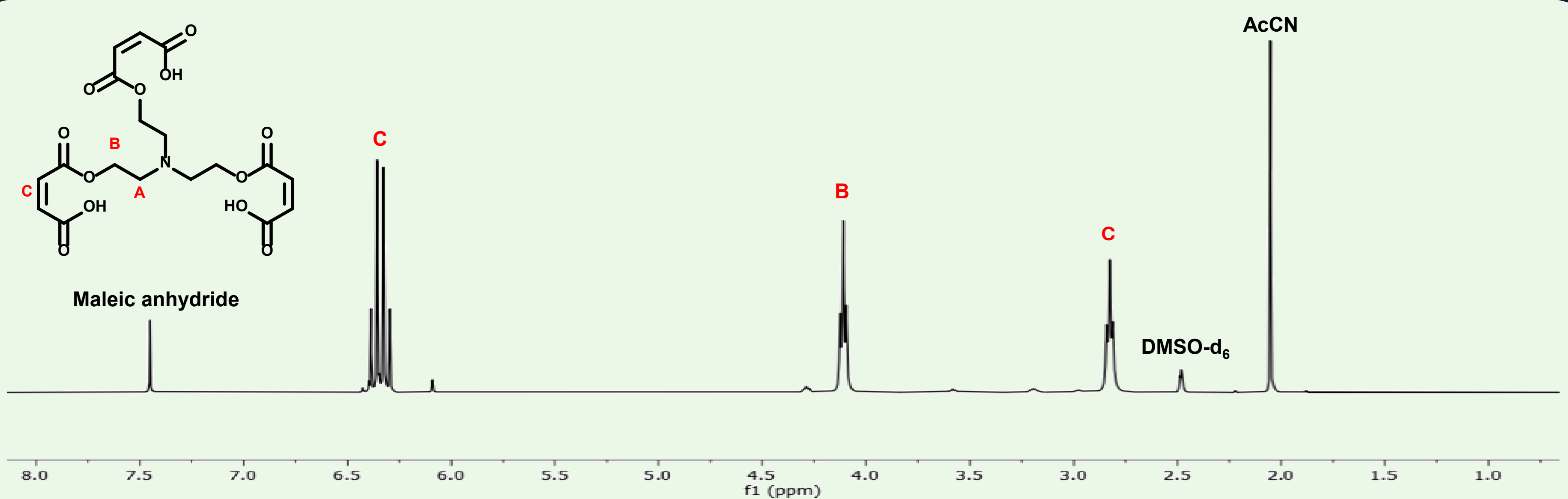
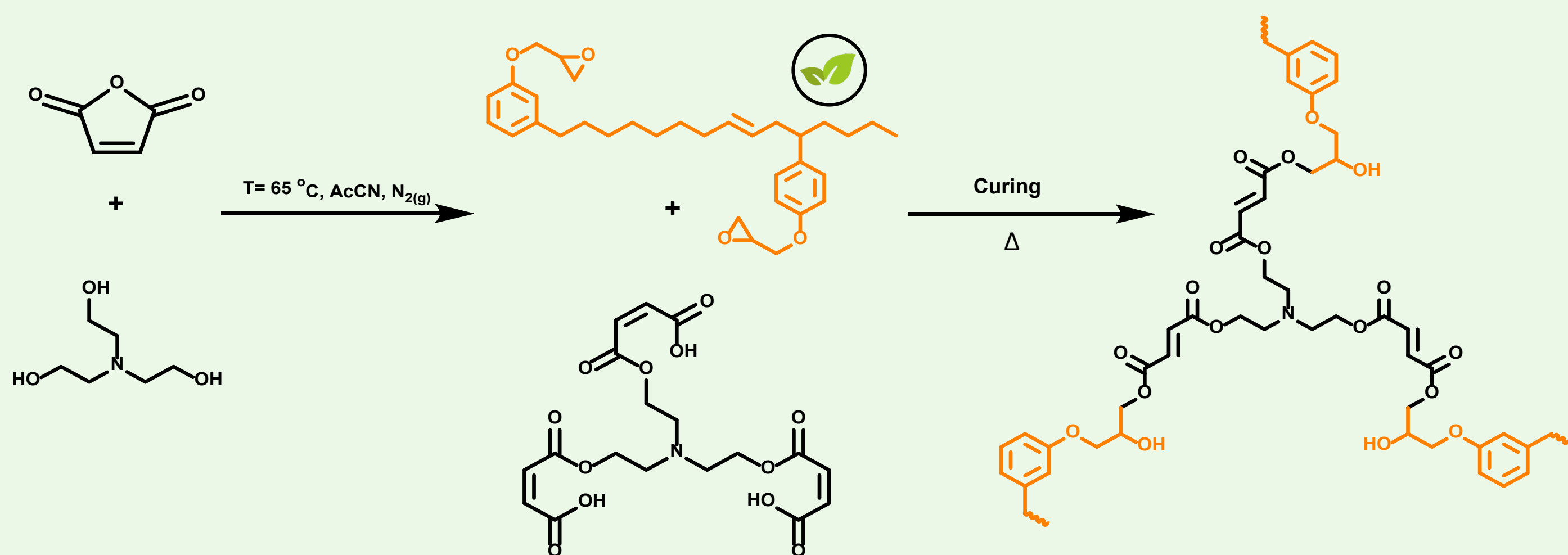


Vitrimer composite key aspects

- Reprocessable matrix → **reparable** composites by the action of heat and/or light
- **Extended lifetime**
- Possibility to exploit **bio-based components** such as cardanol (1) and vanillin (2) based building blocks and **biobased fibers** like flax, kenaf, and sisal as reinforcing agents



Catalyst free vitrimer preparation



Conclusions and Outlook

- Cross linker synthesis optimization →
- Formulations with different cross linker / resin ratios →
- Matrix reprocessability test →
- Use different exchange mechanisms →
- Composite manufacturing →

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References

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