Journal of Wood Science (2018) 64:706–708
https://doi.org/10.1007/s10086-018-1757-1

ANNOUNCEMENT

The 2nd Announcement of the 69th Annual Meeting of the Japan Wood Research Society in Hakodate

Date: March 14–16, 2019

Venue: Hakodate Arena (1-32-1, Yunokawa-cho, Hakodate, Hokkaido, Japan)

Time Table:

<table>
<tr><td>Date</td><td colspan="2">March 14 (Thu)</td><td colspan="2">March 15 (Fri)</td><td colspan="2">March 16 (Sat)</td></tr>
<tr><td>Venue</td><td colspan="2">Hakodate Arena</td><td colspan="2">Hakodate Arena</td><td colspan="2">Hakodate Arena</td></tr>
<tr><td rowspan="2">Morning</td><td rowspan="2">Oral presentation</td><td rowspan="2">Exhibition of related companies</td><td rowspan="2">Poster presentation</td><td rowspan="2">Exhibition of related companies</td><td>Oral presentation</td><td>Exhibition of related companies</td></tr>
<tr><td colspan="2">Closing ceremony</td></tr>
<tr><td>Afternoon</td><td>Oral presentation</td><td>Exhibition of related companies</td><td>JWRS awards ceremony Symposium</td><td>Exhibition of related companies</td><td colspan="2">Seminars for research groups</td></tr>
<tr><td>Evening</td><td colspan="2">Wood Science Mixer</td><td colspan="2">Banquet</td><td colspan="2"></td></tr>
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Due Dates:

The entry of presentation with an abstract: 17:00 (JST), January 10, 2019

Early bird registration: 17:00 (JST), February 15, 2019

The Japan Wood Research Society (JWRS) takes great pleasure in inviting all members of our society with an interest in the science and technology of wood to attend the 69th Annual Meeting of the JWRS that will be held from March 14 to 16, 2019, Hakodate, Hokkaido, Japan.

The society members may take oral and poster presentations during the meeting. The symposium and the exhibition of the related companies will also be held.

For more detail information, please visit http://www.jwrs.org/wood2019/index-e.html.

Organizing Committee:
Prof. Dr. Akio Koizumi (Chief)
Prof. Dr. Yuzou Sano (Executive Chief)
Associate Prof. Dr. Yutaka Tamai (Secretary)
Research Faculty of Agriculture, Hokkaido University
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Mokuzai Gakkaishi (Journal of the Japan Wood Research Society)

Mokuzai Gakkaishi is another official journal of the Japan Wood Research Society. This journal publishes original articles, notes, review articles, and announcements from the Society in Japanese but with English abstracts, tables, and figure captions for original reports. Contents of the latest issue of Mokuzai Gakkaishi are as follows:

Volume 64 Number 5 2018

Category I

Yudong Shen, Sachiko Wakui, Yuko Takehara, Yasuharu Hoshino, Yasuhiro Utsumi, Naoto Kamata, Yoshihiro Nobori, Tomoaki Ichie, Hiroyuki Muraoka, Taku M. Saitoh, Yu Hirano, Koh Yasue

Effects of climate on the radial growth of Japanese beech (*Fagus crenata*) at various sites in Japan

To understand the effects of climate change on radial growth of Japanese beech (*Fagus crenata*), we developed thirteen ring-width residual chronologies for living trees growing at various sites in Japan. Pearson's correlation coefficients and principal components were calculated for the sites. The chronologies at lower altitudes of Tohoku and Hokkaido revealed similarity of ring-width variations. Correlation and response function analyses performed between the site chronologies and climate records (monthly average temperatures, monthly precipitation and monthly sunshine duration) revealed common climatic responses for some combinations of sites in Tohoku and Hokkaido, but they were not common for all sites. In other regions, no common climate response was observed except for the combination of Kochi and Ehime. Running correlations over time revealed changes in significant correlations between the chronologies and the meteorological data at most sites. Therefore we concluded that the climatic responses of Japanese beech vary with local site conditions. In addition, the limiting climate factors changed with time.

Category I

Takashi Renbutsu, Akio Koizumi

Withdrawal properties of glued, round, mortise and tenon joints using greenwood shrinkage as a clamping pressure

Glued mortise and tenon joints are often used in joints for furniture such as chairs. However, such joints are not sufficiently resistant to withdrawal forces because of the difficulty of applying a clamping pressure to the surfaces being glued. Therefore, some reinforcement, such as the use of dowel-type fasteners, is necessary. In this study, we discussed the applicability of the shrink-fit method used in green woodworking to strengthen glued round mortise and tenon joints. The test specimens were assembled using wet mortise members and air-dried tenon members with polyvinyl acetate resin emulsion adhesive. Withdrawal tests on joint specimens of four hardwood species were conducted to study the reinforcing effects of the shrink fit on the withdrawal performance of the mortise and tenon joints. The proposed shrink-fitted glued round mortise and tenon joint exhibited sufficient withdrawal strength equivalent to that of the joint glued with epoxy resin adhesive. After applying four humidity cycles to simulate seasonal variations in moisture content, withdrawal strength did not decrease significantly. The proposed joint could withstand the withdrawal force to some extent after adhesion was fractured by shear force.

Category I

Yo Ochiai, Kenji Aoki, Masahiro Inayama

Fundamental research of an evaluation method of splitting failure in timber III: proposed fracture mechanism and evaluation method of splitting when loaded parallel to grain

The mechanism of splitting of timber loaded parallel to grain is not clear and it is difficult to evaluate the strength of timber under such loading. For splitting of drift-pinned joints with steel side plates loaded parallel to grain, an evaluation method was proposed by considering that splitting occurs when maximum bearing stress by drift pin to timber reaches its bearing strength. Based on this view, values of splitting strength estimated by calculation and analysis were compared with experimental values reported in the previous article. Taking the ends of the drift pin as free ends, the calculated values agreed well with experimental values of specimens with thickness of less than 60 mm. On the other hand, taking the ends of the drift pin as fixed ends, the calculated values agreed well with the experimental values of specimens with thickness of more than 90 mm. According to the method proposed in this research, increasing specimen thickness leads to greater differences between specimens with free and fixed ends. It is clear that restricting joint rotation has a large effect. Analytical and experimental values in any specimen are well matched because the restriction of rotation is set properly based on the results of the tests.

Category I

Ryosuke Takazawa,Hidefumi Yamauchi,Sakae Shibutani, Tomoyuki Hayashi

Changes of moisture content and chemical composition of wood chips during the steaming process in the production of medium density fiberboard

Changes of moisture content and chemical composition of wood were evaluated to determine the optimum conditions for the steaming process in the production of medium density fiberboard. Wood chips with specific moisture contents (10, 30, 60 and 90%) were cooked in a small pressure vessel under a pressure of 0.70 MPa for 1–18 min. Species used

were Acacia mangium (*Acacia mangium* Willd) and Sugi (Japanese Cedar, *Cryptomeria japonica* .D.Don). Changes of moisture content (MC) and chemical composition of the chips were evaluated after the cooking process. The specimens with lower initial MC (10, 30 and 60%) absorbed water during the process. Thickness of the chips did not affect the water absorption per unit area; therefore it is presumed that water diffusion occurred evenly through cell wall, pit membrane and lumen. On the other hand, the specimens with higher initial MC (90%) temporarily released a small amount of water at the beginning of the process, and then absorbed water again to the initial MC. For the chemical composition of Acacia, holocellulose decreased by 10% in 12 min of steaming regardless of the initial MC of the specimens. This was attributed to degradation of the hemicellulose.

Category I

Guangfan Jin, Rui Zhai, Shunli Kou, Huili Wang, Akiko Nakagawa-Izumi

Production of high wet strength paper using a NaOH-thiourea-urea aqueous solution

In this work, paper prepared from cotton fibers was treated with a NaOH-thiourea-urea aqueous solution to provide high wet strength. Effects of alkali concentration, soaking time, cooling temperature, cooling time, and washing time were evaluated by single-factor experiments. Analysis by FT-IR, XRD, TGA, and SEM was used to examine differences of microscale properties between treated and untreated papers. The optimal conditions were determined to be an alkali concentration of 6%, a soaking time of 2 s, a cooling temperature of − 6 °C, a cooling time of 10 min, and a washing time of 15 min. These optimal conditions increased dry tensile index of the treated paper by 84%, dry burst index by 368%, wet tensile index by 380%, and wet burst index by 1150% as compared to untreated paper. There were no significant changes of thermostability, structure of the functional groups, and crystallinity; however, the paper surface morphology changed significantly.