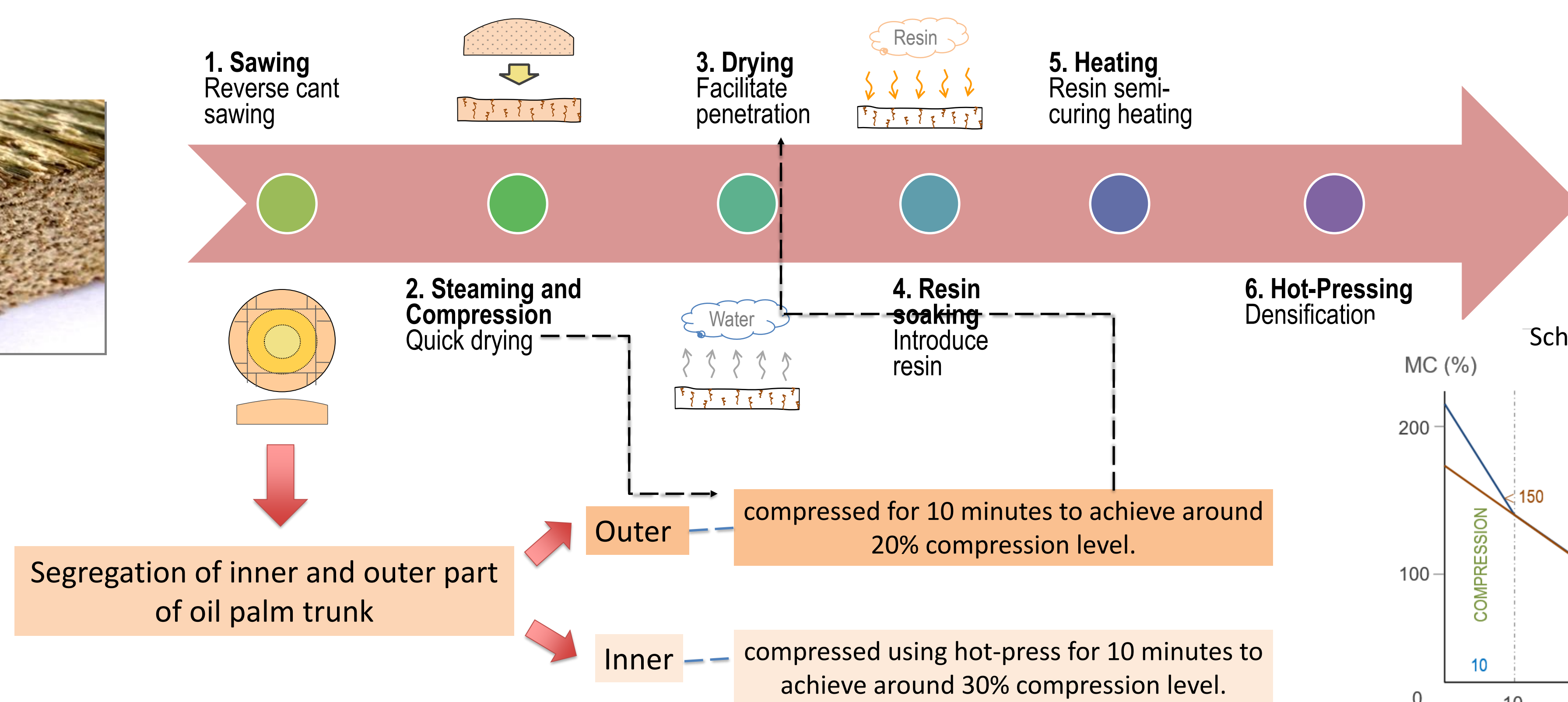




# A Method of Making Compreg Palm Wood

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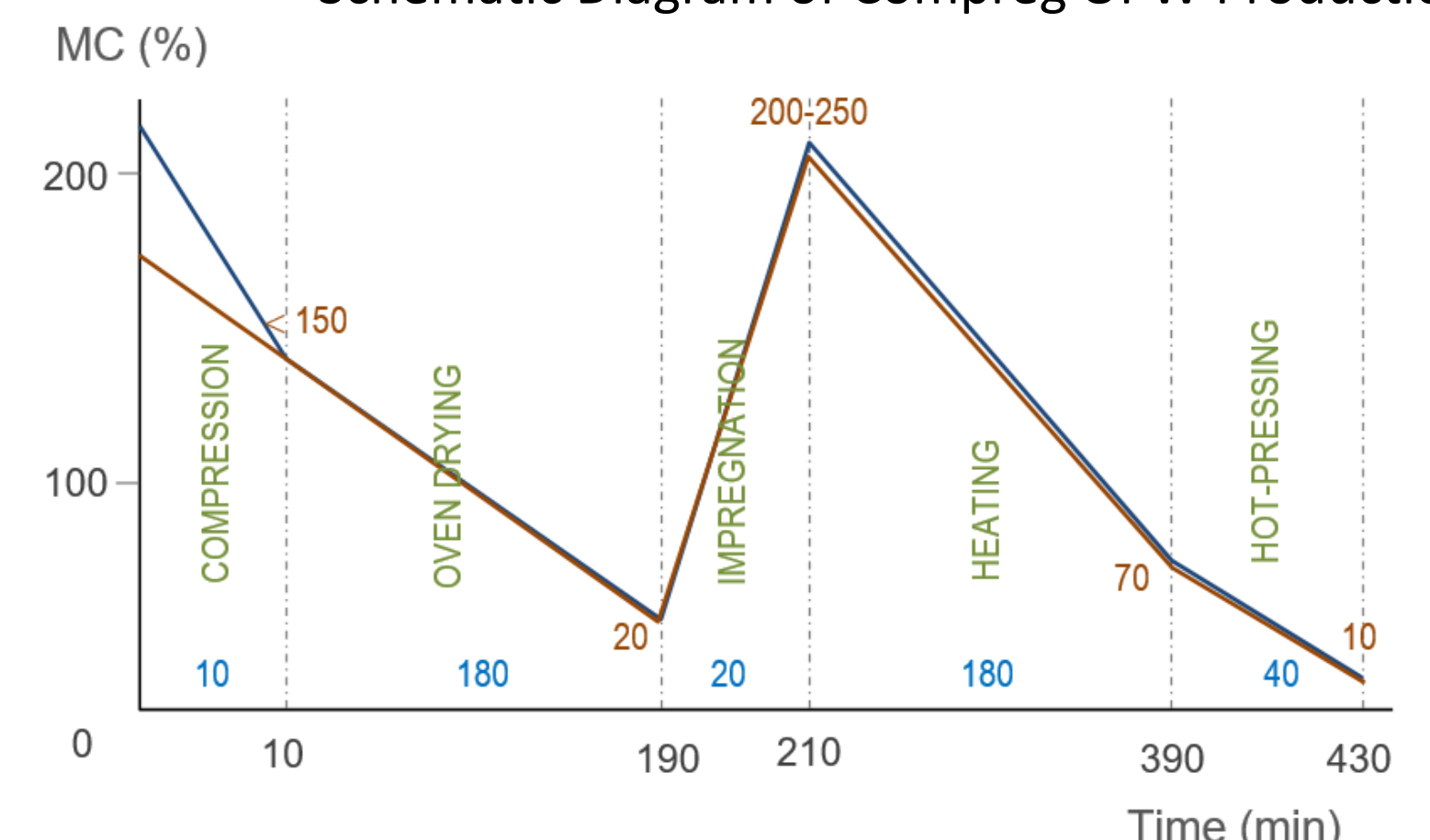
Unmodified oil palm wood (OPW)



Compreg oil palm wood (OPW)



Schematic Diagram of Compreg OPW Production



## TECHNOLOGY

Compreg palm wood with desirable biological, physical and mechanical properties suitable for structural applications.

## CURRENT ISSUES

- The best parts of oil palm trunk are located at the outer layer of the trunk, which contradicts with conventional wood that having the best parts at the core of the trunk. Conventional log sawing techniques does not fully utilize the best parts of the oil palm trunk.
- Even when the best lumber is produced, the oil palm wood itself has inherent inferior properties that make it unsuitable for a variety of end use. It's low and uneven density, low strength, low durability and poor machining characteristics makes the oil palm wood inferior to conventional wood.
- There are also problems in the drying process of oil palm wood due to its high and uneven distribution of moisture.
- The palm wood enhancement process takes a long time and requires precise steps and exact variables to enable the production of compreg oil palm wood with desirable biological, physical and mechanical properties. In summary, the existing methods of producing compreg oil palm wood is difficult and time consuming.

## INVENTIVENESS & NOVELTY

Modifying the sawing, compression, and drying steps in the 6-steps process. The inner part and outer part of the trunk were segregated and processed differently. As the result, the utilization rate of the material increased from just 30% to 90%, and the total processing time shorten by more than 10 times (from 88 hours to 8 hours).

## USEFULNESS & APPLICATION

- The primary use of the integrated treatment and treatment process of oil palm wood is to produce high performance oil palm wood. This product can be used as housing, furniture and also decorative material.
- The potential application can be extended to other non-woody materials such as other species of palms (Eg: Coconut Palm, Date Palm).

## IMPACT OF THE PRODUCT

- Easier processes that can be done by medium skilled operator with simpler apparatuses.
- Very fast process by at least a factor of 10.
- Cheaper processing cost.
- Fully utilization of the material as both inner and outer part of the oil palm trunks could be utilized.
- The produced compreg palm wood has excellent dimensional stability, mechanical properties and biological durability compared to that of conventional wood intended for exterior applications.

## MARKET POTENTIAL

- International wood-based products market to replace conventional wood-based products
- Processing methods that could be adopted by local and global wood-based industries
- Alternative to the current wood-based products

TRL : 5 - Validation in real environment



Project Leader  
Team members

Dept./Faculty  
Email  
Phone  
Expertise

: Dr. Lee Seng Hua  
: Dr. Mojtaba Soltani, Prof. Dr. Zaidon Ashaari, Assoc. Prof. Dr. Edi Suhaimi Bakar (retired)  
: Institute of Tropical Forestry and Forest Product, Universiti Putra Malaysia  
: lee\_seng@upm.edu.my  
: 03-97691786 / +6017-9625131  
: Wood Science and Technology

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