



DENSIFICATION OF HARDWOOD: EXAMPLES FOR NON-STRUCTURAL APPLICATIONS

Swiss Wood Solutions AG
Oliver Kläusler
CEO, Dr. ETH
Switzerland

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Autochthonous Hardwoods and their contribution to the resilience of the forestry sector
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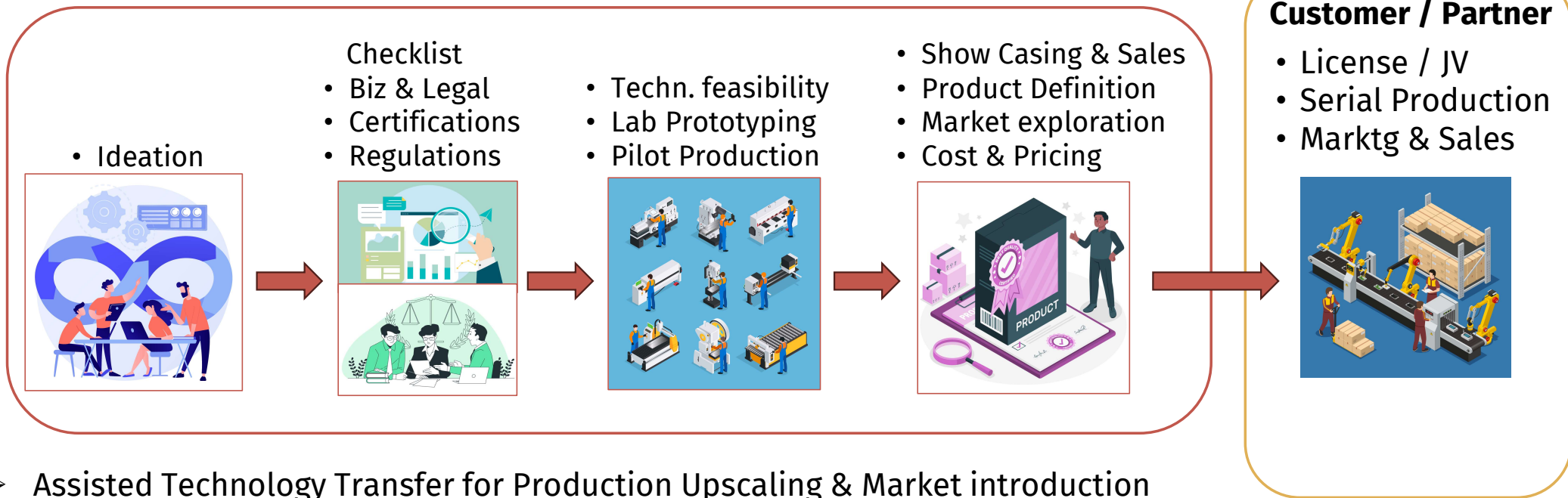
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SWISS WOOD SOLUTIONS AG

INTERN. BUSINESS & TECHNOLOGY INCUBATOR

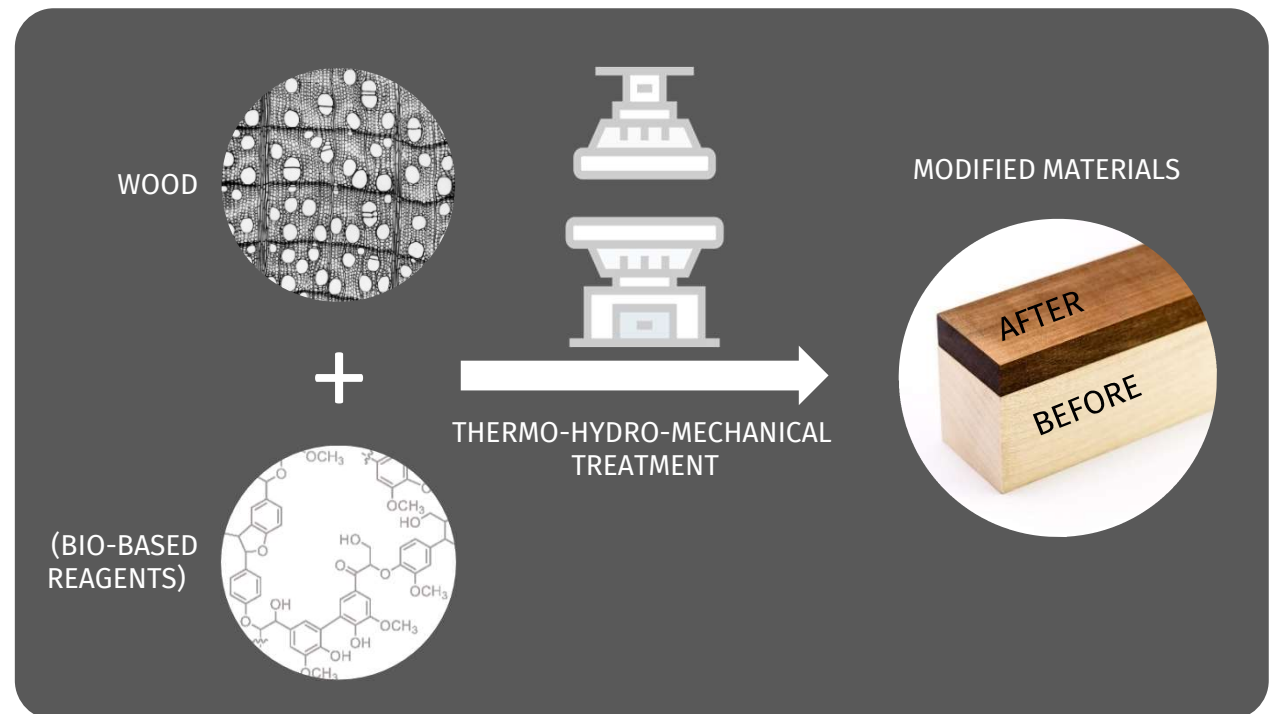


- Assisted Technology Transfer for Production Upscaling & Market introduction
- The customer/partner can *outsource the innovation risks to our incubator* and at the same time *increase the chance of innovation success*.
- Preference for unusual application fields for wood-based materials & composites

SEVERAL TECH APPROACHES

CORE TECH: GREEN TM+ PROCESS

- Combination of bio-based reagents with Thermo-Mechanical Densification
- Applied to various materials in combination with timber / veneers
- Modification of
 - ✓ Hardness & Density
 - ✓ Colour
 - ✓ Mechanics (stiffness, strength)
 - ✓ Dimensional stability
- Integration of additional Functionalities



WOOD MODIFICATION

GREEN TM+ PROCESS

➤ Example:

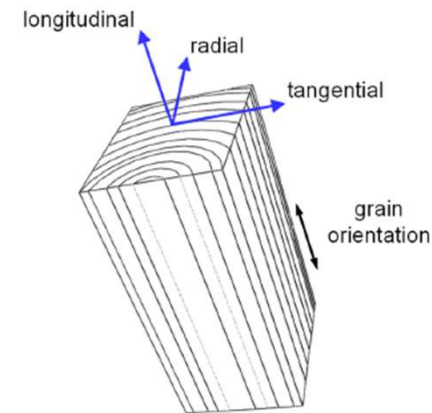
The resulting mechanical behaviour of the product (MOE, strength, etc.) is –among other parameters– strongly influenced by

(1) the angle of the grain direction to the densification direction, and

(2) the load direction when using the product

➤ Adaptation of the process parameters depending on the desired product properties and the conditions of use

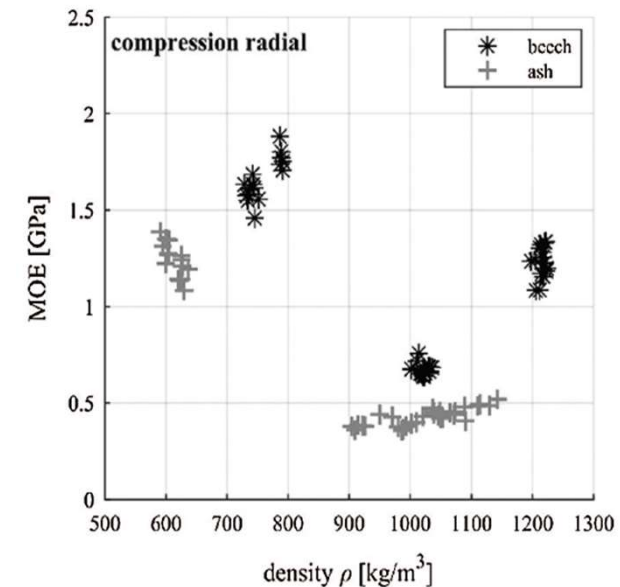
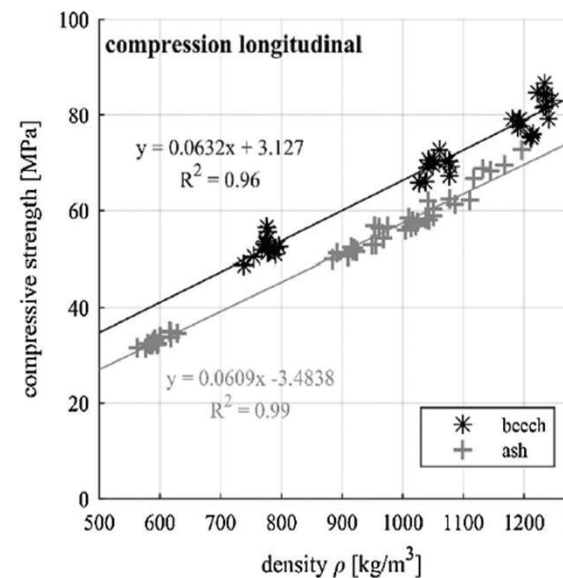
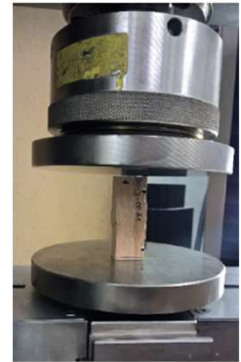
➤ The advantageous ductility remains intact



Example:

Compression Tests
DIN 52185 (1979)
DIN 52192 (1979)

after densification
in radial direction



EXAMPLES

SONOWOOD

- Very high acoustic & aesthetic quality
- Alternative to overused species (e.g. certain Ebony spec. or Grenadill spec.)
- No CITES restrictions
- Free Trade & Travel
- No reputational risk (Professionals)
- Various certified, Europ. species available



Pacific Quartet
PQV Vienna

Klänge aus Pannonien

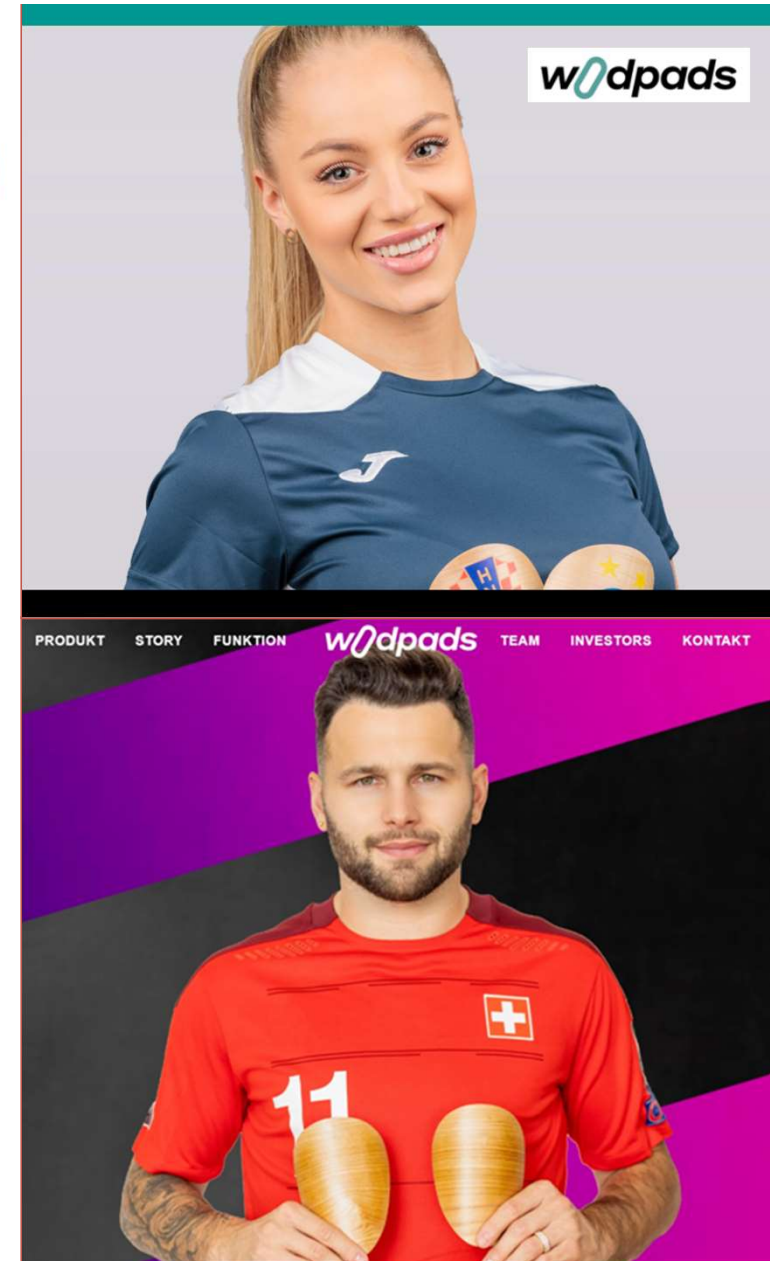
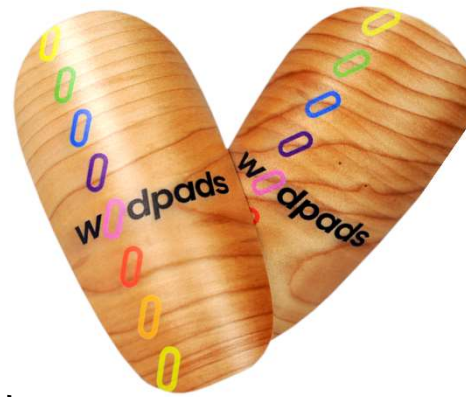
Konzert zur CD-Taufe



EXAMPLES

WOOD PADS

- Wooden Shin Guards for football players
- CE-certified safety from FSC-certified wood
- Alternative to the common plastic shinguards
- Nicer: Ladies & Gents love the aesthetic of wood more than plastic
- Lighter & thinner: half the weight of competing plastic products
- Ambassador **Ana Markovic** (Croatian national team):
“A clear game changer for me! The lightness and the wearing comfort offer an incredibly good feeling when playing.”
- Ambassador **Renato Steffen** (Swiss national team):
“Lightweight, very comfortable and climate-friendly. For me, an investment in the future.”
- Our **Licensee**: <https://woodpads.ch/>



EXAMPLES

TIMBERCARDS

- World's first plastic-free, wooden payment Card
- High-Precision Product (ISO-requirements for PVC-Banking Cards)
- Certified as Credit Card, Debit Card and Prepaid Card
- Home-compostable (TÜV-certified)
 - except magnetic stripe & chip module
- Our **Licensee**: <https://www.copecto.com/>



LET'S KEEP INNOVATING

Please feel free to contact us for **YOUR next Innovation!**

Let's do the JUMP!



Our Incubator

YOUR Business



*Thank you very much
for your attention!*