INTERNATIONAL ACADEMY OF WOOD SCIENCE

BULLETIN 2015-I

www.iaws-web.org/

June 2015

Executive Committee

President: Uwe Schmitt, Hamburg
Vice-President: Robert Evans, Melbourne
Secretary: Yoon Soo Kim, Gwangju
Treasurer: Howard Rosen, Silver Spring
Past President: Lennart Salmén, Stockholm
Bulletin Editor: Roberta Farrell, Hamilton

Please send correspondence to the Editor:

Roberta Farrell
rfarrell@waikato.ac.nz

TABLE OF CONTENTS

MESSAGE FROM THE PRESIDENT

The first year of my presidency already had passed during which we had our very successful 2014 Plenary Meeting in Sopron and Vienna in September. We are grateful to Prof. Robert Németh from the University of West Hungary in Sopron and Fellow Alfred Teischinger from the University of Natural Resources and Life Sciences (BOKU) in Vienna for the excellent organization and the attractive program about hardwood utilization including the Academy Lecture presented by Fellow Holger Militz.

In the frame of the Executive Committee (EC) meeting in Sopron, some important issues were discussed, including recruiting new Supporting Members and increasing the international visibility of the IAWS. The discussions were as follows:

> Recruiting new Supporting Members: As the number of Supporting Members steadily decreased during the past years, a Supporting Members sub-committee was formed, which is chaired by our former president Frank Beall. The sub-committee developed several suggestions to make it more attractive to become an IAWS Supporting Member and to simultaneously reduce bureaucracy during the election process. The EC approved these recommendations and the needed by-laws changes. However, changes of the constitution, which are very minor, are still with the Fellows for voting.
>
> Visibility: The second issue discussed was the visibility of IAWS. The new Distinguished Service Award (DSA) was dedicated to Fellow Madame Jiang Zehui from ICBR in China in 2013 during the Nanjing meeting, in recognition of her extraordinary achievements in wood science and especially bamboo and its utilization. In 2014, the DSA was dedicated to our Fellow Boris Ugolev from Moscow State Forest University, during an impressive ceremony in Moscow. These two events were well recognized by the scientific community and distinctly increased our visibility. Another approach in this matter identified to increase visibility is the use of the scientific expertise of our Fellows for bilateral agreements between the IAWS and specially chosen research organizations. Such agreements might be excellently suited to strengthen relationships to research organizations and to recruit new Supporting Members.

Our recent joint IAWS/Vietnamese Forestry University (VFU) workshop (12-15 May) held in Hanoi was successful with five keynotes from IAWS EC members and numerous presentations from Vietnamese colleagues. At the end of the workshop, we signed a Memorandum of Understanding (MoU) between the two organizations to promote both academic exchange and support for high quality publications in international journals mainly for young talented researchers of VFU.

Our 2015 Plenary Meeting will be held in Québec,Canada in September as a joint meeting with the regular International Scientific Conference on Hardwood Processing (ISCHP), organized by Laval University. For more details of the program please use the link on the start page of our IAWS website. One highlight will definitely be the Academy Lecture of our Fellow Alain Cloutier from Laval University. I am sure that we will have a very informative meeting with many fruitful discussions.
May I now finally draw your attention on the coming year 2016 in which we will have our 50th Anniversary. It was already decided to hold our 2016 plenary meeting from June 2nd to 3rd in Paris where the Academy was founded in 1966. The contract for holding the meeting in the historic rooms of the French Academy of Agriculture in the very heart of Paris has been signed. As soon as we have more details and a conference webpage, there will be a newsletter sent to all Fellows. Please consider this important event and keep these days free in your next year's calendar, and plan on attending.

It is my sincere hope to meet many fellows during our 2015 plenary meeting in Québec as well as next year in Paris.

Uwe Schmitt/Hamburg

TREASURER'S REPORT

Following is the "audited" Treasurer's Report for the calendar year 2014. The dues have been broken down into categories and the E is for "extra" year's payment. The net change for 2014 was $10,086. At the end of 2014, 122 of the 134 (91%) Active and Retired fellows and all of the supporting members were current in their dues. Our CD's and mutual fund totals $81,698 and we have invested in less secure and longer term investments to obtain higher rates of return. The strength of the US dollar over many other currencies, especially the euro, means our funds have increased in buying power in those countries. We continue to purse creative avenues to continue the support from fellows and organizations. With expansion of the IAWS Website, regular technical meetings, the PhD Thesis/Dissertation Award, the Distinguished Service Award, and inflation; continued revenue is essential to preserve our quality programs.

So far in 2015, we have approximately $32,100 in Capital One Bank and $6,000 in our PayPal account. Added to our $83,000 in savings, we have a total of approximately $121,100 in assets. We need to contact delinquent members and actively encourage perspective Supporting Members. All but 3 of our Supporting Members have paid 2015 dues and 58% of our Active and Retired members have paid this year. Our finances remain very sound.

Howard Rosen, IAWS Treasurer

"Fellow Frank C. Beall examined the books of the IAWS Treasury Account for 2014 and found all the details in satisfactory order".

To Fellows who have overdue Annual Dues: Remember there are five methods of payment (see IAWS website) or pay once for a Lifetime Membership.

DR. CHUNG-YUN HSE

Fellow Dr. Chung-Yun Hse, a research scientist for the United States Forest Service in Pineville, Louisiana USA will no longer be required to pay IAWS dues because he has reached the age of 80 in 2015. According to the IAWS Constitution, "Fellows 80 years old or older are no longer required to pay levies or fees." In my tenure as IAWS Treasurer, Dr. Hse is the only fellow to reach 80 while being an Active Member. In his 53 years of wood science research, Dr. Hse has made remarkable contributions to the forest products industry both regionally and internationally. His research on wood adhesives has facilitated the development of southern pine plywood, fiber board, and oriented-strand board products (OSB) that drive the southern forest products industry. His early research resulted in adhesives that could glue southern pine wood which had high concentrations of resin—hence, the development of southern pine plywood industry. His efforts continued and were critical in developing the use of low-quality and varying density hardwoods that became the major component of OSB. The development of these technologies made the USA southern forest industries competitive in the world's markets.

Dr. Hse's big contribution to international research and development cooperation has been the hosting and mentoring of more than 50 scientists from China, Taiwan, and Japan to conduct experiments in the Pineville laboratory. These international relations have greatly increased the scope of Hse's research program, contributing to over 200 scientific papers and six patents. As a result of this scientific cooperation, Dr. Hse received the *International Science and Technology Cooperation Award* in Beijing, China on January, 2014. The award is one of the highest honors that the People's Republic of China offers to recognize scientists who have made significant contributions to China's scientific advancement. This is a remarkable recognition for a wood scientist to achieve. In the picture, the person to the left of Hse is Xi Jinping, President of China and to the right is Li Keqiang, Premier of China. Dr. Hse says he has no plans for slowing down and continues in his science-driven effort to make southern US wood products internationally competitive. He is doing this by developing collaborative efforts with other scientists around the world who share his commitment for world-class science.

Howard Rosen, IAWS Treasurer

GIFTS TO IAWS

IAWS gratefully acknowledges the gifts of Fellow Jiang Zehui and Ms Gao Nuoli.

2013 NEW LIFETIME FELLOWS

Jorge Colodette
Gunnar Henriksson
Hasan Jameel
Nili Liphschitz
Xuejun Pan
Chung-Jui Tsai
I-Chen Wang
Qinglin Wu

2013 VOLUNTARY CONTRIBUTIONS

Starting in 2001, IAWS has provided an opportunity for Fellows to make voluntary contributions for helping to further the goals of IAWS. IAWS sincerely thanks each of the following who have made such a contribution over the past year:

Robert Ross
Holger Militz
R. Malcolm Brown to honor Bengt Ranby and Karl-Erik L. Eriksson

VISIT OF EXECUTIVE COMMITTEE MEMBERS TO VIETNAM FORESTRY UNIVERSITY IN HANOI

From 12-15 May 2015, five EC members (Schmitt, Evans, Kim, Rosen, Salmén) visited Vietnam Forestry University (VFU) in Hanoi on invitation from the VFU President Tran Van Chu. There were several goals to the meeting, foremost outreach to VFU from the IAWS, as well as the occasion of scientific exchanges. The first part of the visit was a joint VFU/IAWS workshop with 70 participants entitled "Cooperation for Development". After the opening speech by the VFU president, colleague Bui The Doi –head of the VFU Science, Technology and International Cooperation Division- and IAWS president Uwe Schmitt gave an introduction of both organizations. Several presentations from the Vietnamese side highlighted current research activities and their future developments in wood science. All five EC members gave keynotes with the following titles:

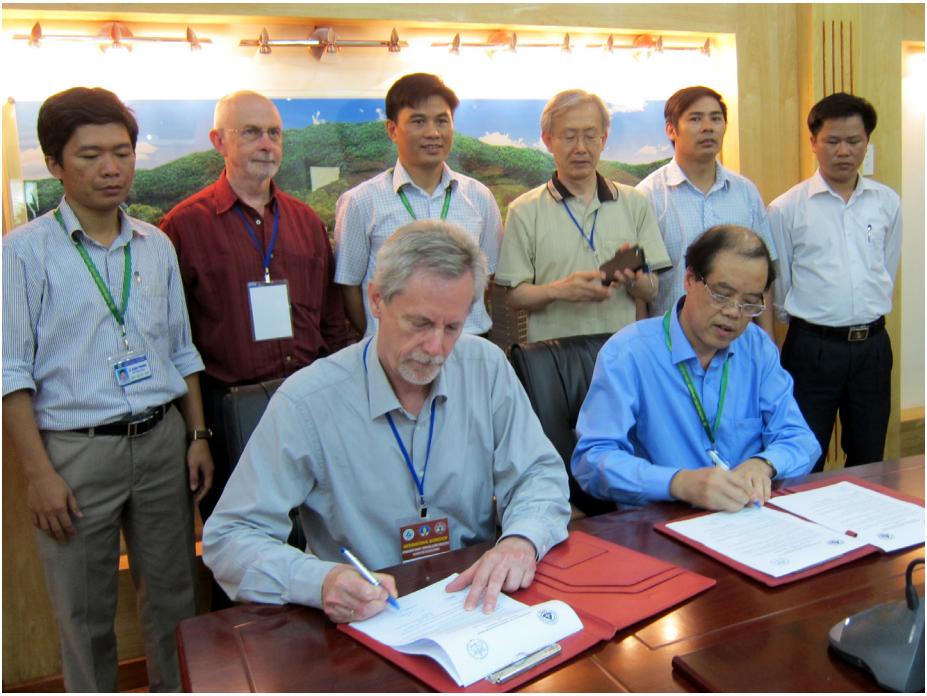
- Uwe Schmitt (co-authored with Fellow Gerald Koch) – "Control and requirements for internationally traded wood and wood products – the EU timber regulation"

- Robert Evans – “SiviScan and its applications”
- Yoon Soo Kim – “Micromorphological aspects of bamboos degraded by wood decay fungi and bacteria and by natural weathering”
- Howard N Rosen – “World Wood Day: Celebrating ‘Wood is Good’ through a cultural approach”
- Lennart Salmén (co-authored with Fellow Peter Axegård) – “Biorefining products from wood resources”

After the workshop, our hosts arranged a highly interesting excursion to a wood company based close to Hanoi producing furniture for a large European and multinational designer and seller of ready-to-assemble furniture. The high standards of the various working units were very impressive; mostly Acacia wood was used. On the final day, VFU and IAWS signed a MoU indicating a closer cooperation in future. As a result of this meeting in Hanoi, VFU agreed to apply for an IAWS Supporting Membership.

Members of the Executive Committee

Group photo of participants



President Schmitt and VFU president Tran Van Chu signing the MoU

IAWS PhD PRIZES

As in former years, IAWS wishes to provide recognition to outstanding thesis/dissertation research at the PhD level by students throughout the world. This year, from the many applications the members of the Academy Board selected two first prize winners. The winners are Michaela Zauner from ETH Zurich and Muhammad Shabir (Mahr) from University of Göttingen. Third prize went to Shengzheng Zhai from Kyoto University. Hearty congratulations of the Academy go to all three winners. The abstracts of their theses are presented below.

IN-SITU SYNCHROTRON BASED TOMOGRAPHIC MICROSCOPY OF UNI-AXIALLY LOADED WOOD: ***IN-SITU TESTING DEVICE, PROCEDURES AND EXPERIMENTAL INVESTIGATIONS***

Dissertation, ETH Zurich, 2014, ETH-No. 21620, **Michaela Zauner**

Full text available at: http://e-collection.library.ethz.ch/view/eth:8349

Wood has been an important material for building in the past and is gaining increasing interest in the present. To better use the material, detailed knowledge of the behavior under mechanical and hygroscopic load is necessary. For this, amongst others, models are continuously developed.

Therefore physical properties have been the focus of extensive scientific research. Particularly, the determination of elastic properties and macroscopic strength are of primary interest. But due to its complex and variable microstructure, the behavior of wood is not completely predictable with macroscopic models. Therefore knowledge at different hierarchical levels is beneficial, as the evolution of mechanical processes and failure mechanisms depends on the structure and the stress on the sample. The microscopic mechanisms leading to ultimate failure of the material have been observed after failure without monitoring of the damage progression, and for selected thin samples of the total volume. Additionally, failure of cell elements isolated from tissue has been investigated. The deformation of cells inside the non- and pre-damaged composite has not been the focus of extensive research.

Non-destructive methods are necessary to monitor the three-dimensional behavior of the wood cell structure under load. In particular, synchrotron radiation-based computed tomography (SRbCT) allows monitoring of arbitrary three-dimensional material structures with microscopic resolution and faster data acquisition than for a common x-ray computed tomography (depending on the quality starting from half a second).

In this thesis, a portable mechanical loading device was developed for on-site operation at the Synchrotron radiation microscopy laboratory at the TOMCAT beamline (Swiss Light Source (SLS) at the Paul-Scherrer-Institute). The installation was applied to experimentally monitor the three-dimensional microstructure of wood at specific loading states.

A main objective was the construction of a mechanical testing device with fast adaptability for tension and compression tests, and the design of sample geometries, production and testing meth-ods. A suitable specimen shape, for which the highest percentage of failure occurred in a defined small field of view at the center of the specimen, was determined and verified. Next, comparative studies between surface deformations and strains determined with Digital Image Correlation ob-served in the small field of view were performed and the strains gained through the deformation over the complete sample length evaluated. The

correlation of density with compressive strength was proven for the sample geometry and a possible size effect was found for up-scaled speci-mens.

Two softwood species (*Picea abies* [L.] Karst and *Abies alba* Mill.) and one hardwood species (*Fagus sylvatica* L.) were tested under increasing compressive load in the longitudinal direction with two different spatial resolutions to evaluate and determine plastic deformations. First, the original structure was recorded and afterwards modifications visible in tomograms acquired at equidistant steps were investigated with respect to the initial tomograms. With this method, the origination and development of plastic failure processes were assessed and described for different structures.

For the first time, the initiation and further progression of deformation during compressive load was shown for isolated structures (like vessels and tracheids) from inside a complete wood sample to illustrate the deformation mechanisms and origination under compression. Mainly telescopic shortening and buckling, previously found in literature, as well as a combination of both, were identified. Single cell-width wood rays and resin channel seemed to deform equally with the surrounding tissue without contributing to the strength or a deflection of the failure lines. Further, the failure areas in the form of kink lines could be isolated and described for latewood of soft-wood, hardwood and specific material compositions. The failure area was automatically deter-mined by monitoring the change of the density in the sample.

Finally, to evaluate the set-up for tension, one wood species was loaded in two different directions (longitudinal and radial), combining acoustic emission and synchrotron radiation-based computed tomography in-situ. The experiments were conducted successfully and significant differences in the acoustic signal strength, distribution and onset between the two loading directions could be shown. In the acquired tomograms, the failure region for radial loading and the starting fissure for axial loading were successfully isolated. Similar to compression, distinct failure mechanisms were found for each direction and the influence of wood rays and resin channels was de-scribed. For radial loading, fiber bridging and varying cell wall failure mechanisms could be shown.

Overall, this thesis introduced a complete set-up for tensile and compressive in-situ tests in combination with synchrotron micro-tomography, available for future use and purposes. Observations of initiation and development of failure in tension and compression were successfully executed for different wood species and compositions. A combination of procedures with additional meas-urement methods was realized and future applications for different structures, higher resolutions and loading modes were suggested. For the first time, the development of failure mechanisms of single elements inside an undamaged structure could be observed for tension and compression. The data generated by the proposed combination of methods, can be used to quantify failure processes and deformations occurring during an increase of load.

WOOD MODIFICATION WITH TITANIA- AND SILICA-BASED PRECURSORS: A NOVEL APPROACH TO PREPARE MULTIFUNCTIONAL SOL-GEL DERIVED TIO_2 / SIO_2 WOOD-INORGANIC COMPOSITES

Dissertation, University of Göttingen, 2013, Cuvillier, **Muhammad Shabir (Mahr)**

Full text available at: http://dnb.d-nb.de

This dissertation is devoted to explicitly investigate the suitability of titania and silica-based precursors for wood modification.

Novel TiO_2 / SiO_2 wood inorganic composites were prepared by two-step process. In first step, freshly prepared precursor solutions of silicon and titanium alkoxides were vacuum impregnated (one or more cycles) to oven dried pine sapwood (*Pinius sylvestris* L.). Precursor solutions with nano-scaled species and particulates (TiO2 and SiO2) were soaked by the entire wood matrix during this step. In (second) subsequent curing step, these penetrating liquids transformed into respective gel layers and depositions therein by sol-gel processing (in-situ hydrolysis-condensation).

Sol-gel based depositions were evenly covered on the cell walls in the form of thin layers. These gel films were not crack-free however; very few cracks were visible in the gel coatings present within the wood matrix of composites prepared with precursors of low alkoxide content. In addition, the gels were randomly distributed, found to be mainly deposited in the wood cell lumen and also localized in the cell walls as ESEM-EDX mapping revealed.

The impregnated samples show an increase in mass and volume expressed as weight percent gain (WPG) and bulking (B). Both of the parameters are decisive for tailoring a number of physical properties of the resultant composites. In general, moisture and water sorption capacities were decreased by 43 to 50 % while anti-swelling efficiency (ASE) and bending strength (MOE) of the precursor-modified wood (composite) were increased up to 34 % and 41 % respectively, when compared to unmodified wood. These improvements are attributed mainly to gel depositions in the wood structure that physically interact with the wood matrix consequently narrowing the main flow passages there and reinforcing strengths of the fiber.

These materials show superior resistance against fire of different scenarios. In small scale fire, their flame was retarded markedly (up to 78 % in optimum case) in comparison to wood controls as studied by oxygen index test (LOI). Cone calorimetric investigations revealed their better fire retardancy in terms of time resolved heat release rates (HRR) in the developing fire scenario. A remarkable reduction of 40 % in the second peak of HRR was achieved through sol-gel treatment. Furthermore, fire hazards such as CO and total smoke production were considerably lowered for these materials. Beside these improvements, reductions in first peak HRR and in fire load (total heat evolved) were not worth considering in compliance to fire retardancy principles. In relation to the mechanism of protection, it

can be concluded that stable gel layer (independence of material loading) inside the wood retards markedly the proceeding combustion processes (oxidation) after first pyrolysis by improving the overall protection properties of the fire residue.

These materials show excellent resistance against bio-deterioration. Almost full decay protection was achieved against wood destroying brown rot fungi (*Coniophora puteana* and *Poria placenta*) in 10 weeks laboratory trials only with 1 mass% loadings (WPG). Mass loss in prolonged test (16 weeks) was similar to 10 week lasted test indicating that protection is permanent. In addition, composites imparted moderate resistances against soft rot fungi and very minor one against surface blue stain. The lowering in moisture content that discourages fungal colonization, gel layer that provides better shielding against fungal exposure and un-hydrolyzed alkoxides (organics) that probably induce biocidal effects are the main reasons for protection against biological attack in these materials.

Composites are utmost leach resistant because of the insolubility of gel depositions in water as well as due to their fixture into the wood matrix. In addition to this intrinsic property, gel precipitates can also reduce substantially (70 to 80 %) the release of hazardous active agents (e.g. $CuCl_2$) of wood preservatives into the environment. This anti-leaching effect is supposed to be due to the reduced ion mobility of active agents inside the wood by their encapsulations into the gel matrix, lowering of water penetration into the wood depths as well as due to the internal covering action of the gel layer.

In short, it can be assessed that TiO_2 / SiO_2 based sol-gel precursor treatment of wood has a possibility to be commercialize in near future due to easy handling and non-toxic nature of the precursor used. Resultant end products (composites) are also novel and promising multifunctional materials that can be used for multi-purposes in relation to use class 3 (outdoor but without ground contact according to EN 335 2006) environments.

ANATOMICAL AND MECHANICAL FEATURES OF PALM FIBROVASCULAR BUNDLES

Dissertation Kyoto University, 2013, **Shengcheng Zhai**

The palm family (Arecaceae, Palmae) consists of approximately 184 genera and 2400 species, is an important family of moncotyledon and palm plays an essential role in daily life of millions of people in tropical and subtropical regions. The properties and commercial utilization of palms are influenced by its structural characters. Until now researchers put most of their attention on the structural biology of commercial palms and there are many publications on oil palm (*Elaeis guineensis*) and coconut palms (*Cocos nucifera*). Tomlinson *et al*. [1, 2] did great research on the stem anatomy of palms. However, the anatomical and mechanical properties of fibrovascular bundles from leaf-sheath of palms, specially

the palms widely distribute over the world, has not been studied well. In this thesis, the anatomical characteristics, mechanical properties and their functional implications were presented. This whole set of knowledge in palm leaf-sheath fibrovascular bundles could facilitate further understanding of archeological palm fiber-based products and utilization of these widespread natural fiber resources in future.

Cell wall characterization of leaf fibers in palm and its functional implications

The fibrovascular bundles from the lignified leaf sheath of windmill palm (*Trachycarpus fortunei*) are widely used as natural fibers for various products, and exhibit excellent durability. In this study, the cell wall of windmill palm fibers was characterized using transmission electron microscopy (TEM, 2000EX II, JEOL Co. Ltd, Tokyo, Japan), high resolution field emission scanning electron microscopy (FE-SEM, JSM-6700F, JEOL Co. Ltd, Tokyo, Japan), and polarized light microscopy (PLM), and chemical analysis to measure lignin content. It was found that (1) the secondary wall was composed of just two layers, outer (equivalent to S1, 0.65±0.12 μm) and inner (equivalent to S2,1.28±0.30 μm) ones, with a high ratio of S1 to the whole cell wall thickness; (2) the microfibrils of the S1 are orientated in an S-helix (MFA, 127.0°±2.0), and those of the S2 in a Z-helix (MFA, 43.7°±2.2); and (3) the Klason lignin content of fiber bundles was very high (nearly 40%). It is suggested that these structural and chemical features of windmill palm fibers are involved in their mechanical properties such as high flexibility and elasticity, and also related to their high durability.

The cell wall organization of leaf sheath fibers in different palm species was also studied with PLM and TEM. The secondary wall of the fibers consisted of only two layers, S1 and S2. The thickness of the S1 layer in leaf sheath fibers from the different palm species ranged from 0.31 to 0.90 μm, with a mean value of 0.57 μm, which was thicker than that of tracheids and fibers in secondary xylem of conifers and dicotyledons. The thickness of the S2 layer ranged from 0.44 to 3.43 μm, with a mean value of 1.86 μm. The ratio of S1 thickness to the whole cell wall thickness in palm fibers appears to be higher than in secondary xylem fibers and tracheids. We suggest that the two-layered structure in the secondary wall of palm leaf fibers, which presumably also applies to the homologous fibers in palm stems, is a specific character different from the fibers in other monocotyledons (such as bamboo and rattan) and dicot wood.

Mechanical characteristic of fibrovascular bundles among different genus in palm and its structural implications

This thesis also presented mechanical properties, microfibril angles (MFAs) and Klason lignin contents of leaf sheath fibrovascular bundles from 14 palm genera. Observed by light microscopy, all fibrovascular bundles consisted equally of thick-walled sclerenchyma fibers and vascular tissue, while the shape and localization of vascular tissues on the transverse sections varied among species. It was possible to group these fibrovascular bundles into 3

types based on the vascular tissue's differences: type A – rounded in the central region; type B – angular in the marginal region; and type C – aliform in the central region. These three anatomical types of fibrovascular bundles showed some correlation with a current phylogenetic classification of palm species. Through mechanical tests, this research confirmed the correlation between diameter and mechanical properties of the fibrovascular bundles of palms; tensile strength and Young's modulus showed a decreasing trend with increasing diameter. We clarified that this trend was due to a marked increase in the proportion of transverse sectional area comprised by vascular tissue with increasing diameter of fibrovascular bundles. The MFAs of fibrovascular bundles ranged from 10.3º to 47.1º, which were generally larger than those of non-woody plants, conifers, and broad-leaved trees. The Klason lignin contents of palm species were also high, ranging from 18.3% to 37.8%, with a mean value of 29.6%. These large MFAs and high lignin contents could lead to the long-term plastic deformation and relatively low tensile strength of palm fibrovascular bundles. The observed MFA features might also have a relationship with the biomechanical movements of fiber bundles in the windmill palm.

NEWLY ELECTED FELLOWS 2015

YOUNG –SOO BAE

Dept. of Forest Biomaterials Engineering, College of Forest and Environmental Sciences, Kangwon National University, Republic of Korea

Dr. Bae's main research area is wood extractives. He is well known to contribute building up the fundamentals of the isolation and structure elucidation of natural compounds and identification of the new and novel natural compounds from trees growing in Korea. His highlight achievements include research in phenolic compounds, epimeric phenylpropanoid glycosides, isolation of acetyl cholinesterase inhibitors, flavan and proanthocyanidin and phenolic constituents. Furthermore, he has actively participated in effective utilization of chemical components of wood through the interdisciplinary works with different academic fields. Over the last 25 years, he has published over hundred publications in peer-reviewed international journals and in domestic journals in the field of phytochemistry. The College of Forest and Environmental Sciences, the only one of its kind in Korea, educates students to effectively produce, manage and utilize forest resources and to help foster ecological principles that are necessary in our industrial society in the student and consists of the Division of Forest Resources and the Departments of Wood Science & Technology, and Department of Paper Science & Engineering.

BARRY GARDINER
INRA-ISPA, Villenave D'Ornon, France

Dr Gardiner has worked on the development of a set of measurement methods and mathematical models for predicting key wood properties of the major commercial conifer species growing in the United Kingdom (UK). The measurement methods have been used to help map the UK wood resource and the models have been coupled with growth models in order to demonstrate the impact of forest management and breeding on the performance of the sawn timber. The models have been made available as web-based Decision Support Systems for use by forest practitioners in order to help in forest planning and management and linked to airborne LiDAR measurements in order to map wood properties at forest and regional scale. Another interest of Dr Gardiner has been in tree biomechanics and understanding how trees balance the sometimes competing requirements of mechanical strength, hydraulic conductivity and access to light. These biomechanics studies have focused in particular on the role of different types of wood such as reaction wood and heartwood and how trees allocate resources between different components (stem, crown, roots, etc.) in order to adapt to their specific environmental conditions. His major achievements include developing a set of integrated wood property and growth models that have allowed the wood properties of the main commercial conifer species to be mapped across the United Kingdom; developing an understanding of the role of wind in biomass partitioning in trees and changes in wood formation (grain angle, MFA, reaction wood, etc.).

MENG GONG
Wood Science and Technology Centre (WSTC), University of New Brunswick, Canada

Dr. Gong has 30 years R&D and teaching experience in wood science, technology and engineering. He has over 200 publications and technical reports, reviewed more than 40 technical guides, and co-authored the book "Fracture and fatigue in wood" published by John Wiley & Sons Ltd. in 2003. Dr. Gong is the leader of Wood Quality and Modification Group at WSTC. His successful research on wood densification was featured in the Canadian Broadcasting Corporation (CBC) at CBC News at Six with a topic "Soft wood to hard wood" on January 18, 2008. His research on development of short length finger joint profile for fabricating structural finger-joined lumber was/is deemed one of the most

successful projects by Natural Resources Canada and is being promoted for commercialization, which can, in comparison to conventional one, save about 2% good quality lumber and 20% adhesive. Two doctoral students co-supervised and supervised by Dr. Gong received the "Wood Award" from Forest Products Society in 2012 and 2014, respectively. Dr. Gong's current research interests are wood quality and modification, micromechanics, image processing technique, and structural use of lumber and engineered wood products. He teaches Wood Technology for undergraduates and Advanced Studies in Wood Science for graduates at the University of New Brunswick, Canada.

ANA GUTIERREZ

Instituto de Recursos Naturales y Agrobiología de Sevilla (IRNAS, CSIC) Reina Mercedes 10 41012 Sevilla. Spain

Dr Gutierrez research is focused on wood chemistry (mainly extractives and lignin) and development of biotechnological tools for removal/modification of these wood components. Her contribution in the field of lipophilic extractives started with the first chemical characterization in different lignocellulosic materials, also including their biotechnological removal for a better use of these renewable feedstocks. These studies started in the EU-projects WEB (on "Wood Extractives Biocontrol") and PITCH (on "New Environmentally-Sound Methods for Pitch Control in Different Paper Pulp Manufacturing Processes"), where she participated also being part of the coordination team. The studies on wood extractives chemistry and biological removal (with fungi and enzymes) continued in National projects, and the other EU projects mentioned below. A second area where she performed outstanding contributions was the biotechnological removal of lignin from wood and non-wood lignocellulosic materials by different enzyme and enzyme-mediator systems, with studies on the use of modern analytical techniques (including 2D NMR) to reveal the chemical and structural modification of lignin. Combination of lignin and extractives studies were performed in subsequent EU-projects BIORENEW ("BIOcatalysts for RENEWable plant polymers"; www.biorenew.org), PEROXICATS ("PEROXIdases as industrial bioCATalystS"; www.peroxicats.org) and INDOX ("INDustrial OXidoreductases"; www.indoxproject.eu), that she also contributed to coordinate, as well as in the LIGNODECO ("LIGNOcellulose DECOnstruction", www.lignodeco.com.br) EU-Brazil project. These studies produced interesting papers (107 SCI), congress communications (133), patents (6), and an H-Index (Thomson Reuters) of 36. She has supervised 5 PhD thesis (besides other 5 PhD thesis in course) in addition to 13 Research Projects in wood chemistry and biotechnology.

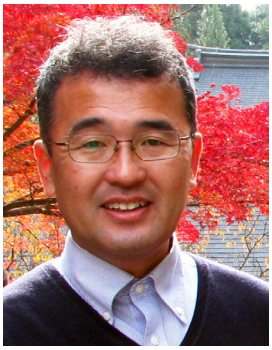
SALIM HIZIROGLU
Professor, Oklahoma State University, Dept. of Natural Resource Ecology and Management, Stillwater, Oklahoma, USA

Dr. Hiziroglu's main research area is related to manufacture of value-added wood composite panels from underutilized and non-wood based species. He conducted experimental research projects related to manufacture of structural and non-structural composite panels from Eastern Red Cedar, an invasive species causing significant ecological problem in Oklahoma. He also conducted research projects in composite technology in various South East Asian universities using non-wood fiber resources including bamboo, rice straw and oil palm. He has 119 refereed journal publications in addition to 80 publications related to wood and wood based products in various journals, conference proceedings and through Oklahoma Cooperative Extension Service. Dr. Hiziroglu has research, teaching and extension appointments in the area of forest products at Oklahoma State University. His teaching responsibility covers to lecture wood products and timber harvesting courses while his research is primarily focused in value-added wood composite technology.

MD SARWAR JAHAN
Principal Scientific Officer, Pulp and Paper Research Division
BCSIR Laboratories, Dhaka, Bangladesh

Dr. Jahan has more than 22 years R&D and teaching experience in wood and pulping chemistry and technology. He has published more than 120 refereed papers and over 18 conference proceedings regarding wood and pulping chemistry and technology. He has supervised more than 70 MSc students. Dr. Jahan is the leader of pulping and biorefinery Groups at the BCSIR Laboratories, Dhaka. His successful research on biorefinery was introduced by Prof. Dr. Yonghao Ni's current research interests are pulping, bleaching, integrated forest biorefinery and wood chemistry. The breakthrough of his research was on pulping of pith containing non-wood. As it is well known that pith is a big problem in non-wood pulping, but pith is a non-fibrous lignocellusic material. Conventionally, pith is removed by physical treatment. Pith can be removed prior to pulping by pre-extraction, which can fit biorefinery well. Recently, his interest is growing on nanocrystalline cellulose (NCC) but the production cost of NCC is extremely high. In this situation, he introduced biorefinery concept in the production of NCC, where lignin, hemicellulose and amorphous cellulose can be used in producing other biomaterials. Dr. Jahan's another finding on *Trema orientalis* pulping has a great potential for forest deficient countries. In 2012, Dr. Jahan has organized four technical sessions on Pulp and Paper in IUFRO Division 5 conference in

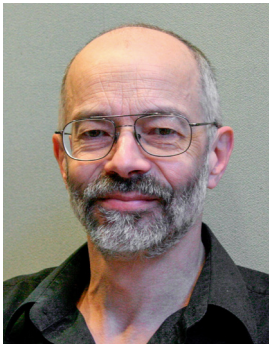
Estoril, Portugal. Presently, he is the Deputy Coordinator of Pulp and Paper Working Party of IUFRO, Austria. He has presented research articles in different international.



HARUO KAWAMOTO
Graduate School of Energy Science, Department of Socio-environmental Energy Science, Kyoto University, Kyoto, Japan

Dr. Kawamoto has made contributions to the chemistry of complex phenomena in wood science, mainly in the fields of complexation of plant tannin with protein and chemistry in wood pyrolysis, from the background of organic and synthetic chemistry. These research works are published as more than 70 refereed papers and over 25 technical reports/book chapters. Each topic is briefly introduced as follows. **Chemistry of tannins:** Tannins are important wood (bark) constituents and has a unique property to complex with protein. Owing to the complexity of the chemical structures and difficulty in isolating tannins from plant materials, clear-cut understandings of tannin structure–property relationships were quite difficult. To solve this problem, Dr. Kawamoto developed the synthetic methods for tannins and clarified the molecular mechanisms in tannin–protein complexation using synthetic tannins, under the supervision of Prof. Fumiaki Nakatsubo. **Wood pyrolysis:** Better understanding of wood pyrolysis is quite informative in developing high temperature wood processing technologies and thermochemical techniques such as carbonization, fast pyrolysis and gasification. Chemistry of wood pyrolysis, however, remained poorly understood due to the intrinsic complexity, when Dr. Kawamoto started his research work in 1996. He disclosed molecular mechanisms, which are involved in pyrolysis of cellulose and lignin in wood. Finally, he has come to propose a principal mechanism for carbohydrate pyrolysis; proton donation through intermolecular hydrogen bonding acts as acid catalyst for promoting transglycosylation, dehydration and other heterolytic reactions, which are characteristic of cellulose and other carbohydrate pyrolysis.

PAUL MORRIS



Research Leader – Durability and Sustainability/Gestionnaire de Recherche - Durabilité et Développement durable, FP Innovations, Vancouver, British Columbia, Canada

Dr. Morris has more than 30 years R&D experience in wood biodegradation and protection. He is currently Research Leader – Durability and Sustainability at FPInnovations, Canada's national forest products research institute. He has published 44 refereed papers, over 200 non refereed papers and technical reports to government funding agencies, plus over 200 proprietary contract reports in the areas of biodegradation, durability by treatment including coatings, durability by nature and durability by design. His research on detoxification of CCA by soil iron and the protection against spore germination conferred by mobile copper provided fundamental information on factors impacting the efficacy of wood preservatives. His publications have documented the relative treatability of Canada's myriad commercial wood species with commercial and experimental wood preservatives. He has also worked with international entomologists to develop termite resistant wood products with Canadian wood species. Possibly his biggest contributions have been in the area of test methodology. Four out of the last ten new test methods standardized by the American Wood Protection Association were adapted for AWPA or developed by Dr. Morris. He also has two provisional evaluation methods under consideration and an above ground accelerated field simulator test under development. Dr. Morris's current research interests include modification of carbon-based preservatives for ground contact, extractives responsible for the durability of western red cedar, biological incising, use of basidiospores in preservative efficacy testing, decay fungi responsible for premature failure of treated wood, preservative treatments for glue-laminated and cross-laminated timbers and dual treatments for softwood bridge timbers.

SUNG PHIL MUN

Professor/Wood Chemistry, Department of Wood Science and Technology, Chonbuk National University, Jeonju, S. Korea

Dr. Mun has more than 30 years R&D and 26 years teaching experience in wood science, chemistry, and technology. He has published more than 130 refereed papers and over 20 technical reports regarding in wood chemistry, and 7 co-authored books (Bioenergy and Biomass, 2011; Mystery of Wood Vinegar, 2006; Testing Methods for Pulp and Paper, 2006; Handbook for Forest Products Chemistry, 1998; Woody Biomass, 1998; Pulp and Paper Technology, 1995; Wood Processing and Utilization, 1989). Dr. Mun is Head of

Department of Wood Science & Technology Department in Chonbuk National University and the president of Pinux Co., Ltd., S. Korea. His successful research on novel wood delignification and utilization of pine bark were introduced by the international journals, patented and industrialized as well. Dr. Mun's current research interest is developing a novel method to produce mass amount of graphene, which is called dream material, from wood lignin. The results yielded the US patent and publications in prestigious journals. Moreover, this research achievement is the first development in the world and cooperates with the US Forest Products Laboratory (FPL) and the Mississippi State University. Production of graphene from wood lignin is still an ongoing project and is supported by FPL and a pulp and paper company in the US. He teaches Lignin Chemistry, Wood Carbohydrate Chemistry, and Natural Products Chemistry for undergraduates and Advanced Study in Wood Chemistry for graduates at Chonbuk National University, S. Korea.

YIQIANG WU
Doctor, Professor, and Dean
College of Materials Science and Engineering, Central South University of Forestry and Technology, 498 Shaoshan South Ave., Changsha, Hunan 410004, China

Professor Wu has worked more than twenty years in the field of wood science and technology with research covering wood properties, lumber drying, functional improvement of wood, biomass composite materials, and biomass nano-cellulose technology. In the field of wood properties and drying, Professor Wu first proposed wood cell shrinkage and the maximum instantaneous collapse theory, and established a complete database for anatomical and heritability properties of fast growing eucalyptus trees, helping guide efficient processing of wood, especially those from plantation forests. In wood modification and wood-based composites, Professor Wu pioneered flame and smoke suppression superimposed coupling theory and developed efficient flame retardants and inorganic adhesives technology for wood/natural fiber-based composites. The technology has been commercialized in China, leading to a large-scale manufacturing of inorganic/formaldehyde-free adhesive-bonded particleboards and plywood from wood and agricultural fiber resources. This work led to a prestigious national Second Place Chinese National Science and Technology Progress Award in China. More recently, Professor Wu focuses on cellulose-based nanocomposites from sustainable bioresources such as wood and straws – developing light weight, electrical conductive, transparent and thermally stable nanocomposites for use in solar cells and other electronic devices, and as superabsorbent materials. Professor Wu leads a large wood science program covering wood properties, wood protection, advanced wood composites, and polymer/chemical engineering.

HONOURS AWARDED TO FELLOWS

FELLOW PROF. BORIS UGOLEV HONORED 'DISTINGUISHED SERVICE AWARD'

Fellow Prof. Boris Ugolev, from Moscow State Forest University, a leading multi-disciplinary higher forest educational institution in Russia, founded in 1919, is an internationally renowned specialist in the field of interactions of wood with the environment. He has published numerous papers on wood deformations, notably describing the so called 'shape memory effect of wood'. Just recently, Fellow Ugolev published a paper in the journal of the International Academy of Wood Science 'Wood Science and Technology' on wood as a natural smart material (WST 48, 2014: 553-568). In his position as head of the Wood Science Department of Moscow State Forest University (1970-1999), he initiated and supported manifold national and international activities. Although political circumstances did not really facilitate international scientific exchange at that time, Boris Ugolev established cooperations and contacts with numerous wood science-related institutions especially in Europe. As a result of these activities and his scientific achievements, in 1991 Boris Ugolev was elected Fellow IAWS. From 1998-2004 he served the Academy as member of its Board and he was the leading organizer of the 2009 IAWS Plenary Meeting held in St. Petersburg and Moscow. The Academy honored Boris Ugolev for his achievements in wood science with the Academy Lecture, which was presented in St. Petersburg at this conference. In 2014, the Academy bestowed the Distinguished Service Award (DSA) to Boris Ugolev in recognition of his contributions and distinguished service to wood science. Such service was made in research, education, national and international leadership area that distinctly furthered the objectives of the Academy.

During an honoring ceremony, which was held by invitation of Rector and Fellow IAWS Victor Sanaev at Moscow State Forest University on 7 November 2014, President Schmitt gave a laudation on the unique career of Fellow Ugolev and handed over DSA certificate and medal.

Rector and Fellow IAWS Victor Sanaev opened the DSA ceremony at Moscow State Forest University

PROFESSOR PHILIP EVANS, BC LEADERSHIP CHAIR, FACULTY OF FORESTRY, DEPARTMENT OF WOOD SCIENCE, THE UNIVERSITY OF BRITISH COLUMBIA

Professor Philip Evans gave the Colley/Hartford Memorial Lecture at the 111th Meeting of the AWPA (held in Asheville, North Carolina (12-14th April 2015). The title of his talk was "Keeping up appearances: The aesthetic failure of treated wood used outdoors". In the photograph, Fellow Evans (right) is being thanked by the President of the American Wood Protection Association (AWPA), Dr Andy Zahora (left).

ROBERT J ROSS, PHD, PROJECT LEADER, FOREST SERVICE

Fellow Robert Ross was presented the 2014 Felix Ponder Award by the USDA Forest Service, Northern Research Station and Forest Products Laboratory, for professional excellence and community service. The citation cited community service with groups who support individuals with intellectual disabilities and Port St. Vincent (a local shelter for men recovering from substance abuse).

NEWS ITEMS FROM FELLOWS

PROFESSOR EMERITUS VALENTIN I. POPA, member of IAWS, IASPM, ILI, American Chemical Society, Romanian Academy for Technical Scienses reports that in 2014, he has published the book with Maria Cristina Area *Wood Fibres for Papermaking, Smithers Rapra,* 2014, 106 p. ISBN:978-1-90903-086-2 (hardback), 978-1-90903-087-9 (ebook). Fellow Popa has been active in Editorial activities including **Editor in chief of Cellulose Chemistry and Technology journal**, Romanian Acadeemy Publishing House, web page: cellulosechemtechnol.ro - **IF 0.833/ Influence factor 0.983**
He is a reviewer for Cellulose Chemistry and Technology, Environmental Engineering and Management Journal, Industrial Crops and Products (Certificate of reviewing). He is also involved **Sciex-IMMOPHENOL** –a cooperation program between Switzerland and Romania.

A BRIEF SURVEY CONCERNING ALL FELLOWS

"What do Fellows expect or want from IAWS?" This was the IAWS Survey question posed in Bulletin II-2014. We thank all who have responded to the Survey, which frankly had a good response. We have kept the responses anonymous, though some Fellows did not mind to have their names associated with their comments. Here are the responses:

"I believe the Academy provides a very worthwhile service by communicating within the wood science community ---updates about fellows, passings, etc.; Suggestion—would it be possible to have a greater presence at other meetings?"

This suggestion seemed to reverberate with the comments of several Fellows, as follows:

"IAWS should have Visibility. Not as a secret society but to increase visibility for the research and education of wood science which feels to be old-fashioned and getting less and less funding although of primary importance for "bioeconomy", sustainable use of "biomaterials" and global change. How to increase such visibility? Association has limited capacity but maybe more visible in social media. Academy lecture during major conferences (i.e. IUFRO) is a good way to create more visibility (not only individual) and introduce IAWS."

The Executive Committee continues to discuss 'visibility' and a call to all Fellows is to please make suggestions how this can be best achieved.

Quite a practical suggestion from the Survey was the following: *"More timely announcements of upcoming meetings and conferences of interest to Fellows."* This is an excellent point, as we all know that typically it planning for meeting attendance, much less getting the abstract in on time, requires knowledge of the meeting of almost a year in advance. The Bulletin will continue to try and highlight meetings and conferences of interest, and please do not hesitate to send any announcements to the President for inclusion on the website.

Lastly, comments from several Fellows concerned the state of commitment and funding for wood science research e.g. *"the decline in wood related R & D in both countries has been dramatic and very disappointing. It would be interesting to survey members of IAWS to get a better idea of the state of the profession internationally."*

Continuing the dialogue, could Fellows please respond to the Editor (rfarrell@waikato.ac.nz) concerning this comment – it would be particularly worthwhile to get a full, worldwide view:

"What in your opinion is the state of the profession of wood science internationally?"

MEMORIAL AND OBITUARIES

ANNE-MARIE CATESSON (- 2012)

Our Colleague Professor Anne-Marie Catesson passed away on August 12th, 2012.
Former student of the famous Ecole Normale Supérieure, Anne-Marie Catesson obtained the 'Agregation' in life sciences in 1954. After a short teaching period in secondary school, she started her scientific carrier under the guidance of Professor Roger Buffat and obtained her Doctorat d'État in 1964 "Origine, fonctionnement et variations cytologiques saisonnières du cambium de L'Acer pseudoplatanus L. (Acéracées) ». In 1970 she became professor at the University Pierre et Marie Curie (Paris VI), a position that she held until her retirement in 1988.
Her work as a professor of plant biology was duly respected by her students and by her colleagues who held her in great esteem. She has always been eager to communicate her enthusiasm for research to her students. She co-authored two textbooks in Plant Biology, the first focused on Cell Organization, published in 1989 and the second on Vegetative organization published in 1990. Both are still greatly appreciated by students, and still available in bookstores.
She always showed a great involvement in research and supervised a number of theses in her laboratory of *Plant Biomembranes and Cell Surface* of the prestigious ENS rue d'Ulm. The various aspects of cambium and xylem in vascular plants were at the center of her research: cell wall evolution and differentiation; cambial ultrastructure and biochemistry; studies of symplasmic domains within the secondary vascular system; and various aspects of cell wall formation and differentiation. She was well-known in the international scientific community for her contributions in the domains of lignification, ferulic acid metabolism, involvement of isoperoxidases and lignin deposition.
Her work was widely recognized in the scientific world of plant biologists with over 100 published articles and about as many communications in national and international meetings.
Her work in plant science was awarded the Foulon prize from the French Académie des Sciences in 1983.
Her contribution in the domain of wood science was recognized with her election as Fellow of the Academy of Wood Science in 1991.

After her retirement, Anne-Marie Catesson was for eight years the treasurer of the Association of the former students of École Normale Supérieure.

Professor Emeritus Jean-Paul Joseleau and Dr. Katia Ruel
Grenoble, February 2015

BÖRJE STEENBERG (1912 - 2015)

Professor emeritus **Börje Steenberg** left us January 17, 2015 in the age of 102 years. Börje Steenberg, PhD in chemistry and Professor Emeritus of Paper Technology, one of the world's leading researchers in paper technology and a Fellow of the IAWS since 1966, was born on 6 August 1912.
Börje was awarded a doctorate by Stockholm University in 1944 for a thesis entitled *Adsorption and Exchange of Ions on Activated Charcoal*, which was cited more than twenty times in a monogram on active charcoal. About 100 of his chemical works are mentioned in Chemical Abstracts and he is cited more than 50 times in Meredith's Mechanical Properties of Wood and Paper. From 1949 to 1979, he was Professor of Paper Technology at the Royal Institute of Technology in Stockholm, where he received the students' union's Demosthenes prize for the Institute's best lecturer. From 1968 to 1974, he was Deputy Director General of FAO and the head of its forestry division. In 2009, he published an autobiography in Swedish "Usefulness with pleasure – memories and opinions" (ISBN 9789173312301), which contains not only memories but also his views on the forest products industry.

Alongside his academic career, Börje Steenberg was an advisor to the paper industry, and he had long-term assignments for SCA, Stora Kopparberg, Modo, Korsnäs, Fiskeby, Feldmuhle among others.
Börje Steenberg was a member of several academies; The Royal Swedish Academy of Engineering Sciences, The Royal Swedish Academy of Agriculture and Forestry, The Technology Academy Finland, Accademia Italiana di Scienze Forestali, The International Academy of Wood Science and the New York Academy of Sciences.

Börje Steenberg has received a large number of awards and honours: Commander of the Order of the Polar Star, the King's medal with the ribbon of the Order of the Seraphim, The Mitscherlich Medal from the German Zellcheming 1961 and Honorary Member 2003, SPCI's Ekman Medal 1962, SPCI's Golden Plaque 1969, TAPPI's Gold Medal 1970 – as the first European, a medal which five of his student's have later received – The Troëdsson Foundation's Gold Medal 1998, TAPPI Fellow, Fellow of the Finnish Paper Engineers' Association, Fellow of the Faraday Society, Fellow of the Society of Chemical Industry (UK), and the degree of Doctor of Forestry h.c. from the Swedish University of Agricultural Sciences.

In 2001, he was elected to the International Paper Industry Hall of Fame in Appleton, Wisconsin, USA; and in 2002 he was named "Father of Modern Paper Science" by the US Forest Products Laboratory, Madison, Wisconsin USA.

Börje Steenberg was foremost a truly "Maestro" in paper science and devoted his entire life to the progress of the excellence in this field. He was an excellent lecturer who also long after his official retirement in 1979 still frequently, for many years, held a large audience enthusiastic during lectures and conference talks. He was during all his time up till his 100-birthday working as emeritus at the institution of Fibre and Polymer at KTH, acting as a mentor for many students and academics. He put the scientific questions foremost, always trying to find the weak spot in the interest of fostering the scientific awareness of anyone who wanted to discuss with him.

Börje also enjoyed many other intellectual fields as archaeology, art, literature and music to which he often enjoyed classical works within his favourite of Béla Bártok. During his last years when health sat limits he devoted his time, from his home, to search regarding the tragic death of his contemporary the former Swedish UN General Secretary Dag Hammarskjöld, shot down under unclear circumstances on a mission in Congo; always searching for the truth.

Colleagues at Innventia and KTH

THOMAS M. MALONEY (1931 - 2014)

Tom Maloney, retired Director of the Wood Materials and Engineering Laboratory, Washington State University (WSU), passed away on June 18, 2014. Tom was born February 18, 1931 in Raymond, Washington, USA the son of the late Peter and May (Jacobsen) Maloney. He attended school in Raymond, Washington, graduating from Raymond High School. He was an excellent student, and multi-sport athlete. He attended Washington State College (now Washington State University), and received a BS degree (with Honors) in Industrial Arts.

Tom began a long, productive career at Washington State University (WSU) in 1958 working as a Junior Wood Technologist in the Wood Technology Section of the Division of Industrial Research, under the leadership of IAWS Fellow Dr. George G. Marra. Tom's assignment was to develop innovative uses for wood residues. Tom led many of the first research studies aimed at systematically identifying the key raw material and processing variables that control the properties of wood composite materials. His work is considered seminal-it provided the foundation for many of the technical innovations in the composites areas that are in use worldwide today. In 1972, Tom became Head of the Wood Technology Section of the Department of Materials Science and Engineering, College of Engineering

and Architecture. In 1985 the Wood Materials and Engineering Laboratory was formed, with Tom as its Director.

Realizing a need to for industry and academia to work collaboratively, Tom initiated the first Particleboard Symposium in 1967. Now in its 47th year, the International Wood Composites Symposium has provided research scientists and engineers from around the world a forum to present their latest findings and technical developments. Tom visited hundreds of composite material manufacturing facilities and research centers around the world, and authored the book "Modern Particleboard and Dry-Process Fiberboard Manufacturing", which is used worldwide as a primary reference on wood composite material manufacturing. He authored or co-authored over 400 research reports and journal articles, and jointly holds several patents. Tom served in a consulting role for many industrial firms, and for the United Nations (UN) working for the Food and Agricultural Organization of the UN in Rome, New Delhi, Beijing, and Shanghai. He was a sought after speaker, giving key note presentations in Australia, Brazil, Canada, Cuba, France, Germany, Italy, Japan, Malaysia, Mexico, Poland, South Korea, Sweden, Taiwan, and Yugoslavia.

Tom held numerous leadership positions with the Forest Products Society and Society of Wood Science and Technology, and served as President of both during his career. Under Tom's leadership, the Wood Materials and Engineering Laboratory provided critical technical support to a range of industrial clients and governmental agencies, including the Department of Agriculture (USDA), Forest Service, and Department of Housing and Urban Development. During his career, Tom, his colleagues and students received numerous awards from a wide range of organizations, including the USDA, Forest Service, Society of Wood Science and Technology, and the Forest Products Society in recognition of their many scientific breakthroughs and international stature. Tom received WSU's inaugural Faculty Excellence Award for Public Service in 1983 and in 1988 was honored by *Forest Industries* for leadership in developing excellence in the forest products industry.

As an educator, Tom Maloney was exceedingly proud of his students."The real reward of any educator," Tom said, "is to witness the personal growth and accomplishments of your students." He and his colleagues mentored a generation of graduate students now in leadership positions in industry, universities, and government laboratories. Tom Maloney retired from Washington State University as a Professor of Materials Science and Engineering, and the Director of the Wood Materials and Engineering Laboratory, in 1995.

Tom Maloney's faith was very important to him— he was a devoted member of Sacred Heart Catholic Church. He was a lifetime member of the Washington State University Alumni Association and a member of the Golden Cougar Club. He was a devoted husband, father and grandfather who enjoyed time spent with family immensely. He enjoyed travel-

ing as well as all sports and was an incredible carpenter, building the family home and summer house. He is survived by his wife Donna in Pullman, WA; his daughter Carol Maloney of Vancouver, WA; his sons William Maloney of London, England and Joe Maloney and wife Lynn of Bonney Lake, WA; a sister Susan Maloney and his four grandchildren Luis, Darren, Jolene and Janelle.

Washington State University is creating the Thomas M. Maloney Graduate Scholarship in memory of Tom and his distinguished career. The endowed scholarship will provide support to deserving graduate students working in the field of wood composite materials and engineering. https://secure.wsu.edu/give/default.aspx?fund=4485

Contributed by Robert J. Ross

INTERVIEW WITH FELLOW LIISA VIIKARI

1. What attracted you to work in wood science?

In Finland we all have, in one way or the other, a very close contact to the forests; forests cover about 75% of the land area, the economy is dependent on forestry, most of us have summer cottages in the countryside etc. For me, forests mean piece and silence; physical work or relaxation in the free time, including the pleasure of collecting berries and mushrooms. Then, I studied biochemical engineering at the Helsinki University of Technology (today the Aalto University), and had the opportunity to combine biotechnology and forestry, thanks to many fruitful discussions with colleagues at VTT. Our start in the forest biotech area in the early 80's was pushed by environmental challenges and emerging technological opportunities. I was fascinated about the opportunities that enzyme technologies offered for modification, processing and analysis of wood and fibers.

2. What do you think is the future for the wood science profession?

Wood sciences seem presently to focus more on material sciences and on new ways how to extract, modify and combine wood based polymers into different products using new spe-

cific and fascinating methods. The increasing genomic data of plants and micro-organisms should be interpreted into deeper understanding for rational exploitation. The barriers between forest and chemical industries and the energy sector are fading away, and novel wood based products are emerging. Old pulp or paper mills are already turning into bio-product factories (a name which is detested by many!). There are still scientific and technical questions to be solved, such as structural modification and exploitation of lignin to increase its value. Thus, wood scientists are certainly needed, but the focus is on exploration and modification of the polymer properties and development of new products. It is a pity if the valuable multipurpose polymers are used for trivial uses, such as energy production.

3. What did you enjoy most about your time at VTT?

I enjoyed most the multidisciplinary and -scientific opportunities provided by the institute, the target oriented high quality expertise and the successful combination of complementary expertise areas. We were among the first to have active discussions with the forest industry, which allowed us to have a realistic basis for new developments and created successful private-public partnerships. On the other hand, based on the financial structure of VTT, possibilities to carry out basic work were rather limited. I think that we were, however, quite successful in acting on the interfaces and combining expertise areas of various groups on basic and more applied areas. And of course, I enjoyed collaborating with so many great individualistic, open-minded and foresighted colleagues from VTT and other organizations.

4. What do you see happening in your own future, professionally and personally?

Since retiring a couple of years ago, I have consciously decreased the number of professional activities, but enjoy carrying out consultations and evaluations at different interesting places. I have 4 grandchildren and I am happy to help their parents to survive with their demanding jobs, like my mother helped me with my own kids. I love the slow mornings, free summers on our island in the archipelago of the Baltic Sea, cultural life (concerts, theatre, art exhibitions), sports to keep the pace, more time with old friends and of course traveling. I have been very fortunate and enjoyed the challenges life has brought to me, and look forward to every new day.

REPORTS OF MEETINGS

IAWS Executive Committee Meeting – Abbreviated Minutes

Held at Western Pannonia Med Hotel, Sopron, Hungary on 14th September 2014.

Present: Fellows Schmitt, Salmén, Evans, Rosen, Beall and Kim

President Schmitt opened the meeting and explained that there were some difficulties to arrange the meeting at a time where all EC members can attend; finally only five EC members were able to attend. President welcomed Yoon Soo Kim from Korea as new secretary of IAWS. Former President Frank Beall was additionally invited to report about the progress of the activities of the Supporting Member Sub-Committee to improve the situation with decreasing number of SM. EC agreed that in principle, minutes of meetings should be included in IAWS Bulletin. President reported the current status of Sopron conference. About 80 delegates registered, 50 from abroad and 30 from Hungary.

Fellow Nomination

President reported current situation of nomination of prospective Fellows. As of September 2014, only 4 nominations were submitted. Therefore, deadline for nomination was to be extended to middle of November. The election process then will continue until Christmas or even until January. It has been advised to look around for young scientists with good scientific potential as IAWS fellow.

Supporting members

President reported that current number of supporting members (SM) decreased to only 20. Considering that 25-28 SM were usually active, the current situation needs some action. Former President Frank Beall reported about recent activities. The new SM subcommittee was established and is active since May 2014. The subcommittee (members are: Frank Beall/Chair, Ian De la Roche, Mark Irle, Bo Kasal, Thomas Mc Lain) agreed to elaborate a program to improve the current situation. Two major concerns were already identified: the benefits for SM are not well articulated and the application process could be simplified. In principle, IAWS should not have the right to reject any organization applying for SM membership. In order to recruit new SM, several ideas were proposed: different scales and diverse benefits (enhanced visibility of SM by direct link to their organization in the website of IAWS) to provide good excuse for newcomers of SM were discussed. All the EC members agreed to launch the subcommittee as standing committee to continue with their important work. The subcommittee will now prepare diverse strategies to recruit new SM together with the President and send out the recommendations to EC members for approval.

2016 Plenary meeting.

Past-President Salmén provided detailed information on a conference in Copenhagen (70th RILEM Week), which will be held on 15-24 August 2016. Main focus of this conference is about materials, systems and structures in civil engineering. However, EC was discussing that the content and nature of this conference would not be well suited to promote wood science. There was a recommendation to think for alternatives. This problem should also be discussed during the coming business meeting. Alternatively, as IAWS has its 50th anniversary in 2016, Paris would be an excellent choice because IAWS was founded in 1966 in Paris.

Distinguished Service Award (DSA)
EC decided that the Distinguished Service Award is to be conferred on Fellow Boris Ugolev from Russia because of his extraordinary contribution in wood science. President Schmitt will contact colleagues in Moscow on which occasion this award can be delivered to Fellow Ugolev.

Academy Lecturer for future plenary meeting
All EC members agreed that Fellow Gerd Wegener is an excellent candidate for the 2016 plenary meeting.Past-President Salmén proposed that an AL should not be confined to IAWS plenary meetings but might be possible to be presented during international conferences related to wood science and technology such as IUFRO meetings. related to wood science and technology such as IUFRO meetings.

Web Page Status
President Schmitt reported that Roberta Farrell from Waikato University, Hamilton, New Zealand, is now taking over the editorship of IAWS bulletin. Unfortunately she was not able to attend the EC meeting due to private reasons. It was proposed that videoconference of EC meeting could be under consideration for those who are not able to attend EC meetings. EC members discussed the increase in visibility of IAWS. Logo of IAWS with good resolution should be seen in the website and bulletin of IAWS. In addition, starting page of IAWS website should be modified to link directly to SM websites.

Wood Science and Technology
Vice-President Robert Evans reported that fellow Klaus Richter, new Editor-in-chief of WST, was now under consideration to have a science editorial system in WST to release the current load concentrated to him.

AOB
EC members discussed the presence of IAWS newsletter to all the Fellows and the familiarity with new social media systems to expand the horizon of wood science to the public.

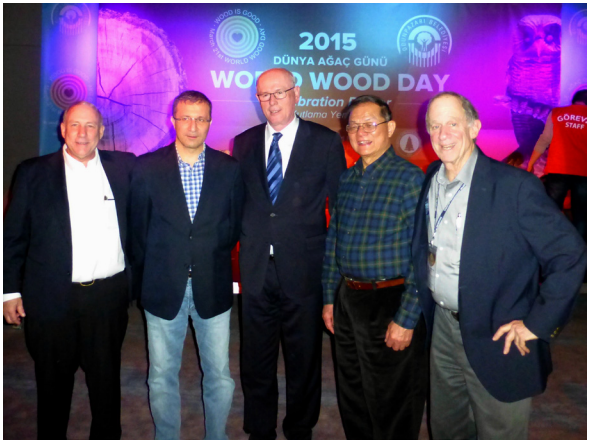
EC decided to continue efforts to enhance the visibility of IAWS to publics by also using social media.

President Schmitt declared the meeting closed at 17:30h, after mentioning that the business meeting will be held on Monday 15 September at 17.00h in the same room.

Yoon Soo KIM, Secretary *December 15, 2014.*

WOOD AND HUMANITY 2015

World Wood Day 2015 in Odunpazarı District of Eskişehir, Turkey Insert WOOD DAY.JPG



Wood and Humanity was the theme of the 3rd World Wood Day (WWD) held March 21, 2015 in Odunpazarı, Turkey.

The 2015 World Wood Day Symposium aimed to encourage the exchange of ideas and experiences concerning the wood related research, strategy and practice, in the cultural, historical and social contexts and development. Focused topics were designed to raise awareness of current issues and to enhance multidisciplinary discussions for the crucial role of wood in human civilization and environment. Official events began March 6th with a 2½ -week collaborative timber bridge project and ended in Istanbul March 31 with a special 4-day program related to wooden architecture and timber construction in the Şişli District of Istanbul. About 380 people from 93 countries participated in this major event with excellent support from the District of Odunpazarı (which translates to "wood market" in English). IAWS was represented by fellows Barry Goodell, Nami Kartal, Chung-yun Hse, and Howard Rosen (pictured with Odunpazarı Mayor, Kazim Kurt). Pieter Baas also was in attendance.

Booths, tents and other venues were set up in Odunpazarı so that hundreds of public attendees of all ages could share in the celebration, which included woodcarvers, wood

turners, furniture makers, folk arts workshops, performances of various wooden musical instruments, and children events. (Barnaby Walters from the UK is shown playing a wooden musical instrument called a hurdy-gurdy.) A technical symposium with 31 speakers ran over two days under the heading of *Wood and Humanity: An Interdisciplinary Approach to Sustainable Development*. The topics focused on raising awareness of current issues and enhancing multidisciplinary discussions for the crucial role of wood in human civilization and the environment. The day after WWD, many of the attendees traveled to a local community park area and planted black pine tree saplings to emphasize the need for a sustainable source of trees to continue making wood products. Fellow Nami Katal was chair at one of the sessions in the symposium namely: International and Domestic Challenges on March 22nd, 2015.

Two unique highlights of the 2015 celebration included an international, collaborative project with 23 artisans from 17 countries that designed and constructed a timber "bridge" (arch) and erected it in the town square a few blocks from the venue of the meeting (see accompanying snowy photo with the arch and artisans). The second highlight was the integration of performances and demonstrations from 13 musical groups from 15 different countries that combined wooden instruments with song and dance. Many times throughout the celebrations, these musicians shared their talents in creative musical performances including the Opening Ceremony, the Welcome Dinner, and two musical concerts.

More details and pictures from these meetings and tours can be found at the World Wood Day 2015 websites http://www.worldwoodday.org/2015/and https://www.facebook.com/worldwoodday.

Howard Rosen
IAWS – Treasurer
WWD Foundation, Chair

FORTHCOMING MEETINGS OF INTEREST TO FELLOWS

IAWS 2015 Annual Meeting
To be held September 15-18, 2015 in Québec City, Canada.

The IAWS 2015 annual meeting will be a joint meeting held with the 2015 ISCHP Conference (International Scientific Conference on Hardwood Processing). There will be a special IAWS session covering all aspects of wood science and Fellows are encouraged to participate. The conference is part of the continuing series of conferences previously held in Canada (2007), France (2009), USA (2011) and Italy (2013). The main objective of this conference is to bring together the scientific and research communities working on hardwood, from the source to the customer, to share knowledge and ideas. International experts, scientists, government employees, hardwood industry representatives, suppliers and customers are invited to discuss recent progress and innovative work in this valuable area.

Topics covered by ISCHP 2015

- Hardwood Forestry Practices & Wood Quality
- Hardwood Product Development
- Hardwood Processing & Optimization
- Hardwood Market & Sustainability
- Hardwood on Building material
- Hardwood on Composite Product

Please read more on the meeting webpage (www.ischp2015.org).

The 8th INTERNATIONAL SYMPOSIUM ON ADVANCED TECHNOLOGIES FOR THE PULP, PAPER, AND CORRUGATED BOARD INDUSTRY
To be held September 15-18, 2015 in Braila, Romania

The objective is to bring together the academic, research and industrial communities for discussion on the new trends in the cellulose and papermaking technologies as well as in the field of equipment and technologies for corrugated board or paper and board packaging. Topics include the following:
1. Progress in cellulose chemistry and technology
2. Advanced technologies for manufacturing of pulp, paper, corrugated board and converting
3. Advanced security solutions for documents, products and commercial brands

EIGHTH EUROPEAN CONFERENCE ON WOOD MODIFICATION ECWM8
To be held October 26-27, 2015 in Helsinki, Finland.

The European Conference on Wood Modification is now firmly established as the premier global event dedicated to the science and technology of wood modification. This conference, now the eighth in the series, will provide a forum for individuals from research organisations and companies to learn about the latest developments in this rapidly evolving field, to discuss with renowned experts and to build their networks in an informal and friendly atmosphere. Sessions on a variety of topics including the commercial opportunities for modified wood, moisture relationships, and chemical and thermal modification, with speakers from around the world presenting their latest research work. The conference, held in conjunction with COST Action FP1303 (Performance of Biobased Building Materials) will cover all forms of wood modification, including, but not limited to thermal, oleo-thermal, thermo-hydro-mechanical, chemical and impregnation modifications, as well as emerging technologies such as microwave, plasma and enzymatic modification. There will also be sessions dealing with testing methods and standards, environmental issues, quality control and various aspects of commercialization, as well as poster presentation sessions.

13th IUFRO International Wood Drying Conference: "Wood drying in developing countries"
To be held September 5-9, 2016 in Istanbul, Turkey.
Fellow Nami Katal is in the organizing team of this conference and the web site is: http://wdc2016.orman.istanbul.edu.tr

Biocomp 2016: The 13th Pacific Rim Bio-Based Composites Symposium
To be held November 14 - 16, 2016 in Concepcion, Chile.

This Symposium started in 1992 and is held every two years in a Pacific Rim country. Past symposia have been held in Rotorua, New Zealand (1992), Vancouver, Canada (1994), Kyoto, Japan (1996), Bogor, Indonesia (1998), Canberra, Australia (2000), Portland, Oregon, USA (2002), Nanjing, China (2004), Kuala Lumpur, Malaysia (2006), Rotorua, New Zealand (2008), Alberta, Canada (2010), Shizuoka Japan (2012) and Beijing, China (2014). The key objective of this international symposium is to provide a forum for discussion and to facilitate the exchange of ideas and information on the latest development and findings in bio-based composites. Among the delegates attending this event will be scientists and experts from the relevant industries, government agencies, universities and research institutions. In addition, this symposium is a forum for promoting and strengthening further cooperation and networking among the researchers, experts, manufacturers and machine suppliers for the development of bio-based composite industries. Another objective is to enjoy the local culture of the host country. The theme of this symposium with be: Biobased composites for a sustainable future. More details can be found at http://246.85b.myftpupload.com/

The Symposium will cover all aspects of bio-based composites including:

- Bio-resources (including characterization, supply, processing, environmental assessment, economics, future challenges and opportunities of wood or non-wood fibers).
- Bioplastics and biocomposites (biodegradable and functional materials, compatibilizers, processing aids, color).
- Adhesives and bonding (current and new adhesives; adhesive mechanisms and characterization; future challenges and opportunities, formaldehyde and VOC emission).
- Carbon-based biomaterials (production, characterization, uses).
- Fibrils and fibers (fundamental and applied aspects, production, chemical modification, uses).
- Processing technologies (including existing and new production technologies, process modelling, material interactions, production and demand trends).
- New analytical techniques, properties and testing (strength, moisture, decay, weathering in lab and ground).
- Sustainability, economics, management and marketing.

ARTICLES AND BOOKS BY OR OF INTEREST TO FELLOWS

PROFESSOR PHILIP EVANS recently coauthored a paper with Gordon Dadswell (son of the late, great Eric Dadswell) and historian John Dargavel about the current state (neglect) of Australia's xylaria and would like to bring this paper to the attention of the IAWS. The reference is G. Dadswell, J. Dargrave, P.D. Evans, **Wood collections in Australia: a history of expansion and retraction.** Australian Forestry
2015 DOI:10.1080/00049158.2015.1011798

The paper is freely available on line:

http://www.tandfonline.com/doi/full/10.1080/00049158.2014.990867#abstract

Summary The history, size and status of each of Australia' s 12 public wood collections, or ' xylaria' , are reviewed in light of the uncertain future of most of them. Their history is traced from the colonial era to the present. Australian colonies sent wood
samples to Britain and international exhibitions from early in the nineteenth century to promote their timber exports. In the 1880s Queensland and New South Wales started the first two scientific reference collections of wood, other states followed, and in the 1920s the Commonwealth started two large national collections. The collections were used to develop classification systems for identifying samples of wood in the absence of
botanical specimens. There are currently 12 collections held by public institutions, of which the largest, with 47 000 specimens, is held by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Their expansion was followed by gradual retractions of government funding, staff and interest over the last 30 years. Ten of the 12 collections are now considered to be secure, six are in institutions that can conserve
them, and only two are in use. Consolidation of the national collections under a professional curator is needed.

Another article, by G. A. Kile, E.K.S.Nambiar, A.G. Brown, Australian Forestry

Volume 77, Issue 3-4, 2014 has been published on the decline of forestry/wood science R & D in Australia. The paper is freely available on line via the following website:

http://www.tandfonline.com/doi/full/10.1080/00049158.2014.990867#abstract

The Summary of the paper follows:
The modern Australian forest industry has been built on the foundations of science and technology provided by decades of research and development. Much of this research and development (R&D) has been undertaken and funded by state and Commonwealth agencies and the universities. It has enabled the development of new industry sectors that have

delivered significant socio-economic benefits. The value of R&D has been supported by independent cost/benefit analyses, and the quality of the science has been upheld by international recognition of innovations and awards to Australian scientists. Despite this successful history, in recent years R&D investment by many organisations has declined sharply to levels that are nationally precarious for continuing industry success. Reasons for the reduction in funding for R&D for the industry include the declining relative contribution of the forest industry to the national economy, reduced government involvement in the industry, corporate restructuring, increased international ownership, low industry profitability, cost cutting and inadequate recognition by the industry of the importance of R&D and innovation for business growth and sustainability. We have already lost or are losing core R&D capability and the human talent required for the future. The forest industry in Australia operates in a dynamic environment: production of raw material (wood) is subject to both continuing and unpredictable threats, while processing and products are subject to innovative competition. Forest industry is a long-term business and the sustainability of the industry depends on a sound, adequate and ongoing underpinning of science and technology. For a better future, key requirements include industry's commitment to greater R&D investment in its own development, strategic partnerships between R&D funders and providers in priority areas, and sustainable and dependable funding from public and private sources.

Fellow Roni Aloni would like to bring to the attention of Fellows the following article:
Ecophysiological implications of vascular differentiation and plant
Evolution, Roni Aloni, *Trees* (2015) 29:1–16. DOI 10.1007/s00468-014-1070-6

Key message Environmental cues regulate plant vascular differentiation and plant evolution through simple hormonal mechanisms of a single or a few moving signals.
Abstract Mechanisms regulating the responses of plants and their vascular tissues to environmental stimuli are mediated by continuously moving hormonal signals that enable continuous response to ecological cues. Auxin from young leaves is the primary hormonal signal that can induce vascular differentiation by itself. Its concentrations determine whether phloem or xylem is induced. Auxin produced in a parasitic plant induces continuous vessel system into its host with open perforation at their junction. Polar auxin gradients along trees regulate the gradual widening of vessel diameter and decrease in vessel density from leaves to roots. This basic mechanism also regulates vascular adaptation to the plant's environment. Gibberellin from mature leaves, in the presence of auxin, promotes cambial activity and woodiness, and is the specific signal inducing fibers. The evolutionary development of vessels and fibers from tracheids reflects their hormonal specialization; from the combined mechanism of auxin and gibberellin for tracheids in gymnosperms, to the specialized mechanisms of auxin inducing vessels, and gibberellin inducing fibers in angiosperms. Cytokinin from root tips promotes cambial activity and sensitivity enabling the extreme differentiation

of ring-porous wood in temperate deciduous hardwood trees. These mechanisms are discussed for clarifying the role of the environment in vascular adaption and evolution.

SUPPORTING MEMBERS

Supporting Members shall be educational, research, industrial, or governmental organizations and individuals, who are actively engaged in carrying out or promoting research in wood science or the enhanced utilization of wood on the basis of scientific or technological principles and practices. The importance of Supporting Members to the Academy is twofold:

- The Academy derives direct contact with organizations and individuals actively engaged in the utilization of wood and wood products
- The Academy receives financial support for its activities from these members.

Contact Details are available on the IAWS website.

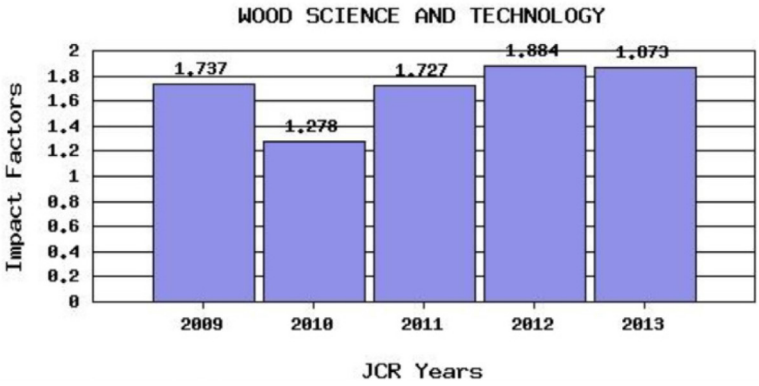
CHINESE ACADEMY of FORESTRY (CAF)	www.caf.ac.cn
CIRAD FORETS (French Agricultural Research Center for International Development)	ur-bois-tropicaux.cirad.fr
ESB- ECOLE SUPÉRIEURE DU BOIS, France	www.ecoledubois.com
FORESTRY & FOREST PRODUCTS RESEARCH INSTITUTE, Japan	www.ffpri.affrc.go.jp
FP INNOVATIONS, Canada	www.fpinnovations.ca
FRAUNHOFER-INSTITUTE OF WOOD RESEARCH, Germany	www.wki.fraunhofer.de
HOLZFORSCHUNG MÜNCHEN, Germany	www.holz.wzw.tum.de
INNVENTIA AB, Sweden	www.innventia.com
KYOTO UNIVERSITY, Japan	www.rish.kyoto-u.ac.jp
MISSISSIPPI STATE UNIVERSITY, USA	www.cfr.msstate.edu/forestp
MOSCOW STATE FOREST UNIVERSITY, Russia	www.mgul.ac.ru/en
OREGON STATE UNIVERSITY, USA	www.woodscience.oregonstate.edu
SCION, New Zealand	www.scionresearch.com

STATE UNIVERSITY OF NEW YORK, USA	www.fla.esf.edu
TECHNICAL UNIVERSITY in ZVOLEN, Slovakia	www.tuzvo.sk/en
THÜNEN INSTITUTE, Germany	www.ti.bund.de
UNIVERSITE LAVAL, Canada	www.xylo.sbf.ulaval.ca
UNIVERSITY OF MINNESOTA, USA	www.bbe.umn.edu
US FOREST PRODUCTS LABORATORY, USA	www.fpl.fs.fed.us
WOOD TECHNOLOGY INSTITUTE, Poland	www.itd.poznan.pl

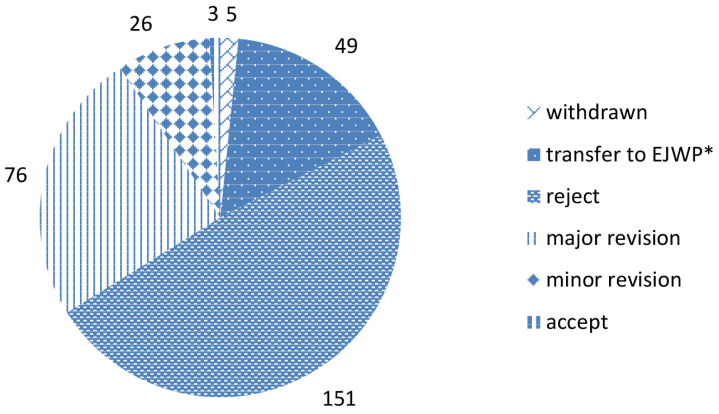
'WOOD SCIENCE AND TECHNOLOGY' – JOURNAL OF THE IAWS

Wood Science and Technology Metrics
Klaus Richter

1. Impact Factor Trend (2013: 1.873 – IF 2014 will be announced in June)



2. Total number of submitted manuscripts in 2014: 310



status	# Manuscripts	[%]
withdrawn	5	1,6
transfer to EJWP*	49	15,8
reject	151	48,7
major revision	76	24,5
minor revision	26	8,4
accept	3	1,0
∑	310	100

*EJWP: European Journal of Wood and Wood Products

3. Accept-reject ratio

	# Manuscripts	[%]
reject*	156	50,3
accept**	154	49,7
∑	310	100

* reject includes reject; withdrawn
** accept includes accept; minor revision; major revision; transfer

4. Average time from submission to publication online first [d]: 356 of which 341 for Peer Review (data from 2013 (latest publisher's report))

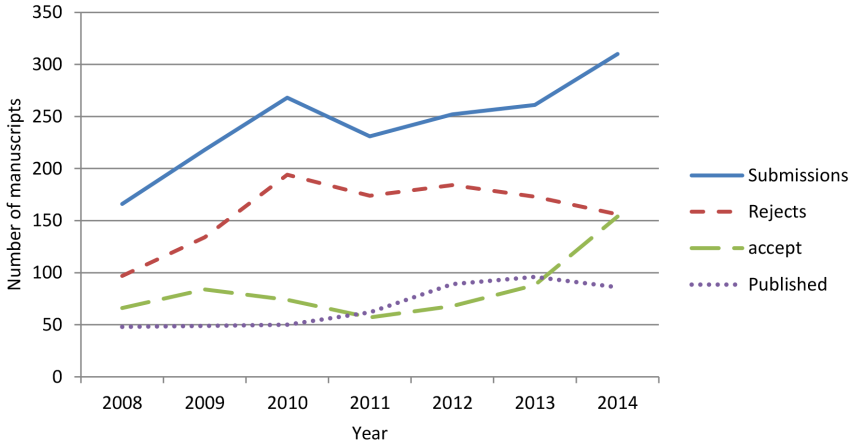
5. Number of manuscripts by country

Country of submitting author	# manuscripts	[%]	Country of submitting author	# manuscripts	[%]
ALGERIA	3	1,0	LATVIA	1	0,3
ARGENTINA	2	0,6	MALAYSIA	13	4,2
AUSTRALIA	2	0,6	MEXICO	3	1,0
AUSTRIA	8	2,6	NEW ZEALAND	1	0,3
BELGIUM	2	0,6	NORWAY	1	0,3
BRAZIL	19	6,1	PAKISTAN	2	0,6
Canada	15	4,8	POLAND	3	1,0
CHILE	3	1,0	PORTUGAL	4	1,3
CHINA	50	16,1	ROMANIA	7	2,3
COSTA RICA	2	0,6	RUSSIAN FEDERATION	5	1,6
CZECH REPUBLIC	5	1,6	SERBIA	3	1,0
ECUADOR	1	0,3	SLOVAKIA	1	0,3
FINLAND	7	2,3	SLOVENIA	3	1,0
FRANCE	8	2,6	SOUTH AFRICA	1	0,3

FRENCH GUIANA	1	0,3	SPAIN	11	3,5
GERMANY	11	3,5	SWEDEN	4	1,3
GREECE	2	0,6	SWITZERLAND	4	1,3
HUNGARY	1	0,3	TAIWAN	3	1,0
INDIA	20	6,5	TANZANIA	1	0,3
INDONESIA	3	1,0	THAILAND	3	1,0
IRAN (ISLAMIC REPUBLIC OF)	18	5,8	TUNISIA	1	0,3
ISRAEL	1	0,3	TURKEY	18	5,8
ITALY	4	1,3	Ukraine	1	0,3
JAPAN	7	2,3	UNITED STATES	11	3,5
KOREA	10	3,2	∑	310	100

6. Development Wood Science and Technology

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Submissions	166	218	268	231	252	261	310
Reject	97	134	194	174	184	173	156
Accept	66	84	74	57	68	88	154
Published	48	49	50	62	89	96	86



7. Participation fellows IAWS 2014

Number of	Total numer	[%]	
Fellows	376		
Reviews prepared	294		
Authors (incl. co-authors)	1233		
Fellows as authors	28	2,3	% of 1233 (all authors)
Reviews prep. by fellows	50	17,0	% of 294 (reviews prep.)

GUIDELINES FOR HIGHLIGHTS

The purpose of the Highlights, published in the Bulletin, is to promote the integration of the fields of wood science. Fellows are encouraged to submit Highlights to any of the Officers.

Highlights should:

- Be free of jargon and highly technical language and (unexplained) acronyms, and be readily understood by wood scientist in other fields
- Be no more than 1000 words (roughly 4 pages in the Bulletin)
- Begin by providing a brief background or framework to put the report in perspective
- Give due credit to the work of others in the field, not just summarise the author's work
- Contain important references to the literature for further reading
- Finish with a statement of future direction in the area

NOMINATION PROCEDURE FOR ELECTION OF FELLOWS

The nomination process is relatively simple; all you need to do is fill in the Nomination form and send it to me. For those to be considered in the next election, the deadline for receipt of nominations is **30 September**.

I then contact the nominee, confirm their willingness to stand for election, and then have them complete the more detailed application form. The Executive Committee reviews the nominees to determine if their applications are complete, and then, in early November, submits the completed applications to the membership for ballot.

Typically, scientists who are nominated are either mid-career, showing great promise and accomplishments, or near the end of their career, when their peers feel that they have made major continuing contributions over their professional life.

There are two areas of Fellowship that are under-represented in IAWS. One is Fellows from developing countries, where the number of refereed scientific contributions, as viewed by the developing world, may be somewhat lacking because of the past or current inability to publish in the leading journals, and/or difficulty with the English language. The other area relates to the few numbers in certain scientific disciplines; if you are in one of those, you are aware of that. The Executive Committee is also interested in election of wood science managers who have had a major impact through their oversight of research activities, without necessarily having the expected number of refereed publications.

Please spend some time thinking about potential nominees, perhaps looking through the Directory and the listing of Fellows by countries. Since we do not "promote" ourselves to gain members, it is up to the Fellows in the Academy to provide the basis for this recognition.

Uwe Schmitt

NOMINATION FORM

Nomination for Fellowship of the International Academy of Wood Science

Name of Candidate:
Position of Candidate:
Candidate Mailing Address:

Candidate email address (required!):

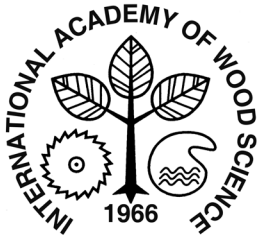
Candidate's Background (maximum 100 words):

Reasons for the candidate's nomination (outstanding in his/her field; substantial contributions to wood science; major results in management of research; etc):

Date:
Nominator name:
Email address:
Telephone:

Please return to: Uwe Schmitt uwe.schmitt@ti.bund.de

IAWS



www.iaws-web.org