

# ***IAWPS 2015***

*60th Anniversary of the Japan Wood Research Society*

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## ***International Symposium on Wood Science and Technology 2015***

***Tower Hall Funabori, Tokyo, Japan  
March 15-17, 2015***

***Conference Program***



# IAWPS 2015

**International Symposium on Wood Science and Technology 2015**  
**Tower Hall Funabori, Tokyo, Japan    March 15-17, 2015**

Organized by  
The Japan Wood Research Society (JWRS)

Supported by  
International Association of Wood Products Societies (IAWPS)

**Conference Chairman of IAWPS 2015:**

Akira Isogai (The University of Tokyo)

**President of JWRS:**

Junji Sugiyama (Kyoto University)

**Organizing Chairman of IAWPS 2015:**

Tadahisa Iwata (The University of Tokyo)

**Conference Chairman of 65th Annual Meeting:**

Masamitsu Ohta (The University of Tokyo)

**Organizing Committee:**

Nobuaki Hattori (Tokyo University of  
Agriculture and Technology)

Takuro Hirai (Hokkaido University)

Akio Inoue (Forestry and Forest Products  
Research Institute)

Tetsuo Kondo (Kyushu University)

Shigehiko Suzuki (Shizuoka University)

Hiroyuki Yano (Kyoto University)

**International Committee:**

Martin P. Ansell, UK

David Cown, New Zealand

Charles E. Frazier, USA

Barry Goodell, USA

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John F. Kadla, Canada

Stephen S. Kelley, USA

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Robert H. Pelton, Canada

John Ralph, USA

Jack N. Saddler, Canada

Lennart Salmén, Sweden

Gary S. Schajer, Canada

Todd F. Shupe, USA

John S. Sperry, USA

**Session Organizers:**

**1. Wood Physics**

Yoshihisa Fujii (Kyoto University)  
Satoru Tsuchikawa (Nagoya University)  
Masamitsu Ohta (The University of Tokyo)

**2. Timber Engineering**

Kenji Aoki (The University of Tokyo)  
Nasahiro Inayama (The University of Tokyo)  
Takuro Mori (Kyoto University)  
Kei Tanaka (Oita University)

**3. Wood Chemistry**

Toshiyuki Takano (Kyoto University)  
Yuji Tsutsumi (Kyushu University)  
Tomoya Yokoyama (The University of Tokyo)

**4. Composite Materials and Adhesion**

Tsuguyuki Saito (The University of Tokyo)  
Akio Takemura (The University of Tokyo)  
Shin-ichiro Tomura (Forestry and Forest  
Products Research Institute)  
Hiroyuki Yano (Kyoto University)

**5. Cell Formation and Wood Structures**

Kazuhiko Fukushima (Nagoya University)  
Keiji Takabe (Kyoto University)  
Masahisa Wada (Kyoto University)

**6. Biodegradation and Preservation of Wood**

Fumio Eguchi  
(Tokyo University of Agriculture)  
Kiyohiko Igarashi (The University of Tokyo)  
Tsuyoshi Yoshimura (Kyoto University)

**7. Biorefinery**

Tadahisa Iwata (The University of Tokyo)  
Takashi Watanabe (Kyoto University)  
Yasumitsu Uraki (Hokaido University)

**Local Committee:**

Tadahisa Iwata, Kiyohiko Igarashi, Tsuguyuki Saito, Takuya Akiyama, Kenji Aoki, Takuya Ishida  
Daisuke Ishii, Satoshi Kimura, Hirotaka Koga, Ryota Kose, Kei Maeda, Satoshi Nakaba  
Tomoaki Soma, Miyuki Takeuchi, Tamami Terada, Tomoya Yokoyama, Makoto Yoshida

**Conference Secretariat:**

Kiyohiko Igarashi (The University of Tokyo)

## 60th Anniversary Welcoming remarks

As chair of the 60th Anniversary of the Japan Wood Research Society (JWRS), it is an honor to share our thought on this special occasion in the history and to welcome you to the IAWPS International Symposium on Wood Science and Technology 2015.

In 1955, members of the Japanese Forest Society launched the JWRS to serve as a hub for the development in the field of wood science and technology in Japan. The JWRS was for a long time an unincorporated organization but was reformed and established as a Ippan Shadan Hojin (general incorporated association) in 2010.

Traditionally in eastern Asia, sixty years from birth is specially celebrated. In Japan, this celebration is called “Kanreki”, which means renewal or reborn. According to the traditional lunar calendar, the number 60 means accomplishing one great circle of life and starting another one. The JWRS is now, at the beginning of 2015, ready to seek solutions for the paradigm shift to achieve "sustainable development" from all the fields of wood science and technology.

Memorial ceremony is scheduled on March 15, followed by special symposium " Wood science brings future “. We also publish a book entitled “ Wood era revives - signpost to the future - “. Moreover our official journal, *Journal of Wood Science* and *Mokuzai Gakkaishi*, will provide special editions of volumes in 2015.

Lastly, on behalf of the JWRS, I would like to appreciate again all the participants to IAWPS2015 and but not least, to the organizing committee who brought this conference successful.

A handwritten signature in black ink, appearing to read 'Junji Sugiyama'.

Junji Sugiyama  
President  
The Japan Wood Research Society



## Preface for IAWPS 2015

On behalf of the Organizing Committee, I wish you a warm welcome to the capital of Japan and The International Symposium on Wood Science and Technologies (IAWPS2015), which is held from March 15th to 17th, 2015, at Tower Hall Funabori. This symposium is co-organized by The Japan Wood Research Society (JWRS) and The International Association of Wood Products Societies (IAWPS), and is held as the 60th Anniversary of JWRS.

Wood is the most abundant renewable resource for chemicals, materials, furniture, and building components in this planet. Besides the importance of wood to our society, the research & developments and education in this topic have been somewhat scattered in Japan and around the world. In this 21st century, creation and establishment of the environmentally friendly and sustainable society is a part of our obligations as researchers, engineers and educators, handling wood and its related science and technologies. This is because so far only plants can immobilize atmospheric carbon dioxide to renewable biomass, contributing to prevention of the issue of global warming. The adequate cycling and balance between the tree plantation and wood utilization is an efficient way to create the low-carbon society. Therefore, it is meaningful that now we gather here, Tokyo, from all over the world, discuss wood science and technologies and proceed with information and human exchanges in this symposium.

Besides the 2 keynote and 16 invited lectures, 385 oral and poster papers are presented in this symposium, and the presentation fields widely expand to wood physics, timber engineering, wood chemistry, composite materials and adhesion, cell formation and wood structures, biodegradation and preservation of wood, and wood biorefinery. The latest fundamental and application researches & developments and engineering of the above fields are presented in this symposium, and I believe that it is surely fruitful and enjoyable for all of you to participate in this event.

Tokyo is the famous city of OMOTENASHI or kind hospitality as other cities in Japan. Therefore, you would enjoy not only wood science and technologies, participating in this symposium, but also beautiful early spring season, having sightseeing in and around Tokyo. I would like to thank all of invitees and participants, coming from various countries of the world.



Sincerely yours,

A handwritten signature in cursive script that reads "Akira Isogai".

Akira Isogai  
Conference Chairman of IAWPS 2015  
Bionanomaterials and Cellulose Science  
Department of Biomaterials Science  
The University of Tokyo

## Invitation to the 65th Annual Meeting of Japan Wood Research Society

Dear participants of IAWPS 2015,

Following to the International Symposium on Wood Science and Technology 2015, the Japan Wood Research Society (JWRS) holds the 65th Annual Meeting at the same place, from the afternoon of the 17th March 2015. This annual meeting was planned as one of the events celebrating the 60th Anniversary of the JWRS, then all participants of the IAWPS 2015 are welcomed to attend it. It is regrettable that almost presentations will be done by Japanese, because this meeting is a domestic one, but it would be a chance for you to witness the vast fields of Japanese researches on the wood related sciences: I am sure that you can understand many figures of poster presentations.

The banquet of the 16th March evening is also co-organized with the International Symposium and the Annual Meeting of JWRS. It will be also for your chance to have acquaintance with many Japanese researchers.

Hoping see you at our annual meeting also,



Sincerely yours,

A handwritten signature in black ink, appearing to read 'Ohta' followed by a stylized flourish.

Masamitsu Ohta  
Chairman of the Annual Meeting of JWRS

## General Information

**Registration desk** will be open at the following time:

March 15 (Sun)	17:30-20:00	82 Ale House, Lotte City Hotel Kinshicho 4F (at Welcome reception)
March 16 (Mon)	9:00-19:00	Tenji hall, Tower Hall Funabori 1F
March 17 (Tue)	9:00-12:00	Tenji hall, Tower Hall Funabori 1F

**Shuttle bus service** (prior reservation essential) between Tobu Hotel Levant Tokyo and Tower Hall Funabori is available free of charge. The buses will depart at the following time (approx. 30 min for each way):

	From Tobu Hotel Levant Tokyo	From Tower Hall Funabori
March 16 (Mon)	8:30	21:00
March 17 (Tue)	8:30	14:00

**Lunch box** (prior reservation essential) will be delivered at the following rooms of Tower Hall Funabori:

March 16 (Mon)	room Heian, 2F	11:00-15:00
March 17 (Tue)	rooms Fukujyu and Tougen, 2F	12:30-14:30

**Wireless internet access** will be freely available in the Tenji hall, 1F.

**Communication space** and free drinks will be provided at the back rooms of Tenji hall, 1F.

**Cloakroom service** will be available at the rooms 302 and 303, 3F.

## **Social Hours**

### ***Welcome reception:***

March 15 (Sun), 18:00-20:00, 82 Ale House, Lotte City Hotel Kinshicho 4F

<http://www.eok.jp/restaurants-bars/pub/british/82ale-house-lotte-city-hotel-kinshicho>

All participants are invited free of charge to the welcome reception.

### ***Banquet*** (prior reservation essential):

March 16 (Mon), 19:00-20:30, room Zuiun-Heian, Tower Hall Funabori 2F

Welcome drinks will be provided from 18:30.

## **Notes for Presentations**

### ***Oral Presentation***

A LCD projector with a D-sub 15 pin connector will be set up in each session room. Presenters are required to bring your own computer for presentation.

Total time for oral presentations including Q&A time is 20 min. It is thus recommended to finish your talk within around 15 min.

Total time for invited lectures including Q&A time is 30 min. It is thus recommended to finish your talk within around 25 min.

### ***Poster Presentation***

The size of the poster board is 120 cm (W) x 180 cm (H). Pins or tape for putting your poster on the board will be supplied by the organizing committee.

Poster presentations for each session will be held at the following schedule,

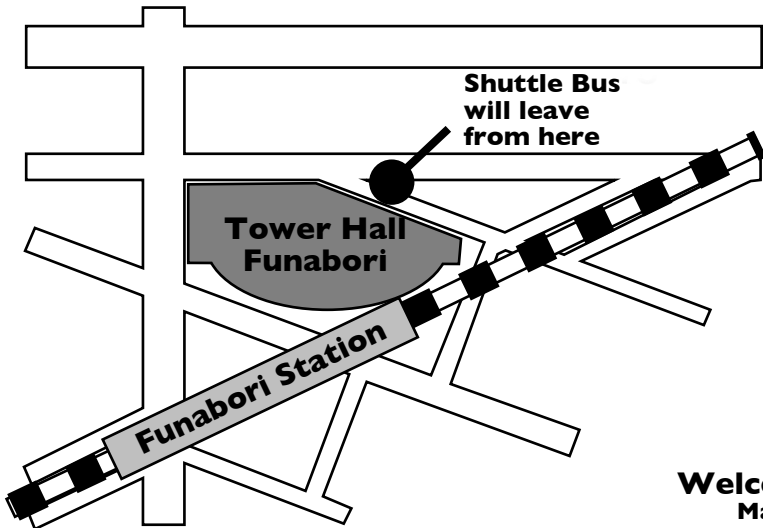
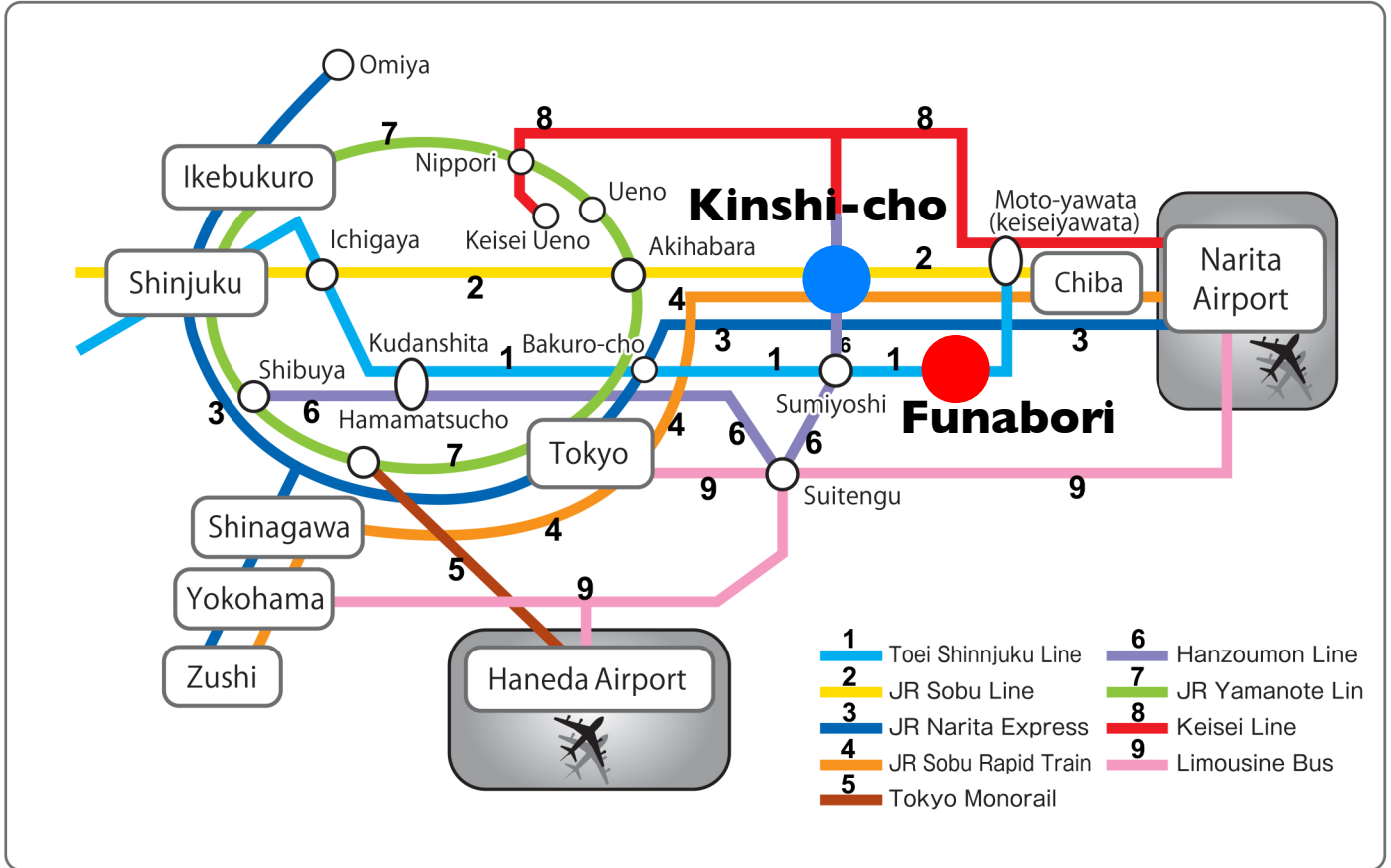
Sessions 3, 5, and 7: 13:00–14:30 (obligation time), March 16 (Mon)

All the presenters are required to display posters from 11:00 to 14:30, and remove them by 15:00.

Sessions 1, 2, 4, and 6: 17:10–18:40 (obligation time), March 16 (Mon)

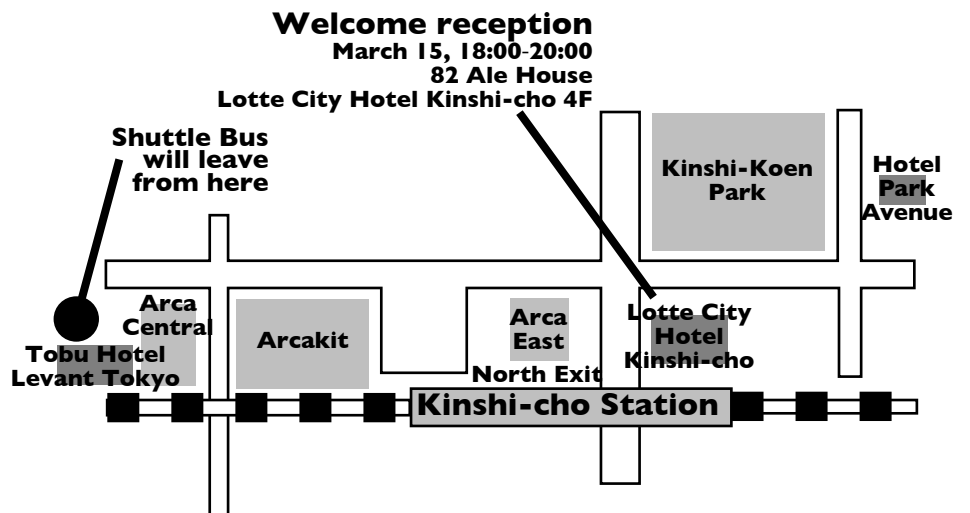
All the presenters are required to display posters from 15:30 to 18:40, and remove them by 19:00.

# Tokyo rail and Bus Route Map



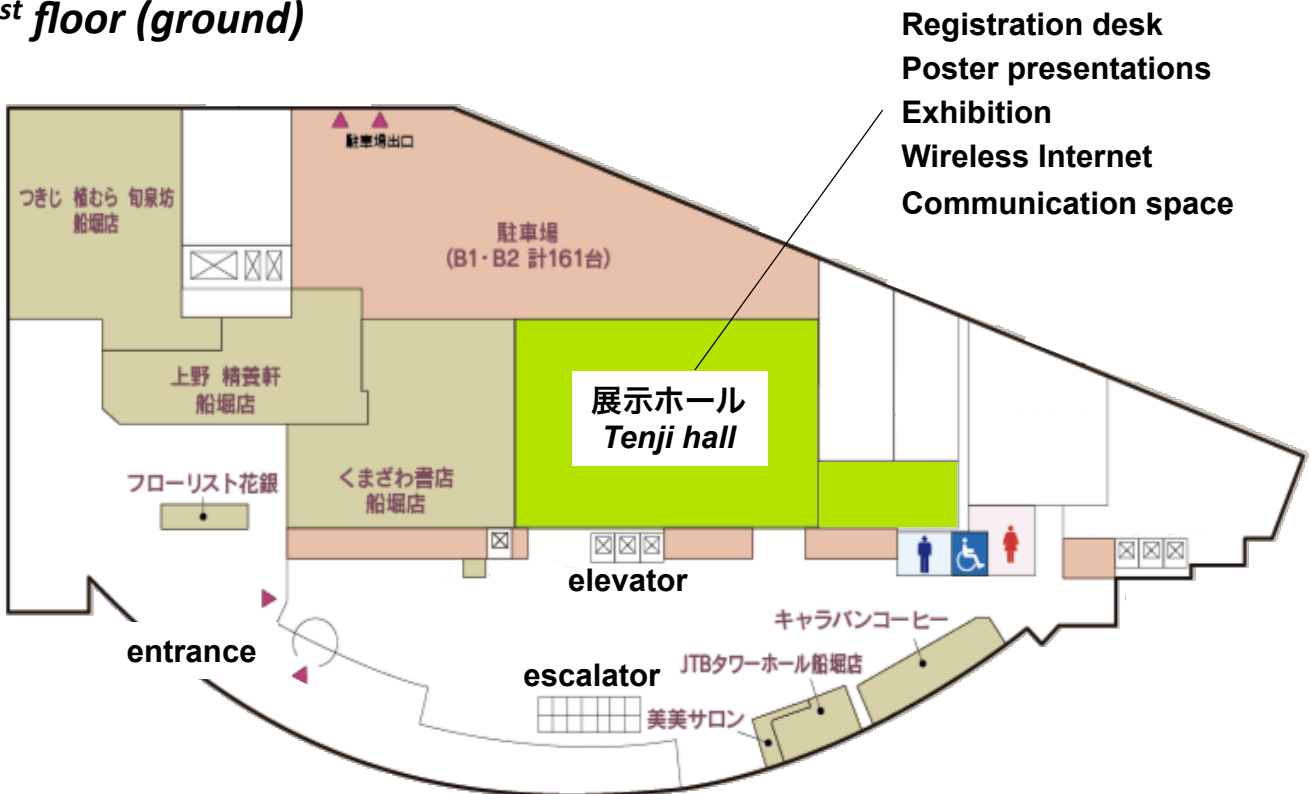
## Map around Funabori Station

## Map around Kinsho-cho Station

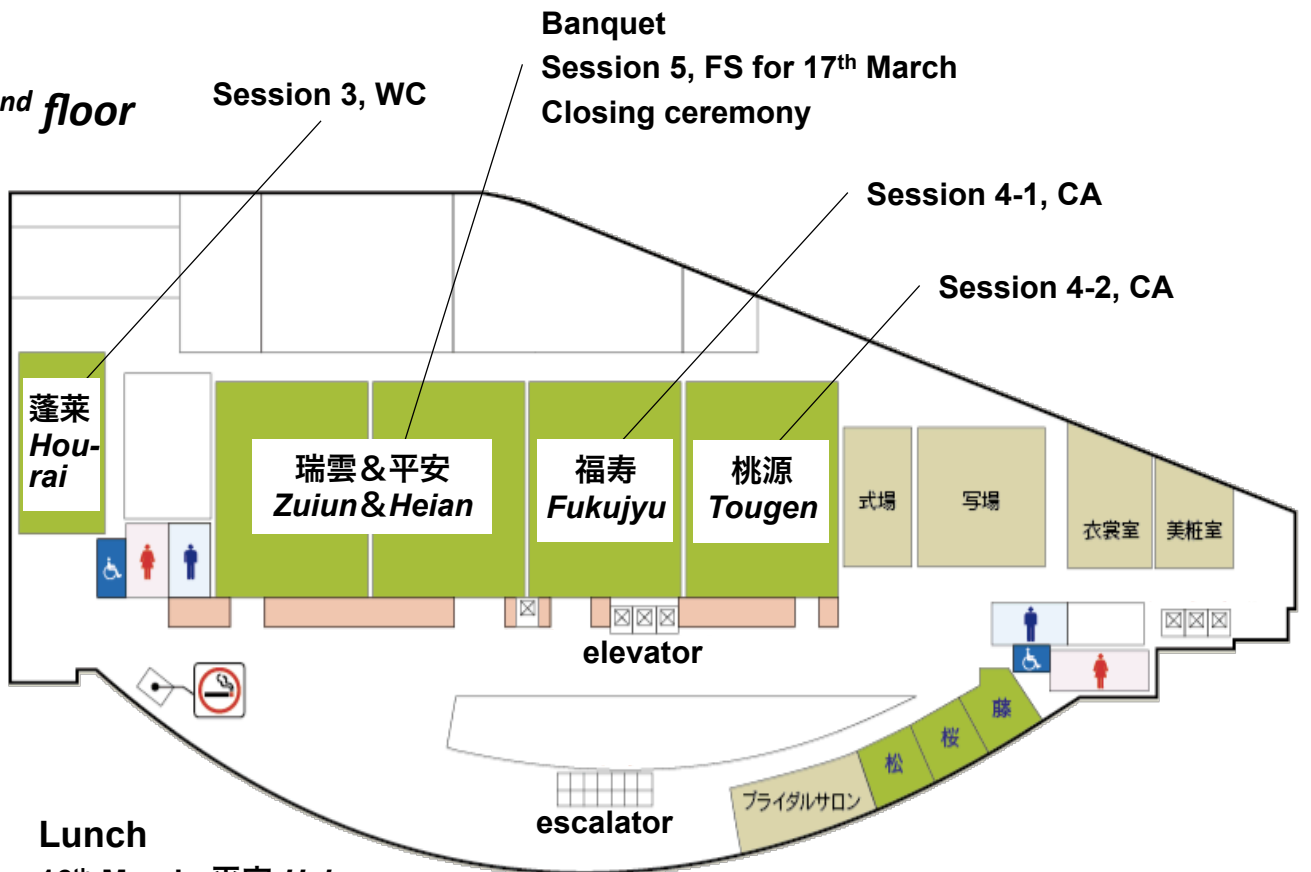


# Floor Map, Tower Hall Funabori

## 1<sup>st</sup> floor (ground)



## 2<sup>nd</sup> floor



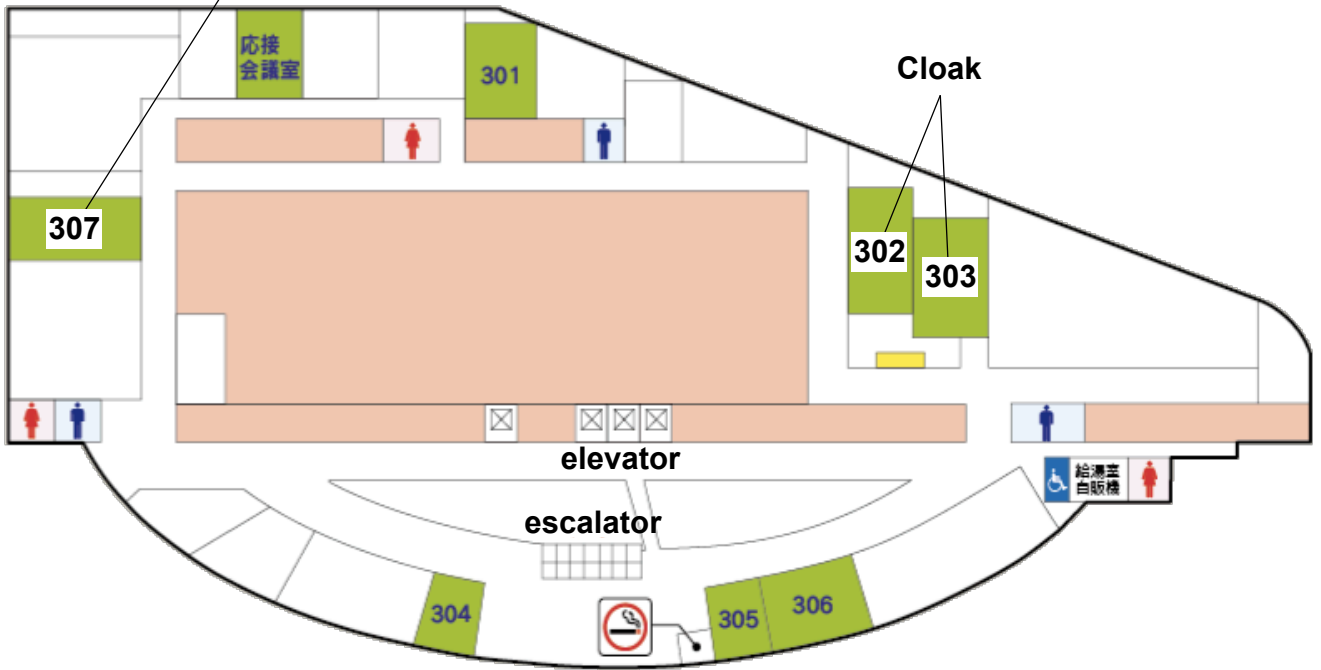
### Lunch

16<sup>th</sup> March, 平安 Heian

17<sup>th</sup> March, 福寿&桃源 Fukujyu&Tougen

3<sup>rd</sup> floor

Session 6, BP



4<sup>th</sup> floor

Session 1, WP

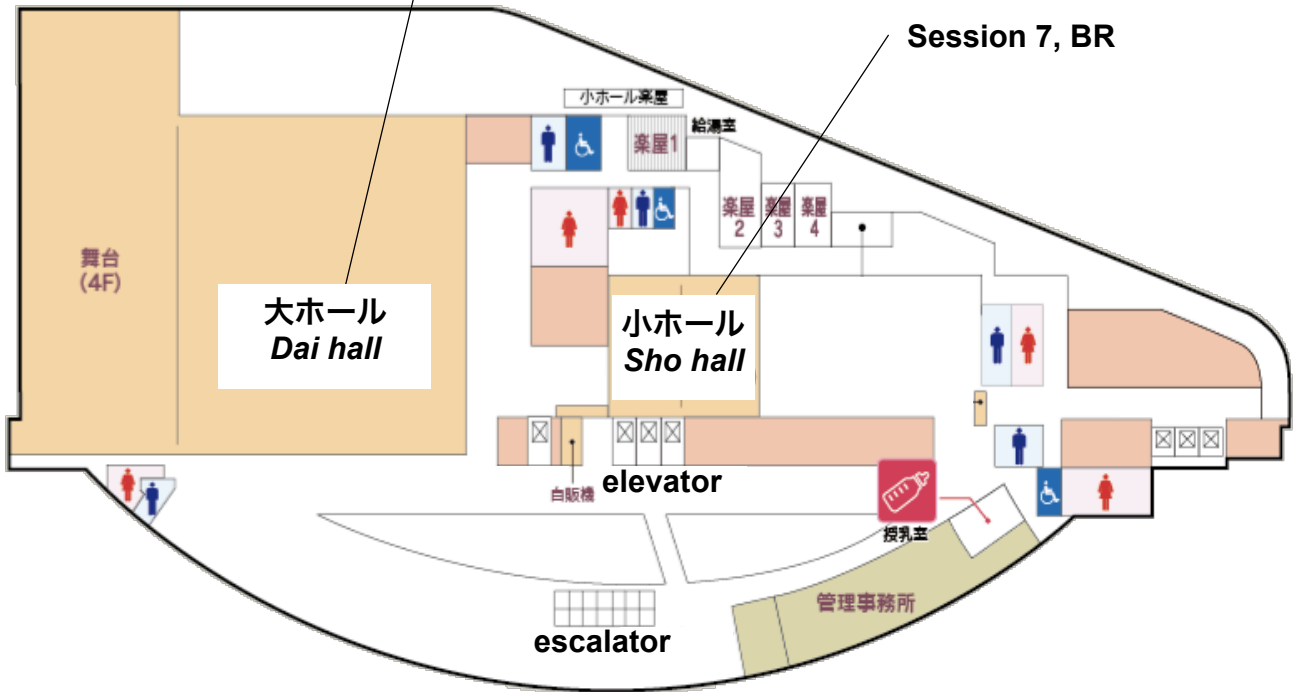
Session 2, TE



5<sup>th</sup> floor

Opening ceremony  
Keynote lectures  
Session 5, FS for 16<sup>th</sup> March

Session 7, BR





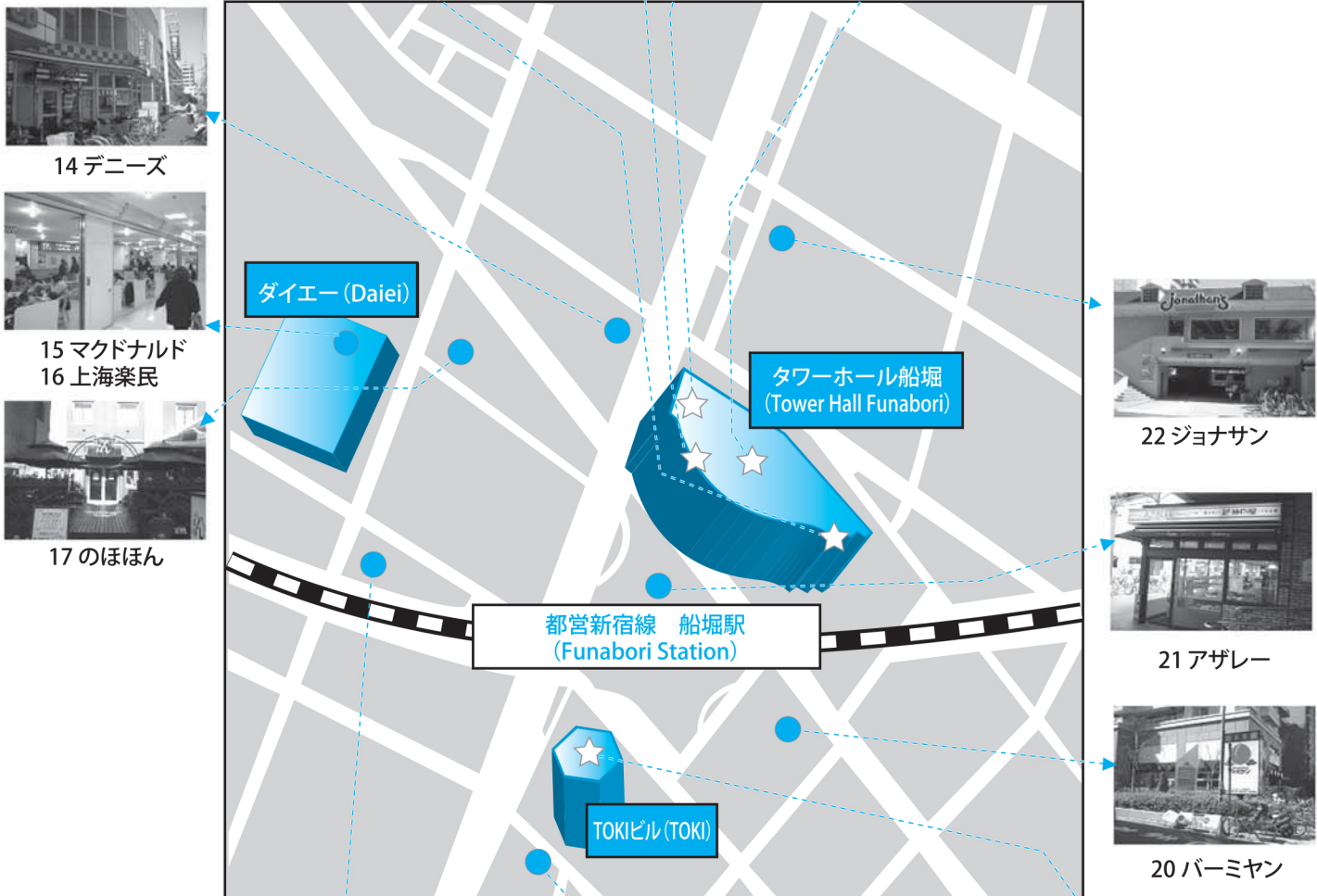
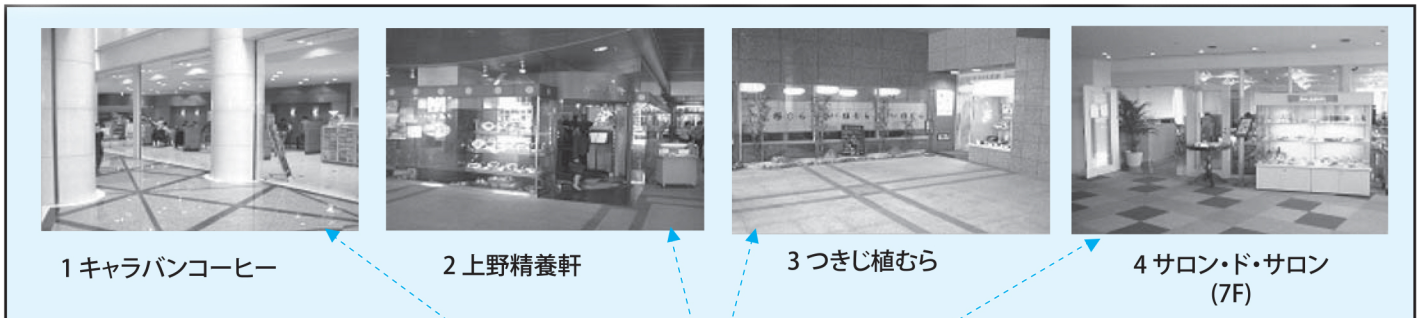
## お食事処案内 / Restaurant Guide

	店名 / Name	営業時間 / Business Hours	定休日 / Regular Holiday	種別 / type	電話番号 / Phone	備考 / Remarks
1	キャラバンコーヒー Caravan Coffee	9:00~20:30	年中無休 No Holidays	喫茶・軽食 Coffee / Light Meal	03-5605-8559	タワーホール船堀 1階 Tower Hall Funabori 1F
2	上野精養軒 Ueno Seiyoken	11:00~21:00	年中無休 No Holidays	洋食 / Western	03-5676-2701	タワーホール船堀 1階 Tower Hall Funabori 1F
3	つきじ植むら旬泉坊 船堀店 Tsukiji Uemura	平日/Weekday 11:00~15:00 17:00~22:00 日祝祭/Holidays 11:00~22:00	年中無休 No Holidays	和食 / Japanese	03-5667-2633	タワーホール船堀 1階 Tower Hall Funabori 1F
4	サロン・ド・サロン(展望レストラン) Salon de Salon	11:00~21:00	年中無休 No Holidays	洋食 / Western	03-5676-3307	タワーホール船堀 7階 Tower Hall Funabori 7F
5	すき家 船堀駅前店 Sukiya	0:00~24:00	年中無休 No Holidays	牛丼 Beef Rice		トキビル 1階 TOKI building, 1F
6	モスバーガー 船堀駅前店 Mos Burger	7:00~24:00	年中無休 No Holidays	ハンバーガー Hamburger	03-3688-9808	トキビル 1階 TOKI building, 1F
7	ミスタードーナツ 船堀駅前店 Mister Donut	7:00~24:00	年中無休 No Holidays	喫茶・ドーナツ Coffee / Donut	03-3688-3715	トキビル 1階 TOKI building, 1F
8	すし 三崎丸 Sushi Misakimaru	11:00~23:00	年中無休 No Holidays	回転寿司 Revolving Sushi bar	03-5605-6831	トキビル 1階 TOKI building, 1F
9	かるび家 Karubiya	11:00~23:00	年中無休 No Holidays	焼肉 Korean Barbecue	03-5605-9021	トキビル 2階 TOKI building, 2F
10	オリエンタルビッグフット Oriental Big Foot	11:00~15:00 17:00~23:30	年中無休 No Holidays	無国籍料理 Multinational	03-5679-5788	トキビル 2階 TOKI building, 2F
11	とり樹亭 Torijutei	17:00~23:30	水曜日 / Wednesday	地鶏料理 / Japanese	03-3686-2273	トキビル 2階 TOKI building, 2F
12	ポポラマーマ Popolamama	11:00~23:00	年中無休 No Holidays	イタリアン Italian	03-3869-0780	トキビル 2階 TOKI building, 2F
13	コンパスポイント Compass Point	11:30~14:30 18:00~23:30	月曜日 / Monday	和洋食 Japanese & Western Restaurant	03-3877-2129	トキビル 2階 TOKI building, 2F
14	デニーズ Denny's	0:00~24:00	年中無休 No Holidays	ファミリーレストラン Coffee & Restaurant	03-5675-1138	
15	マクドナルド McDonald's	10:00~21:30	年中無休 No Holidays	ハンバーガー Hamburger	03-6663-7317	ダイエー内 1階 DAIEI, 1F
16	上海楽民 Shanghai Rakumin	10:00~21:00	年中無休 No Holidays	中華 Chinese Restaurant		ダイエー内 1階 DAIEI, 1F
17	のほほん Nohohon	7:00~21:00	年中無休 No Holidays	韓国料理 Korean Restaurant	03-3869-5334	
18	萃寿 Suiyosi	11:00~22:00	年中無休 No Holidays	中華 Chinese Restaurant	03-3877-3715	
19	とんかつ 田 Tonkatu Den	11:30~14:30 17:00~21:30	年中無休 No Holidays	とんかつ (Breaded) Pork Cutlet	03-5676-7555	
20	バーミヤン Bamiyan	10:00~5:00	年中無休 No Holidays	中華 Chinese Restaurant	03-5667-3248	
21	アザレー AZALEE	8:00~20:00	年中無休 No Holidays	喫茶 Café & Bakery	03-3680-7819	船堀駅 Funabori station
22	ジョナサン Jonathan's	0:00~24:00	年中無休 No Holidays	ファミリーレストラン Coffee & Restaurant	03-5696-7384	

この案内と実態は一致しない場合があります。 / This guide and actual condition may not be in agreement.

# お食事処案内 / Restaurant Guide

The following numbers correspond to those in the previous page.



# Symposium Schedule at a Glance

Session	1	2	3	4-1	4-2	5	6	7		
	WP	TE	WC	CA	CA	FS	BP	BR		
<b>15<sup>th</sup> March</b>										
18:00-20:00	Welcome reception & registration (82 Ale House, Lotte City hotel)									
<b>16<sup>th</sup> March</b>										
8:30	Bus departs from hotel									
8:45-9:30	Registration									
9:30-9:45	Opening remark (Dai hall)									
9:45-10:20	Keynote lecture 1									
10:20-10:55	Keynote lecture 2									
10:55-11:15										
11:15-12:25	Lunch (room Heian, 11:15-14:00)	Lunch (room Heian, 11:15-14:00)	Oral-1 (11:15-12:25)	Oral-1 (11:15-12:25)	Oral-1 (11:15-12:25)	Oral-1 (11:15-12:25)	Lunch (room Heian, 11:15-14:00)	Oral-1 (11:15-12:25)		
12:25-12:50		Oral-1 (13:00-17:00)	Oral-1 (12:50-17:00)	Lunch (room Heian, 11:15-14:00) & Poster (13:00-14:30)	Lunch (room Heian,11:15-14:00)			Lunch (room Heian, 11:15-14:00) & Poster (13:00-14:30)	Oral-1 (13:00-17:00)	Lunch (room Heian, 11:15-14:00) & Poster (13:00-14:30)
12:50-13:00	Oral-2 (13:20-17:00)				Oral-2 (13:20-17:00)	Oral-2 (13:20-17:00)	Oral-2 (13:20-17:00)			
13:00-13:20										
12:50-13:00										
13:00-14:30										
14:30-14:40										
14:40-17:00										
17:00-17:10	Oral-2 (14:40-18:40)		Oral-2 (14:40-18:40)		Oral-2 (14:40-18:40)	Oral-2 (14:40-18:40)				
17:10-18:40	Poster (17:10-18:40)	Poster (17:10-18:40)	Poster (17:10-18:40)		Poster (17:10-18:40)	Poster (17:10-18:40)	Poster (17:10-18:40)			
18:40-19:00										
19:00-20:30	Banquet (room Zuiun & Heian)									
21:00	Bus departs to hotel									
<b>17<sup>th</sup> March</b>										
8:30	Bus departs from hotel									
9:20-9:30	Oral-2 (9:20-12:10)	Oral-2 (9:20-12:10)	Oral-3 (9:20-12:10)			Oral-3 (9:20-12:10)	Oral-2 (9:20-12:10)	Oral-3 (9:20-12:10)		
9:30-12:10				Oral-3 (9:30-12:10)	Oral-3 (9:30-12:10)					
12:10-12:20										
12:20-13:00	Closing remark (room Zuiun & Heian)									
13:00-14:00	Lunch (room Fukujyu & Tougen,13:00-14:30)									
14:00	Bus departs to hotel									

## Abbreviations

WP: Wood Physics

TE: Timber Engineering

WC: Wood Chemistry

CA: Composite Materials and Adhesion

FS: Cell Formation and Wood Structures

BP: Biodegradation and Preservation of Wood

BR: Biorefinery

# **Keynote Lectures**

**March 16**

9:45-10:20

John Ralph

*University of Wisconsin, USA*

Designing Plant Cell Walls for Deconstruction: Using Monolignol Ferulate Conjugates to Introduce Cleavable Ester Bonds into the Lignin Backbone

Chair: Yuji Matsumoto, *The University of Tokyo, Japan*

10:20-10:55

Kohei Komatsu

*Kyoto University, Japan*

Development of Glulam and Glulam Structures

Chair: Masamitsu Ohta, *The University of Tokyo, Japan*

# **Oral Presentations**

## Session 1: Wood Physics

<b>March 16</b>		<b>Chair</b>
13:00-13:30	1WP-I01	Yoshihisa Fujii <i>Kyoto University, Japan</i>
13:30-13:50	1WP-O01	
13:50-14:10	1WP-O02	
14:10-14:30	1WP-O03	Eiichi Obataya <i>University of Tsukuba, Japan</i>
14:30-14:50	1WP-O04	
14:50-15:20	1WP-I02	Satoru Tsuchikawa <i>Nagoya University, Japan</i>
15:20-15:40	1WP-O05	
15:40-16:00	1WP-O06	
16:00-16:20	1WP-O07	Joseph Gril <i>CNRS, Montpellier University, France</i>
16:20-16:40	1WP-O08	
16:40-17:00	1WP-O09	
Poster (17:10-18:40)		

### March 17

10:00-10:30	1WP-I03	Masamitsu Ohta <i>The University of Tokyo, Japan</i>
10:30-10:50	1WP-O10	
10:50-11:10	1WP-O11	
11:10-11:30	1WP-O12	Peer Haller <i>Technische Universität Dresden, Germany</i>
11:30-11:50	1WP-O13	
11:50-12:10	1WP-O14	

## March 16

13:00-13:30 1WP-I01 *Invited Lecture*

Joseph Gril

*CNRS, Montpellier University, France*

Modelling mechano-sorption in wood through hygro-locks and other approaches

13:30-13:50 1WP-O01

Yoyo Suhaya, Aos Akyas, Titin Supriatun and Imam Wahyudi

*School of Life Sciences and Technology Institut Teknologi Bandung, Indonesia*

Variation of Surian Woods (*Toona sinensis* Roem.) Characteristics in West Java, Indonesia

13:50-14:10 1WP-O02

Paulo Hein, José Tarcísio Lima, Selma Goulart, José Reinaldo Silva, Taiana Arriel and Fernanda Nascimento

*Federal University of Lavras, Brazil*

Dynamic elastic properties variation of 37 year-old *Eucalyptus* species grown in Brazil

14:10-14:30 1WP-O03

Takashi Yojo, Raphael Pigozzo, Suelem Macena and Maria Miranda

*Institute for Technological Research, Brazil*

Compressive Strength Of Wood in Direction Parallel to the Cell

14:30-14:50 1WP-O04

Tetsuya Inagaki, Belal Ahmed, Ian Hartley, Satoru Tsuchikawa and Matthew Reid

*Nagoya University, Japan*

Simultaneous prediction of density and moisture content of wood by terahertz time domain spectroscopy

14:50-15:20 1WP-I02 *Invited Lecture*

Peter Niemz, Michaela Zauner and Franziska Baensch

*ETH Zürich, Switzerland*

In-situ Synchrotron micro-tomography and acoustic emission of Norway spruce samples under tensile load

15:20-15:40 1WP-O05

Tsunehisa Miki, Masako Seki, Soichi Tanaka, Nobuo Sobue, Masakazu Nishida, Ichinori Shigematsu and Kozo Kanayama

*National Institute of Advanced Industrial Science and Technology, Japan*

Dynamic heat capacity changes of wood related to microstructure alterations caused by drying

15:40-16:00 1WP-O06

Yu Ogawa, Pan Chen, Yoshiharu Nishiyama and Karim Mazeau

*CNRS, France*

The role of shear deformation of cellulosic crystals



16:00-16:20 1WP-O07

Karim Mazeau, Liang Li, Patrick Perre and Xavier Frank

*Univ. Grenoble Alpes, France*

The interface in biomimetic xylan/cellulose nanocomposites probed by multiscale modelling.

16:20-16:40 1WP-O08

Matti Toivonen, Sauli Kurki-Suonio, Felix Schacher, Orlando Rojas and Olli Ikkala

*Aalto University, Finland*

Physical cross-linking of nanofibrillated cellulose with chitosan by surface adsorption and desolubilization in transparent hybrid nanopaper

16:40-17:00 1WP-O09

Kayoko Kobayashi, Masanori Akada, Setsuo Imazu and Junji Sugiyama

*Kyoto University, Japan*

Pattern recognition system toward identification of culturally important wooden artifacts

***Poster session (17:10-18:40)***

## March 17

10:00-10:30 1WP-I03 *Invited Lecture*

Peer Haller, Jens Hartig and Joerg Wehsener

*Technische Universität Dresden, Germany*

Recent Advancements for the Application of Moulded Wooden Tubes as Structural Elements

10:30-10:50 1WP-O10

Masayuki Ishihara, Yoshihiro Ootao and Yoshitaka Kameo

*Osaka Prefecture University, Japan*

Transient Hygrothermal Field in One-dimensional Porus Media Considering Nonlinear Coupling Between Heat and Moisture Diffusion

10:50-11:10 1WP-O11

Yonggun Park, Yeonjung Han, Jun-Ho Park, Yoon-Seong Chang, Sang-Yun Yang, Hyun Woo Chung and Hwanmyeong Yeo

*Seoul National University, Republic of Korea*

The Process of Superheated Steam Heat Treatment for Properties of Treated Wood

11:10-11:30 1WP-O12

Mayumi Utsumi, Koji Murata and Takato Nakano

*Kyoto University, Japan*

Stress relaxation and fracture toughness of thermally modified wood

11:30-11:50 1WP-O13

Kaoru Yamagishi-Nishikiori, Tomohiro Yamada, Takayuki Yamagishi and Koji Adachi

*Akita Prefectural University, Japan*

Water repellency of Diamond-like carbon coated wood

11:50-12:10 1WP-O14

Soichi Tanaka, Tsunehisa Miki, Masako Seki, Ichinori Shigematsu and Kozo Kanayama

*National Institute of Advanced Industrial Science and Technology, Japan*

Migration of polymers into cell walls in wood impregnated with an aqueous polymer solution under conditioning in controlled atmosphere: Effect of solution concentration on swelling and shrinkage behaviors of wood treated with polyethylene glycol polymers

## Session 2: Timber Engineering

### March 16

### Chair

12:50-13:20	2TE-I01	Kei Tanaka
13:20-13:40	2TE-O01	<i>Oita University, Japan</i>
13:40-14:00	2TE-O02	Haiqing Ren <i>Chinese Academy of Forestry, China</i>
14:00-14:20	2TE-O03	
14:20-14:40	2TE-O04	
14:40-15:00	2TE-O05	Toshiro Harada <i>Forestry and Forest Products Institute, Japan</i>
15:00-15:20	2TE-O06	
15:20-15:40	2TE-O07	
15:40-16:00	2TE-O08	Masashi Nakamura <i>Kyoto University, Japan</i>
16:00-16:20	2TE-O09	
16:20-16:40	2TE-O10	
16:40-17:00	2TE-O11	
Poster (17:10-18:40)		

### March 17

9:20-9:50	2TE-I02	Takuro Mori
9:50-10:10	2TE-O12	<i>Kyoto University, Japan</i>
10:10-10:30	2TE-O13	Ying Hei Chui <i>New Brunswick University, Canada</i>
10:30-10:50	2TE-O14	
10:50-11:10	2TE-O15	
11:10-11:30	2TE-O16	Solomon Tesfamariam <i>University of British Columbia, Canada</i>
11:30-11:50	2TE-O17	
11:50-12:10	2TE-O18	

## March 16

12:50-13:20          2TE-I01 *Invited Lecture*

Haiqing Ren

*Chinese Academy of Forestry, China*

Design value of the compressive strength parallel to grain for Larch 2×4 lumber based on a reliability analysis

13:20-13:40          2TE-O01

Zhaoxia Guo, Ying Gao, Songlin Yi

*Beijing Forestry University, China*

Dovetail Joints Mechanics of Solid Wood Furniture Based on Finite Element Analysis

13:40-14:00          2TE-O02

Raquel Gonçalves, Cinthya Bertoldo, Alex Julio Trinca, Rafael Lorensani and Monica Ruy

*University of Campinas, Brazil*

The role of nondestructive testing in the timber characterization and classification

14:00-14:20          2TE-O03

Kango Sato and Tadatoshi Furukawa

*Nagoya University, Japan*

Study on Bonding Technique and Bending Performance of Built-up Beam

14:20-14:40          2TE-O04

Hidemaru Shimizu and Yoshiaki Wakashima

*Toyama Prefectural Forest Products Research Institute, Japan*

Study on seismic grid wall using compression wood of shape recovery behavior

14:40-15:00          2TE-O05

André Luiz Silva Matos Matos, Antônio Alves Dias Dias, Orlando Ferreira Gomes Gomes and Francisco Antônio Rocco Lhar Lhar

*Universidade Federal de Goiás, Brazil*

Influence of torque control in wooden beams juxtaposed bolts

15:00-15:20          2TE-O06

Andreja Kutnar and Dick Sandberg

*University of Primorska, Slovenia*

Sustainable Development, Wood, and Build Environment in Slovenia and Sweden

15:20-15:40          2TE-O07

Shin Ikhyun, Andi Hermawan and Noboru Fujimoto

*Kyushu University, Japan*

Effect of treatment time and temperature for High temperature and low humidity (HT-LH) pretreatment on drying characteristics of Sugi boxed-heart timber

15:40-16:00 2TE-O08

Dick Sandberg and Andreja Kutnar

*Luleå University of Technology Sweden*

Recent Development of Thermal Wood Treatments: Relationship between Modification Processing, Product Properties, and the Associated Environmental Impacts

16:00-16:20 2TE-O09

Manja Kitek Kuzman and Milan Šernek

*University of Ljubljana, Slovenia*

Timber Passive House for Sustainability

16:20-16:40 2TE-O10

Yuuki Kawamura, Yuko Tsunetsugu, Kohta Miyamoto, Takahiro Kounoike and Kenji Kariya

*Sumitomo Forestry co.,ltd, Japan*

Physiological and psychological responses to touching wooden balls in school-age children-I: physical properties of the balls and pools

16:40-17:00 2TE-O11

Yuko Tsunetsugu, Yuuki Kawamura, Kohta Miyamoto, Takahiro Kounoike and Kenji Kariya

*Forestry and Forest Products Research Institute, Japan*

Physiological and psychological responses to touching wooden balls in school-age children-II: heart rate variability and cerebral blood flow changes

***Poster session (17:10-18:40)***

## March 17

9:20-9:50 2TE-I02 *Invited Lecture*

Ying-Hei Chui

*University of New Brunswick, Canada*

A multi-disciplinary Canadian research network to support the use of wood products multi-storey building construction

9:50-10:10 2TE-O12

Shoichi Nakashima, Yasuhiro Araki and Hiroshi Isoda

*Utsunomiya University, Japan*

Tensile structural performance of multiple dowels type joint with CLT

10:10-10:30 2TE-O13

Akihisa Kitamori, Shoichi Nakashima, Mami Wada and Hiroshi Isoda

*Kyoto University, Japan*

FE analysis on in-plane shear performance of frame structure composed of L-shape CLT members

10:30-10:50 2TE-O14

Kohei Komatsu, Hiroshi Nakatani, Kenho Okura, Yoshikuni Okura, Yoshinori Okura, Yoshiaki Wakashima, Hidemaru Shimizu and Kuninari Ueda

*Kyoto University, Japan*

Shaking Table Tests on a Two Storey & Two Span Glulam Frame Structure Whose Moment-Resisting Joints are Composed of Steel Hybrid Dampers

10:50-11:10 2TE-O15

Ryota Haba, Akihisa Kitamori, Takuro Mori and Hiroshi Isoda

*Kyoto University, Japan*

Development of CLT panels bond-in method for seismic retrofitting of RC frame structure

11:10-11:30 2TE-O16

Weibo Dong, Ying Gao, Zhiming Yu and Tingge Yuan

*Beijing Forestry University, China*

Test research on nail joints of MIDPLY wood shear wall

11:30-11:50 2TE-O17

Ying Gao, Weibo Dong, Zhiming Yu and Tingge Yuan

*Beijing Foestry University, China*

Analysis of Nail Joints of MIDPLY Wood Shear Wall

11:50-12:10 2TE-O18

Vilma França Monteiro Monteiro, Edgar Bacarji Bacarji, Orlando Ferreira Gomes Gomes and Francisco Antônio Rocco Lhar Lhar

*Universidade Federal De Goias, Brazil*

Mixed wood frame-bent plate submitted to bending simple

## Session 3: Wood Chemistry

**March 16**

**Chair**

11:15-11:45	3WC-I01	Hiroshi Ohi <i>University of Tsukuba, Japan</i>
11:45-12:05	3WC-O01	
12:05-12:25	3WC-O02	
Lunch, Poster		
14:40-15:00	3WC-O03	Tatsuhiko Yamada <i>Forestry and Forest Products Research Institute, Japan</i>
15:00-15:20	3WC-O04	
15:20-15:40	3WC-O05	
15:40-16:00	3WC-O06	Yuki Tobimatsu <i>Kyoto University, Japan</i>
16:00-16:20	3WC-O07	
16:20-16:40	3WC-O08	
16:40-17:00	3WC-O09	Yasuyuki Matsushita <i>Nagoya University, Japan</i>
17:00-17:20	3WC-O10	
17:20-17:40	3WC-O11	
17:40-18:00	3WC-O12	Yuji Tsutsumi <i>Kyushu University, Japan</i>
18:00-18:20	3WC-O13	
18:20-18:40	3WC-O14	

**March 17**

9:20-9:50	3WC-I02	Toshiyuki Takano <i>Kyoto University, Japan</i>
9:50-10:10	3WC-O15	
10:10-10:30	3WC-O16	
10:30-10:50	3WC-O17	Keiichi Koda <i>Hokkaido University, Japan</i>
10:50-11:10	3WC-O18	
11:10-11:30	3WC-O19	
11:30-11:50	3WC-O20	Satoshi Kubo <i>Forestry and Forest Products Research Institute, Japan</i>
11:50-12:10	3WC-O21	

## **March 16**

11:15-11:45          3WC-I01 *Invited Lecture*

Yonghao Ni

*University of New Brunswick, Canada*

Prehydrolysis kraft (PHK) dissolving pulp production, pulp quality improvement and its integration into forest biorefinery

11:45-12:05          3WC-O01

Haruka Goto, Akari Tamai, Takuya Akiyama and Yuji Matsumoto

*The University of Tokyo, Japan*

Variety of the content of biphenyl structures in softwood and hardwood lignins

12:05-12:25          3WC-O02

Morikazu Toda, Takuya Akiyama, Tomoya Yokoyama and Yuji Matsumoto

*The University of Tokyo, Japan*

Methoxyl analysis of Klason residue of tree leaves

### ***Lunch Break***

### ***Poster session (13:00-14:30)***

14:40-15:00          3WC-O03

Satoko Nishikawa, Hidehiro Daidoji and Bunji Hashimoto

*HORIBA, Ltd., Japan*

X-ray Fluorescence Quantitative Analysis of CCA and Other Preservative Treated Wood

15:00-15:20          3WC-O04

Gilles Chaix, Sophie Nourissier, Tahiana Ramanantoandro, Garel Makouanzi and Mario Tomazello Filho

*CIRAD, Brazil*

Near Infrared Spectroscopy for Eucalyptus wood chemical compounds

15:20-15:40          3WC-O05

Te Ma, Tetsuya Inagaki, Guanxiong Wang and Satoru Tsuchikawa

*Nagoya University, Japan*

Evaluation of chemical composition in wood using NIR hyperspectral imaging

15:40-16:00          3WC-O06

Peiming Zheng, Dan Aoki, Yasuyuki Matsushita, Sachie Yagami, Yuzou Sano and Kazuhiko Fukushima

*Nagoya University, Japan*

Lignification of ray parenchyma cells in the xylem of *Phellodendron amurense* detected by LMD and TOF-SIMS



- 16:00-16:20            3WC-O07  
Chisato Ko, Yasuyuki Matsushita, Sachie Yagami, Dan Aoki and Kazuhiko Fukushima  
*Nagoya University, Japan*  
Studies on Enzymatic Dehydrogenative Polymerization of Monolignol Dimers
- 16:20-16:40            3WC-O08  
Li Qiang, Tasaki Yuka, Yoshinaga Arata, Takabe Keiji, Koda Keiichi and Uraki Yasumitsu  
*Hokkaido University, Japan*  
Xylan as a scaffold for DHP deposition on cellulose
- 16:40-17:00            3WC-O09  
Hiroshi Kamitakahara, Ryo Suhara, Mao Yamagami, Haruko Kawano, Yoshimasa Tanaka,  
Arata Yoshinaga and Toshiyuki Takano  
*Kyoto University, Japan*  
Thermoresponsive supramolecular hydrogels based on amphiphilic end-functionalized  
methylcellulose derivatives
- 17:00-17:20            3WC-O10  
Yasuko Saito, Hiroshi Kamitakahara and Toshiyuki Takano  
*Kyoto University, Japan*  
Photosensitizer-bound cellulose derivatives for photocurrent generation
- 17:20-17:40            3WC-O11  
Yasuhito Sugano, Tiina Saloranta, Chunlin Xu, Johan Bobacka and Ari Ivaska  
*Abo Akademi University, Finland*  
Electro-catalytic oxidation and degradation of cellulose at Au electrode
- 17:40-18:00            3WC-O12  
Jun-ichi Azuma, Tomoki Maruoka, Shohei Shiomi, Hiroaki Kanayama and Shuntaro Tsubaki  
*Osaka University, Japan*  
Visualization of Three-Dimensional Structure of Plant Cuticular Membrane by X-Ray  
Computed Tomography
- 18:00-18:20            3WC-O13  
Dimas Andrianto, Takeshi Katayama and Toshisada Suzuki  
*Kagawa University, Japan*  
Antioxidant and antihyperlipidemic activity of various Indonesian underutilized forest fruits
- 18:20-18:40            3WC-O14  
Kosei Yamauchi, Tohru Mitsunaga and Irmanida Batubara  
*Gifu University, Japan*  
Quercetin methylethers stimulate melanosome transportation in B16 melanoma cells

## March 17

9:20-9:503 WC-I02 *Invited Lecture*

Yongcan Jin

*Nanjing Forestry University, China*

Does lignin always inhibit the enzymatic saccharification of lignocellulose?

9:50-10:10 3WC-O15

Hao Ren, Shuang Qian, Xin Dai, Yongcan Jin and Shigetoshi Omori

*Nanjing Forestry University, China*

Water Solubility Comparisons of Carboxymethylated Celluloses and Lignins

10:10-10:30 3WC-O16

Zhulan Liu, Yunfeng Cao, Zhiguo Wang and Hao Ren

*Nanjing Forestry University, China*

Isolation and Characterization of Lignin from Soybean Straw by the Combination of Total Dissolution–Regeneration and Enzyme Hydrolysis

10:30-10:50 3WC-O17

Xu Tan, Jialong Wen, Yiqin Yang and Yongcan Jin

*Nanjing Forestry University, China*

Using QCM-D to study the effect of lignin structures on the non-productive adsorption of cellulase on residual lignin in GL pretreated solids

10:50-11:10 3WC-O18

Wiwin Suwinarti and Rudianto Amirta

*Mulawarman University, Indonesia*

The Use of Alkaline Pretreatment on Bioethanol Production

11:10-11:30 3WC-O19

Felix Kilian Haiduk, Bodo Saake and Carsten Mai

*Georg-August Universität Göttingen, Germany*

Effect of Hot-water Hemicellulose Extraction of Wood Particles on Properties of Particle Boards made thereof

11:30-11:50 3WC-O20

XinWei Miao and JunWen Pu

*Beijing Forestry University, China*

In situ polymerization of urea-formaldehyde pre-polymer in cell wall and induction of pulse-pressure impregnation on *Ailanthus altissima* green wood

11:50-12:10 3WC-O21

Takayuki Yamagishi, Yasuji Kurimoto and Shigeru Yamauchi

*Akita prefectural University, Japan*

Visualization of the cesium ions adsorbed onto Japanese cedar charcoals and their acetylated samples.

## Session 4-1: Composite Materials and Adhesion 1

**March 16**

**Chair**

11:15-11:45	4CA1-I01	Akio Takemura <i>The University of Tokyo, Japan</i>
11:45-12:05	4CA1-O01	
12:05-12:25	4CA1-O02	
Lunch		
13:20-13:40	4CA1-O03	Charles R. Frihart <i>USDA, Madison, USA</i>
13:40-14:00	4CA1-O04	
14:00-14:20	4CA1-O05	
14:20-14:40	4CA1-O06	Akio Inoue <i>Forestry and Forest Products Research Institute, Japan</i>
14:40-15:00	4CA1-O07	
15:00-15:20	4CA1-O08	
15:20-15:40	4CA1-O09	Shin-ichiro Tomura <i>Forestry and Forest Products Research Institute, Japan</i>
15:40-16:00	4CA1-O10	
16:00-16:20	4CA1-O11	
16:20-16:40	4CA1-O12	Shin-ichiro Tomura <i>Forestry and Forest Products Research Institute, Japan</i>
16:40-17:00	4CA1-O13	
Poster (17:10-18:40)		

**March 17**

9:30-9:50	4CA1-O14	Kenji Umemura <i>Kyoto University, Japan</i>
9:50-10:10	4CA1-O15	
10:10-10:30	4CA1-O16	
10:30-10:50	4CA1-O17	Masatoshi Sato <i>The University of Tokyo, Japan</i>
10:50-11:10	4CA1-O18	
11:10-11:30	4CA1-O19	
11:30-11:50	4CA1-O20	
11:50-12:10	4CA1-O21	

## **March 16**

11:15-11:45        4CA1-I01 *Invited Lecture*  
Charles R. Frihart  
*United States Department of Agriculture, USA*  
Investigation of the interphase for understanding wood adhesion

11:45-12:05        4CA1-O01  
Fauzi Febrianto, Tati Karliati, Wasrin Syafii, Imam Wahyudi, Ihak Sumardi, Yoshikuni Teramoto and Nam Hun Kim  
*Bogor Agricultural University, Indonesia*  
Properties of Laminated Wood Bonded with Modified Gutta Percha

12:05-12:25        4CA1-O02  
Minzhi Chen, Yan Chen, Xiaoyan Zhou, Bitao Lu, Meiping He and Xi Ling  
*Nanjing Forestry University, China*  
Effect of poly(ethylene glycol)s on adhesion property of soy-based adhesives

### ***Lunch Break***

13:20-13:40        4CA1-O03  
Eka Alamsyah, Masaaki Yamada and Kinji Taki  
*Institut Teknologi Bandung, Indonesia*  
Curing Behavior of Phenol Formaldehyde Resin Adhesives: Effects of Direct Adding of Surian Wood Bark-powder into Pressure Temperature of Resin Adhesives

13:40-14:00        4CA1-O04  
Yuliati Indrayani, Dina Setyawati, Sukma Kusuma, Kenji Umemura and Tsuyoshi Yoshimura  
*Tanjungpura University, Indonesia*  
A novel utilization of agricultural fiber for molding bonded with citric acid and sucrose

14:00-14:20        4CA1-O05  
Zhongyaun Zhao and Kenji Umemura  
*Kyoto University, Japan*  
Comparison of adhesiveness of tannin and sucrose adhesive with and without citric acid

14:20-14:40        4CA1-O06  
Sukma Kusumah and Kenji Umemura  
*Kyoto University, Japan*  
Development of Particleboard made from Super Sweet Sorghum Bagasse (*Sorghum bicolor* spp) and Citric Acid

14:40-15:00        4CA1-O07  
Ru Liu, Jinzhen Cao and Yao Peng  
*Beijing Forestry University, China*  
Physical, mechanical, and thermal properties of various anionic surfactant modifiers used in in-situ synthesis of organo-montmorillonite inside wood flour

15:00-15:20 4CA1-O08

Ling-fei Ma

*Zhejiang Agriculture & Forestry University, China*

Effect of additives on the hydration and flexural and compressive strength of wood flour and Magnesium Oxychloride Cement mixture

15:20-15:40 4CA1-O09

Toshimitsu Hata, Paul Bronsveld and Tomohiko Mitani

*Kyoto University, Japan*

Microstructural observation of graphene layers from carbonized wood

15:40-16:00 4CA1-O10

Min Lee, Sang-Bum Park and Sung-Phil Mun

*Korea Forest Research Institute, Republic of Korea*

Photocatalysis and adsorption of formaldehyde and toluene by TiO<sub>2</sub> embedded carbonized medium density fiberboard

16:00-16:20 4CA1-O11

Yuxuan Wu, Ying Gao and Xudong Zhu

*Beijing Forestry University, China*

Mechanical Properties of Structural Glulam Made by Cathay Poplar

16:20-16:40 4CA1-O12

Byung-Dae Park, Arif Nuryawan, Adya Singh, Valerio Causin and Chuck Frihart

*Kyungpook National University, Republic of Korea*

Crystalline Structure in Urea-Formaldehyde Resin Adhesives with Low Formaldehyde/Urea Mole Ratio

16:40-17:00 4CA1-O13

Wissanee Yingprasert

*Prince of Songkla University, Thailand*

Effects of boric acid addition to urea formaldehyde resin on formaldehyde emission, termite resistance and shear strength of rubberwood plywood

***Poster session (17:10-18:40)***

## March 17

9:30-9:50 4CA1-O14

Yi Liu, Jianmin Gao, Hongwu Guo and Brian K. Via

*Beijing Forestry University, China*

Interface Properties of Loblolly Pine Bonded with Epoxy/Wood Pyrolysis Bio-oil Blended System

9:50-10:10 4CA1-O15

Yoko Kurokochi and Masatoshi Sato

*The University of Tokyo, Japan*

Properties of binderless board manufactured from rice straw: Effect of pretreatment and pressing condition

10:10-10:30 4CA1-O16

Hiroe Narita, Shun Okubo and Masatoshi Sato

*The University of Tokyo, Japan*

Binderless boards manufactured from Chenopodium plants

10:30-10:50 4CA1-O17

Xiaoyan Zhou, Minzhi Chen, Yang Li, Lijuan Tang, Minzhu Pan and Xuehui Yang

*Nanjing Forestry University, China*

Improvement of the interfacial adhesion between wheat straw and urea-formaldehyde resin by means of dielectric barrier discharge (DBD) plasma treatment

10:50-11:10 4CA1-O18

Saori Niwa, Masaki Okamoto, Rie Makise, Itsuro Higuchi, Hirokazu Ito and Yoshikuni Teramoto

*Gifu University, Japan*

Elucidation of compatibilizing effect for WPC production

11:10-11:30 4CA1-O19

Suiyi Li and Dagang Li

*Nanjing Forestry University, China*

Electrically conductive charcoal powder/ultra-high molecular weight polyethylene composites

11:30-11:50 4CA1-O20

Sasa Sofyan Munawar, Muhammad Wahyu Darajat, Subyakto, Mohammad Gopar, Ismail Budiman and Wida Banar Kusumaningrum

*Indonesian Institute of Sciences, Indonesia*

The effect of aggregate types and composition on the mechanical properties of mortar for train carriage floor

11:50-12:10 4CA1-O21

Subyakto Mr, Muhammad Wahyu Darajat, Sasa Sofyan Munawar, Mohammad Gopar, Ismail Budiman and Wida Banar Kusumaningrum

*Indonesian Institute of Sciences, Indonesia*

The sound absorption and thermal properties of mortar as affected by aggregate types

## Session 4-2: Composite Materials and Adhesion 2

**March 16**

**Chair**

11:15-11:45	4CA2-I01	Hiroyuki Yano <i>Kyoto University, Japan</i>
11:45-12:05	4CA2-O01	
12:05-12:25	4CA2-O02	
Lunch		
13:20-13:40	4CA2-O03	Lars A. Berglund <i>Royal Institute of Technology, Sweden</i>
13:40-14:00	4CA2-O04	
14:00-14:20	4CA2-O05	
14:20-14:40	4CA2-O06	Olli Ikkala <i>Aalto University, Finland</i>
14:40-15:00	4CA2-O07	
15:00-15:20	4CA2-O08	
15:20-15:40	4CA2-O09	Alexander Bismarck <i>University of Vienna, Austria</i>
15:40-16:00	4CA2-O10	
16:00-16:20	4CA2-O11	
16:20-16:40	4CA2-O12	Koon-Yang Lee <i>University College London, UK</i>
16:40-17:00	4CA2-O13	
Poster (17:10-18:40)		

**March 17**

9:30-9:50	4CA2-O14	Houssine Sehaqui <i>EMPA, Switzerland</i>
9:50-10:10	4CA2-O15	
10:10-10:30	4CA2-O16	
10:30-10:50	4CA2-O17	Antonio Norio Nakagaito <i>University of Tokushima, Japan</i>
10:50-11:10	4CA2-O18	
11:10-11:30	4CA2-O19	
11:30-11:50	4CA2-O20	Masaya Nogi <i>Osaka University, Japan</i>
11:50-12:10	4CA2-O21	

## **March 16**

11:15-11:45          4CA2-I01 *Invited Lecture*

Lars Berglund

*Royal Institute of Technology, Sweden*

New materials from nanocellulose – towards nanostructural control

11:45-12:05          4CA2-O01

Antonio Norio Nakagaito, Hitoshi Takagi and Sohtaroh Kanzawa

*The University of Tokushima, Japan*

Hybrid nanocomposites made of polylactic acid reinforced with cellulose and chitin nanofibers

12:05-12:25          4CA2-O02

Shenyuan Fu and Qiang Wu

*Zhejiang Agricultural and Forestry University*

Rheological behavior of liquefied cellulose with phenol

### ***Lunch Break***

13:20-13:40          4CA2-O03

Marta Fortea-Verdejo, Koon Yang Lee and Alexander Bismarck

*University of Vienna, Austria*

Making the most of fibre off-cuts: Using nanocellulose as binder to create hierarchical composites

13:40-14:00          4CA2-O04

Tobias Keplinger, Etienne Cabane and Ingo Burgert

*ETH Zurich, Switzerland*

Versatile strategies for grafting polymers to wood cell walls

14:00-14:20          4CA2-O05

Evi Oktavia and Toshiharu Enomae

*University of Tsukuba, Japan*

Electric power generation from vibration of paper

14:20-14:40          4CA2-O06

Li Jiao, Yuan-yuan Li, Guan-lian Li and Hong-qi Dai

*Nanjing Forestry University, China*

Properties of cellulose nanofiber reinforced cement based composites

14:40-15:00          4CA2-O07

Minna Hakalahti, Arto Salminen, Jukka Seppälä, Tekla Tammelin and Tuomas Hänninen

*VTT Technical Research Centre of Finland, Finland*

Customizing the mechanical performance of water stable TEMPO oxidized cellulose nanofibril films



15:00-15:20 4CA2-O08

Hiroataka Koga and Masaya Nogi  
*Osaka University, Japan*

Flexible paper electronics prepared by using a papermaking technique

15:20-15:40 4CA2-O09

Valentina Guccini, Bernd Wicklein, Christian Aulin and German Salazar-Alvarez  
*Stockholm University, Sweden*

Cellulose nanofibrils and graphene oxide bionanocomposite: characterisation and improvement of the barrier and mechanical properties

15:40-16:00 4CA2-O10

Jinxia Ma, Yajun Tian and Li Jiao  
*Nanjing Forestry University, China*

Preparation of ZnO/starch nanocomposite and its application on coating

16:00-16:20 4CA2-O11

Henrikki Mertaniemi and Olli Ikkala  
*Aalto University, Finland*

Functionalization of nanofibrillated cellulose for increased wet strength and applications in biomedicine

16:20-16:40 4CA2-O12

Reina Tanaka, Hiromasa Hondo, Tsuguyuki Saito and Akira Isogai  
*The University of Tokyo, Japan*

Influences of rigidity of cellulose nanofibrils on length evaluation using shear viscosity measurement

16:40-17:00 4CA2-O13

Takashi Nishino, Hiroaki Ito and Chizuru Hongo  
*Kobe University, Japan*

Silver modification of TEMPO oxidized cellulose nanofibers

***Poster session (17:10-18:40)***

## March 17

9:30-9:50 4CA2-O14

Olli Ikkala

*Aalto University, Finland*

Combining supramolecular functionalities with nanocelluloses

9:50-10:10 4CA2-O15

Tetsuji Inui, Hirotaka Koga, Masaya Nogi and Katsuaki Suganuma

*Osaka University, Japan*

Small and Flexible Nanopaper Antenna for Wearable Electronics

10:10-10:30 4CA2-O16

Vivian Merk, Munish Chanana, Sabyasachi Gaan and Ingo Burgert

*ETH Zurich, Switzerland*

Bioinspired mineralization of wood on nano- and submicron level for green fire retardancy

10:30-10:50 4CA2-O17

Chia-Yuan Chang and Feng-Cheng Chang

*National Taiwan University, Taiwan*

Developing lignin-based electrospun fibrous materials for filtration

10:50-11:10 4CA2-O18

Kei-Kei Chan and Feng-Cheng Chang

*National Taiwan University, Taiwan*

Effects of processing parameters on structure and diameters of electrospun lignin fibers

11:10-11:30 4CA2-O19

Thanit Montrikittiphant, Martin Hervy, Min Tang, Charlotte K Williams, Alexander

Bismarck and Koon-Yang Lee

*University College London, United Kingdom*

Making the most out of bacterial cellulose: Renewable thermoplastic nano-papreg

11:30-11:50 4CA2-O20

Hongzhi Liu, Youming Yu and Fangli Sun

*Zhejiang Agriculture & Forestry University, China*

Studies of cellulose nanowhisker-reinforced thermosetting phenolic resin prepared via in situ curing

11:50-12:10 4CA2-O21

Hiroyuki Yano, Haruo Omura, Hiroaki Okumura, Yuka Kitano and Fumiaki Nakastubo

*Kyoto University, Japan*

Reinforcement of thermoplastic resins using chemically modified cellulose nanofibers

## Session 5: Cell Formation and Wood Structures

**March 16**

**Chair**

11:15-11:45	5FS-I01	Kazuhiko Fukushima <i>Nagoya University, Japan</i>
11:45-12:05	5FS-O01	
12:05-12:25	5FS-O02	
Lunch, Poster (13:00-14:30)		
14:40-15:10	5FS-I02	Katsuhiko Takata <i>Akita Prefectural University, Japan</i>
15:10-15:30	5FS-O03	
15:30-15:50	5FS-O04	
15:50-16:10	5FS-O05	Ugai Watanabe Chiba Institute of Technology
16:10-16:30	5FS-O06	
16:30-16:50	5FS-O07	
16:50-17:10	5FS-O08	Arata Yoshinaga <i>Kyoto University, Japan</i>
17:10-17:30	5FS-O09	
17:30-17:50	5FS-O10	
17:50-18:10	5FS-O11	Futoshi Ishiguri <i>Utsunomiya University, Japan</i>
18:10-18:30	5FS-O12	
18:30-18:50	5FS-O13	

**March 17**

9:20-9:50	5FS-I03	Fang Chen <i>University of North Texas, USA</i>
9:50-10:10	5FS-O14	
10:10-10:30	5FS-O15	
10:30-10:50	5FS-O16	Masahisa Wada <i>Kyoto University, Japan</i>
10:50-11:10	5FS-O17	
11:10-11:30	5FS-O18	Miyuki Takeuchi <i>The University of Tokyo, Japan</i>
11:30-11:50	5FS-O19	

## March 16

11:15-11:45 5FS-I01 *Invited Lecture*

Fang Chen, Xiaolan Rao and Richard A. Dixon

*University of North Texas, USA*

Exploring candidate genes for catechyl lignin biosynthesis via RNA-Seq data in two distinct plant species

11:45-12:05 5FS-O01

Soichiro Noda, Masatoshi Yamaguchi, Nobuyuki Nishikubo, Nozomu Sakurai, Masaomi Yamamura, Takefumi Hattori, Hideyuki Suzuki, Daisuke Shibata, Taku Demura, Shiro Suzuki and Toshiaki Umezawa

*Kyoto University, Japan*

An E3 ubiquitin ligase involved in secondary wall formation

12:05-12:25 5FS-O02

Ugai Watanabe, Hisashi Abe, Ryo Funada, Satoshi Nakaba and Yusuke Yamagishi

*Chiba Institute of Technology, Japan*

Local expression of genes encoding tubulin isotypes in the cambium of *Cryptomeria japonica*

### *Lunch Break*

### *Poster session (13:00-14:30)*

14:40-15:10 5FS-I02 *Invited Lecture*

Futoshi Ishiguri

*Utsunomiya University, Japan*

Relationship between growth characteristics and wood properties in tropical trees

15:10-15:30 5FS-O03

Kei'ichi Baba and Takahisa Hayashi

*Kyoto University, Japan*

Characterization of tension wood formed in poplar overexpressing polygalacturonase

15:30-15:50 5FS-O04

Rumi Kaida, Eiichi Obataya, Masato Yoshida, Futoshi Ishiguri, Jun Tanabe, Toru Taniguchi, Manabu Kurita, Kei'ichi Baba and Takahisa Hayashi

*Tokyo University of Agriculture, Japan*

Occurrence of xyloglucan in the xylem of poplar stems for wind and earthquake

15:50-16:10 5FS-O05

Shengcheng Zhai, Biao Pan, Zhaoyang Xu, Yoshiki Horikawa, Tomoya Imai and Junji Sugiyama

*Nanjing Forestry University, China*

Cell wall ultrastructure of palm leaf fibers

16:10-16:30 5FS-O06

Md Hasnat Rahman, Yusuke Yamagishi, Kayo Kudo, Yugo Matsuoka, Shahanara Begum, Yuichiro Oribe, Satoshi Nakaba and Ryo Funada

*Tokyo University of Agriculture and Technology, Japan*

Cambial reactivation and xylem differentiation induced by localized heating of stems in conifer sawara (*Chamaecyparis pisifera*) trees

16:30-16:50 5FS-O07

Takao Itoh, Biao Pan, Jiayan Luo, Yawen Zheng, Yaping Jiang and Zhiyin Wang

*Nara National Research Institute for Cultural Properties, Japan*

Hormonal induction of gum or resin in Chinese sweetgum and agarwood

16:50-17:10 5FS-O08

Widyanto Dwi Nugroho, Shofi Rukhama and Sri Rahayu

*Universitas Gadjah Mada, Indonesia*

Changes in wood anatomical characteristics of *Falcataria mollucana* due to infection of *Uromycladium tepperianum*

17:10-17:30 5FS-O09

Yusuke Yamagishi, Suzuka Ide, Joto Yoshimoto, Ugai Watanabe, Satoshi Nakaba and Ryo Funada

*Tokyo University of Agriculture and Technology, Japan*

Effect of partial desiccation on induction of secondary xylem like tracheary element from cultured cells of hybrid poplar

17:30-17:50 5FS-O10

Satoshi Nakaba, Izumi Arakawa, Hikaru Morimoto, Naoki Takata, Makoto Yoshida, Yuzou Sano and Ryo Funada

*Tokyo University of Agriculture and Technology, Japan*

Cell biological analysis of the death of long-lived ray parenchyma cells

17:50-18:10 5FS-O11

Ridwan Yahya, Yoshiki Horikawa and Junji Sugiyama

*University of Bengkulu, Indonesia*

Observed microfibril angle of fiber adjacent and distant from vessel by polarised light microscopy

18:10-18:30 5FS-O12

Katsuhiko Takata, Tomohiro Miyashita, Seishiro Taki, Yoichi Hasegawa, Satomi Akiyama and Miyako Sato

*Akita Prefectural University, Japan*

Wood and growth properties of the cultivars with resistance to snow-damage of Japanese cedar

18:30-18:50          5FS-O13

vilma Bayramzadeh, Babak shahkaram and Alireza pajuhandeh

*Islamic Azad University, Iran*

Response of anatomical structures in *Carpinus orientalis* roots to soil Erosion in Hassanabad valley, Iran

## March 17

9:20-9:50 5FS-I03 Arata Yoshinaga *Invited Lecture*

*Kyoto University, Japan*

Immunolocalization of lignin in wood cell walls using monoclonal antibodies

9:50-10:10 5FS-O14

Yuki Tobimatsu, Satoshi Aruga, Dorien Van de Wouwer, Allen Eric, Robert Kumpf, Hiroshi Kamitakahara, Toshiyuki Takano, Bartel Vanholme, Boerjan Wout and John Ralph

*Kyoto University, Japan*

Visualization of cell wall lignins by metabolic labeling and bioorthogonal click chemistry

10:10-10:30 5FS-O15

Yuto Hanaya, Dan Aoki, Yasuyuki Matsushita, Masato Yoshida, Katsushi Kuroda, Ruka Takama and Kazuhiko Fukushima

*Nagoya University, Japan*

Chemical mapping of organic/inorganic chemicals in freeze-fixed *Ginkgo biloba* by the cryo-TOF-SIMS/SEM system

10:30-10:50 5FS-O16

Paavo Aleksii Penttilä, Junji Sugiyama and Tomoya Imai

*Kyoto University, Japan*

Effects of reaction conditions on cellulose structures synthesized *in vitro*

10:50-11:10 5FS-O17

Yasuyuki Miyagawa, Yuki Tobimatsu, Takahito Mizukami, John Ralph, Hiroshi Kamitakahara and Toshiyuki Takano

*Kyoto University, Japan*

NMR studies of phenyl glycoside-type lignin-carbohydrate complexes (LCCs) in wood cell walls

11:10-11:30 5FS-O18

Hiroshi Nishimura, Akihiro Kamiya, Masato Katahira and Takashi Watanabe

*Kyoto University, Japan*

Structural studies on the chemical linkage between lignin and polysaccharide

11:30-11:50 5FS-O19 Takahisa Hayashi, Chisato Yasukawa, Shoko Aoki, Miki Nonaka, Masateru Itakura, Rumi Kaida, Teruaki Taji, Yoichi Sakata, Hiroya Ohbayashi, Tomoko Seyama, Iwao Uehara, Kei'ichi Baba and Masaharu Tsubokura

*Tokyo University of Agriculture, Japan*

Incorporation of radioiodine into trees by binding to 1,4-linked glucans

## Session 6: Biodegradation and Preservation of Wood

**March 16**

**Chair**

<b>13:00-13:30</b>	6BP-I01	Makoto Yoshida <i>Tokyo University of Agriculture and Technology, Japan</i>
13:30-13:50	6BP-O01	
13:50-14:10	6BP-O02	
14:10-14:30	6BP-O03	Emma Master <i>University of Toronto, Canada</i>
14:30-14:50	6BP-O04	
14:50-15:10	6BP-O05	
15:10-15:30	Break	
15:30-16:00	6BP-I02	Fumio Eguchi <i>Tokyo University of Agriculture, Japan</i>
16:00-16:20	6BP-O06	
16:20-16:40	6BP-O07	Tomoko Wada <i>National Research Institute for Cultural Properties, Tokyo, Japan</i>
16:40-17:00	6BP-O08	
Poster (17:10-18:40)		

**March 17**

9:20-9:50	6BP-I03	Tsuyoshi Yoshimura <i>Kyoto University, Japan</i>
9:50-10:10	6BP-O09	
10:10-10:30	6BP-O10	
10:30-10:50	6BP-O11	Ikuo Momohara <i>Forestry and Forest Products Research Institute, Japan</i>
10:50-11:10	6BP-O12	
11:10-11:30	6BP-O13	Yoshiyuki Yanase <i>Kyoto University, Japan</i>
11:30-11:50	6BP-O14	
11:50-12:10	6BP-O15	



## March 16

13:00-13:30          6BP-I01 *Invited Lecture*

Marie Couturier, Marie-Noëlle Rosso, Jean-Guy Berrin and Emma Master

*University of Toronto, Canada*

Elucidating the lignocellulolytic capability of *Pycnoporus coccineus* through combined proteomic and analytical characterization of enzyme activities

13:30-13:50          6BP-O01

Chiaki Hori

*RIKEN, Japan*

Analysis of the *Phlebiopsis gigantea* genome, transcriptome and secretome gives insight into its pioneer colonization strategies of wood

13:50-14:10          6BP-O02

Wenhui Geng, Yongcan Jin, Hasan Jameel and Sunkyu Park

*Nanjing Forestry University, China*

Approaches to achieve high-solid enzymatic hydrolysis using autohydrolysis pretreated hardwood and dilute-acid pretreated corn stover

14:10-14:30          6BP-O03

Taku Uchiyama, Masahiro Samejima and Kiyohiko Igarashi

*The University of Tokyo, Japan*

Processive movement observation of four cellulases from cellulolytic bacteria *Cellulomonas fimi*

14:30-14:50          6BP-O04

Krisna Septiningrum, Hiroshi Ohi and Akihiko Kosugi

*University of Tsukuba, Japan*

The GH67  $\alpha$ -glucuronidase of *Paenibacillus curdlanolyticus* B-6 removes hexenuronic acid groups from xylooligosaccharides and has potential application in bio-bleaching

14:50-15:10          6BP-O05

Kiwamu Umezawa, Kouta Takeda, Takuya Ishida, Kiyohiko Igarashi, Nobuhumi Nakamura, Masahiro Samejima, Hiroyuki Ohno and Makoto Yoshida

*Tokyo University of Agriculture and Technology, Japan*

Characterization of a pyrroloquinoline quinone-dependent sugar dehydrogenase homologue from the basidiomycete *Coprinopsis cinerea*

## **Break**

15:30-16:00          6BP-I02 *Invited Lecture*

Renato G. Reyes, Dean Barry L. Tan, Alfred Cacayan, Sofronio P. Kalaw, Rich Milton R. Dulay, Bismarck Francisco, Crisanto Salamat, Hiroaki Yoshimoto, Tomoko Seyama and Fumio Eguchi

*Central Luzon State University, Philippines*

From forestry wastes to rice straw and forest leaf litters for medicinal fungi: A paradigm shift in mushroom cultivation in the Philippines

16:00-16:20          6BP-O06

Tomoko Wada, Rie Endo, Coskun Kose, Dilek Dogu, Kamile Tirak, Nural Yilgor, Junji Sugiyama, Kiyohiko Igarashi and Nami Kartal

*National Research Institute for Cultural Properties, Tokyo, Japan*

A survey of microbial deterioration in archaeological wood excavated from Yenikapi, Istanbul, Turkey

16:20-16:40          6BP-O07

Alina Lozhechnikova and Monika Österberg

*Aalto University, Finland*

Sustainable surface modification of wood

16:40-17:00          6BP-O08

Rie Endo and Junji Sugiyama

*Toyo Feather Industry Co., Japan*

Improving the stability of archaeological waterlogged wood by adding multivalent-metal salt process in feather-keratin method

***Poster session (17:10-18:40)***

## March 17

9:20-9:50 6BP-I03 *Invited Lecture*

Hou-Feng Li, Hsin-Ting Yeh, Chun-I Chiu, Chu-Yu Quo, Wei- Ren Liang and Ming-Jer Tsai  
*National Chung Hsing University, Taiwan*  
Termite infestation pattern in trees

9:50-10:10 6BP-O09

S. Nami Kartal, Evren Terzi and Lauri Rautkari  
*Faculty of Forestry, Istanbul University, Turkey*  
Role of nano particles in prevention of mold growth

10:10-10:30 6BP-O10

Syahidah, Takeshi Katayama, Toshisada Suzuki, Yasuhiko Asada, Yoshito Ohtani and Wakako Ohmura  
*Kagawa University, Japan*  
Antitermite and antifungal activities of gofasa (*Vitex cofassus* Reinw.) heartwood extract

10:30-10:50 6BP-O11

Hiroki Watanabe, Yoshiyuki Yanase and Yoshihisa Fujii  
*Kyoto University, Japan*  
Evaluation of larval feeding activity of the bamboo powder-post beetle *Dinoderus minutus* using acoustic emission monitoring

10:50-11:10 6BP-O12

Ruibo Li, Ryo Narita, Shinsuke Marumoto, Hiroshi Nishimura, Mitsuyoshi Yatagai, Takashi Fujita and Takashi Watanabe  
*Kyoto University, Japan*  
Characterization of antiviral activities of wood and bamboo vinegar

11:10-11:30 6BP-O13

John Allexander, Ferry Bongers, Julian Marcroft, Simon Aicher and Gerhard Dill-Langer  
*Accsys Technologies, United Kingdom*  
Structural performance of Accoya<sup>®</sup> wood under service class 3 (wet use) conditions

11:30-11:50 6BP-O14

Teruhisa Miyauchi and Ikuo Momohara  
*Hokkaido Research Organization, Japan*  
Quantitative determination of quaternary ammonium compounds in treated wood using ultra high performance liquid chromatography with evaporative light scattering detection.

11:50-12:10 6BP-O15

Fangli Sun, Binbin Liu, Lingfei Ma, Hongzhi Liu and Yuhui Zhang  
*Zhejiang Agriculture and Forestry University, China*  
Polyacrylic acid (PAA)/polyethylene glycol(PEG) hydrogel with interpenetrating network structure

## Session 7: Biorefinery

**March 16**

**Chair**

11:15-11:45	7BR-I01	Takashi Watanabe <i>Kyoto University, Japan</i>
11:45-12:05	7BR-O01	
12:05-12:25	7BR-O02	
Lunch, Poster (13:00-14:30)		
14:40-15:00	7BR-O03	Shiro Saka <i>Kyoto University, Japan</i>
15:00-15:20	7BR-O04	
15:20-15:40	7BR-O05	
15:40-16:00	7BR-O06	Kentaro Abe <i>Kyoto University, Japan</i>
16:00-16:20	7BR-O07	
16:20-16:40	7BR-O08	
16:40-17:00	7BR-O09	Yukiko Enomoto-Rogers <i>The University of Tokyo, Japan</i>
17:00-17:20	7BR-O10	
17:20-17:40	7BR-O11	
17:40-18:00	7BR-O12	Houssine Schaquì <i>EMPA, Switzerland</i>
18:00-18:20	7BR-O13	
18:20-18:40	7BR-O14	

**March 17**

9:30-9:50	7BR-O15	Toshiaki Umezawa <i>Kyoto University, Japan</i>
9:50-10:10	7BR-O16	
10:10-10:30	7BR-O17	
10:30-10:50	7BR-O18	Jaehyuk Jang <i>Kangwon National University, Republic of Korea</i>
10:50-11:10	7BR-O19	
11:10-11:30	7BR-O20	Tatsuhiko Yamada <i>Forestry and Forest Products Research Institute, Japan</i>
11:30-11:50	7BR-O21	
11:50-12:10	7BR-O22	

## **March 16**

11:15-11:45        7BR-I01 *Invited Lecture*

Tatsuhiko Yamada

*Forestry and Forest Products Research Institute, Japan*

Development of lignin based functional materials for the establishment of rural area biorefinery system

11:45-12:05        7BR-O01

Marc Borrega and Herbert Sixta

*Aalto University, Finland*

Post-hydrolysis of Kraft paper pulp for the production of dissolving pulp and xylo-oligosaccharides

12:05-12:25        7BR-O02

Kyoko S. Katsumata, Supachineekan Tanarugamorn, Xiumei Zhang and Yuji Matsumoto

*The University of Tokyo, Japan*

The effect of age on the alkaline pulping of *Eucalyptus* wood

### ***Lunch Break***

### ***Poster session (13:00-14:30)***

14:40-15:00        7BR-O03

Saara Hanhikoski, Klaus Niemelä and Tapani Vuorinen

*VTT Technical Research Centre of Finland, Finland*

The potential of neutral sulphite biorefinery

15:00-15:20        7BR-O04

Chuchu Chen, Dagang Li, Hiroyuki Yano and Kantaro Abe

*Nanjing Forestry University, China*

Preparation of high crystalline  $\alpha$ -chitin hydrogel using a simple NaOH treatment at low temperatures

15:20-15:40        7BR-O05

Annariikka Roselli, Agnes Stepan, Michael Hummel and Herbert Sixta

*Aalto University, Finland*

IONCELL-P, an ionic liquid based hemicellulose extraction method.

15:40-16:00        7BR-O06

Yukiko Enomoto-Rogers, Noreen G.V. Fundador and Tadahisa Iwata

*The University of Tokyo, Japan*

Synthesis of xylan derivatives and their applications

16:00-16:20 7BR-O07

Anne Michud, Shirin Asaadi, Michael Hummel and Herbert Sixta  
*Aalto University, Finland*

IONCELL-F: Production of high tenacity man-made cellulose fibers by dry-jet wet spinning from cellulose-ionic liquid solution

16:20-16:40 7BR-O08

Jie Jiang, Liang Liu, Wenbo Ye, Mu Chen and Yimin Fan  
*Nanjing Forestry University, China*

Preparation and characterization of cellulose nanofibers by laccase-TEMPO oxidation

16:40-17:00 7BR-O09

Houssine Sehaqui, Uxua Perez de Larraya, Michael Sander, Philippe Tingaut and Tanja Zimmermann  
*EMPA, Switzerland*

Contaminants adsorption onto nanofibrillated cellulose for water purification

17:00-17:20 7BR-O10

Haiying Wang, Dagang Li, Hiroyuki Yano and Kentaro Abe  
*Nanjing Forestry University, China*

Obtaining tough cellulose II nanofibers with high thermal stability from wood

17:20-17:40 7BR-O11

Shukichi Tanaka, Tadahisa Iwata and Masatoshi Iji  
*NEC Corp., Japan*

Development of cardanol-bonded cellulose thermoplastic: Influence of solvents in its heterogeneous synthesis process

17:40-18:00 7BR-O12

Shiro Saka, Eiji Minami, Harifara Rabemanolontsoa and Haruo Kawamoto  
*Kyoto University, Japan*

The 3rd generation bioethanol production process with acetic acid fermentation from lignocellulosics

18:00-18:20 7BR-O13

Fabio Minoru Yamaji, Hiroyuki Yamamoto, Gabriela Tami Nakashima, Carlos Roberto Sette Jr, Alessandra Luzia Da Róz and Joao Lucio Barros  
*UFSCar, Brazil*

Biomass for solid biofuel production in Brazil

18:20-18:40 7BR-O14

Denny Irawati, Higeta Satoru, Soekmana Wedatama, Johannes Pramana Gentur Sutapa, Ishiguri Futoshi and Yokota Shinso  
*Faculty of Forestry Gadjah Mada University, Indonesia*

Bioenergy properties of tree branch from several species planted in Indonesia

## March 17

9:30-9:50 7BR-O15

Daisuke Ishii and Tadahisa Iwata

*The University of Tokyo, Japan*

Thermal and rheological properties of poly(caffeic acid) as biomass-derived heat-resistant polyester

9:50-10:10 7BR-O16

Jaehyuk Jang

*Kangwon National University, Republic of Korea*

Effect of enzymatic hydrolysis on the morphological characteristics of lignocellulose nanofibers with different lignin contents

10:10-10:30 7BR-O17

Dou-yong Min, Hou-min Chang, Hasan Jameel, Lucian Lucia and Yong-can Jin

*Nanjing Forestry University, China*

Structural changes of corn stem lignin induced by pretreatments

10:30-10:50 7BR-O18

Rie Takada and Takashi Watanabe

*Kyoto University, Japan*

Analysis of unproductive adsorption of cellulase on lignin

10:50-11:10 7BR-O19

Toshiaki Umezawa, Masahiro Sakamoto, Taichi Koshihara, Takefumi Hattori, Shiro Suzuki and Masaomi Yamamura

*Kyoto University, Japan*

Lignin metabolic engineering in *Oryza sativa* for biomass refining

11:10-11:30 7BR-O20

Chenhuan Lai, Maobing Tu, Qiang Yong and Shiyuan Yu

*Nanjing Forestry University, China*

Contrasting effects of extractable lignin and bulk lignin on enzymatic hydrolysis of pretreated sweetgum

11:30-11:50 7BR-O21

Yuxiang Huang and Guangjie Zhao

*Beijing Forestry University, China*

Comparisons of pore properties and surface functional groups of activated carbon fibers from liquefied wood by KOH and steam activation

11:50-12:10 7BR-O22

Tsutomu Suzuki and Kyoko Suzuki

*Kitami Institute of Technology, Japan*

Wood refinery by two-steps iron-catalyzed carbonization

# **Poster Presentations**



## **Session 1: Wood Physics (17:10-18:40, March 16)**

1WP-P01

Haruka Maejima, Kaoru Endo and Eiichi Obataya

*University of Tsukuba, Japan*

Effects of moistening treatment on the hygroscopicity and the vibrational properties of aged wood

1WP-P02

Masakazu Nishida, Tomoko Tanaka, Wataru Kanematsu, Tsunehisa Miki and Kozo Kanayama

*Advanced Science and Technology, Japan*

Solid state NMR study on thermal expansion characters of wood impregnated with polyethylene glycols

1WP-P03

Eiko NAKAYAMA

*Showa Women's University, Japan*

Degradation of wood by light

1WP-P04

Hikaru Akahoshi and Eiichi Obataya

*University of Tsukuba, Japan*

Investigation of the Deterioration of Woodwind Reed

1WP-P05

Kaoru Endo, Haruka Maejima and Eiichi Obataya

*University of Tsukuba, Japan*

Hygroscopicity and vibrational properties of hydrothermally-treated wood

1WP-P06

Yoon-Seong Chang, Sang-Yun Yang, Han-Seob Jeong, Kyu-Young Kang, Joon-Weon Choi, In-Gyu Choi and Hwanmyeong Yeo

*Seoul National University, Republic of Korea*

Analysis of moisture-sorption characteristics of sawdust by NIR spectroscopy

1WP-P07

Merlin SIMO TAGNE

*Douala Institute of Technology, Cameroon*

Modeling and simulation of the drying of temperate hardwood using oscillating regimes

1WP-P08

Noboru Sekino

*Iwate University, Japan*

Effect of carbonization temperature and density on the thermal conductivity of charcoal

1WP-P09

Gang Tao, Takashi Takeda, Yoshihiro Hosoo and Takahisa Yoshida  
*Shinshu University, Japan*

Relationship between fractal dimensions of fracture surface and mechanical properties on small specimens of Japanese larch timber dried by the high-temperature setting method

1WP-P10

Ryo Nakanishi and Eiichi Obataya  
*University of Tsukuba, Japan*

Investigation of Material Properties of Reed for Hichiriki.

1WP-P11

Nozomi Takemura, Eiichi Obataya and Koji Adachi  
*University of Tsukuba, Japan*

Compressive elasticity of piled beam structure and compressed wood

1WP-P12

Takaaki Fujimoto and Junji Kimura  
*Tottori University, Japan*

Application of Bayesian approach for estimating the parameters of the radial variation model of basic density in hinoki cypress (*Chamaecyparis obtusa*)

1WP-P13

Sang-Yun Yang, Yonggun Park, Hyun Woo Chung, Chang-Deuk Eom, Kug-Bo Shim and Hwanmyeong Yeo  
*Seoul National University, Republic of Korea*

Moisture Content Prediction Model Development using Complex Dielectric Permittivity of wood in Radio Frequency

1WP-P14

Anna Carolina Andrade, José Reinaldo Silva, Roberto Braga Júnior, José Tarcisio Lima and Paulo Ricardo Hein  
*Department of Forest Science, Brazil*

Analysis of the surface quality of solid wood using solid-state laser

1WP-P15

Franciane Andrade de Pádua, Paulo Fernando Trugilho, Sebastião Carlos Silva Rosado, Fabio Minoru Yamaji and Larissa Benassi Valentim  
*Federal University of Sao Carlos, Brazil*

Effect of diameter and height of trees in the growth stresses measures by residual strain in Eucalyptus clones

1WP-P16

Yuma Tohjima, Masamitsu Ohta and Satoshi Shida  
*University of Tokyo, Japan*

The reflection of ultraviolet rays from wood in the view of the human health

1WP-P17

Aoi Hirano, Eiichi Obataya and Koji Adachi

*University of Tsukuba, Japan*

Bending properties of the composite beam using compressed wood

1WP-P18

Katsuhisa Hirano and Satoshi Shida

*University of Tokyo, Japan*

Measuring moisture distribution by non-destructive method using x-ray digital microscope when surface checks occur in a first stage of drying boxed-heart Japanese cedar

1WP-P19

Miyuki Matsuo, Masato Yoshida, Hiroyuki Yamamoto, Kenji Umemura and Shuichi Kawai

*Nagoya University, Japan*

Natural aging of keyaki (*Zelkova serrata* Makino) wood

1WP-P20

Mariana Ramírez-Pérez and Javier-Ramón Sotomayor-Castellanos

*Universidad Michoacana, Mexico*

Hygro-Thermo-Mechanical Densified of Mexican Wood.

1WP-P21

Javier-Ramón Sotomayor-Castellanos and Mariana Ramírez-Pérez

*Universidad Michoacana, Mexico*

Hygro-Thermo-Fatigue of Mexican Woods. Assessment by Nondestructive Methods.

1WP-P22

Feng-Rong Chang, Feng-Cheng Chang, Te-Hsin Yang and Cheng-Jung Lin

*National Taiwan University, Taiwan*

Effect of heat treatment on the physical, surface and mechanical properties of Japanese cedar (*Cryptomeria japonica*)

1WP-P23

Jingpeng Li, Bitao Fan, Huanhuan Zheng, Chenye Yan, Chunde Jin and Qingfeng Sun

*Zhejiang Agricultural and Forestry University, China*

Design, Fabrication, and Photocatalytic Utility of Nanostructured semiconductors on the Bamboo Surface: Focus on ZnO-based Nanostructures

1WP-P24

Jingpeng Li, Qiufang Yao, Huanhuan Zheng, Chenye Yan, Qingfeng Sun and Chunde Jin

*Zhejiang Agricultural and Forestry University, China*

Fabrication, Characterization, and Properties of Superhydrophobic Bamboo Surface Based on ZnO Nanostructures

1WP-P25

YUE QI, Jaehyuk Jang, Sehwi Park and Namhun Kim

*Kangwon National University, Republic of Korea*

Wood quality of Paulownia coreana grown in Korea

1WP-P26

Misao Yokoyama

*Kyoto University, Japan*

Aging Effect on Wood Mechanics

1WP-P27

Ryunosuke Kitamura, Tetsuya Inagaki, Keiji Konagaya, Hikaru Kobori and Satoru

Tsuchikawa

*Nagoya University, Japan*

An investigation of light propagation in wood by time-of-flight near-infrared spectroscopy

1WP-P28

Shinichi Tai, Tomoaki Kiryu, Yuka Miyoshi, Yuzo Furuta and Ohkoshi Makoto

*Kyoto Prefectural University, Japan*

Compressive deformation behavior of wood cells in radial direction: Effect of the variation of cell shapes within an annual ring

1WP-P29

Ken Watanabe, Yasuhiro Matsushita and Isao Kobayashi

*Forestry and Forest Products Research Institute, Japan*

Self-organizing map as a potential method for optimizing lumber sorting before kiln-drying

1WP-P30

Youki Suzuki, Kiyohiko Ikeda, Nobuo Sobue, Takahisa Yoshida, Motoyoshi Ikeda and Isao Kobayashi

*Forestry and Forest Products Research Institute, Japan*

Monitoring the moisture content of piled timbers using impedance models

1WP-P31

Se-hwi Park, Jae-hyuk Jang, Sa-ra Jang and Nam-hun Kim

*Kangwon national university, Republic of Korea*

Wood quality and preservation properties of major wood species planted in Indonesia

1WP-P32

Ae-Hee Lee, Nam-Hun Kim and Jae-Hyuk Jang

*Kangwon National University, Republic of Korea*

Structure and properties of yellow hearted pine in Korea

1WP-P33

So Seon Lee, Jin Hyuk Kong and Gi Young Jeong

*Chonnam National University, Republic of Korea*

Effects of sample size and drying condition on the shrinkage of different species in South Korea

1WP-P34

Chul-Ki Kim, Jung-Kwon Oh and Jun-Jae Lee

*Seoul National University, Republic of Korea*

Field application with portable X-ray CT for investigating inner state of wood

1WP-P35

Andi Hermawan and Noboru Fujimoto

*Kyushu University Japan*

Viscoelastic creep behavior of Sugi and Hinoki under various temperatures

## **Session 2: Timber Engineering (17:10-18:40, March 16)**

2TE-P01

Yasushi Nakashima and Takashi Takeda

*Iwate Prefectural Forestry Technology Center, Japan*

Evaluation of bending strength of Japanese red pine two-surface sawn timber used for beams and girders

2TE-P02

Takashi Takeda, Yoshihiro Hosoo and Futo Shinozaki

*Shinshu University, Japan*

Actual performances of concrete-form plywood composed of domestic wood on site of constructing a small check dam

2TE-P03

Toshiro Harada, Daisuke Kamikawa, Atsushi Miyatake, Ikuo Momohara, Masayuki

Miyabayashi and Yuji Imamura

*Forestry and Forest Products Research Institute, Japan*

Effects of preservative treatment on fire safety performance of glued laminated timber.

2TE-P04

Satomi Sonoda

*Toyama Prefectural Agricultural, Forestry and Fisheries Research Center, Japan*

Analysis of asymmetric loading layered beams with incomplete interaction

2TE-P05

Shuetsu Saito

*Forestry and Forest Products Research Institute, Japan*

Development of a weight monitoring equipment to apply an optical stress sensor during lumber drying in a kiln dryer

2TE-P06

Yoshiaki Wakashima, Hidemaru Shimizu, Koichiro Ishikawa and Yasushi Fujisawa

*Toyama Prefectural Agricultural, Forestry and Fisheries Research Center, Japan*

Development of high damping shear walls using wood friction

2TE-P07

Yuhei Mouri, Takumi Nakahata, Takuro Mori, Yoshiyuki Yanase, Kei Tanaka and Masafumi Inoue

*Oita University, Japan*

Effect of Termite Attack on Single Shear Strength of Wood Screwed Joint

2TE-P08

Mami Wada, Hiroshi Isoda, Takuro Mori and Akihisa Kitamori

*Kyoto University, Japan*

A Study on Strength Properties of L and T Shape Panel with CLT Construction

2TE-P09

Yui Kikuchi, Masashi Nakamura, Yoshiko Yagi, Akitaka Kimura and Takato Nakano  
*Kyoto University, Japan*

Effects of wooden wall designs on perceived wood ratio

2TE-P10

Masashi Nakamura, Akitaka Kimura and Yui Kikuchi  
*Kyoto University, Japan*

Evaluation of visual impression of full-size wooden wall decorated by Sugi timber

2TE-P11

Takumi Nakahata, Takuro Mori, Kei Tanaka, Yuhei Mouri and Masafumi Inoue  
*Oita University, Japan*

Effect of Moisture Contents of Wood on Strength Properties of Nailed wooden Joint

2TE-P12

Risa Hisadome, Andi Hermawan, Takeshi Ohuchi and Noboru Fujimoto  
*Kyushu University, Japan*

Effect of Humidity Control Automatically Associated with Acoustic Emission on the Kiln Drying of Hardwood Board

2TE-P13

Germán Suárez-Béjar and Javier-Ramón Sotomayor-Castellanos  
*Universidad Michoacana, Mexico*

Mechanical Characteristics and Material Indices as Design Criteria for Tropical Mexican Woods.

2TE-P14

Yuta Kano and Masamitsu Ohta  
*University of Tokyo, Japan*

Similarities of the vibration properties between the two different scaled wooden house models

2TE-P15

Chih-Hsien Lin, Chih-Lung Cho and Te-Hsin Yang  
*National Chung Hsing University, Taiwan*

Determination of poisson's ratio in relation to transverse layer thickness of 3-layers CLT

2TE-P16

Kouchi Kato, Mariya Ito, Tetsuya Inagaki, Hikaru Kobori, Takaaki Fuzimoto and Satoru Tsuchikawa  
*Nagoya University, Japan*

Fast on-line NIR technique to predict modulus of elastic of the lamina for Cross Laminated Timber

2TE-P17

Jin Hyuk Kong, Moon Jae Park and Gi Young Jeong  
*Chonnam National University, Republic of Korea*

Effects of peg diameters and orientations on the bearing properties of wood peg connection

2TE-P18

Norihiko Yamada, Tomoyuki Ishizaka, Kijuro Fukuju and Yoshihisa Fujii  
*Hyogo Pref. Tech. Center for Agriculture, Forestry and Fisheries, Japan*  
Drying of konara lumber in log-house type lumber dryer using solar energy

2TE-P19

Olusola Samuel Areo, Olajide Razaq Adejoba and Ayodeji.O Omole  
*Forestry Research Institute of Nigeria, Ibadan, Nigeria*  
Influence of mechanical properties on utilization potential of *Mangifera indica* L. wood for furniture industry

2TE-P20

Zhe-rui Li, Ze-li Que and Tong-yu Hou  
*Nanjing Forestry University, China*  
Experimental Study on Shaking Table Tests of Dougong in Tianwang Hall, Luzhi, Ming dynasty

2TE-P21

Chih-Lung Cho and Yang-He Huang  
*National ILan University, Taiwan*  
The Mechanical Properties of Shuttle Columns Used for Post and Lintel Constructions

2TE-P22

Yasuo Okazaki  
*Akita Prefectural University, Japan*  
Wood-decay diagnosis by modal analysis

2TE-P23

Jung-Kwon Oh, Jung-Pyo Hong and Jun-Jae Lee  
*Seoul National University, Republic of Korea*  
Prediction of Compressive Strength of Cross Laminated Timber



## **Session 3: Wood Chemistry (13:00-14:30, March 16)**

3WC-P01

Frantisek Kacik, Danica Kacikova, Veronika Velkova and Vladimir Vacek  
*Technical University in Zvolen, Slovakia*

Chemical alterations at the wood thermal modification and its influence on mechanical properties

3WC-P02

Zhulan Liu, Yunfeng Cao, Zhiguo Wang and Hao Ren  
*Nanjing Forestry University, China*

Water Solubility Comparisons of Carboxymethylated Celluloses and Lignins

3WC-P03

Toshinari Hamaoka, Keisuke Ando and Nobuaki Hattori  
*Tokyo University of Agriculture and Technology, Japan*

Removal of toner from printed PPC paper by repeated laser ablation

3WC-P04

Frantisek Kacik, Stepan Podzimek, Danica Kacikova and Katarina Vizarova  
*Technical University in Zvolen, Slovakia*

Characterisation of cellulose degradation by SEC-MALS, SEC-MALS-DAD and A4F-MALS methods

3WC-P05

Kazuto Seki and Ken Orihashi  
*Hokkaido Research Organization, Japan*

Characterization of secondary metabolites, nutritional substances, and internal secretory structures in the branch bark tissues among two larch species and their hybrid F1

3WC-P06

Naoyuki Matsui and Tatsuro Ohira  
*Forestry and Forest Products Research Institute, Japan*

Observation of deposition process of lignin in young tree leaves by DFRC method

3WC-P07

Toru Inamochi, Tsuguyuki Saito and Akira Isogai  
*University of Tokyo, Japan*

Effect of the co-catalyst salt on TEMPO-mediated oxidation of cellulose

3WC-P08

Chaonan Wang, Yoshito Ohtani, Masaki Kawakatu and Hideaki Ichiura  
*Kochi University, Japan*

Addition of tree essential oils into diesel engine fuel improves exhaust gas pollution

3WC-P09

Toshisada Suzuki, Takeshi katayama and Tanachai Pankasemsuk  
*Kagawa University, Japan*

Catechol-type lignan/neolignans isolated as antioxidants from the defatted seed residue of *Jatropha curcas*

3WC-P10

Masahiro Matsunaga, Yutaka Kataoka, Atsuko Ishikawa, Hiroshi Matsunaga, Masahiko Kobayashi and Makoto Kiguchi

Forestry and Forest Products Research Institute, Japan

Evaluation of heat-treated wood using supercritical carbon dioxide

3WC-P11

Toshinao Shioya, Tomoya Yokoyama and Yuji Matsumoto

*University of Tokyo, Japan*

Formation behavior of benzyl cation of lignin model compounds under acidic conditions

3WC-P12

Fumio Kawamura, Tatsuro Ohira, Shojiro Hishiyama, Kazunori Sasaki, Junkyu Han and Hiroko Isoda

*Forestry and Forest Products Research Institute, Japan*

Protective effects of major norlignans from the heartwood of *Cryptomeria japonica* against corticosterone-induced neurotoxicity in PC12 cells

3WC-P13

Yanding Li, Takuya Akiyama and Yuji Matsumoto

*University of Tokyo, Japan*

Nitrobenzene oxidation of 5-O-4 lignin model compounds and the characteristics of NMR chemical shifts of the models

3WC-P14

Satoko Shimizu, Pattaraporn Posoknistakul, Tomoya Yokoyama and Yuji Matsumoto

*University of Tokyo, Japan*

Effect of the presence of  $\gamma$ -hydroxymethyl group on the  $\beta$ -O-4 bond cleavage during alkaline cooking processes

3WC-P15

Masatsugu Takada, Eiji Minami, Haruo Kawamoto and Shiro Saka

*Kyoto University, Japan*

Comparative study on hydrothermal decomposition behavior of lignin from Japanese cedar and Japanese beech

3WC-P16

Dimas Andrianto, Waras Nurcholis, Takeshi Katayama and Toshisada Suzuki

*Kagawa University, Japan*

Antioxidant, antidiabetic and antihyperlipidemic activity of *Graptophyllum pictum* leaf extract

3WC-P17

Masaomi Yamamura, Shiro Suzuki, Takefumi Hattori and Toshiaki Umezawa  
*Kyoto University, Japan*  
High-throughput protocols of lignin analysis

3WC-P18

Li-Yuan Liu and Ting-Feng Yeh  
*National Taiwan University, Taiwan*  
Characterization of lignin and caffeic acid O-methyltransferase of *Dendrocalamus latiflorus*  
Munro

3WC-P19

Hsin-Tzu Wang, Li-Yuan Liu and Ting-Feng Yeh  
*National Taiwan University, Taiwan*  
Polysaccharide distributions and restricted mannan recognitions in poplar stems of different developmental stages

3WC-P20

Dezhi Chen, Wuping Chen and Guolin Tong  
*Nanjing Forestry University, China*  
Oxygen delignification of Acacia Lo-solids kraft pulp and Massoniana conventional kraft pulp

3WC-P21

Jin Er-suo, Zhu Yang-yang, Yang Fang and Song Jun-long  
*Nanjing Forestry University, China*  
Polymorph conversion of nanocellulose crystal in alkaline media

3WC-P22

Pattaraporn Posoknistakul, Tomoya Yokoyama and Yuji Matsumoto  
*University of Tokyo, Japan*  
Effect of the structural difference of  $\beta$ -O-4 type lignin model compounds on the reaction with active oxygen species under oxygen bleaching conditions

3WC-P23

Sheau-Horng Lin  
*National Pingtung University of Science and Technology, Taiwan*  
Manufacturing of Charcoal Adsorptive Paper and Its Application on Maintaining the Freshness of Fruits

3WC-P24

Deded Sarip Nawawi, Wasrin Syafii, Takuya Akiyama, Tomoya Yokoyama and Yuji Matsumoto  
*Bogor Agricultural University, Indonesia*  
Syringyl-guaiacyl Lignin in Reaction Wood of the Vesselless-Gymnosperm *Gnetum gnemon*

3WC-P25

Ho Chen-Lung, Wang Eugene I-Chen and Su Yu-Chang

*Taiwan Forestry Research Institute, Taiwan*

Derivation of Empirical Equations for the Dissolution of Lignin, Cellulose and Hemicelluloses in THFA/HCl Organosolv Pulping of Rice Straw

3WC-P26

Tomoko Shimokawa, Eiji Togawa, Koichi Kakegawa, Atsushi Kato, Noriko Hayashi, Shigeki Yoshida, Tsutomu Ikeda and Kengo Magara

*Forestry and Forest Products Research Institute, Japan*

Film formation and some structural features of hetero polysaccharide fractions from *Prunus speciosa* leaves

3WC-P27

Zhenfu Jin and Kenji Iiyama

*Zhejiang Agricultural and Forestry University, China*

Chemical characteristics of binderless board from bamboo residue and mechanism of self bonding

3WC-P28

Philip Kunio Naito, Satoshi Kimura, Masahisa Wada and Tadahisa Iwata

*University of Tokyo, Japan*

Crystal transition from hydrated chitosan to anhydrous chitosan

3WC-P29

Toshinori Nakagawa, Hiroki Horiba, Yuiko Yamabe, Yuri Yoshimura, Atsushi Nagaike, Makoto Inagami, Qinchang Zhu, Koichiro Ohnuki, Hiroya Ishikawa, Tsuyoshi Okamoto, Noboru Fujimoto and Kuniyoshi Shimizu

*Kyushu University, Japan*

Multiple-utilization of Sugi (*Cryptomeria japonica*) based on its variety of functions

3WC-P30

Yu-Tang Tung, Tung-Chou Tsai, Hsiao-Ling Chen and Chuan-Mu Chen

*National Chung Hsing University, Taiwan*

Anti-inflammatory Effect of *Antrodia camphorata* on Hyperoxia-induced Systemic Inflammatory Responses using NF- $\kappa$ B/luciferase Transgenic Mice

3WC-P31

Jiaqing Lu, Yiqin Yang, Yanjin Bi and Yongcan Jin

*Nanjing Forestry University, China*

Comparison of dilute acid and ammonium sulfite pretreatments on the enzymatic saccharification of wheat straw handling residues

3WC-P32

Wenjuan WU and Huamin Zhai

*Nanjing Forestry University, China*

Effects of DMSO/LiCl Dissolution on the Structural Characteristics of Bamboo Lignin

3WC-P33

Nathanael Guigo, Amandine Codou, Karim Mazeau, Jean-Luc Putaux and Laurent Heux  
*Université Grenoble Alpes, France*

Periodate oxidation and cellulose: a versatile tool for surface modification and biomaterial elaboration

3WC-P34

Qiang Liu and Hiroshi Ohi  
*University of Tsukuba, Japan*

Behavior of residual lignin during peroxymonosulfuric acid treatment of kraft pulp (Part 2)

## **Session 4: Composite Materials and Adhesion (17:10-18:40, March 16)**

4CA-P01

Shuang QIAN, Xin Dai and Hao Ren

*Nanjing Forestry University, China*

Properties of Polyhydroxybutyrate-Bamboo(*Sinocalamus affinis*) Lignophenol Biocomposite Films

4CA-P02

Xin Dai, Shuang Qian and Hao Ren

*Nanjing Forestry University, China*

Characterization and Application of Bamboo (*Sinocalamus affinis*) Lignophenols in Lignophenols-Pulp Sheet Composites

4CA-P03

Byung-Dae Park, Jiung Yang, Sang-Min Lee and Sang-Bum Park

*Kyungpook National Univrsity, Republic of Korea*

Modification of Urea-Formaldehyde Resin Adhesives with Blocked Polymeric MDI Resin for Wood-Based Composites

4CA-P04

Quanling Yang, Zhuqun Shi, Zidong Qi, Tsuguyuki Saito and Akira Isogai

*University of Tokyo, Japan*

Strongly luminescent nanocomposites prepared from TEMPO-oxidized cellulose nanofibrils and quantum dots

4CA-P05

Michiko Shimizu, Tsuguyuki Saito, Hayaka Fukuzumi and Akira Isogai

*University of Tokyo, Japan*

Material properties of surface-charged nanocellulose films with various counterions

4CA-P06

Shunsuke Fukui, Tsuguyuki Saito, Toru Noguchi and Akira Isogai

*University of Tokyo, Japan*

Nanostructural controls and properties of elastomer composites reinforced with TOCNs.

4CA-P07

Xin Guan

*Fujian Agriculture and Forestry University, China*

A Study on the Correlativity of Carbon Reservation and Properties of Medium Density Fiberboard during the Preparation of Wood Fiber with Laccase-mediator System

4CA-P08

Hiroto Soeta, Shuji Fujisawa, Tsuguyuki Saito and Akira Isogai  
*University of Tokyo, Japan*

Transparent and Strong Nanocellulose-Reinforced Cellulose Triacetate Composites

4CA-P09

Yasuji Kurimoto and Sakae Shibutani  
*Akita Prefectural University, Japan*

Introduction of carboxyl groups onto rice husk by mechano-chemical method for ammonia sorbent

4CA-P10

Shuoye Chen and Eiichi Obataya  
*University of Tsukuba, Japan*

Potential of compressed wood as a material for erhu soundbox

4CA-P11

Norihisa Kusumoto and Yasuji Kurimoto  
*Akita Prefectural University, Japan*

Mechanochemical acetylation of wood meal and mechanical properties of the composites

4CA-P12

Saji Kaoru, Togawa Eiji, Hashida Koh, Kubo Satoshi, Tanaka Ryohei and Sato Masatoshi  
*University of Tokyo, Japan*

Preparation and characterization of lignocellulose films prepared by alkaline glycerol pulps of oil palm trunk

4CA-P13

Motoi Yokokawa, Hisashi Miyafuji, Yusaku Murakami, Shinichi Shouho and Akio Yamaguchi

*Kyoto Prefectural University, Japan*

Enhanced fire-resistance of wood treated with various ionic liquids

4CA-P14

Hao Ren, Xin Dai, Shuang Qian, Yongcan Jin and Shigetoshi Omori  
*Nanjing Forestry University, China*

Production and Evaluation of Pulp Fibers Reinforced Composites

4CA-P15

Masahiko Kobayashi, Satoshi Kubo, Yutaka Kataoka, Atsuko Ishikawa, Masahiro Matsunaga, Makoto Kiguchi and Yushin Ohtomo  
*Forestry and Forest Products Research Institute, Japan*

Quantification of wood and plastics in WPCs containing a mixture of PP and PE as plastic raw material

4CA-P16

Ryosuke Kobe and Yoshikuni Teramoto

*Gifu University, Japan*

Fabrication of nanocomposite hydrogels using surface-modified cellulose nanofiber as an effective cross-linker

4CA-P17

Takeshi Ohuchi and Yoshiyasu Fujimoto

*Fukuoka University of Education, Japan*

Evaluation of adhesive layer of glulam by Acoustic Emission

4CA-P18

Shingo Yokota, Shiro Sakoda and Tetsuo Kondo

*Kyushu University, Japan*

Interfacial molecular design of nematic ordered cellulose templates for epitaxial nanodeposition

4CA-P19

Makoto Matsumoto and Takuya Kitaoka

*Kyushu University, Japan*

Wood Cellulose Nanofiber Films Containing Metal-Organic Frameworks for Selective Gas Separation

4CA-P20

Nathalie Lavoine, Julien Bras, Tsuguyuki Saito and Akira Isogai

*University of Tokyo, Japan*

TOCN/PNIPAm, a new composite material for controlled drug delivery

4CA-P21

Zhao Mengchen, Takeuchi Miyuki, Shimizu Michiko, Saito Tsuguyuki and Isogai Akira

*University of Tokyo, Japan*

Influences of the fibril arrangement on material properties of nanocellulose structures

4CA-P22

Zhigang Ling, Narohito Hori, Tadahisa Iwata and Akoi Takemura

*University of Tokyo, Japan*

In-situ Analysis of Chemical Structure of API Adhesive using FT-NIR Spectroscopy

4CA-P23

Ya-Wen Cheng, Chih-Hsuan Lee and Te-Hsin Yang

*National Chung Hsing University, Taiwan*

Effects of heat treatment on the physical and mechanical performance of bamboo composites

4CA-P24

Ju Zhou, Hongtuo Tong, Congcong Wang, Yanwen Huang, Xinglai Mao, Yan Wu and Jun Qian

*Zhejiang Agricultural and Forestry University, China*

Study on process scheme of flat-pressuring of hollow particleboard



4CA-P25

Shuji Fujisawa, Tsuguyuki Saito, Tadahisa Iwata and Akira Isogai  
*Forestry and Forest Products Research Institute, Japan*

Nucleating ability of poly (ethylene glycol)-grafted nanocellulose for poly(L-lactide)

4CA-P26

Lilik Astari and Sasa Sofyan Munawar  
*Research Centre for Biomaterials, Indonesia*

Production of Wood Plastic Composites from Oil Palm Empty Fruit Bunches Fiber and Recycled Polypropelene

4CA-P27

Min Lee, Sang-Bum Park and Sung-Phil Mun  
*Korea Forest Research Institute, Republic of Korea*

One-step preparation of TiO<sub>2</sub> embedded carbonized medium density fiberboard

4CA-P28

Lingfei MA, Jialu HUA, Jia MEI and Lingyan WANG  
*Zhejiang Agricultural and Forestry University, China*

Effect of additives on the hydration and flexural and compressive strength of Poplar powder and Magnesium Oxychloride Cement mixture

4CA-P29

Weibing Wu and Zhiliang Zhuang  
*Nanjing Forestry University, China*

Temperature-Sensitive and Fluorescent Poly(N-Isopropylacrylamide) Grafted Cellulose Nanocrystals For Drug Loading and Releasing

4CA-P30

Chul Choi, Chang-goo Lee and Seog-goo Kang  
*Republic of Korea*

A Study on Mechanical Properties of Hybrid Wooden-core Laminated Timber (HWLT) with Plywood core made of Domestic-Wood Veneer

4CA-P31

Atsushi Akahori, Kenjiro Fujinami, Masayuki Watanabe and Satoshi Sakuragawa  
*Industrial Research Institute of Shizuoka Prefecture, Japan*

An evaluation of the incombustible performance with infusion to the wood of the Phosphorus and Boric Types solution using the sap flow method.

4CA-P32

Teng-Chun Yang, Tung-Lin Wu, Ke-Chang Hung and Jyh-Horng Wu  
*National Chung Hsing University, Taiwan*

Dynamic viscoelastic and extended creep behavior of bamboo fiber-recycled poly(lactic acid) composites using time-temperature superposition principle (TTSP)

4CA-P33

Angelo Rita and Luigi Todaro

*University of Basilicata, Italy*

Bonding performance of Thermo-treated wood: comparisons Among Norway Spruce,  
Common Ash, and Turkey Oak

## Session 5: Cell Formation and Wood Structures

(13:00-14:30, March 16)

5FS-P01

Yoshihiro Hosoo, Masashi Hirano and Hirokazu Nishiwaki

*Shinshu University, Japan*

Molecular cloning and analysis of genes encoding potassium uptake transporters from *Liriodendron tulipifera*

5FS-P02

Ryunosuke Funahashi, Yusuke Okita, Hiromasa Hondo, Tsuguyuki Saito and Akira Isogai

*University of Tokyo, Japan*

Structural Analysis of Cellulose Microfibrils via Layer-by-Layer Peeling of the Surface Molecules

5FS-P03

Takuro Ichikawa, Futoshi Ishiguri, Kazuya Iizuka and Shinso Yokota

*Utsunomiya University, Japan*

Identification of specific proteins produced in each organ of Japanese birch plantlet treated with azelaic acid

5FS-P04

Jose Tarcisio Lima, Paulo Ricardo Gherardi Hein, Selma Lopes Goulart, Lidiane Costa Lima and Natalino Calegario

*Federal University of Lavras, Brazil*

Modelling microfibril angle of Eucalyptus wood by NIRS

5FS-P05

Yukiko Ishikura

*Local Independent Administrative Agency Hokkaido Research Organization Forest Research Department Forest Products Research Institute, Japan*

Cell wall structures and mechanical properties of juvenile and mature wood in softwood

5FS-P06

Daichi Yamashita, Masahisa Wada and Keiji Takabe

*Kyoto University, Japan*

Improvement of Mäule color reaction provides more detailed information on syringyl lignin distribution within cell wall in hardwoods

5FS-P07

Shijing Sun, Yoshiki Horikawa, Junji Sugiyama and Tomoya Imai

*Kyoto University, Japan*

Function analysis of cellulose synthase by site-directed mutagenesis

5FS-P08

Hisaya Miyashita and James Ndufa

*Forestry and Forest Products Research Institute, Japan*

Variation of wood density in the plus tree clones of *Melia volkensii* selected from drylands of Kenya

5FS-P09

Nellie Oduor and Hisaya Miyashita

*Forestry and Forest Products Research Institute, Japan*

Basic density in *Melia volkensii*

5FS-P10

Dagula Nuoan, Yukiko Tsuji, Shinya Kajita, Naofumi Kamimura and Eiji Masai

*Tokyo University of Agriculture and Technology, Japan*

Functional characterization of a gene for phenylcoumaran benzylic ether reductase in *Arabidopsis thaliana*

5FS-P11 Kentaro Abe

*Kyoto University, Japan*

Cellulose microfibril-based scaffold for artificial lignification

5FS-P12

Haruna Aiso, Futoshi Ishiguri, Kazuya Iizuka, Junko Shimizu, Jyunichi Ohshima and Shinso Yokota

*Tokyo University of Agriculture and Technology, Japan*

Reaction wood anatomy and lignin distribution in a vessel-less angiosperm *Tetracentron sinense*

5FS-P13

Kayo Kudo, Eri Nabeshima, Shahanara Begum, Yusuke Yamagishi, Satoshi Nakaba, Koh Yasue, Yuichiro Oribe and Ryo Funada

*Tokyo University of Agriculture and Technology, Japan*

The effects of localized heating to dormant stems on formation of the earlywood vessels in deciduous ring-porous hardwood, *Quercus serrata*

5FS-P14

Manami Takeuchi and Yuji Tsutsumi

*Kyushu University, Japan*

Screening of monolignol transport protein in *Arabidopsis thaliana*

5FS-P15

Izumi Arakawa, Hikaru Morimoto, Ryogo Nakada, Ryo Funada and Satoshi Nakaba

*Tokyo University of Agriculture and Technology, Japan*

Morphological changes and disappearance of nuclei in ray parenchyma cells during heartwood formation in *Cryptomeria japonica*

5FS-P16

Bei Luo, Monlin Kuo and Rui He

*Southwest Forestry University, China*

Cell Wall Formation in Developing Tracheids of China Fir (*Cunninghamia lanceolata*)  
Seedlings

5FS-P17

Shinya Koga, Yuta Imamura, Yasuhiro Utsumi, Takuo Hishi, Tsutomu Enoki and Naoaki Tashiro

*Kyushu University, Japan*

Growth and wood properties of Japanese larch planted in two different regions of Japan

5FS-P18

Suguru Wada, Koki Fujita and Yuji Tsutsumi

*Kyushu University, Japan*

Analysis of lignin structural changes within a growth ring of *Populus alba* xylem using Laser micro dissection and Py-GC-M

5FS-P19

Hiromi SHIBUI and Yuzou SANO

*Hokkaido University, Japan*

The structure and formation of outer bark of *Betula* species

5FS-P20

Yudong Shen, Tomoaki Ichie, Muraoka Hiroyuki, Saitoh Taku and Koh Yasue

*Shinshu University, Japan*

Climate responses of tree-ring width and densities of Japanese beech (*Fagus crenata*) growing in various growth conditions in Japan

5FS-P21

Yu Hirano, Taku M. Saitoh, Hiroyuki Muraoka and Koh Yasue

*Shinshu University, Japan*

Influence of climatic factors on an annual tree ring structures of *Cryptomeria japonica*.

5FS-P22

Satoshi Kimura, Tatsuki Kaneko and Masahisa Wada

*University of Tokyo, Japan*

Molecular directionality in crystalline polysaccharides

5FS-P23

Shinjiro Ogita, Taiji Nomura and Yasuo Kato

*Toyama Prefectural University, Japan*

Morphological and histochemical characteristics of thick-walled solid culms in Bambusa bamboo

5FS-P24

Kazuya Iizuka, Jyunichi Ohshima, Futoshi Isiguri, Minaaki Aizawa, Tatsuhiro Ohkubo and Shinso Yokota

*Utsunomiya University, Japan*

Relationship between radioactive cesium concentration and color of heartwood in sugi (*Cryptomeria japonica* D. Don) affected by fallout due to the Fukushima Dai-ichi nuclear power plant accident

5FS-P25

Jyunichi Ohshima, Kazuya Iizuka, Futoshi Ishiguri, Shinso Yokota and Toshihiro Ona

*Utsunomiya University, Japan*

Relationship between various extracted basic densities and cell morphology in Eucalyptus

5FS-P26

Mingzhu Pan, Hailan Lian and Xiaoyan Zhou

*Nanjing Forestry University, China*

The ultrastructure of rice straw in the process of ionic liquid treatment

5FS-P27

Miyuki Takeuchi, Mariko Norisada and Akira Isogai

*University of Tokyo, Japan*

Isotopic imaging of carbon accumulation during xylem cell wall formation using  $^{13}\text{C}$  pulse labeling

5FS-P28

Yoko Watanabe and Yasuyuki Ohno

*Hokkaido University, Japan*

The effect of insect defoliation on wood structure of deciduous tree species in cool-temperate forests

5FS-P29

Kang Han Wang, Mohd Zaki Hamzah, Mohd Nazre Saleh@Japri, Rasmina Halis and Amir Affan Abdul Azim

*Universiti Putra Malaysia, Malaysia*

Cambial activity of *Shorea acuminata* in relation to different stem diameters growing in tropical rainforest of west peninsular Malaysia

5FS-P30

Nguyen Viet Hoa Hoang and Keiji TAKABE

*Kyoto Univeristy, Japan*

The differences in anatomical structure between Japanese and Vietnamese Moso bamboo (*Phyllostachys heterocycla* f. pubescens (Mazel) Muroi) and Vietnamese *Dendrocalamus barbatus* Hsueh et D. Z. Li

5FS-P31

Youming Yu, Wen Cao and Zhiqiang Dong

*Zhejiang Agricultural and Forestry University, China*

The studies of Anatomical structure and fiber morphology of *Betula luminifera* tension wood

5FS-P32

Naoki Sunagawa, Kenji Tajima, Masahiro Samejima and Kiyohiko Igarashi  
*University of Tokyo, Japan*

Functional expression of bacterial cellulose synthase in yeast

5FS-P33

Yuko Yasuda, Yasuhiro Utsumi, Shinya Koga and Naoaki Tashiro  
*Kyushu University, Japan*

Effects of relative light intensity to the secondary xylem formation in *Abies sachalinensis*

5FS-P34

Tuula Jyske, Katsushi Kuroda, Dan Aoki, Andrey Pranovich, Bjarne Holmbom, Jussi-Petteri Suuronen, Hisashi Abe, Ugai Watanabe and Kazuhiko Fukushima  
*Finnish Forest Research Institute, Finland*

Phloem structure and stilbene chemistry in *Picea abies* as revealed by novel microtechniques

## **Session 6: Biodegradation and Preservation of Wood (17:10-18:40, March 16)**

6BP-P01

Hiroshi Kurisaki, Yoshihisa Fujii, Yosiyuki Yanase, Hidemaru Shimidzu, Satoko Nishikawa, Hitomi Nakano and Mami Segawa

*Toyama Prefectural Agricultural, Forestry and Fisheries Research Center, Japan*

Analysis of copper contents at the surface of wood post with copper metal fitting in Kyoto Sanjo-ohashi

6BP-P02

Ryuta Kido, Midori Takeeda, Mitsuhiro Manabe, Yutaka Miyagawa, Tatsuhiro Katashiba, Mitsuyasu Yamauchi, Shuji Itakura and Hiromi Tanaka

*Kinki University, Japan*

Extracellular NAD<sup>+</sup> and NADH by white-rot, brown-rot, and soft-rot fungi

6BP-P03

Mariko Takano, Masaya Nakamura and Muneyoshi Yamaguchi

*Forestry and Forest products Research Institute, Japan*

Distribution of manganese peroxidase in liquid culture of *P. crassa* WD1694

6BP-P04

Mariko Takano, Masaya Nakamura and Muneyoshi Yamaguchi

*Forestry and Forest Products Research Institute, Japan*

Effect of pH and concentration on glyoxal oxidase activity of *P. crassa* WD1694

6BP-P05

Naotake Konno, Ayumi Obara and Yuichi Sakamoto

*Utsunomiya University, Japan*

$\beta$ -N-acetylhexosaminidases involved in morphological changes of the *Lentinula edodes* fruiting body (shiitake mushroom)

6BP-P06

Yutaka Kataoka, Hiroshi Matsunaga, Atsuko Ishikawa, Sumire Kawamoto, Masahiro Matsunaga, Masahiko Kobayashi and Makoto Kiguchi

*Forestry and Forest Products Research Institute, Japan*

Measurement of penetration of wood preservative semi-transparent coatings into wood

6BP-P07

Atsuko Ishikawa, Yutaka Kataoka, Sumire Kawamoto, Masahiro Matsunaga, Masahiko Kobayashi and Makoto Kiguchi

*Forestry and Forest Products Research Institute, Japan*

Natural and accelerated weathering characteristics of wood finished with wood preservative semi-transparent coatings



6BP-P08

Juan Tao, Takao Kishimoto, Masahiro Hamada and Noriyuki Nakajima  
*Toyama Prefectural University, Japan*  
Enzymatic hydrolysis of cellulose in amino acid ionic liquid with co-solvent

6BP-P09

Shinichi Isaji  
*Hokkaido Research Organization Forest Products Research Institute, Japan*  
Weathering resistance of a semitransparent stain on copper monoethanolamine treated wood.

6BP-P10

Kenichi Ebe, Yoshiyuki Takahashi, Rumi Konuma and Noboru Sekino  
*Yamagata Research Institute of Technology, Japan*  
Surface deterioration and microbial contamination of wood plastic composites under outdoor exposure

6BP-P11

Takeshi Nishimura, Nobuaki Shirai and Takashi Watanabe  
*Forestry and Forest Products Research Institute, Japan*  
Chemiluminescence from decayed wood blocks by Japanese representative wood-rotting fungi

6BP-P12

Wakako Ohmura, Masaru Hojo, Yutaka Kataoka and Makoto Kiguchi  
*Forestry and Forest Products Research Institute, Japan*  
Morphological change in compound eyes and opsin gene expression from nymphs to alates in the termite, *Zootermopsis nevadensis* (Hagen)

6BP-P13

Kazuhiro Shiba, Masuo Hasegawa, Hiroshi Kurisaki and Makoto Nakata  
*Toyama Prefectural Forest Products Research Laboratory, Japan*  
Study on relationships between durability of wooden structures and growth of planted trees in afforestation

6BP-P14

Kohei Kambara, Genki Mihara and Yoko Takematsu  
*Forestry and forest products research institute, Japan*  
Differences of feeding and foraging activities of Japanese Reticulitermes termites

6BP-P15

Tereza Tribulova, Frantisek Kacik, Vladimir Vacek, Dmitry Evtuguin and Iveta Cabalova  
*Technical University in Zvolen, Slovakia*  
Depolymerization of modified cellulose by inorganic salts evaluated by size exclusion chromatography

6BP-P16

Tereza Tribulova, Frantisek Kacik, Dmitry Evtuguin and Iveta Cabalova  
*Technical University in Zvolen, Slovakia*  
Effect of fire retardant treatment on wood chemical components

6BP-P17

Sen-Sung Cheng, Chun-Ya Lin and Shang-Tzen Chang  
*National Taiwan University, Taiwan*  
Antitermitic Activity of Chemical Constituents from *Zelkova serrata* Essential Oils against *Coptotermes formosanus*

6BP-P18

Xinjie Cui and Jian Qiu  
*Southwest Forestry University, China*  
Identification of wooden piles from the site of Hai Menkou

6BP-P19

Wei-Cheng Chao, Te-Hsin Yang and Chia-Ju Lee  
*National Chung-Hsing University, Taiwan*  
Evaluation of decay and termite resistance of thermosetting resin impregnated southern pine (*Pinus* spp.) wood

6BP-P20

Toshikazu Irie, Chihana Toyokawa, Misaki Shobu, Rie Tsukamoto, Saki Okamura, Yoichi Honda, Hisatoshi Kamitsuji, Kousuke Izumitsu and Kazumi Suzuki  
*University of Shiga Prefecture, Japan*  
Overexpression of PKAc genes enhanced lignin degradation in the white-rot fungus *Pleurotus ostreatus*

6BP-P21

Yun-chih Chen and Te-Hsin Yang  
*National Chung-Hsing University, Taiwan*  
Weathering durability of ACQ preservatives treated Japanese cedar wood

6BP-P22

Chia-Wei Chang and Kun-Tsung Lu  
*National Chung Hsing University, Taiwan*  
Ultraviolet curable waterborne wood coatings from derivative of castor oil

6BP-P23

Yoshiaki Tamaru, Kiwamu Umezawa and Makoto Yoshida  
*Tokyo University of Agriculture and Technology, Japan*  
Cloning and Characterization of Auxiliary Activities Family 3 Enzymes from the Basidiomycete *Coprinopsis cinerea*

6BP-P24

Mikako Tachioka, Naohisa Sugimoto, Akihiko Nakamura, Takuya Ishida, Taku Uchiyama, Kiyohiko Igarashi and Masahiro Samejima

*University of Tokyo, Japan*

Effects of manganese ions and plasmid concentration in Phi29 polymerase-based random mutagenesis

6BP-P25

Yuka Kojima, Takuya Ishida, Naoki Sunagawa, Kiyohiko Igarashi, Masahiro Samejima, Kiwamu Umezawa, Jody Jellison, Barry Goodell and Makoto Yoshida

*Tokyo University of Agriculture and Technology, Japan*

Characterization of the Auxiliary Activities Family 9 from the Brown Rot Fungus

*Gloeophyllum trabeum*

## Session 7: Biorefinery (13:00-14:30, March 16)

7BR-P01

Zhigao Liu, Qiuhui Zhang and Guangjie Zhao

*Beijing Forestry University, China*

XPS analysis of carbon fiber precursor from liquefied wood under different curing conditions

7BR-P02

Toru Kanbayashi and Hisashi Miyafuji

*Kyoto Prefectural University, Japan*

Effect of wood liquefaction on cell wall structure and chemical component during ionic liquid treatment

7BR-P03

Teruaki Yokoo and Hisashi Miyafuji

*Kyoto Prefectural University, Japan*

Liquefaction behavior of wood in an ionic liquid, 1-ethylpyridinium bromide

7BR-P04

Ayako Miyata and Hisashi Miyafuji

*Kyoto Prefectural University, Japan*

Reaction of cellulose as treated with pyridinium-based ionic liquids

7BR-P05

Shintaro Ogawa and Hisashi Miyafuji

*Kyoto Prefectural University, Japan*

Reaction behavior of milled wood lignin in an ionic liquid under different heating method

7BR-P06

Masanobu Nojiri, Tomoko Shimokawa and Hajime Shibuya

*Forestry and Forest Products Research Institute, Japan*

Production of cellobiase from *Aspergillus niger* using saccharified residue of pulp

7BR-P07

Ryoya Ito and Hisashi Miyafuji

*Kyoto Prefectural University, Japan*

Production of 5-hydroxymethylfurfural (5-HMF) from glucose, cellulose and wood by ionic liquid treatment

7BR-P08

Yu Nakahara, Eiji Minami, Haruo Kawamoto and Shiro Saka

*Kyoto University, Japan*

MALDI-TOF/MS analysis of decomposition behaviors of hemicelluloses in Japanese beech and Japanese cedar as treated by hot-compressed water

7BR-P09

Asuka Fukutome, Haruo Kawamoto and Shiro Saka  
*Kyoto University, Japan*

Gas- and liquid-phase reactions of levoglucosan as a key intermediate of cellulose gasification

7BR-P10

Yoshiki Horikawa, Tomoya Imai and Junji Sugiyama  
*Kyoto University, Japan*

Longitudinal suprastructure of cellulose microfibril in green algae

7BR-P11

Harifara Rabemanolontsoa and Shiro Saka  
*Kyoto University, Japan*

Chemical characteristics of biomass species to determine their potential for biorefinery

7BR-P12

Caoxing Huang, Juan He, Douyong Min, Yongcan Jin and Qiang Yong  
*Nanjing Forestry University, China*

Effects of kraft pulping with cooking additives on the enzymatic hydrolysis of Moso bamboo residues

7BR-P13

Thi Thi Nge, Eri Takata, Shiho Takahashi and Tatsuhiko Yamada  
*Forestry and Forest Products Research Institute, Japan*

Preparation of polyethylene glycol modified softwood lignin derivatives and their thermal characterization

7BR-P14

Shou Hiasa, Shinichiro Iwamoto, Takashi Endo and Yusuke Edashige  
*Ehime University, Japan*

Reinforcement of polypropylene by nanofibers obtained from mandarin peel waste

7BR-P15

Gabriela Tami Nakashima, Mariana Provedel Martins, Hiroyuki Yamamoto, Caio Salmeron Boschi and Fabio Minoru Yamaji

*Universidade Federal de São Carlos, Brazil*

Use of sugarcane straw for energy purposes

7BR-P16

Walbert Chrisostomo, Fabio Yamaji, Hiroyuki Yamamoto and Antonio Carvalho  
*Federal University of São Carlos, Brazil*

Effect temperature of densification on the binding mechanisms of wood sawdust

7BR-P17

Luis Ricardo Oliveira Santos, Gabriela Tami Nakashima, Walbert Chrisostomo and Fabio Minoru Yamaji

*UFSCAR, Brazil*

Analysis of Energy Efficiency of Biomass used in Ceramic Ovens Region Tatuí-SP.

7BR-P18

Eri Takata, Tatsushi Tsuruoka, Ken Tsutsumi, Yuji Tsutsumi and Kenji Tabata  
*Kyushu University, Japan*

Conversion of lignocellulosic xylan into tetrahydrofurfuryl alcohol and xylitol by two step treatments: a hydrothermal process with phosphorus oxoacids followed by aqueous phase hydrogenation

7BR-P19

Wenyuan Zhu, Bo Jiang and Yongcan Jin  
*Nanjing Forestry University, China*

Sulfite pretreatment to overcome recalcitrance of lignocellulose (SPORL) for robust enzymatic saccharification of cotton stalk

7BR-P20

Zhu Yang-yang, Jin Er-suo, Yang Fang and Song Jun-long  
*Nanjing Forestry University, China*

Effects of reaction conditions on the molecular weight of amphoteric polyacrylamide studied by orthogonal test

7BR-P21

Lingling Zhang, Shufang Wu, Houmin Chang and Roberta Farrell  
*Nanjing Forestry University, China*

Characterization of *P.kloeckeri* mannase and its impact on sugar conversion in enzymatic hydrolysis of *Pinus massoniana*

7BR-P22

Tatsuya Goto, Daisuke Ishii, Akio Takemura and Tadahisa Iwata  
*University of Tokyo, Japan*

Preparation and characterization of poly(ester-amide)s of ferulic acid and aliphatic amino acids

7BR-P23

Saki Okumura, Taizo Kabe, Daisuke Ishii, Takaaki Hikima, Masaki Takata, Akio Takemura and Tadahisa Iwata  
*University of Tokyo, Japan*

Synthesis, Thermal Properties and Structure Analysis of Curdlan Acetate Propionate

7BR-P24

Nobuko Takeda, Yukiko Enomoto-Rogers, Akio Takemura and Tadahisa Iwata  
*University of Tokyo, Japan*

Synthesis and Enzymatic Degradation of Regioselectively Substituted Cellulose Acetates

7BR-P25

Takahiro Danjo, Yukiko Enomoto-Rogers, Akio Takemura and Tadahisa Iwata  
*University of Tokyo, Japan*

Syntheses of chitosan acylates and their properties

7BR-P26

Yuxin Wu, Yukiko Enomoto-Rogers, Hisaharu Masaki and Tadahisa Iwata  
*University of Tokyo, Japan*  
Synthesis of polyamides and polyesters from glucaric acid

7BR-P27

Hiroyuki Kagawa, Yoshiaki Okabe, Chizuru Sasaki and Yoshitoshi Nakamura  
*Hitachi, Ltd., Japan*  
Epoxy resin and its hardener obtained from woody lignin obtained by steam explosion

7BR-P28

Atsushi Kaiho, Makiko Kogo, Ryo Sakai, Kaori Saito and Takashi Watanabe  
*Nippon Kayaku Co., Ltd, Japan*  
Acid-catalyzed depolymerization of lignin controlled by in situ trapping of enol intermediates with alcohol in water-immiscible solvent

7BR-P29

Ana Larissa Hansted, Mariana P. Martins, Leandro C. Morais, Hiroyuki Yamamoto and Fabio M. Yamaji  
*UFSCar, Brazil*  
*Piptadenia gonoachanta* biomass characterization for bioenergy

7BR-P30

Takashi Nogita, Hirofumi Ichinose and Takuya Kitaoka  
*Kyushu University, Japan*  
Cooperative enzymatic reaction by cellulosome-mimetic complex on cellulose paper

7BR-P31

Noriko Hayashi, Tomoko Shimokawa, Tsutomu Ikeda and Kengo Magara  
*Forestry and Forest Products Research Institute, Japan*  
Effect of hemicelluloses in bamboo nano-fiber produced by mechanical processing in the presence of endoglucanase

7BR-P32

Marina Alekhina, Andreas Ebert, Sami Heikkinen and Sixta Herbert  
*Aalto University, Finland*  
Effect of hydrothermolysis process conditions on the structural features of pine lignin

7BR-P33

Sakarin Puanglek, Satoshi Kimura, Yukiko Enomoto-Rogers, Taizo Kabe, Makoto Yoshida, Masahisa Wada and Tadahisa Iwata  
*University of Tokyo, Japan*  
Preparation of  $\alpha$ -1,3-glucan by in vitro enzyme-catalyzed polymerization and chemical modification to its ester derivatives

7BR-P34

Haruo Kawamoto and Shiro Saka

*Kyoto University, Japan*

Primary and secondary reactions of lignin pyrolysis

7BR-P35

Shinichiro Iwamoto and Takashi Endo

*National Institute of Advanced Industrial Science and Technology, Japan*

3-nm-thick Lignocellulose Nanofibers Obtained from Esterified Wood with Maleic Anhydride

7BR-P36

Shih-Hsuan Yen and Feng-Cheng Chang

*National Taiwan University, Taiwan*

The production of carbon fibers from lignosulfonate without chemical process

7BR-P37

Leonardo Galvis, Jinze Dou, Mehedi Reza and Tapani Vuorinen

*Aalto University, Finland*

Willow inner bark characterization: towards a new biorefinery concept

7BR-P38

Mayumi Hatakeyama, Yukiyo Yamauchi, Takuya Kitaoka and Hirofumi Ichinose

*Kyushu University, Japan*

Heterologous expression of cytochrome P450 from wood-rotting basidiomycetes in *Escherichia coli*

7BR-P39

Xin Jin and Takuya Kitaoka

*Kyushu University, Japan*

Proline-mediated Organocatalysis on Wood Cellulose Nanofibers

7BR-P40

Yukako Hishikawa, Mami Yamaguchi, Satoshi Kubo and Tatsuhiko Yamada *Forestry and Forest Products Research Institute, Japan*

Preparation of butyl levulinate by a single solvolysis process of cellulosic biomass

7BR-P41

Liwei Yu, Daisuke Tatsumi and Tetsuo Kondo

*Kyushu University, Japan*

Preparation of Carbon Nano-Particles from Biomass Carbons Using Aqueous Counter Collision Treatments

7BR-P42

Yoshiaki Kato, Ryohei Enomoto, Minami Akazawa, Keigo Mikame and Yasuo Kojima *Niigata University, Japan*

Properties of Japanese cedar bio-oil produced at various pyrolysis temperatures



7BR-P43

Ryota Kose, Kouki Yamaguchi and Takayuki Okayama  
*Tokyo University of Agriculture and Technology, Japan*

Physical properties and structure of paper with fine cellulose fibers including nanofibers

7BR-P44

Hajime Shibuya, Kengo Magara and Masanobu Nojiri  
*Forestry and Forest Products Research Institute, Japan*

Cellulase production by *Trichoderma reesei* in fed-batch cultivation on pulp

7BR-P45

Olga Ershova, Nicole Wilde, Roger Gläser and Herbert Sixta  
*Aalto University, Finland*

Furfural formation from xylose in solid catalyzed microwave-assisted reactions

7BR-P46

Yasuyo Fujii, Keiji Okada and Risa Minakuchi  
*Kyotogakuen University, Japan*

Properties of biochar of bamboo for carbon fixation

7BR-P47

Su-Ling Liu, Yun-Ting Chen, Jin-Cherng Huang, Ya-Nan Wang, Tsang-Chyi Shiah, Che-Wei Chang and Sun-Wen Juan

*National Chiayi University, Taiwan*

The Properties of Copper ion Adsorption on Three kinds of Activated Carbon

7BR-P48

Sun-Wen Juan, Jin-Cherng Huang, Ya-Nan Wang, Che-Wei Chang and Su-Ling Liu  
*National Taiwan University, Taiwan*

Adsorption of Chromium Ion on Thorny Bamboo and Cattle Manure Activated Carbon at Different pH

7BR-P49

Wangxia Wang, Michael Mozuch, Ronald Sabo, Phil Kersten, Junyong Zhu and Yongcan Jin  
*Nanjing Forestry University; USDA, United States*

Production of cellulose nanofibril films from bleached eucalyptus fibers by endoglucanase treatment and microfluidization

7BR-P50

Roni Maryana and Hiroshi Ohi  
*University of Tsukuba, Japan*

Effect of S/V lignin ratio on saccharification rate of oil palm trunk pulps obtained by using soda-AQ and AS-AQ delignification

7BR-P51

Khoiria Oktaviani and Hiroshi Ohi

*University of Tsukuba, Japan*

Effect of delignification on enzymatic saccharification of oil palm empty fruit bunch and bioethanol productivity

## **Members of IAWPS2015**

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Wood Technological Association of Japan, Japan  
The Japan Wood Research Society, Japan  
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Korean Society of Wood Science & Technology, Korea  
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Forest Products Association of Republic of China, Taiwan  
Forest Products Society, USA  
Brazilian Wood Association, Brazil*



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