ISSUE
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June
2018

IAWS Bulletin

Academy Board

Chair: P. Baas (2018)

R. Aloni (2020)

A. Ballerini (2020)

G. Daniel (2022)

R. Franich (2018)

A. Gutierrez (2022)

P. Niemz (2018)

A. Ragauskas (2018)

T. Shupe (2020)

K. Takabe (2020)

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S. Wang (2022)

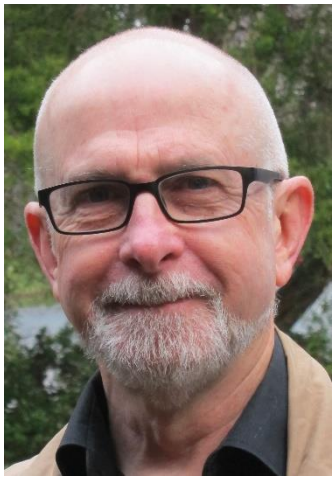
End of terms: 1 June

Please send correspondence by email to the editor, Lloyd Donaldson:

lloyd.donaldson@scionresearch.com

http://www.iaws-web.org/

Message from the President



Wood is universally prized as a material We surround ourselves with innumerable wood products because of their highly desirable mechanical, visual, thermal and tactile properties. However, wood is so familiar that it is often taken for granted. For almost two decades in many countries, wood science funding has been in decline despite the looming environmental crisis that should be favoring the use of such low energy renewable materials. Fortunately, many researchers are making progress in new and exciting areas of wood science so that there is considerable hope for a bright future for this unique sustainable material. In addition to good science, it is necessary to have effective marketing not only to the general public but to political and industrial decision makers as well as to potential wood scientists and engineers.

In support of this, the IAWS Executive Committee held a meeting and workshop at Oregon State University in Corvallis on May 7 and 8. Fellow Laurie Schimleck organized the meeting and workshop on wood science awareness and education around the world. The meeting also benefited from excellent comments from several OSU students who discussed their experiences and reasons for choosing careers in this field. Presentations were made by Fellows Lloyd Donaldson (on New Zealand), Yoon-Soo Kim (on South Korea, Japan, China), Pieter Baas (on the Netherlands), Uwe Schmitt (on Germany) and Howard Rosen (on the International Wood Culture Society and World Wood Day). We intend to make the presentations available on the IAWS website.

We welcome the newly elected IAWS Board Chair, Professor Siqun Wang from the University of Tennessee Center for Renewable Carbon. His research interests cover a wide spectrum of nanosciences applied to wood and wood composites, as well as applications in soil science and water purification. He has authored or co-authored more than 200 referred journal articles and was elected as an IAWS Fellow in 2009. Fellow Wang will also represent the Board as a full member of the Executive Committee. I am very grateful to Fellow Baas for his exemplary service as Chair of the Board and for his support and guidance on the Executive Committee.

Fellow Pieter Baas continues to contribute to the IAWS as Chair of a Scouting Sub-Committee. The new team has been charged with addressing imbalances in gender and geographic representation in the IAWS. Such imbalances tend to be self-perpetuating in all organizations unless action is taken to address them. Fellow Baas, who has served with distinction his term as Chair of the IAWS Board, has been appointed to lead the new Scouting Sub-Committee. Joining him we are honored to have Fellows Barbara Lachenbruch (USA), Roberta Farrell (New Zealand) and Ruben Ananias (Chile). I look forward to working with them. More detail can be found in this Bulletin.

In this issue

In support of global cooperation in wood science the IAWS awards a PhD prize to the best submitted thesis/dissertation by a student who gains their degree in a country other than their own. The Academy Board has determined that the winner of the 2017 PhD award is Marco Beaumont, BOKU, Vienna, Austria. Characterization and Modification of a Cellulose II Gel. Second place was won by Lu Wang, University of Maine, Orono, USA. 3D Printing of Spray-Dried Cellulose Nanofibril-Reinforced Polypropylene Composites.

Third place was won by Rebecca Ringman, Technical University, Munich, Germany. Biomechanical Mechanisms of Brown Rot Decay. Dr Beaumont receives a Medal and is invited to attend the next IAWS Plenary in Mexico meeting to present his work. Congratulations to the award winners and many thanks to all the nominees and the nominators, and to the IAWS Board for their expert deliberations.

The IAWS, in partnership with the IAWA and the Department of Wood, Cellulose and Paper, University of Guadalajara, invite researchers, scientists, industry professionals, consultants, government leaders, students and other key stake holders to participate in this meeting. Registration and abstract submission is now open for this year's Annual Meeting. Details can be found at the conference web site: http://iaws2018annualmeeting.com/index.html

Robert Evans
Melbourne

Treasurers Report

TREASURER'S REPORT
Following is the audited Treasurer's Report for the calendar year 2017. The dues have been broken down into categories and the E is for "extra" year's payment. The net change for 2017 was $16,161. At the end of 2017, 106 of the 119 (89%) Active and Retired fellows and 25 out of 26 of the Affiliate Members were current in their dues. Our CD's and mutual fund totals $99,849 and have been invested in less secure and longer-term investments to obtain higher rates of return. Our biggest increase was our mutual fund, the Vanguard Dividend Appreciations Index Fund, which appreciated almost $13,000 or 24%.

So far in 2018, we have approximately $37,800 in Capital One Bank and $3,200 in our PayPal account. Added to our $99,200 in savings, we have a total of approximately $140,200 in assets. We need to contact delinquent members and actively encourage prospective Affiliate Members. Fifteen of our 26 Affiliate Members have paid 2018 dues and 62% of our Active and Retired members have paid this year. We need funds to support our website, the PhD Thesis/Dissertation Award, the Distinguished Service Award, and technical conferences. Our finances continue to be very sound.

Howard Rosen, IAWS Treasurer
May 2, 2018

IAWS Expenses and Revenues--Calendar Year 2017

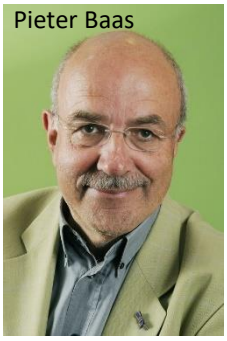
Revenues (E – extra years paid by a member)		
Retired dues (30 + 11E)		820.00
Active dues (69 +3E)		3,600.00
Lifetime dues (4)		2,400.00
Affiliate member dues (18)		5,582.00
Donations (3)		130.00
Total		$12,532.00
Expenses		
Supplies		55.00
Web Site Revision/Managing		770.10
Awards		2,000.00
Meetings		5,362.57
Wire fees Capital One		210.00
PayPal Fees		330.26
Total		$8,727.93
		Income = $12,532 - $8,728 = $3,804
Capital One Account		
Beginning balance January 1, 2017		30,665.17
Deposits by H. Rosen		1,690.00
Incoming bank wires		2,932.00
Transfers from PayPal		9,300.00
Interest		16.17
Withdrawal	– Fees	-210.00
	– Wires	-6,145.90
	– Checks	-1,216.67
	– Paypal transfer payment	-770.10
End Balance December 31, 2017		$36,260.67
PayPal Account		
Beginning balance January 1, 2017		2,248.35
Deposits (62 active, 33 retired, 4 life, 8 Affiliate)		7,760.00
Donations		80.00
Transfers		-9,300.00
Payments		-55.00
Fees		-330.26
End Balance December 31, 2017		$403.09
Total Assets		
CD Bank of the Ozarks		$34,110.81
renewed 10/16/16 at 1.35% for 23 months, interest is accumulated		
Vanguard Dividend Appreciations Index Fund		$65,738.36
opened 5/23/13, dividends are reinvested		
	Checking + PayPal Accounts	$36,663.76
	Total Assets	(2017) $136,513
		(2016) $120,352
Net change 2017 – 2016		$16,161

I have examined the books of the IAWS Treasury Account for 2017 and have found all the details in satisfactory order.
Frank C. Beall, Fellow IAWS
Professor Emeritus, UC Berkeley
Date 17, Jan. 2018

In this issue

Addressing Gender and Geographical Imbalances in our Academy

Consecutive Executive Committees and Boards of the IAWS have noted that there are serious imbalances in the gender ratio and geographical representation in our Academy. For instance only 5% of our Fellows are women, and major countries and continents are hardly or at best under-represented in the Academy despite the fact that in wood science worldwide about 30% of tenured staff are women, and that emerging economies in Latin America, SE Asia, and Africa house active research center's that are breeding grounds for excellence. At its last meeting in Corvallis, Oregon, on 7 May 2018, the Executive Committee has asked outgoing Chairman of the Academy Board Pieter Baas to establish a Scouting Committee to actively search for suitable candidates among women and in underrepresented regions who might be nominated in future ballots. Meanwhile the Scouting Committee has been established with as members Barbara Lachenbruch (Oregon, USA), Roberta Farrell (Hamilton, New Zealand), Ruben Ananias (Chile) and Pieter Baas (The Netherlands). The Committee is currently busy analyzing the extent of the imbalances and planning its activities. In its search for new nominees the committee will not compromise on the requirements for scientific excellence that have applied and still apply to eligibility by the Academy. The sensitive and personal nature of nominations will be observed by appropriate discretion. Meanwhile all Fellows are encouraged to think "out of the box" when nominating new Fellows for the IAWS. Any suggestions to help remedy the imbalances in the Academy will be welcome. Please write to pieter.baas@naturalis.nl or one of the other committee members.


Pieter Baas


Roberta Farrell


Ruben Ananias


Barb Lachenbruch

World Wood Day 2018 held in Siem Reap, Cambodia March 20-25, 2018

World Wood Day (WWD), March 21st. was celebrated for the 6th time in Siem Reap, Cambodia. The official celebratory event from March 20- 25, 2018 sought to raise public awareness and understanding of the importance of wood in society, as well as to explore the value and usage of wood from a cultural perspective. The previous five celebrations were held in Tanzania, China, Turkey, Nepal and the United States. About 550 people from 100 countries and regions attended this event on the grounds of the Angkor Century Resort and Spa. IAWS continues to be supportive of these important events. Fellows Chung-Yun Hse, Pieter Baas, and Howard Rosen represented IAWS.

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Programs included a tree planting, a 2½-day technical symposium with 36 speakers, young adult furniture making, about 90 wood carvers and wood turners, children's programs, a folk-art workshop, a wood design project, a photo contest, and a music festival. There were special projects, such as the collaborative project involving 14 people from 10 countries. Wood carvers worked in groups of three to make intricate carvings from large slabs of wood. The WWD celebration extended to programs in Vientiane, Laos March 29-April 1 and Mandalay, Myanmar April 6-8. The 2019 WWD will be celebrated in Graz, Austria.

More details and pictures from these meetings and tours can be found at the World Wood Day 2018 websites http://www.worldwoodday.org/2018/ and https://www.facebook.com/worldwoodday.

Howard Rosen
IAWS, Treasurer

In this issue

EC Meeting, Corvallis, Oregon, USA May 2018

The executive committee met in May at Oregon State University in Corvallis, Oregon with the assistance of fellow Laurie Schimleck. In addition to the business meeting which included discussions with Antonio Guzman on plans for the forthcoming plenary meeting in Guadalajara, a workshop was held on the state of wood science around the world with presentations on New Zealand (Lloyd), Germany (Uwe), and Asia (Yoon Soo), as well as a presentation on World Wood Day by Howard and a presentation on the roots of wood culture and science in the Netherlands by Pieter. Laurie gave an overview of wood science at OSU and we heard from some of the post-grad students.


FIRE

EC team inspecting the construction of a covered bridge made from Douglas fir near Corvallis.

Silver Falls, Cascade range, Oregon. Mature Douglas fir with hardwood understorey.

IAWS Plenary Meeting, October 15–19, 2018, Guadalajara, Mexico

INTERNATIONAL ACADEMY OF WOOD SCIENCE

2018 ANNUAL MEETING

"Biosustainable materials: Key to a better future"

BIOSUSTAINABLE MATERIALS: KEY TO A BETTER FUTURE

Welcome Letter

The topic of biosustainable materials is currently a hot topic in the world due to an increased interest of the international community to promote a more efficient and sustainable use of the products derived from the forest and other plants.

The IAWS and the DWC&P "Ing. Karl Augustin Grellmann" promote collaborative international learning by connecting institutions, universities and research centers around the world, bringing international engagement in order to promote a better use of the biosustainable materials through science.

The IAWS and the DWC&P, University of Guadalajara, invite researchers, scientists, industry professionals, consultants, government leaders, students and other key stake holders to participate in the IAWS 2018 Annual Meeting.

The IAWS 2018 Annual Meeting has been organized to gather all the international community of forestry and wood science experts to present the latest research findings, to build upon developing a better understanding of the biosustainable materials to promote their better use.

The meeting is a unique opportunity for developing professional contacts with worldwide experts.

Registration fee

Full conference program and materials, coffee breaks, two lunches, event dinner and welcome cocktail.

US$450 - Professionals
Earlybird before September 7, 2018

US$500
After September 7, 2018

US$225 – Students
Earlybird before September 7, 2018

US$250
After September 7, 2018

http://iaws2018annualmeeting.com/index.html

WOOD STRUCTURE AND QUALITY

The anatomy of wood (macro, micro and nanostructure), bark (tree biology) and other plants (i.e. bamboo), and related issues are some of the topics covered in this area. Also, the relationship between wood structure and quality, properties and performance, and all issues related to wood science and technology could be included in this section.

FORESTRY

Tree ecology, dendrochronology, silviculture and physiology with special focus in environmental and/or genetic control of wood formation, ecophysiological and wood functioning, wood formation and tree adaptation to climate. Also, includes commercial plantations and quality of the wood produced, and more related topics.

SUSTAINABLE BIOMATERIALS

Wood, wood-based or wood-derivate sustainable materials such as: wood physical and mechanical properties, natural durability and wood protection, biocomposites, biopolymers, biodegradable composites, among others.

CELLULOSE NANOMATERIALS

Cellulose nanomaterials processing, characterization, functionality, coatings, gels, nanofibers and nanocrystalline cellulose nanocomposites, applications, among others.

BIOREFINERIES

Biofuels, energy, functional products, chemical extractives from wood and plants and chemical characterization are related topics covered in this section.

Books of Interest to Fellows

Wood Extractives in Conifers: A Study of Stemwood and Knots of Industrially Important Species

Linda Nisula, PhD Thesis, Åbo Akademi University Press, 253 pp. + 91 pp. Appendices, ISBN 978-951-765-891-1 (paperback), ISBN 978-951-765-892-8 (digital).

Throughout the years, extractives have been studied with various analytical methods, and it has been found that different tree species contain different types and amounts of extractive compounds. However, many studies have been incomplete and the number of methods used has been almost as vast as the number of publications, making it difficult or even impossible to compare the results of different studies.

This thesis contains data on lipophilic and hydrophilic extractives in heartwood, sapwood and knots of 39 industrially important conifer species: 14 pines (Pinus), 7 spruces (Picea), 9 firs (Abies), 5 larches (Larix), 3 hemlocks (Tsuga) and Douglas-fir (Pseudotsuga). The wood samples were sequentially extracted, and the amount and composition of resin acids, fatty acids, sterols, steryl esters, acyl glycerols, juvabiones, lignans, oligolignans, flavonoids and stilbenes were analysed by gas chromatography (GC) and GC-mass spectrometry. The main conclusions were that:

• There are major differences in amount and composition of extractives, not only between genera, but also between species, especially regarding the hydrophilic extractives;

• Lignans are present in heartwood and knots of all genera. The knots, however, contain remarkably more, in some cases several hundred times more, lignans than the adjacent heartwood. Some spruce, fir, larch and hemlock species contain especially high concentrations of lignans. Hydroxymatairesinol (HMR) is the dominating lignan in spruce and hemlock, while secoisolariciresinol dominates in fir and larch;

• Considerable amounts of flavonoids are found in all larches, some of the pines and in Douglas-fir;

• Stilbenes are present in heartwood and knots of all pines;

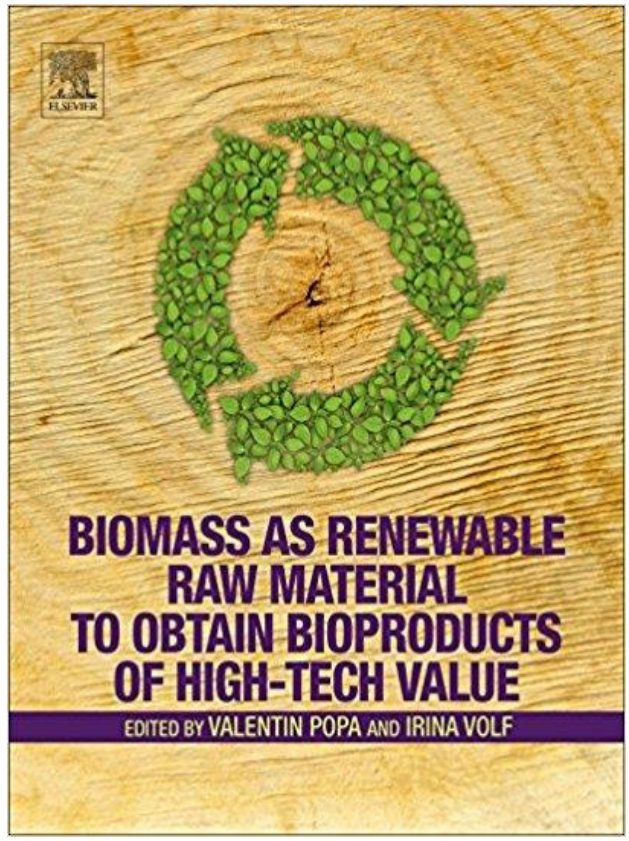
• Considerable amounts of juvabiones are found in all firs, some pines and in Douglas-fir. The concentrations are significantly higher in knots than in ordinary stemwood; and pine heartwood, and pine knots in particular, contain much more resin acids than the sapwood.

Lipophilic extractives are known to cause problems in pulp and paper mills, mainly in the form of deposits and specks. On the other hand, they are also recovered and utilized for production of tall oil and plant sterols. The hydrophilic compounds are not detrimental in pulping and papermaking. They do, however, exhibit strong bioactivity and play a significant role in the protection of trees against insects, bacteria and fungi. Several of these compounds are strong antioxidants, and some are already used as active agents in dietary supplements and cosmetic products. The extraction, purification and utilization of these bioactive polyphenols should be further studied and developed with special focus on the knots of the most promising conifer species.

This thesis provides a unique collection of data on extractives in conifers, probably the most comprehensive study ever published. The book is not meant to be read from cover to cover, but rather to be used as a reference when information is needed on amount and/or composition of extractives in conifers.

Books of Interest to Fellows

Biomass as Renewable Raw Material to Obtain Bioproducts of High-Tech Value 1st Edition
by Valentin I. Popa (Editor), Irina Volf (Editor)



ISBN-13: 978-0444637741
ISBN-10: 0444637745

Biomass as Renewable Raw Material to Obtain Bioproducts of High-tech Value examines the use of biomass as a raw material, including terrestrial and aquatic sources to obtain extracts (e.g. polyphenols), biofuels, and/or intermediates (furfural, levulinates) through chemical and biochemical processes. The book also covers the production of natural polymers using biomass and the biosynthetic process, cellulose modified by biochemical and chemical methods, and other biochemicals that can be used in the synthesis of various pharmaceuticals.

Featuring case studies, discussions of sustainability, and nanomedical, biomedical, and pharmaceutical applications, *Biomass as Renewable Raw Material to Obtain Bioproducts of High-tech Value* is a crucial resource for biotechnologists, biochemical engineers, biochemists, microbiologists, and research students in these areas, as well as entrepreneurs, policy makers, stakeholders, and politicians.

- Reviews biomass resources and compounds with bioactive properties.
- Describes chemical and biochemical processes for creating biofuels from biomass.
- Outlines production of polysaccharides and cellulose derivatives.
- Features applications in the fields of medicine and pharmacy.

Upcoming Meetings

IAWS Plenary Meeting, Guadalajara, Mexico, 15-19 October 2018.

IAWS Plenary Meeting, Graz, Austria, March 2019.

2018 Joint Convention – Society of Wood Science and Technology (SWTS) and The Japan Wood Research Society (JWRS): Era of Sustainable World – Tradition and Innovation for Wood Science and Technology. 5-9 November 2018, Nagoya, Japan. http://www.swst.org/wp/meeting/program-information/

International Forest Products Congress (ORENKO 2018) – 26-29 September 2018, Trabzon, Turkey. http://www.ktu.edu.tr/orenko2018

World Wood Day, Gratz, Austria, March 21st 2019.

10th World Dendro Conference, June 10–15, 2018 in Bhutan https://www.geog.cam.ac.uk/events/worlddendro2018 Eryuan Liang, China

Plasticity in Plant Vascular Systems: Roles, Limits and Consequences, June 2018, USA This is the second annual meeting of the Gordon Research Conference (GRC) on Multiscale Plant Vascular Biology, to be held in West Dover, Vermont, USA from June 17–22, 2018. https://www.grc.org/multiscale-plant-vascular-biology-conference/2018/

The Biology of Wood: from Cell to Trees, July 2018, USA
The 42nd New Phytologist Symposium will be held in Lake Tahoe, California, USA, July 10–12, 2018.
https://www.newphytologist.org/symposia/42

13th Joint Seminar of China-Korea-Japan on Wood Quality and Utilization, 2018, in Nanjing, China, October 25–27, 2018, at Nanjing Forestry University, Jiangsu province of China. ckj2018@njfu.edu.cn for more details.

The Academic Symposium on the Protection and Investigation of Lacquer-Wooden Wares of Chu and Han Dynasties, 25–28 October, 2018, in Yangzhou, China

61st SWST International Convention, November 5–9, 2018, in Nagoya, Japan http://www.swst.org/wp/meeting/2018-swstjwrs-international-convention/

The 18th International Course on Wood Anatomy of Tree Rings "Wood Anatomy and Tree-Ring Ecology 2018" will be held on November 26 to December 1, 2018, in KlostersDorf, Switzerland. https://www.wsl.ch/en/about wsl/events/courses/international-course-on-wood-anatomy-tree-ring-ecology-2018.html

Wood anatomy: An African perspective, 7–10 January 2019, at the University of Johannesburg, South Africa. Alexei Oskolski (aoskolski@uj.ac.za).

IAWA - IUFRO International Symposium: Challenges and Opportunities for Updating Wood Identification, 21–23 May 2019, Beijing, China. The symposium will be associated with IAWA and IUFRO. Please contact Yafang Yin (yafang@caf.ac.cn) and Alex Wiedenhoeft (acwieden@wisc.edu) for more details.

Fellows News from Turkey

Personal News:

Professor Dr. S. Nami KARTAL of Faculty of Forestry, Istanbul University, Turkey has received Invitation Fellowship from Kyoto University, Japan to perform a research project on distribution of copper, boron and fluoride-based biocides in wood at Research Institute for Sustainable Humansophere (RISH) between 23 July – 23 October 2018.

Professor Dr. S. Nami KARTAL of Faculty of Forestry, Istanbul University has been recently selected as a professor to give lectures on nano-particles and nano-biocides in the wood industry and nano-technological applications in the wood products industry under the newly established Graduate Program on Nano-Science and Nano-Engineering at Institute of Graduate Studies in Science and Engineering, Istanbul University, Turkey.

A research project under the leadership of Professor Dr. S. Nami KARTAL of Faculty of Forestry, Istanbul University has been recently approved by TUBİTAK – The Scientific and Technological Research Council of Turkey. The project will be focusing on the development and commercialization of new-generation boron based rods for remedial treatments of structural timber. The research group includes a number of researchers and graduate students from both Istanbul University and Yildiz Technical University, Istanbul as well as a company specialized on the production of refractories.
https://www.tubitak.gov.tr/en

A patent application by Professor Dr. S. Nami KARTAL of Faculty of Forestry, Istanbul University, Turkey has been recently approved by the Turkish Patent and Trademark Office. The patent includes use of raw boron minerals in wood plastic composites to increase the fire performance properties of such composites. Other applicants in the patent are Assistant Professor Dr. Evren Terzi, Professor Dr. Sabriye Pişkin, and Associate Professor Dr. Aysel Kantürk Figen.

Institutional news:

Undergraduate Program of Forest Industrial Engineering at Faculty of Forestry, Istanbul University, Turkey has been re-accredited by MÜDEK (Association for Evaluation and Accreditation of Engineering Programs) and the program has been certified by the EUR-ACE Framework Standards for Accreditation of Engineering Programmes for the period of 01 May 2014 – 30 September 2019. Therefore the program is accepted as a European-Accredited Engineering Bachelor Degree Programme. The engineering program at Faculty of Forestry, Istanbul University is the first accredited Forest Industrial Engineering program in the country among ten other similar programs.
http://www.mudek.org.tr/en/ana/ilk.shtm

Undergraduate Program of Forest Industrial Engineering at Faculty of Forestry, Istanbul University, Turkey has started English curriculum. According to this new system, at least 30% of the total credit of the courses in the curriculum is given in English and the enrolled students are required to attend an English preparatory class for two terms (1 year).
http://orman.istanbul.edu.tr/en/

Obituary

Peter Frederick Nelson (1926 – 2017)

Warwick Raverty, James and Robert Nelson remember the influence and achievements of Peter Frederick Nelson.

Early life and career

Peter was born on the 26 June 1926 at Chatswood, NSW to Frederick and Millie Nelson. Frederick was a naval officer and the family moved about a lot. Peter attended Frankston High School, while his father was Lieutenant Commander at the Flinders Naval Base. Peter's experience at Frankston High started his love affair with education and left a lifelong commitment to the public education system.

Peter went on to the University of Melbourne, where in 1945 he was awarded a B.Sc. (Bachelor of Science) and then in 1948, an M.Sc. (Master of Science) in organic chemistry under Profs Sir Roy ('Pansy') Wright and Ernst Hartung. They helped bring out the science educator in Peter and introduced him to the Royal Australian Chemical Institute (RACI).

While studying, Peter met Eva Klein, a fellow science student at Melbourne University and they married in 1951, and were blessed with two children, James and Robert.

Peter worked in the Research Department of Monsanto from 1948 to 1951 and then joined the Royal Melbourne Institute of Technology in 1952 as an organic chemistry lecturer and was Senior Lecturer in Organic Chemistry from 1956 to 1959. Peter's longstanding interest in the application of chemistry to improve human lives saw him seek and gain employment as a Research Chemist in Australia's largest pulp and paper company at the time, Australian Paper Manufacturers Limited (APM - later renamed Amcor Limited) in 1959. Promoted to Senior Organic Chemist, Peter worked on such projects as chemical modification of cellulose and starch by attachment of polar groups and grafting of synthetic polymers, studies of lignin and examination of the effects of wood extractives on pulping and bleaching.

Peter's potential as an industrial innovator was recognised early in his career at APM and, as a result, in 1966-67 he obtained special leave from APM to study at the Chalmers Technical University in Gothenburg, Sweden. He and the family were sent to one of the centres of paper making excellence, the Royal Institute of Technology in Gothenburg, Sweden where both Peter and Eva investigated aspects of the chemistry of the biopolymers cellulose and hemicellulose that make up 80% of the wood of Australian eucalypts, working with famous cellulose chemist, Professor Olof Samuelson.

His work on chemical changes in wood polysaccharides during pulping was a valuable contribution to the understanding of pulping reactions and in 1969 he was awarded the degree of Doctor of Applied Science by Melbourne University primarily for his work on wood and cellulose chemistry.

A Fellow of the Royal Australian Chemical Institute, he served on many of its committees and was its Victorian Branch President in 1972. He was the Hartung Youth Lecturer in 1975 and over at least 13 years gave a series of Applied Chemistry lectures to third year Melbourne University B.Sc.(Educ.) students.

Peter's research career at APM/Amcor was a distinguished one, both from a technical perspective and also the way in which he gave so much of his time to mentoring dozens of younger research scientists. Many of those young scientists went on to make significant contributions to the advancement of the pulp and paper industry in Australia.

In 1980, Peter left APM and was appointed Dean of Applied Science of the Swinburne Institute of Technology, now Swinburne University.

His own achievements, his ability to inspire achievement in others and his willingness to serve so many scientific causes marked Dr Peter Nelson as a worthy recipient of the Appita - L. R. Benjamin Medal in 1981 in good part for his development of anthraquinone pulping.

He returned to APM Research Division in 1981 and in June of that year he attended the Ekman Days Symposium in Stockholm, where he presented a paper titled 'The Response of Pines and Eucalypts to NSSC-AQ Pulping'. He was the author or co-author of over 100 technical papers and was the joint holder of three patents. Peter was awarded the Centenary Medal in addition to Appita's L.R. Benjamin medal.

On his retirement from Amcor, Peter was appointed Research Director of the newly established Australian Pulp and Paper Institute (APPI) at Monash University from 1988–1993, where he took part in establishing the Masters course in pulp and paper technology. Peter was also the co-director of the Cooperative Research Centre for Hardwood Fibre and Paper Science and a Fellow and Board Member of the International Academy of Wood Science and was on the Board of Directors of the Empire State Paper Research Association, State University of New York.

On his retirement from Amcor, Peter was appointed Research Director of the newly established Australian Pulp and Paper Institute (APPI) at Monash University from 1988–1993, where he took part in establishing the Masters course in pulp and paper technology. Peter was also the co-director of the Cooperative Research Centre for Hardwood Fibre and Paper Science and a Fellow and Board Member of the International Academy of Wood Science and was on the Board of Directors of the Empire State Paper Research Association, State University of New York.

Anthraquinone pulping

An example of Peter's erudition and lateral thinking occurred in 1977 when he read an obscure article published in an East German chemical journal. The journal described how small quantities of a dyestuff intermediate, the sodium salt of anthraquinone-2-sulfonic acid, could protect cellulose from being degraded in strongly alkaline solutions. Peter immediately recognised that this observation might lead to higher yields of cellulose pulps being produced from wood under the conditions used in the processes that use alkalis dissolved in water to make 80% of the world's virgin papermaking pulps. Peter reasoned that, at the low levels required, even the less expensive chemical, anthraquinone, which is insoluble in water, might be effective.

This approach was not very promising but work with quinones was resumed later when laboratory trials using ethyl anthraquinone and anthraquinone as delignification catalysts in soda pulping were carried out by his colleague Dr Alan Farrington in August 1975.

Peter supervised a team of young research chemists at APM to show that his conjecture was correct and this led to international patents being granted to APM for what has become known as AQ pulping, a process still used in many pulp mills worldwide.

The work led to an application for an Australian patent in June 1976 and were followed by a series of full scale commercial trials of kraft-AQ pulping at Maryvale mill, the first cook being on October 11, 1976. These trials were concerned mainly with pine but included some eucalypt cooks and they demonstrated that the kraft-AQ and soda-AQ processes were indeed viable on the commercial scale. Dr Nelson's team also investigated the mechanism of action of anthraquinone pulping and put forward the now generally accepted idea of a cyclic redox scheme involving alkali-soluble anthrahydroquinone as the active delignifying agent in their original patent application, first published in South African patent No. 77/3044, May 23 1977. Following their original paper describing the soda-AQ pulping process in Appita in September 1977 (the first to appear on this subject in the English language), they developed their ideas in a series of Appita papers, the most recent of which is to be presented at the 36th Annual Conference. The group's investigations of pulping mechanism involved a very fruitful collaboration with Prof Don Cameron at Melbourne University's Organic Chemistry Department which demonstrated the conversion of AQ first to lignin-derived intermediates and then to carbohydrate-derived products.

In some ways, even more surprising than the effect of AQ in alkaline pulping, was the discovery made in Dr Nelson's laboratory of the effectiveness of this and related additives in NSSC pulping of softwoods, a development which aroused great interest in a number of countries with the potential it had to change the future of sulphite pulping.

Direct Alkali Recovery System (DARS)

Peter also played a key role in the development of APM's Direct Alkali Recovery System (DARS) a technology that promised to reduce the capital cost of equipment used to recycle pulping chemicals in many smaller chemical pulp mills in the third world.

In his working life, Peter was first and foremost a communicator in addition to being a highly creative research scientist, capable of thinking laterally and understanding the relevance of developments in academia to the technology associated with converting wood into paper and also in recycling paper.

In addition to his distinguished career as a scientist and research manager at APM/Amcor, Peter was one of that increasingly rare breed – a true renaissance man. Fluent in several languages, Peter loved classical music and was very widely read. Until he became ill, his memory was encyclopaedic. Despite these manifest skills and abilities, Peter was a humble and very generous person who never lost that sense of child-like curiosity and wonder in regard to the natural world around us that characterises the truly inventive mind. After a long illness, Peter died peacefully at home on 14th July 2017 and, like a true Renaissance Man, donated his body to science.

2019 IAWS Plenary Meeting – Graz, Austria 19-24th March

In conjunction with World Wood Day

Obituary

Dr. Mikhail Ya. Zarubin [1930 - 2018]

Dr. Mikhail Zarubin, Professor Emeritus of St. Petersburg State Forest Technical University, Russia (FTU) passed away on March 23, 2018 at the age of 87 in St. Petersburg, Russia after struggling with pneumonia. Dr. Zarubin is survived by his wife, son, daughter, grandson and two granddaughters. He was elected as IAWS Fellow in 1989.

Dr. Mikhail Zarubin was elected to the Russian Academy of Natural Sciences in 1995 and honored with titles of a Soros' Professor in 1994 and Distinguished Scientist of the Russian Federation in 1997. He served as a Chairman of the UNESCO Expert Board in Chemistry of Plant Resources since 1990 and Director of the Department of Forest and Forest Product Technology at the UNESCO World University of Technology (WTU) since 2001. Dr. Zarubin was a member of program committees of several International Symposia on Wood and Pulping Chemistry.

Dr. Zarubin was born in the village of Kulemikha in Nizhniy Novgorod region. After graduating from Leningrad Forest Technical Academy (FTA) (now St. Petersburg State Forest Technical University, FTU) in 1954 (PhD, 1961) he pursued an academic career there as an Associate Professor (1964) and Professor (1979); (DSc in 1978).

In 1967 – 1971 he had been teaching at the Institute of Oil and Gas in Algeria, holding the posts of Deputy Head and Head of the Department of Chemistry; he published there an organic chemistry textbook in French in 1970. In 1972, he was elected as the Head of the Department of Organic Chemistry at FTA and held this position until 2011. In 1980–1985, Dr. Zarubin served as a Dean of the Faculty of Chemical Technological at FTA, and in 1985-1996 as a Deputy Rector of FTA. Since 1997 he was also a Professor at the Polytechnic Institute in Grenoble, France. He contributed significantly to understanding of lignin structure and its chemical transformations under both alkaline and acidic conditions that helped in building a basic scientific background to modern technologies of wood chemical processing. He created a scientific school in the area of chemistry of lignin being a scientific adviser in 36 PhD and 5 DSc theses and published over 270 scientific papers. His former students now work in many countries.

In difficult times, Dr. Zarubin maintained an untarnished reputation of an exceptionally honest, talented, optimistic and professional scientist and administrator, a source of support and inspiration to his numerous students and colleagues, an example of selfless service to science and teaching. He will be much missed by all in our scientific community.

Obituary

Dr. W. Wayne Wilcox [1938 - 2018]

Wayne died 23 May 2018; he was born on 28 October 1938 at Berkeley, California. He obtained his BS in Forestry at UC Berkeley (1960) and MS and PhD in Plant Pathology at University of Wisconsin, Madison (1962, 1965). Wayne received the Forest Products Society First Place Wood Award in1965: Fundamental Characteristics of Wood Decay Indicated by a Sequential Microscopical Analysis.

Wayne began his academic career at UC Berkeley Forest Products Laboratory in 1964, becoming a full professor in 1977, and retired in 1991. Much of his research and teaching was in the area of biological degradation of wood. He was appointed by Governor Jerry Brown to, and served as Vice President of, the State of California Structural Pest Control Board from 1979-1981.

He was awarded a Fulbright-Hayes Senior Postdoctoral Fellowship to work at the Institut für Holzbiologie und Holzschutz at the University of Hamburg for a sabbatical in 1973-74. A decade later, he had a second sabbatical at the University of Hawaii at Mānoa, By the time of his retirement, Wayne had produced close to 100 publications. One of his major contributions was a book, coauthored with Elmer Botsai and Hans Kubler: Wood as a Building Material, A Guide for Designers and Builders, published in 1991.

Wayne was a member of the following organizations: Xi Sigma Pi, Sigma Xi, Forest Products Society, Society of Wood Science and Technology, American Phytopathological Society, American Institute of Biological Sciences, International Research Group on Wood Preservation, International Association of Wood Anatomists. He was elected to IAWS in 1978.

Wayne had a rich, resonant baritone that earned him a place in the UC Men's Octet and the Glee Club, with which he traveled to Tokyo in 1957 for a joint US-Japanese performance of Beethoven's Ninth Symphony. He also joined the "Monks," the UC Berkeley men's faculty singing group, and began singing with the San Francisco Opera Chorus and the Sacramento Opera Chorus in the 2000s and 2010s.

Outside of his work, Wayne spent much time sailing on San Francisco Bay, stopping only when retirement took him too far from the Bay for easy day trips. Wayne was survived by his wife Margaret after 58 years of marriage, two children and two grandchildren.

Distribution of Fellows by Country: 39 Countries, 378 Fellows.

Australia	9	Greece	2	Russia	10
Austria	6	India	3	Slovakia	2
Bangladesh	1	Indonesia	1	Slovenia	1
Belgium	2	Israel	3	South Africa	2
Brazil	3	Italy	2	Spain	2
Canada	35	Japan	42	Sweden	15
Chile	3	Korea	6	Switzerland	6
China	21	Latvia	2	Turkey	1
Denmark	4	Netherlands	1	Taiwan	5
Egypt	1	New Zealand	10	United Kingdom	6
Finland	11	Philippines	1	USA	107
France	21	Poland	2	Mexico	0
Georgia	1	Portugal	1	Norway	0
Germany	26	Romania	1	Total	378

Distribution of Fellows by Continent

Continent	No. of Countries	No. of Fellows
Africa & Israel	3	6
Asia	9	81
Australia & New Zealand	2	19
Latin America	2	6
Europe	21	124
North America	2	142
Total	39	378

Affiliated Members elected in 2017
International Wood Culture Society, USA
Department of Wood Science – UBC, Canada

Affiliated Members elected in 2016
Vietnam Forestry University, Hanoi, Vietnam
Seoul National University, Seoul, Korea
International Center for Bamboo & Rattan, Beijing, China
Göettingen University, Göettingen, Germany

Fellows elected in 2017
Umesh Agarwal (USA)
Junyou Shi (China)
Alain Celzard (France)
Nicolas Brosse (France)
Youngcan Jin (China)
Yuzou Sano (Japan)
Andrey Pranovich (Finland)

Fellows elected in 2016
Joris van Acker Belgium
Katarina Cufar Slovenia
Phillipe Gerardin France
Yonghao Ni Canada
Byung-Dae Park Korea, South
Xiping Wang USA
Cordt Zollfrank Germany

Chair of Academic Board elected in 2016
Pieter Baas The Netherlands

New Board Members elected in 2016
Geoffrey Daniel Sweden
Ana Gutierrez Spain
Alfred Teischinger Austria
Siqun Wang USA

Fellows deceased in 2018
Mikhail ZARUBIN, Russian Federation
Hikaru SASAKI, Japan
Wayne WILCOX, USA

Fellows deceased in 2017
Peter ALBERSHEIM, USA
Kazumi FUKAZAWA, Japan
Takayoshi HIGUCHI, Japan
Peter F. NELSON, Australia
Dereck H. PAGE, Canada.

Fellows deceased in 2016
Ants TEDER, Sweden
Emmanuel POPPEL, Romania
Josef SCHURZ, Austria
John David BARRETT Canada
Ramon ECHENIQUE-MANRIQUE, Mexico
Kunio HATA, Japan

Deceased Fellows (2010 - 2015)
John M. HARRIS (2010) New Zealand
Shinji HIRAI (2010) Japan
Tamio KONDO (2010) Japan
Otto R. GOTTLIEB (2011) Brazil
Huntly HIGGINS (2011) Australia
Knut O. LUNDQUIST (2011) Sweden
Hubert POLGE (2011) France
Stanley K. SUDDARTH (2011) USA
Jerzy WAZNY (2011) Poland
Abraham FAHN (2012) Israel
Wolfgang KNIGGE (2012) Germany
Harold TARKOW (2012) USA
Anne-Marie CATESSON (2012) France
Eugene ZAVARIN (2012) USA
B.J. ZOBEL (2012) USA
Wilfred A. CÔTÉ (2012) USA
Horst H. NIMZ (2013) Germany
John D. BRAZIER (2013) United Kingdom
Fernand BARNOUD (2013) France
Gösta BRUNOW (2013) Sweden
Shigeo ISHIDA (2013) Japan
Thomas M. MALONEY (2014) USA
Sandor MOLNAR (2014) Hungary
Geza IFJU (2014) USA
John ERICKSON (2014) USA
Paul KIBBLEWHITE (2015) New Zealand
Börje K. STEENBERG (2015) Sweden
Boris N. UGOLEV (2015) Russia
Rolf BIRKELAND (2015) Norway

Compiled by Yoon Soo Kim, Gwangju

Affiliate Members

Affiliate 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 Affiliates to the Academy is two-fold:

- 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.

AFFILIATE MEMBERS LIST

CHINESE ACADEMY of FORESTRY (CAF) www.caf.ac.cn
CIRAD FORETS (French Agricultural Research Center for International Development) ur-bois-tropicaux.cirad.fr
DEPARTMENT OF WOOD SCIENCE – UBC, Canada www.wood.ubc.ca/
ESB- ECOLE SUPÉRIEURE DU BOIS, France www.ecoledubois.com
FORESTRY & FOREST PRODUCTS RESEARCH INSTITUTE, Japan www.ffpri.affrc.go.jp
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INTERNATIONAL WOOD CULTURE SOCIETY, USA www.iwcs.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
SEOUL NATIONAL UNIVERSITY, Republic of Korea www.adhesion.org
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 GÖTTINGEN, Germany www.holz.uni-goettingen.de
UNIVERSITY OF MINNESOTA, USA www.bbe.umn.edu
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VIETNAM NATIONAL UNIVERSITY OF FORESTRY www.vfu.edu.vn
WOOD TECHNOLOGY INSTITUTE, Poland www.itd.poznan.pl

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 scientists 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 summarize the author's work
- Contain important references to the literature for further reading
- Finish with a statement of future direction in the area

Nomination 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.

Robert Evans

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: Robert Evans
robertxevans@gmail.com

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