Future perspectives on biocomposite products

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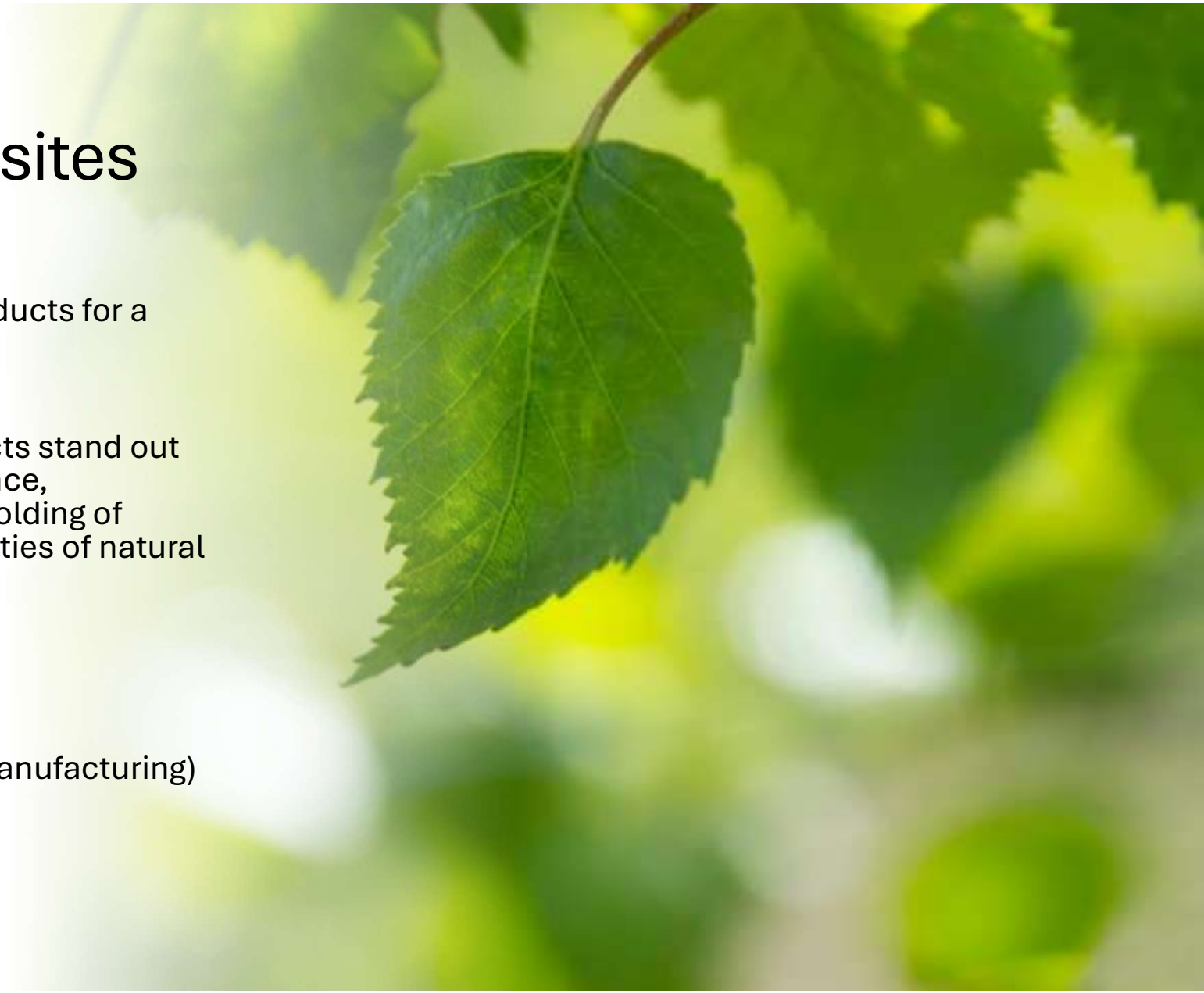
KCL Biocomposites

- We offer biocomposite products for a wide range of applications.

- KCL’s biocomposite products stand out with exceptional performance, combining the effortless molding of plastics with unique properties of natural fibres.

- Applications include:
  - Injection moulding
  - 3D printing (additive manufacturing)



Why Biocomposites matter?

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Regulatory drivers

New regulations encourage industries to use environmentally friendly options.

Consumer and business demand

Growing demand for materials that reduce carbon footprint.

Product performance

Strength, acoustic performance, low heat conductivity, high HDT, post processing...

How to meet the demand?

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Establishing biocomposite factory that is capable of:

Compaunding innovative functional natural fibers into polymer matrix enhancing properties

Supporting circular economy principles including take-back systems and recycling processes for bio composites.

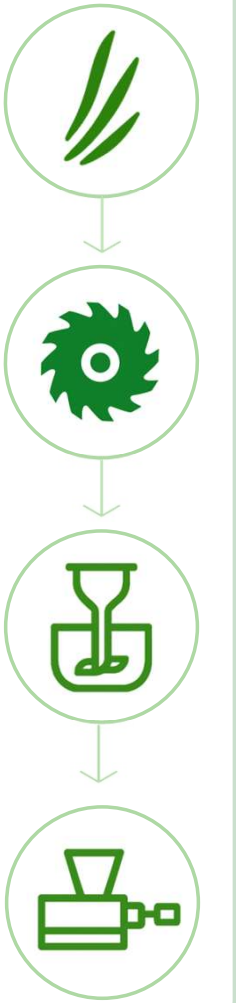
Tracing material flows ensuring transparency and regulatory compliance

Biocomposites at KCL

Biocomposites at KCL – A Brief Journey

- KCL recognized significant business potential in biocomposites and saw them as a strong complement to its existing infrastructure and capabilities
- KCL acquired a biocomposite production line from UPM at the end of 2024 Including remaining raw materials and patent portfolio
- Based on UPM’s former Formi products, KCL relaunched its first product lines: KCL Formi 3D for additive manufacturing and KCL Formi Pro for injection molding

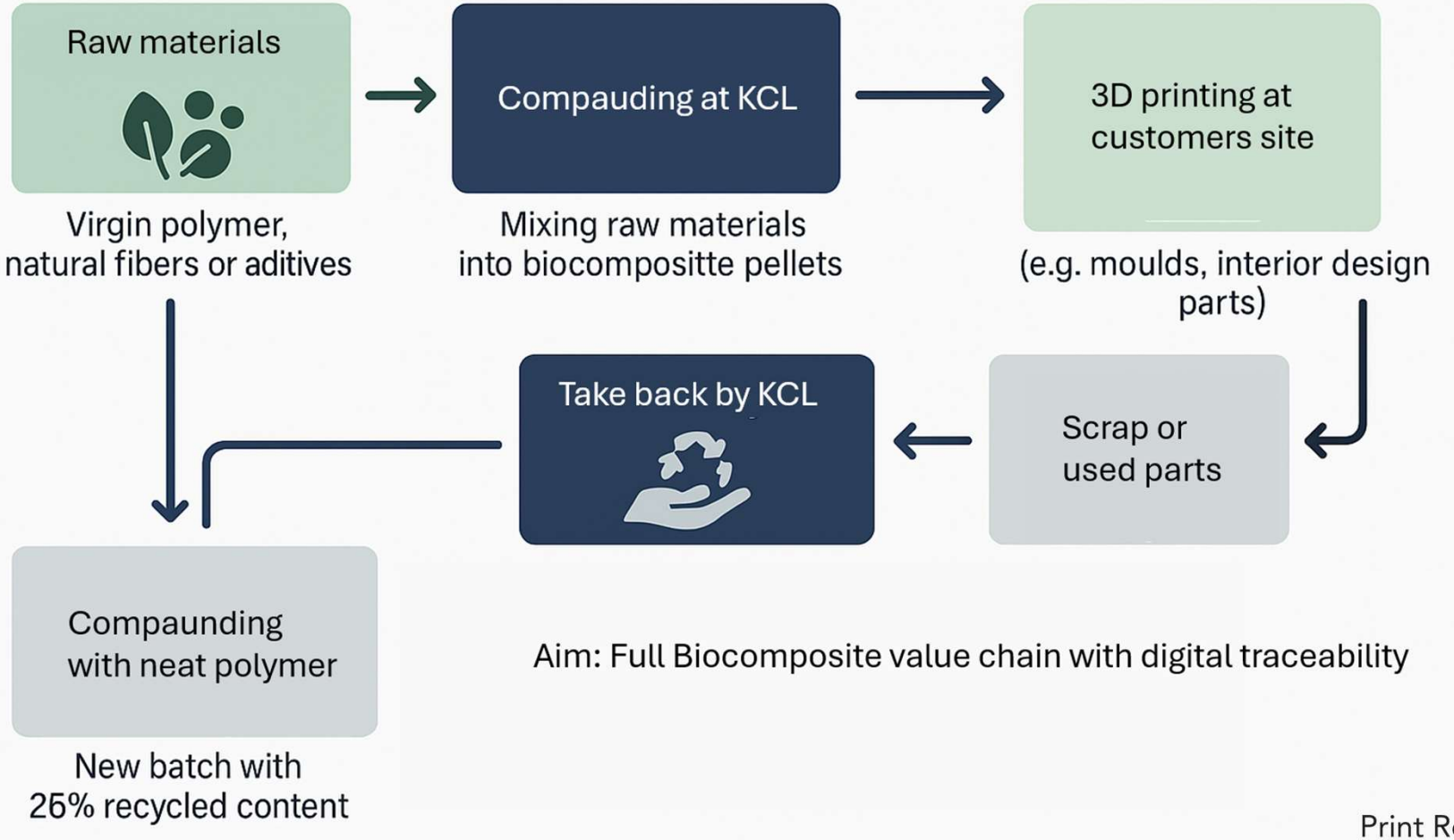
KCL Formi® biocomposites manufacturing process



Whats next?

- Modification the prodution line to be able to handle different kind of natural fibres, and sidestream raw materials
- Establisigh full circular ecosystem for our biocomposites

Closed loop recycling of KCL Formi®3D



Think Big.
Print Responsibly.

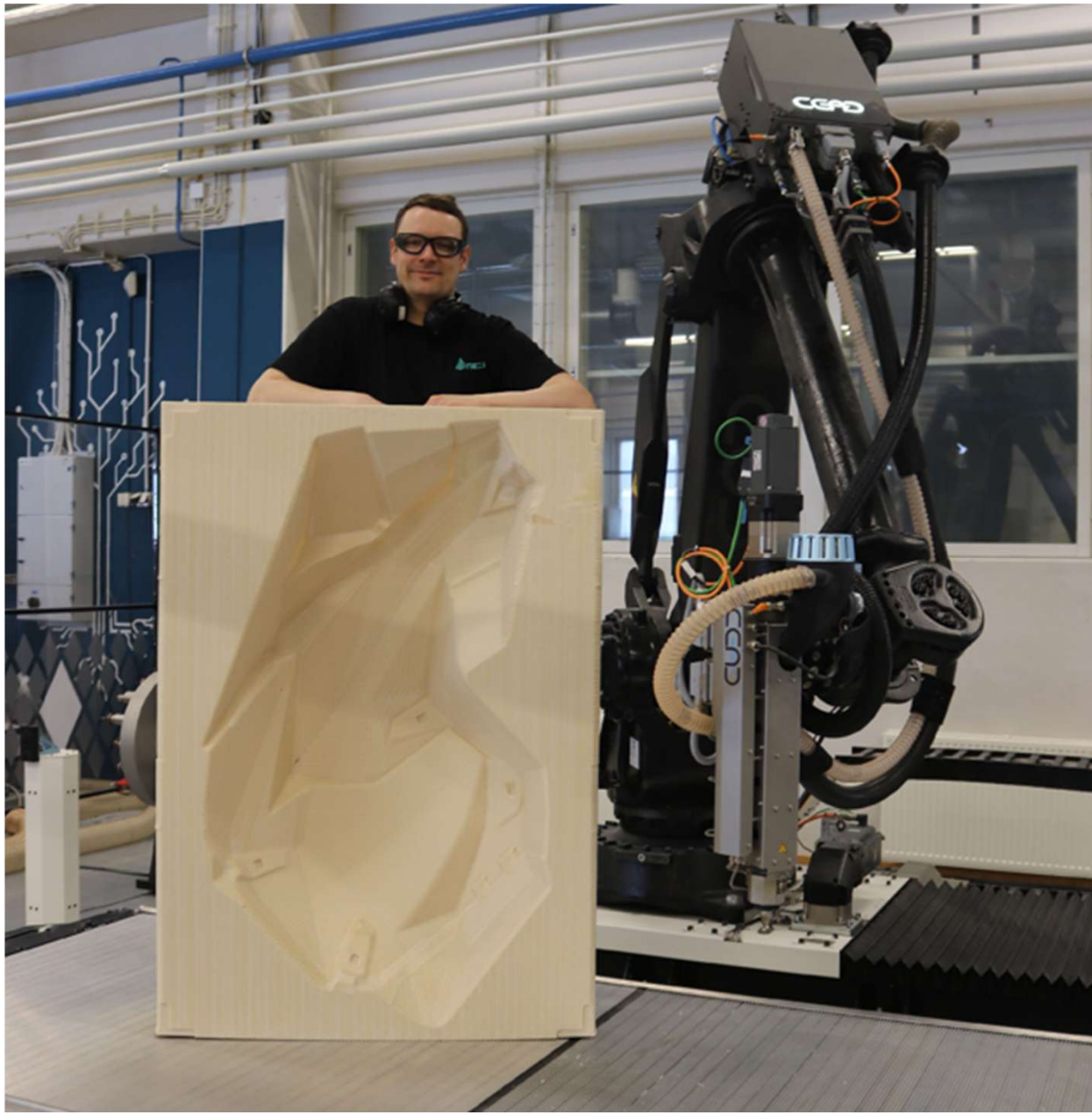
KCL

CASE
Large format additive manufacturing (LFAM)

Large-scale 3D printing – a rapidly growing industrial sector

Large-format additive manufacturing is transforming production by enabling molds, industrial design components, and even furniture. The full potential is still unfolding, with new applications emerging every year.

Starting is fast and cost-efficient, requiring no massive upfront investments.



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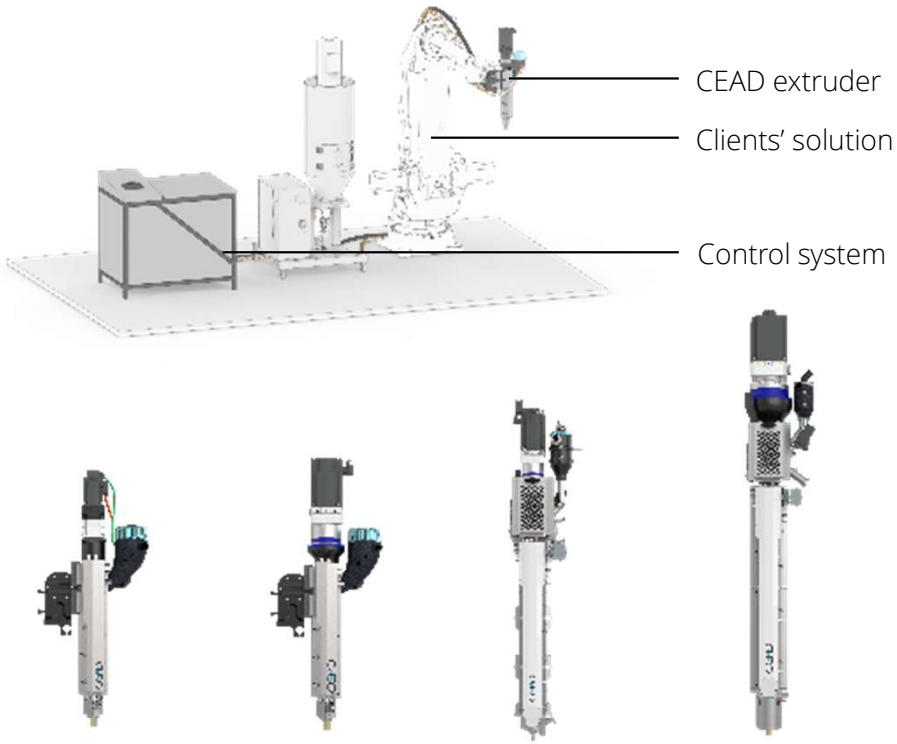
CEAD solutions

Stand-alone system



Turnkey system

- To print multiple parts
- Control the process with CNC industrial controller and G-code
- Scale up business to expand capabilities

Company

We deliver & install solutions worldwide

We have installed more than **200+** large scale additive manufacturing solutions in over **20+** countries worldwide.

Next up:
Joyce Pont / Raw Idea

Future perspective of Biocomposites materials

According to Raw Idea

Who is Raw Idea?

Let me start by introducing Raw Idea; a company that's redefining the boundaries of design, engineering, and sustainability.

At Raw Idea, we do everything in-house:
our **designers** dream up innovative concepts, our **engineers** optimize them for performance, our **operators** bring them to life on large-scale 3D printers, and our **material specialists** ensure the right (bio-based) composites are used.

We started 5 years ago with desiging,engineering and printing a 5 meter vessel

Experience is everything

We frequently work with **KCL's bio-based materials**, combining sustainability with high-performance results.

This allows us to produce **high-end, customized solutions**, including furniture for clients like **Jacky Jackson, the brother of Michael Jackson**.

Yes, even the stars want sustainable 3D-printed designs.

Closed Loop

We see **biocomposite materials** as the foundation of a new era: **strong, eco-conscious**, and capable of supporting **innovative, high-end design applications**.

We envision:
- Biocomposites as mainstream in **furniture, interiors, and construction**.
- **AI-driven design** integrated with 3D printing.
- Fully **sustainable production**, minimizing waste and carbon impact.
- **Closed loop** manufacturing.

“3D Printing: because sometimes reality just needs a few extra layers.”

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