The 8th IWoRS

Swiss bel Hotel, Ambon, October 21-22, 2016

"Integrated development of wood, ecosystem and biodiversity for sustainable energy and mitigate of climate change"

Programme Book

SCHEDULE

The 8th International Symsopsium of Indonesian Wood Research Society (IWoRS)

AMBON, OCTOBER 21, 2016

Waktu	Acara	Moderator
08.00-08.30	Registration	
09.00-09.30	Opening Ceremony	
09.00-09.10	Organizing Committee Report	
09.10-09.20	Opening ceremony by Head of MAPEKI	
09.20-09.30	Opening ceremony by Rector of Pattimura University	
09.30-09.40	Opening ceremony by Ambon Mayor	
09.10-10.00	Coffee Break	
10.00-11.00	Keynote Speaker I : Dr. Sang Bum Park *Conversion of Woody Resources Into Eco-Friendly Materials by Carbonation*	Prof. Dr. Ir. Yusran Masijaya, M.Sc
11.00-12.00	Keynote Speaker II : Prof. Dr. Ir. Dodi Nandika, MS *Water level management in indonesia's wetland plantation forest to reduce subterranean termite infestation; case in Acacia crassicarpa plantation*	
12.00-13.00	Lunch	
13.00-15.00	Parallel Sessions I	
15.00-15.30	Coffee Break	
15.30-17.00	Parallel Sessions II	
17.30-18.00	The Closing of IWoRs 2016	
19.00-21.00	Banquet	

DAFTAR PESERTA PRESENTASI MAKALAH

BIDANG ILMU : WOOD PHYSICS
RUANG : BANDA NAIRA 1

NO	KODE ABSTRAK	WAKTU	NAMA	JUDUL
Moderator : Evalina Herawati				
1.	A2-01	13.00-13.40	Haruna Aiso	Changes in Anatomical and Chemical Characteristics by Reaction Wood Formation in 28 Tropical Angiosperms Naturally Grown in Indonesia
2.	A2-02		Imam Wahyudi	Several Improvement Techniques for The Inferior Quality of Jabon, Sengon, and Teak Woods From Plantation Forest
3.	A2-03		Tomy Listyanto	Heat Treatment on Colour Change and Durability of Perhutani Superior Teak (*Tectona Grandis* L.F)
4.	A2-04		Wahyu Hidayat	Heat Treatment of Okan Wood (*Cylicodiscus Gabunensis*): Effect of Treatment Duration and Clamping on The Color Change, Physical and Mechanical Properties
		13.40-13.50	**DISKUSI**	
Moderator : Imam Wahyudi				
5.	A2-05	13.50-14.30	Woo-Seok Jeon	Anatomical Characteristics of Stem, Branch, and Root In

HEAT TREATMENT OF OKAN WOOD (*Cylicodiscus gabunensis*): EFFECT OF TREATMENT DURATION AND CLAMPING ON THE COLOR CHANGE, PHYSICAL AND MECHANICAL PROPERTIES

Wahyu Hidayat[1,2], Yue Qi[1], Jae-Hyuk Jang[1,3], Fauzi Febrianto[4], Seung-Hwan Lee[1], and Nam-Hun Kim[1,*]

[1] *Department of Forest Biomaterials Engineering, College of Forest and Environmental Sciences, Kangwon National University, Chuncheon 24341, Republic of Korea*

[2] *Department of Forestry, Faculty of Agriculture, Lampung University, Bandar Lampung 35145, Indonesia*

[3] *The Institute of Forest Science, Kangwon National University, Chuncheon 24341, Republic of Korea*

[4] *Department of Forest Products, Faculty of Forestry, Bogor Agricultural University, Bogor 16680, Indonesia*

E-mail : kimnh@kangwon.ac.kr

ABSTRACT

The use of Okan wood (*Cylicodiscus gabunensis*) for decking and flooring in Korea began to rise due to its exotic color and visual appearance that can be further optimized by heat treatment. This study evaluated the color changes, physical and mechanical properties of Okan wood after heat treatment with/without clamp at different treatment duration. Heat treatment of sapwood and heartwood was performed at 180 °C for 1, 2, 3, and 4 h. The results showed that in both sapwood and heartwood with/without clamping, the changes in color appeared mostly by the reduction in lightness (L^*) and yellow/blue chromaticity (b^*) and the values further decreased with increasing treatment duration, while red/green chromaticity (a^*) was not significantly affected by treatment duration. The weight loss and volume shrinkage increased with the increase of treatment duration, while the density of heat treated wood only slightly decreased due to a balance reduction of weight loss and volume shrinkage. Clamping during heat treatment protected wood surfaces from direct contact with heated air, resulted in lower weight loss and volume shrinkage

than samples without clamping. Heat treated wood evidently absorbed less water compared to control as shown by lower equilibrium moisture content and water absorption. In addition, the heartwood of heat treated Okan absorbed less water than sapwood. The mechanical evaluation showed the reduction of modulus of rupture and modulus of elasticity after heat treatment. The application of clamping minimized the strength reduction in both sapwood and heartwood, particularly after heat treatment for 1 and 2 h. Consequently, the treatment duration and clamping contributed significant effect on the properties of heat treated Okan wood.

Keywords : Heat Treatment, Clamping, Color Change, Dimensional Stability Treatment Duration