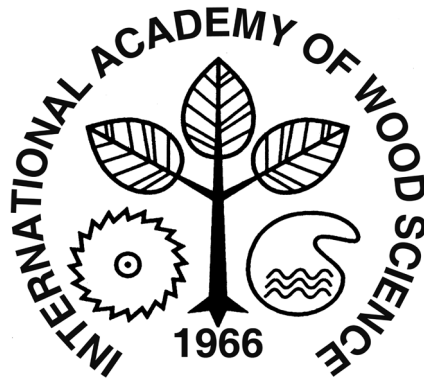


**INTERNATIONAL
ACADEMY
OF
WOOD SCIENCE**

**BULLETIN
2012-II**



www.iaws-web.org/

December 2012

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Vice-President: Uwe Schmitt, Hamburg
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End of terms: 1 June

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TABLE OF CONTENTS

Message from the President	1
New Board Members	2
IAWS PhD Prize Winners and Abstracts	3
Honours awarded to Fellows	4
Reports of Meetings	5
News from the International Association of Wood Anatomists	6
Forthcoming Meetings of Interest to Fellows	7
Obituaries	8
Eugene Zavarin (1924 - 2012)	9
Stanley K. Suddarth (1921 - 2011)	10
Books by or of interest to Fellows	11
Highlights	12
Wood-plastic composite blend finds its way to oil well drilling industry	13
Guidelines for Highlights	14
Nomination Procedure for Election of Fellows	15
Nomination Form	16

MESSAGE FROM THE PRESIDENT

This year's annual meeting took place in Zvolen, organized by the Faculty of Wood Science and Technology at the Technical University in Zvolen with the theme "Wood the Best Material for Mankind together with Interaction of Wood with Various Forms of Energy". I especially have to thank Fellow Marian Babiak for an excellent arrangement and great hospitality. It was pleasing that of the 50 participants from 19 countries and 4 continents were represented. The academy lecture with the title "Understanding Wood at the Nanoscale - Zooming through Wood Cell Wall Ultrastructural Organization". was presented by Fellow Katia Ruel. There was also a highly appreciated excellent presentation from this year's PhD prize-winner Houssine Sehaqui on "Material processing based on wood nanofibrillated cellulose". It was a pity that more students from the nearby regions did not benefit from this meeting; language problems were thought to be a factor. The academy will, however, continue to strive for a broadening of such contacts. Planning is now taking place for the 2013 annual meeting, which it is hoped will take place in Nanjing, China in October of 2013.

The vitality of the academy is highly dependent on improving our profile. We aim to have increased representation at conferences and also to promote the greater involvement of our supporting members. Discussions are also under way to see whether the academy can be engaged in promoting publications of books dealing with all aspects of wood science. We also recognise the importance of the election new fellows from emerging fields of wood research. This is a matter of importance for all fellows as it is only through your nominations and votes that such fellows will be elected. I am particularly concerned about the underrepresentation of female scientists among Academy Fellows, and that some regions, i.e. South America, Africa and the Middle East lack adequate representation.

The web page is constantly improving. Fellows can now access their files and upload changes to make the information more accurate and up-to-date. Suggestions for improvements and corrections may be sent to Vice-President Uwe Schmitt uwe.schmitt@vti.bund.de.

Fellows are strongly urged to consider publishing in the Academy Journal, Wood Science and Technology. The impact factor has improved over the last few years (it currently stands at 1.727) and will improve further as it receives more high quality submissions. It has been agreed that the field of interest for the journal will be widened to include emerging wood science technologies. I strongly urge you to consider publishing in this journal. Recently a number of review papers from a COST Action on wood mechanics, where fellows were authors or co-authors, were published in the journal. Such papers are very valuable in increasing the impact factor of the Journal.

We have now completed our new Board election, with five Fellows standing for four positions. The highest votes were for Fellows Niemz (Switzerland), Baas (Netherlands), Franich (New Zealand), and Ragauskas (USA). They will be replacing Fellows Kelley, Lachenbruch, Zhang, and Jeronimidis, who have completed their six-year terms. My thanks and good wishes to all eight Fellows! Special thanks go also to Fellow Jeronimidis for serving as Chair for the Board and as administrator for the evaluation of the PhD awards.

Lennart Salmén, Stockholm



Delegates and guests at the meeting in Zvolen

NEW BOARD MEMBERS

As reported in the message from the President, four new Board members were recently elected.

Pieter Baas

Nationaal Herbarium Nederland, P.O. Box 9514, 2300 RA Leiden, The Netherlands.

Pieter's main interests are in ecological and functional wood anatomy, systematic and phylogenetic plant anatomy, microscopic wood identification, biodiversity and biohistory. In addition to being a Fellow of our Academy, he is a Fellow of the Royal Academy of Arts and Sciences of the Netherlands, an Honorary member of the International Association of Wood Anatomists, and of the Indian Association of Plant Taxonomists. He is also Corresponding Member of the Botanical Society of America. He has been awarded the Linnean Gold Medal (Botany), and Ridder (Knight) in the Orde van de Nederlandse Leeuw. He is Editor in Chief of the IAWA Journal and Chairman of the Foundation for the National Plant Collection in the Netherlands.

Robert Franich

Chemipreneur Ltd. Rotorua, New Zealand.

Robert is currently Managing Director of Chemipreneur Ltd. Until 2011 he was a Principal Scientist with Scion, Rotorua, where he began his career in wood science in 1973 when it was the Forest Research Institute. In addition to Fellowship of the Academy, he is a Fellow of the Royal Society (New Zealand) and a Fellow of the New Zealand Institute of Chemistry.

Peter Niemz

ETH Zurich, Institute for Building Material, Wood Physics Group, CH 8093 Zurich, Schafmattstrasse 6, HIF E252

Peter is Professor and Head of the Wood Physics group at ETH. He has an honorary doctorate from the University of West Hungary at Sopron and is on the advisory boards of ten wood science journals. He received a Distinguished Service Award for his work on the non-destructive testing of wood from the FPL, Madison in 2009.

Arthur Ragauskas

Institute of Paper Science and Technology, Georgia Institute of Technology, Atlanta, GA, USA

Arthur is Professor in the School of Chemistry and Biochemistry. His research programme is concerned with the understanding and exploitation of innovative sustainable bioresources; in particular new and improved applications for woody biopolymers for biofuel, biopower and biomaterials. He is a Fulbright Fellow in Alternative Energy and a fellow of Tappi

IAWS PHD PRIZE

Gold medal winner, Houssine Sehaqui, presented his work at the Academy meeting in Zvoilen, where he will receive his award. The full abstract of the winner's thesis is presented below, together with condensed abstracts of the theses of the second and third place winners, Jong Sik Kim and Evandro Novaes respectively. The congratulations of the Academy go to all three prize-winners.

Materials based on nano-fibrillated cellulose - Houssine Sehaqui

Nanofibrillated cellulose (NFC) from wood is an interesting material constituent of high strength and high aspect ratio, which easily forms networks through interfibril secondary

bonding including hydrogen bonds. This has been exploited in preparation of new materials, which extend the range of properties for existing cellulosic materials. The objective is to explore processing-structure and structure-property relationships in NFC materials.

Dense networks of NFC, referred to as “nanopaper” having a random-in-the-plane orientation of the fibrils have been successfully prepared by a papermaking-like process involving vacuum filtration and water evaporation using laboratory papermaking equipment. Large, flat and transparent nanopaper sheets have thus been prepared in a relatively short time. Using the same preparation route, NFC was used to reinforce pulped wood fibers in dense network structures. NFC networks formed in the pore space of the wood fiber network give an interesting hierarchical structure of reduced porosity. These NFC/wood fiber biocomposites have greater strength, greater stiffness and greater strain-to-failure than reference networks of wood fibers only. In particular, the work to fracture (area under the stress-strain curve) is doubled with an NFC content of only 2%.

The papermaking preparation route was extended to prepare nanocomposites of high NFC content with a cellulose derivative matrix (hydroxyethyl cellulose, HEC) strongly associated to the NFC. Little HEC was lost during filtration. The NFC/HEC composites have high work to fracture, higher than that of any reported cellulose composite. This is related to NFC network characteristics, and HEC properties and its nanoscale distribution and association with NFC.

Higher porosity NFC nanopaper networks of high specific surface area were prepared by new routes including supercritical drying, *tert*-butanol freeze-drying and CO₂ evaporation. Light-weight porous nanopaper materials resulted with mechanical properties similar to thermoplastics but with a much lower density and a specific surface area of up to 480 m²/g.

Freeze-drying of hydrocolloidal NFC dispersions was used to prepare ultra-high porosity foam structures. The NFC foams have a cellular foam structure of mixed open/closed cells and “nanopaper” cell wall. Control of density and mechanical properties was possible by variation of NFC concentration in the dispersion. A cellulose I foam of the highest porosity ever reported (99.5%) was prepared. The NFC foams have high ductility and toughness and may be of interest for applications involving mechanical energy absorption. Freeze-drying of NFC suspended in *tert*-butanol gave highly porous NFC network aerogels with a large surface area. The mechanical behavior was significantly different from NFC foams of similar density due to differences in deformation mechanisms for NFC nanofiber networks.

Immunolocalization of hemicelluloses in differentiating xylem of *Cryptomeria japonica* - Jong Sik Kim

This project aimed to extend our knowledge of the spatial and temporal distributions of cell wall components in softwood by investigation of hemicellulose distribution in differentiat-

ing secondary xylem of *Cryptomeria japonica*. Immunocytochemical techniques, including immunofluorescence microscopy and immunogold electron microscopy, were applied in combination with immunocytochemical probes. The spatial and temporal distributions of glucomannans (*O*-acetyl-galactoglucomannans, GGMs), xylans (arabino-4-*O*-methylglucuronoxylans, AGXs) and β -(1-4)-galactans were investigated in differentiating secondary xylem of normal wood and compression wood. The thesis indicates that hemicellulose distribution in the cell wall varies depending on cell type, including in tracheids, ray cells and CW tracheids. Even in the same cell, the hemicellulose distribution differed not only in different cell wall layers, but also depending on the type of hemicellulose. The thesis also suggests that structurally different types of hemicelluloses may deposit in the cell wall depending on developmental stage of the cell wall.

Integrating genomics and quantitative genetics for discovery of genes that regulate bioenergy traits in wood species - Evandro Novaes

Wood can provide the so needed renewable source of energy to sustain our economic development. *Eucalyptus* and *Populus* are among the fastest growing woody species. To efficiently exploit them for bioenergy, it is important that genetics and genomics resources are accessible. With the genome sequenced and thousands of known genes, *Populus* had, at the time of this work, more developed resources than *Eucalyptus*. To start offsetting this difference a next generation sequencing technology was utilized to generate 148 Mbp of gene sequences in *Eucalyptus grandis*. This work contributed to the annotation of the *Eucalyptus* genome sequence. Working with poplars, one genomic region was identified, in chromosome XIII, significantly associated with biomass growth and composition. By integrating the multiple genetic and genomic resources available for *Populus*, gene *cpg13* (carbon partitioning and growth in LG13) was pinpointed as the likely regulator of these bioenergy traits.

HONOURS AWARDED TO FELLOWS

Regis Miller

During the conference banquet at the Pan-American IAWA Meeting in Recife, Brazil, Executive Secretary Frederic Lens announced the election of Dr. Regis B. Miller as Honorary Member of IAWA by the international IAWA Council. Regis has rendered extraordinary service to IAWA as one of the longest serving Executive Secretaries from

1997–2011. From 1990–1997 he was Deputy Executive Secretary, and currently he continues to serve by administering the USA bank account for IAWA.

As wood anatomist at the Forest Products Laboratory in Madison, Wisconsin, and curator of the world's largest and most accessible xylarium Regis has played a leading role in research on wood identification and systematic wood anatomy as well as enabling wood anatomists worldwide to use offcuts of the MADw and SJRW collections. Frederic also praised Regis for his friendly and helpful character. The news of Regis's Honorary Membership was welcomed by warm applause and a communal hug by his numerous fans present in Recife.

Contributed by Fellow Pieter Baas

Chung-Yun Hse (Senior Research Scientist at the USDA Forest Service, Southern Research Station in Pineville, Louisiana, USA) has been awarded the Distinguished Service Award by the Society of Wood Science and Technology. The DSA is the highest award bestowed by SWST and was awarded for Dr. Hse's life-long work contributions to SWST and his life-long work to facilitate cooperative research in Wood Science and Technology between the US and China and all of Southeast Asia. The DSA Award was given to Dr. Hse at the SWST International Convention in Beijing China (held August 27-31, 2012).

Contributed by Fellow Jerrold Winandy

Stuart Corson has been elected a Fellow of Appita, "The Technical Association of the Pulp and Paper Industry of Australia and New Zealand" and was given this honour at a ceremony in Melbourne during the annual Appita conference.

Art Ragauskas, who has just joined the Academy Board, has been elected as a Fellow of the American Association for the Advancement of Science.

REPORTS OF MEETINGS

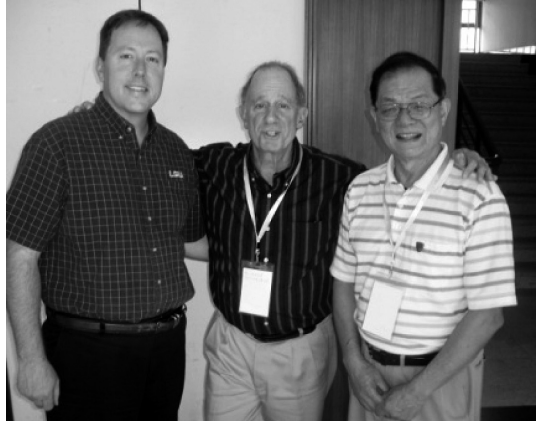
The IUFRO All-Division 5 Conference

This conference was held this July in Lisbon. This was reputedly the largest single division IUFRO conference ever. Submitted abstracts totalled 760, and 500 people actually attended the meeting, representing 63 countries. Over five days, there were 50 technical sessions and visits to local industries. Several sessions were organised in conjunction with IAWS.

Contributed by David Cown

Wood Culture Symposia and Tour in SE China

I had the pleasure to attend two Symposia and a Wood Culture Tour in Zhejiang and Anhui provinces September 1 to 7, in SE China near Shanghai. Todd Shupe, Chung Hse, (1st Picture) and Pieter Baas (On right in 2nd Picture) also attended from IAWS. The 2012 International Wood Culture Society's (IWCS) International Wood Culture Symposia was held at the Zhejiang Agriculture and Forestry University, with 23 speakers (5 representing the US) on various topics of wood culture. Also included in this Symposium were competition hands-on crafts projects from wood including wood sculpture, wood construction, and a young children's drawing project—all done to educate people of the beauty and importance of wood use.



rations from ancient times (Hongcun from 1300 AD, Xidi from 1049 AD, and Huizhou from 1600 AD). We also visited the Anji Bamboo Gardens to see 45 species of bamboo, Huzhou Taihu Ancient Wood Museum of Art (still being constructed as we toured-2nd Picture) to see amazingly large wooden pieces from all over Asia, and Dehua Tubao Deco-

The tours consisted of a visit to many ancient cities to see the use of wood in construction, furniture, and deco-



ration Material Co. that produced decorative dyed and sliced veneers. The highlight of the trip was Huang Shan (Yellow Mountain) 6000 feet, including a cable car ride (3rd Picture) almost to the top and 60,000 carved steps to walk along the top of the ridges. Our group hiked about 4 ½ miles and used only a small fraction of the steps.

The final day was at Anhui Agricultural University where The International Wood Culture Symposium of Traditional Huizhou Houses was held with 7 speakers from China and simultaneous translations to English.

Contributed by Howard Rosen

NEWS FROM THE INTERATIONAL ASSOCIATION OF WOOD ANATOMISTS

Report of the 2012 IAWA Pan-American meeting in Recife

Recife, a sunny city in the Northeast of Brazil and one of the largest in the country was chosen to host the latest IAWA Pan-American Meeting from 1–5 October 2012. Located in an amazing hotel on the beach of Piedade, coral reefs could be seen from the windows justifying the city's name (Recife means coral reef in Portuguese), and although numerous signs of "caution, risk of shark attack" were captured by our cameras, no fins were spotted and apparently everybody left Recife in one piece. Rumors say that Carmen Marcati, president of this superbly well-organized meeting, chose the only beach in Brazil with sharks to avoid wood anatomists to escape the sessions. False or true, it worked. Jokes apart, lots of enthusiasm and excellent works were the impressions left with all of the more than 100 participants from 15 nationalities who attended the meeting. The program included symposia and workshops on wood collections, bark anatomy, cambial activity and seasonality, tropical dendrochronology, and also selected talks on functional wood anatomy, effects of parasites on wood, cambial variants, wood evolution, wood and charcoal identification, paleoecological wood anatomy, and new technologies applied to wood anatomical studies, all with outstanding young and senior researchers.

The meeting also featured a banquet, a field trip and the usual IAWA Business (perhaps much more Social) Hour. The banquet was especially moving since it included surprise tributes to two exceptional names in wood anatomical research, Veronica Angyalossy and Regis Miller. Eleven former and present graduate students of Veronica attending the meeting, could personally thank her for her noteworthy contributions in the field of wood anatomy in Brazil, while other former students sent congratulatory messages from all over the world. Frederic Lens announced the IAWA Council's appointment of Regis Miller, his predecessor as Executive Secretary, as Honorary Member of IAWA (see elsewhere in this issue). Both

Veronica and Regis were presented with beautiful handicraft boards made of liana stem cross sections. We are all sure that these two friends will go on contributing to the field of wood anatomy and inspiring new generations even more.

The field trip to the Atlantic Rain Forest, a global hotspot of biodiversity and also the most endangered biome in Brazil, allowed participants to admire various native trees and lianas while walking through the forest. The trip ended with a fabulous lunch with many typical northeastern Brazilian foods.

During the IAWABusiness Meeting and Social Hour everybody had the opportunity to talk longer and make plans for future events, such as the International Symposium on Wood Structure in Plant Biology and Ecology in Naples (Italy), the International Conference on Functional Plant Anatomy, dedicated to the 90th anniversary of Prof. G.B. Kedrov in Moscow, and the 8th Pacific Regional Wood Anatomy Conference in Nanjing (China).

IAWA Bark Symposium and Satellite Meeting — Another very successful outcome of the IAWA Pan-American meeting was the first IAWA Bark Symposium, organized by VeronicaAngyalossy, with an afternoon of outstanding presentations on bark anatomy and a satellite meeting that discussed the future preparation of an IAWA List of Terms of Macroscopic and Microscopic Bark Features. The IAWA Bark List is expected to be delivered in early 2014, aiming to represent the most frequent features and their variation in the bark of both Conifers and Angiosperms, unifying the nomenclature based on already existing lists, specialized literature and the participants' research expertise. With this list the IAWA expects to trigger more studies in this rather neglected field.

Wood Collections Satellite Meeting — After a successful round of presentations on Wood Collections in the session organized by Vera Coradin and Claudia Barros, a satellite meeting was scheduled to discuss common ambitions and problems experienced by the curators and users of wood collections. Important recommendations concerned the creation of a common protocol for sample registration in wood collections, including the quality of the samples in the records, promoting courses to teach how to upload images and information on the InsideWood website (Elisabeth Wheeler in charge), establishing collaborations with plant taxonomists to collect well identified wood specimens, and exchanging samples among wood collections to ensure their safety and availability. Participants in this workshop were: Alan Curtis (IWCS), Claudia Barros (RBw), Giuliano Locosselli (SPFw), Guilherme Freire (SPFw), Neusa Tamaio (RBw), Patricia Soffiatti (UFPR), Raphael Pigozzo (BCTw), Regis Miller (MADw), Rivete Lima (UFPB), and Vera Coradin (LPFw).

In the end, after so much activity, exchange, talks, new plans for the future, and refreshing ideas to consider, most of us certainly left Recife with a feeling of fulfillment and at the same time a longing for the next meeting, looking forward for more novelties and for another opportunity to meet again with old and new friends.

Marcelo Pace, USP, São Paulo, Brazil

Contributed by Pieter Baas

FORTHCOMING MEETINGS OF INTEREST TO FELLOWS

Annual Meeting of IAWS 21-24 October 2013, Nanjing, China

Preliminary announcement

The 2013 annual meeting of the Academy will be hosted by the Institute of Chemical Industry of Forest Products (ICIFP) Chinese Academy of Forestry(CAF) in Nanjing from 21 to 24 Oct., 2013. This will take place back-to-back with the PRWAC/IAWA meeting (see below) The meeting will cover the biological, chemical, and physical sciences of lignified natural materials and products derived therefrom, as well as the scientific base of the technology of converting such substances into useful products. You are kindly invited to submit your research paper or manuscripts for inclusion in this great event.

Venue

The meeting will take place at the Jinling Star Metropole Hotel, Nanjing, China.

Address: No. 169, Long Pan Road, Nanjing, 210042, P.R. China

More information about the meeting venue available at the following website:

http://www.hkctshotels.com/hotelHomeqt!queryhotelhome_qt.action?language=2&search_hotel=29&request_locale=en_US

Preliminary Programme

There will be a three-day programme for this meeting. It will begin on Monday, 21st October 2013.

- Day 1(Oct. 21st, 2013): Registration(3:00pm - 5:00pm)
- Day 2 (Oct. 22nd, 2013): Speaker presentations and posters: addressing the role of wood science and wood processing technology as well as its sustainability in the world.
- Day 3 (Oct. 23rd, 2013): am: Presentations (continued).
pm: Excursion
- Day 4 (Oct. 24th, 2013): Departure

Meeting themes:

1. Wood science including wood properties, wood identification, wood structural diversity, wood anatomy, wood composites etc.
2. Wood processing technology including bio-refinery, biotechnology, bio-energy and bio-fuel, bio-materials etc.
3. Other topics related with wood, e.g., cellulose nano-fiber & its composites, and Life-cycle assessment of wood industry etc.

Poster exhibition

A poster exhibition will be on display throughout the meeting (Oct. 22nd, 2013) and will include a selected number of examples to demonstrate various aspects of the meeting themes related to wood science. Initially you are invited to register your interest by submitting proposals for projects that you would like to be considered for the exhibition. If selected, you will be asked to make poster for the exhibits.

Working language

The working language for the meeting is English (without interpretation)

Registration

Early bird registration before 15th Jun. 2013: US\$300 or RMB1900

Late registration after 15th Jun. 2013: US\$400 or RMB2500

Student early bird registration before 15th Jun. 2013: US\$200 or RMB1250

Student late registration after 15th Jun. 2013: US\$300 or RMB1900

Important dates

Submission of abstracts: 31 Mar., 2013

Notification on acceptance of abstracts: 15 Apr., 2013

Submission of full manuscripts (To be published in CD-ROM): 31 Aug., 2013

Notification on acceptance for oral or poster: 15 Sept., 2013

Final date for early-bird registration: 15 Jun., 2013

Accommodation

Delegates are responsible for making their own travel and accommodation arrangements. However, local organizers (ICIFP) have made a number of reservations at Jinling Star Metropole Hotel in the city centre of Nanjing. For those registering before August 15th, 2013 and noticed the registration for Annual Meeting of IAWS 2013, there are special prices available.

Contact details

Ms. Yu WANG

Institute of Chemical Industry of Forest Products

No. 16, Suojin 5th Village, Nanjing, China

Tel. +86 25 85482411

Fax +86 25 85413445

E-mail: lhswangyu@163.com**PRWAC 2013 Meeting in Nanjing**

The 8th Pacific Regional Wood Anatomy Conference (PRWAC 2013) will take place from October 17 through 21 at the Nanjing Forestry University, China. The meeting will be co-organized by the Pacific Regional Group of IAWA and the Wood Science Branch of the Chinese Society of Forestry (14th WSC of CSF) and will be back-to-back with the annual meeting of the International Academy of Wood Science (IAWS) on 21 or 24 October. The conference sessions will address all major applications of wood anatomical research as relevant for tree biology and pathology, wood formation, ecological wood anatomy, dendrochronology and dendroclimatology, wood identification, wood quality, structure and utilization of bamboo and rattan, paleobotany and archeology, protection of endangered timber species, wood utilization and the environment, wood culture, general wood anatomy, and classification, anatomy and utilization of Chinese rosewoods (“hongmu”). The last conference day will feature a Wood Culture excursion in and around the old capital city of Nanjing. Abstracts of contributed papers and posters should be submitted before July 15, 2013. Early registration at the reduced rate should also be done before that date.

Please consult the conference website at <http://8th-prwac.njfu.edu.cn> or write directly to the secretariat of the Conference Organizing Committee headed by Prof. Pan Biao (prwac8th@163.com).

Wood structure in Plant Biology and Ecology, Naples, April 2013

The first circulars for the international symposium Wood Structure in Plant Biology and Ecology (WSE) to be held in Naples, Italy, from April 17 through 20, 2013 have been distributed. Please consult the website (www.wse2013.com) for the programme outline and deadlines for submission of abstracts and registration. WSE is organized by a large team, led by local hosts Veronica De Micco and Giovanna Battipaglia, under the auspices of IAWA and the Association of Tree-ring Research (ATR). Naples in spring should provide the ideal setting for a very stimulating international meeting.

Symposium on Wood Structure in Plant Biology and Ecology in Naples, April 2013

An International Symposium on Wood Structure in Tree Biology and Ecology (WSE) will be held from 17–19 April 2013 in Naples, in the Congress Centre Partenope of the University of Naples Federico II. The Symposium will be organised by the Faculty of Agriculture of the University of Naples Federico II and the Department of Environmental Science of the Second University of Naples, on behalf of the Afro-European Group of IAWA and the Association for Tree-ring Research (ATR). The symposium will follow up on the 2nd Meeting of Cost-Action “STReESS - Studying Tree Responses to extreme Events: a Synthesis” that will be held on 15–16 April 2013.

The Wood Structure Symposium will offer an opportunity to exchange knowledge and experience in all contemporary key aspects of wood structure as integrated in Tree Biology and Ecology. It aims to bring together experts working on different aspects of wood: xylogenesis and cambial phenology, phylogeny and ecological wood anatomy, ecophysiology, trees' responses to climate change, and tree-growth modelling.

The objective of the WSE Symposium is to provide a forum for anatomists, dendrochronologists, eco-physiologists, palaeoclimatologists and climate modellers to present recent findings, to exchange know-how and technologies. It will help addressing methodological issues in cross-disciplinary and cross-scale studies. In particular it will focus on:

- the analysis of the endogenous and environmental factors affecting cambial activity and wood cell formation
- the relationship between environmental factors and species sensitivity
- long- and short-term stomatal responses to environmental change: from palaeo-observations to stable isotopes
- the integration of proxi information and *in-vivo* flow analysis as linked to wood hydraulic architecture
- tree growth modelling and forest dynamics under changing climate conditions.

The WSE Symposium includes dedicated thematic sessions with oral communications and poster sessions, as well as group discussions on issues relevant to wood biology.

IAWA will host a business meeting and a social hour on Wednesday 17 April.

All researchers and students with an interest in the structure and function of wood are warmly invited to participate in this symposium. *Awards will be presented for the best oral presentation and the best poster by young scientists.*

Information regarding logistics, registration, submission of abstracts and preparation of short papers for the symposium proceedings will be available soon on the web-page: www.wse2013.com

The Chairs:

Veronica De Micco - University of Naples Federico II (I)

Giovanna Battipaglia - Second University of Naples (I); Centre de Bio-Archéologie et d'Ecologie EPHE- UMR5059 CNRS, Montpellier 2 (FR).

Workshop Secretariat:

Adriana Forlani, Annunziata Scognamiglio, Adriano Stinca - University of Naples Federico II (I). (Contact e-mail address: info@wse.com).

Advancements in Fiber-Polymer Composites: Wood Fiber, Natural Fibers, and Nanocellulose. Milwaukee, Wisconsin, USA. May 6-7 2013

The Advancements in Fiber-Polymer Composites: Wood Fiber, Natural Fibers, and Nanocellulose will be held on May 6-7, 2013 and will bring together international experts from the scientific, technical, and commercial communities to encourage the exchange and dissemination of information on the latest advances and future opportunities for these materials.

<http://www.forestprod.org/fiberpolymer/index.html>

21st International Wood Machining Seminar (IWMS-21), Tsukuba, 4-7 August, 2013

The 21st International Wood Machining Seminar (IWMS-21) will be held August 4-7, 2013 at EPOCHAL TSUKUBA, Tsukuba, Japan. This seminar is the 21st in a series that began in 1963 at California, USA to provide a forum for researchers and practicing engineers to present and discuss recent advances in wood machining.

The seminar will feature technical and scientific presentations and discussions on: Cutting process, Tool materials and tool wear, Advances in sawing technology, Planing, Molding, Routing, Sanding, and Novel wood products processing. An optional post-seminar tour will be organized. The conference language is English.

Tsukuba International Congress Center(EPOCHAL TSUKUBA)is an international conference center located in the heart of Tsukuba City, which is home to a large number of internationally renowned scientists.

Further information from: <http://www.ffpri.go.jp/en/symposium/iwms21/>

Woodchem 2013 –September 26th and 27th Nancy, France

Covering a wide range of topics related to chemical and biochemical valorization of wood and the corresponding biomass, WOODCHEM® 2013 will provide an excellent opportunity for discussion and exchange of knowledge between scientists, engineers, industrials, and other specialists, as well as to policy makers and government officials to showcase leadingedge technology for future sustainable large scaled wood-based industries.

WOODCHEM® 2013 will take place in Nancy, France on September 26rd and 27th, 2013. The congress is organized every second year by the French Fibers Innovative Cluster (*“Pôle de Compétitivité Fibres”*). This 3rd edition is organized during the week of the 20th anniversary of the European Forest Institute.

It is our pleasure to invite authors to contribute with oral communications and posters related to the topics covered by the congress and to participate in WOODCHEM® 2013.

Registration for the congress can be made only through the website: www.woodchem.fr

Functional Plant Anatomy, Moscow, September 2013

From September 16 through 21, 2013, on the occasion of the 90th birthday of Professor Gorn B. Kedrov, a conference on Functional Plant Anatomy will be organized by a consortium of Russian scientific organizations and societies, under the leadership of Dr. Alexander C. Timonin. Main topics to be addressed include functional anatomy of vegetative and reproductive plant organs, plant biomechanics, byproducts of morphogenesis, functional reconstructions in paleobotany, evolutionary implications, and theoretical concepts in functional biology. The deadline for registration and abstract submission is March 10, 2013.

(When this announcement was written the website was still under construction but it should be available now at www.anatomyconf.ru).

First workshop of the NECLIME working group on fossil wood in Brno, Czech Republic, 2013

NECLIME is a project which tries to reconstruct the Neogene climate and vegetation of Eurasia and has several working groups. In September 2011 in Bucharest a special fossil wood working group was proposed. Its first workshop is planned for June 2013 at the Faculty of Forestry and Wood Technology of Mendel University in Brno (Czech Republic). The emphasis will be on Cenozoic fossil angiosperm wood with two main objectives: 1) to reconsider the nearest living relatives of fossil taxa, 2) to revise “taxon complexes” by

adding fossil wood morphogenera and 3) to summarize the fossil wood localities suitable for Wiemann *et al.*'s statistical approach of paleoclimate reconstruction. A well equipped room with a projector directly connected with a teaching microscope and 25 good-quality microscopes as well as numerous reference slides of modern Central European and some tropical wood will be at our disposal. The workshop is primarily for people who would be interested to become a NECLIME member and to cooperate with the fossil wood working group. However, IAWA members and others interested are also most welcome! The city of Brno where the workshop will take place is a nice and historical metropolis of Moravia, easily accessible by car or public transport. Moravian wine tasting and visits to historical sites and the beautiful Moravian Karst landscape are further incentives to come. We look forward to welcome you in Brno in 2013!

Vladimir Gryc (Mendel University in Brno) & Jakub Sakala (Charles University in Prague), organizers (e-mail contact: rade@natur.cuni.cz).

18th International Nondestructive Testing and Evaluation of Wood Symposium, Madison 2013

The 18th International Nondestructive Testing and Evaluation of Wood Symposium will be held from 24-27 September 2013. The symposium is a forum for those involved in nondestructive testing and evaluation of wood, wood-based materials and products. It will bring together the international nondestructive testing and evaluation research community, users of various nondestructive testing technologies, equipment development and manufacturing professionals, representatives from various government agencies and other groups to share research findings and new nondestructive testing products and technologies.

For further information go to: <http://www.forestprod.org/symposium2013/>

International Conference on Wood Adhesives 2013

A call for papers on wood adhesives and their performance in bonded products has been announced. This conference will be held on **October 9-11, 2013** at the InterContinental Toronto Centre in Toronto, ON, Canada.

The conference brings together all the parties with an interest in wood adhesives: adhesive researchers, suppliers and users, and users of the bonded product who represent industry, academia, government, and other organizations. This conference provides an excellent opportunity to interact with leaders in the field from around the world (over 200 from 28 countries attended the 2009 meeting) and hear about the latest developments.

<http://www.forestprod.org/woodadhesives/index.html>

9th International Conference “Wood Science and Engineering in the Third Millennium” – ICWSE 2013,

The conference will be organized by the Transilvania University of Brasov - Faculty of Wood Engineering in Brasov, Romania, between **07 – 09 November 2013**.

All accepted papers will be published in a special edition of PRO LIGNO - scientific journal in the field of wood engineering, indexed by CABI, EBSCO and DOAJ (<http://www.proligno.ro/en>). Correspondence regarding the conference and submission of papers should be addressed to: icwse2013@unitbv.ro.

OBITUARIES



Eugene Zavarin (1924 - 2012)

Professor Eugene Zavarin passed away on 23 July 2012 at the age of 88. He was born in 1924 in Sombor, Yugoslavia (the northwestern part of now Serbia). He received a Diplom Vorprüfung (chemistry) at Universität Göttingen, Germany (1949) and a PhD in organic chemistry, University of California, Berkeley (1954). His dissertation title was “Synthesis and reaction of dialkylated β -disulfones.” His entire professional career was at the University of California, Forest Products Laboratory, Richmond, California, starting as a teaching assistant in 1952, becoming a professor in 1975, and retiring in 1991.

Eugene’s fields of research included analysis of natural products (oleoresins and essential oils, structural determination of natural products, chemosystematics, computer-statistical approach to determination of biogenetic pathways, chemical ecology, thermal analysis of lignocellulosics, cellulose grafting, wood surface chemistry, chemistry of the manufacture of composites, and plasma surface activation of wood. He published over 100 papers in various journals, many with his graduate students, including *Phytochemistry*, *Biochemical Systematics and Ecology*, *Forest Science*, *Journal of Wood Chemistry and Technology*, *Forest Products Journal*, *Holzforschung*, and *Journal of Applied Polymer Science*. His professional society memberships included American Chemical Society, Sigma Xi, Forest Products Society, Phytochemical Society of North America, American Association for Advancement of Science, and International Academy of Wood Science (elected in 1968).

He had two sabbatical leaves, one at Institut de Chimie des Substances Naturelles, Gif-sur-Yvette, France (1963), and a second in 1985 when he visited research institutions in France, Germany, Israel, and Greece.

Eugene was fluent in five languages (and read many more), undoubtedly originating from his movements and activities during and after World War II, including as an interpreter for a displaced persons camp in Hannover, Germany in 1946. He arrived in the US in 1949 and became a citizen in 1955. In 1956 he married Valentina Kusubov, who was born in Latvia, and they had five children born between 1959 and 1970.

His proudest accomplishments that he would brag about, and what he loved most about working at the Forest Products Lab:

- His publications and research.
- His assistants and students at the lab that made the above happen
- His teaching at UC Berkeley. He was very proud of his ability to pass down his knowledge to his students, graduate and undergraduate.
- His field work, and dragging his whole family to the wilderness of California (and Mexico) to collect tree samples (we loved it too!)
- And lastly, he was extremely proud of his long standing tenure as Santa Claus during the Forest Products Lab Annual Christmas/Holiday party, where he would ride in on a big red sleigh to hand out gifts to the children!!!

Another job that he was also very proud of was selling ice cream, his first job when he arrived in the United States. He would tell us that people would come from all around to the ice cream parlor where he worked, since he learned to “synthesize” the best tasting ice cream and would create the best new flavors. He did not make much money (which was not that important), but he did gain quite a bit of weight by testing his results!

Every year or so, the “forestry” emeriti are asked to provide an overview on their activities, which are then published in *California Forester*. One of Eugene’s was:

“Each retirement is a bit of a shock, but in my case the shock was particularly strong, since shortly after my [full] retirement the entire UCFPL closed. I have at the present time sufficient data left for a dozen publications, but I simply don’t have stamina to start the work. The needed environment is gone. Life is sad, occasionally. This does not mean I am not busy. Retirement is an age of increased activity. It is a paradox, but true. In any case with me. The mind just switches to different fields of activity. Babysitting, parties, birthdays, name’s days grow exponentially with increase in the number of children, grandchildren, relatives, etc. And all of that takes time and energy. I took to writing literary stories. Somewhat gothic. In Russian. My literary English is not plastic enough. So far I finished three novels and a dozen long and short stories. Nothing has been published as yet, but my limited audience liked them. Valentina and I celebrated without too much fanfare our Golden Marriage Anniversary. We traveled, of course. Besides various cities in the US we spent some time in the Dominican Republic. The stay was a pleasant surprise, particularly the people – helpful

and polite and the country surprisingly crime-free. Pleasant memories: my son telling me – ‘Thank you, father, for teaching me to love science for the sake of science’.”

Frank Beall



Stanley K. Suddarth (1921 - 2011)

Suddarth, Stanley K. 89 Oct. 22, 1921 June 09, 2011 Stanley K. Suddarth, of Newberg, passed away on 9th June 2011 of respiratory arrest at age 89. He was born in Westerly, R.I on 9th October 1921. At the age of 18 he moved to Lafayette, Ind., to attend Purdue University. After earning his Ph.D., he started teaching at Purdue where he received his professorship and became the director of the Wood Research Lab. Dr. Suddarth was a well-known authority on timber construction and a 35-year distinguished professor emeritus at Purdue. During his career he was inducted into the Structural Building Components Association Hall of Fame and

was the key engineering contributor to the development of building roof trusses. He served in the U.S. Marine Corps during World War II and served on Saipan and Peleliu. After retirement he married Mary, and they moved to Oregon in 1988. They lived in Sherwood for 22 years and then moved to Newberg. He is survived by his wife, Mary; children, Jane Herbert and Steve Suddarth; stepchildren, Louis, Bill and Ron Comus; and nine grandchildren. Interment was held June 13, 2011, at Gibbs Cemetery in Sherwood., Louis, Bill and Ron Comus; and nine grandchildren. Interment was held June 13, 2011, at Gibbs Cemetery in Sherwood.

Published in The Oregonian on June 21, 2011

BOOKS BY OR OF INTEREST TO FELLOWS

Nondestructive Testing and Evaluation of Wood-50 Years of Research. International Nondestructive Testing and Evaluation of Wood Symposium Series, USDA FPL-GTR-213. **Robert J Ross and Xiping Wang.**

This is a compilation (electronic format) of all of the proceedings from the International Nondestructive Testing and Evaluation of Wood Symposium Series. It is over 6,700 pages in length. Its foreward and table of contents are listed on the website for the symposium. <http://www.forestprod.org/symposium2013/>

Handbook of Wood Chemistry and Wood Composites 2nd Edition. Edited by Roger Rowell

The purpose of this book is to present the latest concepts in wood chemistry and wood composites as understood by the various authors who have written the chapters.. The second edition has been fully revised and updated throughout the text. This edition includes a new chapter on the latest chemistry of wood heat treatments and discusses the newest chemistry of wood heat treatment.

Chapters include: Wood and Society. Structure and Chemistry: Structure and Function of Wood. Cell Wall Chemistry. **Properties:** Moisture Properties. Biological Properties of Wood. Thermal Properties, Combustion, and Fire Retardancy of Wood. Weathering of Wood and Wood Composites. Surface Characterization. **Wood Composites:** Adhesion and Adhesives. Wood Composites. Chemistry of Wood Strength. Fiber Webs. Wood/Nonwood Thermoplastic Composites. **Property Improvements:** Heat Treatments. Chemical Modification of Wood. Lumen Modifications. Plasma Treatment of Wood. Sustainability of Wood and Other Biomass.

HIGHLIGHTS

Wood-Plastic composite blend finds its way to oil well drilling industry

Dr. Qinglin Wu, FIAWS, Professor
School of Renewable Natural Resources
Louisiana State University AgCenter

Fiber-reinforced plastic composites have been widely used in structural and non-structural applications. Materials for building components, automobile parts, etc. are typical examples of reinforced composites. More recently, Dr. Qinglin Wu at the LSU AgCenter has patented a technology to make plastic composite blends reinforced by wood/natural fibers for use in drilling fluids to control lost circulation for oil and gas industry.

Drilling fluids, often referred to as drilling muds in the oil industry, are used in well drilling operations. The drilling fluid, which may be a water, oil-, or synthetic-based formulation, circulates within the well bore, carries cuttings to the surface, lubricates the drilling equipment, and acts as a cooling agent. Lost circulation occurs when drilling fluids or muds enter into a porous or fractured formation, and are lost to the drilling operation rather than returning to the surface for recycling and reuse. Many drilling hazards such as hole collapse, struck pipe, and even blowout have been the result of lost circulation. Lost circulation costs

the industry about \$1 billion per year in the United States alone, and that the lost circulation products could represent an additional \$250 million. High performances lost circulation materials (LCMs) are needed to cure the problem.

The LCM patented by the LSU AgCenter recently is trade-named as ***TigerBullets***[®]. It is made of a thermoplastic polymer, cellulosic fibers, and other additives and formulated with different particle size distributions for various geographical formations. The ***TigerBullets***[®] product line is targeted for low and moderate temperature applications. The materials are economical, and seal fissures and cracks more rapidly, more efficiently, and at higher temperatures than is typical of most commercially-available LCMs. It can be mixed with water, aqueous mixtures, aqueous slurries, or aqueous muds shortly before being pumped into a well bore as part of the drilling fluid. In the fractured formations, the particles can settle down, absorb water, and swell in size while maintaining rigidity. The swelling property (from the cellulosic fiber based blends) helps lock the particles into the fractured formation and seal the fractures against drilling fluid leakage. The use of the composite material allows one more readily to control the size distribution of the particles than with mixtures of the individual components. In particular, the ***TigerBullets***[®] product line provides a significant value-added option for wood fiber resources.

TigerBullets[®] product is currently being manufactured by Wallace Molding and Millwork Inc., in Columbia, Louisiana – a traditional wood products company. The material is marketed by MI-Swaco Inc., in Houston, TX (a Schlumberger company) and HolePluggers LLC in New Iberia, Louisiana. So far, over 3,000,000 pounds of material have been manufactured and sold. The material has been used by some major oil companies including BP, Exxon, Chevron, XTO, Pioneer, OXY, etc in over 300 oil wells in the United States and several other counties in the world.

GUIDELINE 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 directions 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.

Lennart Salmén

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: lennart.salmen@innventia.com

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