

**INTERNATIONAL
ACADEMY
OF
WOOD SCIENCE**

**BULLETIN
2010-I**



www.iaws-web.org

May 2010

Executive Committee

President: Frank Beall, Richmond
Vice-President: Lennart Salmén, Stockholm
Secretary: Uwe Schmitt, Hamburg
Treasurer: Howard Rosen, Silver Spring
Past President: Xavier Deglise, Nancy
Bulletin Editor: John Barnett, Kniveton
Chair of the Academy Board: Katia Ruel, Grenoble

ACADEMY BOARD

K. Ruel, Chair (2010)

-

R.W. Allison (2010)

O. Faix (2010)

F. Kamke (2014)

B. Lachenbruch (2012)

G. Jeronimidis (2012)

S. Kelley (2012)

G. Meshitsuka (2010)

F. Nakatsubo (2014)

P. Saranpää (2014)

A. Singh (2014)

S.Y. (Tony) Zhang (2012)

End of terms: 1 June

Except Treasurer: 31 December

Please send correspondence to:

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MESSAGE FROM THE PRESIDENT

In the previous president's message, I outlined a number of activities of the Executive Committee. In this message, I would like to expand on two of them that will be introduced over the next several months.

First, the Expertise Directory. Some version of this has been under discussion for at least five years. It was suggested in our recent discussions as one means of raising the visibility of IAWS in international wood science research and development. The Expertise Directory would be an open resource on our web page for both IAWS members and non-members. To promote this for the latter group, we might use the IAWS pages in Wood Science & Technology. Anyone interested in locating Fellows who can provide advice or consulting on specific technical issues would be able to enter keywords of their own choice and get profiles of files that contain those words. To protect the confidential contact information of Fellows, we would not provide such information in the profiles, but alert the Fellow that someone is interested in their advice. After that, the Fellow could take whatever follow-up action they desire. We still have to work out the specific details of how this will be handled, but we will soon start soliciting profiles from Fellows to enter into this data base. A form will be sent out along with an example of how a completed form might look.

Next, the PhD dissertation/thesis award. Discussions on this topic have a long history. It is one of those ideas that everyone has been in favor of, but could not agree on the details of implementation (even trying to sort out whether this is termed a dissertation, as it is in the US, or a thesis, as it is in most other countries). For example, how should we deal with the great number of languages and selection of judges? If that is taken care of, what recognition shall we provide? For the first issue, we decided that all submissions must be extended abstracts in English along with the abstract in the original language. The judges would be our 12-member Academy Board, which has a reasonably balanced international membership. The Board would make its recommendations to the Executive Committee for the final decisions. Depending on the quality of submissions, up to three annual awards would be given, with appropriate recognition. The top awardee would be invited to attend an IAWS meeting and present his/her work with travel support provided by IAWS. So far as I know, this is the first action that IAWS has taken to recognize student achievements.

I must add that these two efforts were not solely developed by the Executive Committee. They came about through years of input in IAWS business meetings and many hours of discussion to arrive at a consensus. I want to express my appreciation to the IAWS Fellows who contributed to the development of these concepts. Both efforts should have a positive impact on the international visibility of IAWS.

In this Bulletin, you will read some disheartening news about the elimination of forest products research in CSIRO. Many of us have looked on CSIRO as one of the leading organizations in wood research. Unfortunately, this is another example of the continuing decline of wood science programs that has been underway for many years. With each budgetary, smaller, specialized programs seem to be the target of reductions.

On a brighter note, I would like to congratulate the 13 new Fellows for 2011 who are listed in this Bulletin. It was a very competitive election with about one-half of those nominated being elected. The new Fellows represent a wide distribution of countries (China, Finland, France, Japan, Russia, Switzerland, UK, and USA) and disciplines. My thanks to the nominators for providing an excellent list of candidates.

We have also completed our Board election, with six Fellows standing for four positions. The highest votes were for Fellows Militz (Germany), Sales (France), Vinden (Australia), and Westermark (Sweden). They will be replacing Fellows Allison, Faix, Meshitsuka, and Ruel, who will be completing their six-year terms on 2 June. My thanks and good wishes to all eight Fellows!

Frank Beall / Richmond

TREASURER'S REPORTS 2008 AND 2009

Owing to an oversight, the Treasurer's report for 2008 was omitted from the Bulletin last year. It is presented below.

Treasurer's Report March 25, 2009

IAWS Expenses and Revenues--Calendar Year 2008

Revenues (E – extra years paid by a member)

Retired dues (44 + 16E)	900.00
Active dues (68 + 6E)	2,214.00
Lifetime dues (8)	3,200.00
Supporting (21 + 2E)	2,408.00
Donations (3)	60.00
Interest on CD	1,399.60
Total	10,181.60

Expenses

Printing/mailing	3,441.29
Travel	3,190.90
Foreign bank/wire fees Chevy Chase	312.00
PayPal Fees	159.41
Academy Lecture	407.40
Website	1,312.10
Total	8,823.10

Income = \$10,181.60 - \$8,823.10 = **\$1,358.50**

Chevy Chase Account

Beginning balance January 1, 2008	18,105.83
Deposits by H. Rosen	4,900.37
Incoming bank wires	1,508.00
Transfer from PayPal	3,240.00
Withdrawal – Fees	-312.00
– Expenses	-7,351.69
– Checks	-1,000.00
End Balance December 31, 2008	19,090.51

PayPal Account

Beginning balance January 1, 2008	3.94
Deposits (36 active, 19 retired, 6 life)	3,765.00
Transfer to Chevy Chase	-3,240.00
Donation	25.00
Fees	-159.41
End Balance December 31, 2008	394.53

Total Assets

- CD Countrywide Bank **\$30,000**
 -interest paid in 2008 = \$1,399.60
 -renewed to 10/1/09 at 2.8%
- CD Countrywide Bank **\$11,316.41**
 -interest paid in 2008 = \$473.65
 -interest is accumulated
 -renewed to 5/12/09 at 3.8%

Checking + PayPal Accounts = **\$19,485.04**

Total Assets = **\$60,801.45**

Net change **2008 – 2007**

\$1,849.42

I have examined the books of the IAWS Treasury Account for 2008 and have found all the details in satisfactory order.

Robert Youngs

Robert L Youngs, Fellow, IAWS, Professor Emeritus, Virginia Tech.

Date: February 14, 2009

Dues

The dues have been broken down into categories and the E is for “extra” year’s payment. The net change for 2008 was \$1849. At the end of 2008, 115 of the 130 (88%) Active and Retired Fellows were current in their dues. Our CD’s total \$41,316, but interest rates have dropped to slightly more than 3%. Again, more of our members are using PayPal to pay their dues, 58 of our members used this credit card method in 2008. Four of the 26 supporting members did not pay 2008 dues. We are pursuing creative avenues to continue the support from these organizations.

As most of you know, we raised our dues in 2009 because of expanded programs and inflation since the last increase. The dues (payable in US dollars or Euros) are as follows:

Year	Active	Retired	Lifetime
2008	30	15	400
2009	50	20	600

IAWS is financially sound and has rebounded with the relative increase of the US dollar compared to other currencies.

If you are able, please try PayPal—the process is simple and efficient.

2008 NEW LIFETIME FELLOWS

Naceur Belgacem
 Jeffrey Dean
 Joseph Gril
 Hyun-Joong Kim
 Gerald Koch

Holger Militz
 Robert Rice
 Shiro Saka

2008 VOLUNTARY CONTRIBUTIONS

Starting in 2001, we have provided an opportunity for Fellows to make voluntary contributions to IAWS. We thank each of these for helping to further the goals of IAWS. The following Fellows have made such contributions over the past year:

Bob Hanna
 Bob Youngs
 F. H. Schweingruber

Howard Rosen, USA
Treasurer
March 25, 2009

Treasurer's Report March 31, 2010

IAWS Expenses and Revenues--Calendar Year 2009

Revenues (E – extra years paid by a member)

Retired dues (34 + 3E)	740.00
Active dues (74 + 12E)	4,160.00
Lifetime dues (4)	2,205.00
Supporting (24 + 3E)	5,020.00
Donations (3)	140.00
Interest on CD	581.20
Closed CD's	41,495.00
<i>Total</i>	<i>54,341.21</i>

Expenses

Printing/mailing	4.78
Travel	4,265.84
Foreign bank/wire fees Chevy Chase	330.00
PayPal Fees	164.89

Academy Lecture	400.00
Website	1,506.90
Opened CD's	55,000.00
Total	61,672.41

Income = \$54,341.20 - \$61,672.41 = -\$7,331.21

Chevy Chase Account

Beginning balance January 1, 2009	19,090.51
Deposits by H. Rosen	45,706.20
Incoming bank wires	3,855.00
Transfer from PayPal	4,070.00
Withdrawal – Fees	-370.00
– Wires	-3,972.74
– Checks	-56,500.00
– Cash	-400.00
End Balance December 31, 2009	11,478.97

PayPal Account

Beginning balance January 1, 2009	394.53
Deposits (48 active, 18 retired, 2 life)	3,890.00
Donation	20.00
Transfer to Chevy Chase	-4,070.00
Fees	-164.89
End Balance December 31, 2009	69.64

Total Assets

- CD Intervest National Bank **\$30,109.49**
 - interest paid in 2009 from Countrywide Bank = \$581.20
 - opened 10/16/09 at 2.2% for 2 years
 - interest is accumulated
- CD Advanta **\$25,000**
 - interest paid in 2009 (Countrywide Bank and Advanta) was accumulated = \$576.00
 - opened 5/23/09 at 2.6% for 2 years

Checking + PayPal Accounts = **\$11,548.61**

Total Assets = **\$66,658.10**

Net change **2009 – 2008**

\$5,856.65

I have examined the books of the IAWS Treasury Account for 2008 and have found all the details in satisfactory order.

Robert Youngs

Robert L Youngs, Fellow, IAWS, Professor Emeritus, Virginia Tech.

Date: February 4, 2010

Dues

The dues have been broken down into categories and the E is for “extra” year’s payment. The net change for 2009 was **\$5,857**. At the end of 2009, 124 of the 137 (91%) Active and Retired fellows were current in their dues. Our CD’s total \$55,109, but interest rates have dropped to slightly over 2% for two years. Again, more of our members are using PayPal to pay their dues; 63 of our members used this credit card method in 2009. Only two of the 26 supporting members did not pay 2009 dues. We continue to pursue creative avenues to continue the support from these organizations.

Although some fellows expressed concern about the dues increase in 2009, the increase did not seem to affect the number of members that paid. With expansion of the SWST Website, regular technical meetings, and inflation, more revenue was essential to preserve our quality programs.

So far in 2010, we have received payments from 13 of 24 supporting members (two Supporting Members are no longer paying dues—CSIRO from Australia and KCL from Finland), 28 of 50 Retired fellows, 44 of 88 Active fellows and 9 of 13 newly elected fellows. IAWS is financially sound and 2009 was a good financial year.

If you are able, please try PayPal—the process is simple and efficient.

2009 NEW LIFETIME FELLOWS

Konstantin Bogolitsyn

Peter Niemz

Hyoë Hatakeyama

Junji Matsumura

2009 VOLUNTARY CONTRIBUTIONS

Starting in 2001, we have provided an opportunity for Fellows to make voluntary contributions to IAWS. We thank each of these for helping to further the goals of IAWS. The following Fellows have made such contributions over the past year:

David Goring
Shuichi Kawai
Robert Ross

Howard Rosen / USA
Treasurer
March 31, 2010

REPORT OF THE JOINT EC/7TH ESTB MEETING IN MOROCCO



Delegates and EC members at the Al Akhawayn University in Ifrane.

The Executive Committee of IAWS aims to provide support and encouragement to wood scientists, particularly in parts of the world under-represented in terms of Fellows. For this reason it was decided that the first EC meeting of 2010 would be held in Morocco, where it was hoped wood scientists from African countries would be able to gather and discuss the problems and priorities for the continent. Past-President Deglise collaborated with Profes-

sor Abdellilah Hakam of the School of Wood Science and Technology (7th ESTB) in Rabat to organise a workshop on the theme of “Wood and Derivatives: Sustainable Materials and Products for Future Needs”. In the event the programme was split between the Faculty of Sciences at the University of Rabat and the Al Akhawayn University in Ifrane.

The Executive Committee met in Rabat on Sunday 21st March and the minutes of the meeting are presented in this Bulletin.

The Workshop proper began on Monday 22nd at the University of Rabat, with a session on “Forest Resources”, which included presentations on the situations in Morocco, South Africa, Cameroon and Benin. This was followed by a session on “Forest Products and Derivatives Industries in Morocco”. Delegates were then taken to visit the SEDEC Company which uses timber in many forms in domestic and industrial construction.

On Tuesday delegates were transported to Ifrane for an afternoon session on “Wood and Derivatives Characterisation” followed by a session on “Careers in Industry”. In the evening the Academy Lecture, “Wounding of Trees, Consequences and Defence Strategies” was presented by Fellow Uwe Schmitt.



Fellow Schmitt presenting his Academy Lecture

Wednesday began with a session on Wood and Fibre Composites, followed by a session on “Pulp and Paper”, with particular emphasis on energy use, chemicals, fine chemicals and ethnochemicals. In the evening a session on “Wood Cultural Heritage” was followed by a round table discussion at which it was recommended that a pan-African network be set up to attempt to analyse the problems, priorities and needs of African wood science.

Delegates were transported back to Rabat the following day, visiting the fascinating city of Fes on the way.

What was originally suggested as a small EC meeting together with African colleagues, developed into a full workshop, thanks to the efforts of Professors Deglise and Hakam. The attendance was estimated to be about 160 delegates including many students from the two universities

and from the Forestry School in Salé. The original aims of the EC in holding a meeting in Africa were more than met, and we are now looking forward to an equally successful annual meeting in Madison in June and an EC meeting in Brazil, in 2011.

John Barnett / Kniveton

IAWS EXECUTIVE COMMITTEE MEETING, 21. MARCH 2010, RABAT/MOROCCO

The meeting was called to order by Vice-President Salmén and was held in Rabat/Morocco. Fellows Barnett, Deglise, Rosen, and Schmitt were also present.

Vice-President Salmén opened the meeting at 16-15 h, welcomed Fellows and thanked Past-President Deglise for his enormous and time-consuming input in the organisation of the Morocco Meeting. The meeting approved the minutes of the last EC meeting held in Stockholm in 2009.

Secretary Schmitt reported on the first use of the new electronic voting process for the 2010 Fellow's election. The system was developed with the help of webmaster Thomas Schwarz and was used by more than 90% of all voting Fellows. Only a few Fellows returned paper ballots. The beneficial effect of introducing electronic voting was seen in the increase in numbers of Fellows using their votes. Special thanks were given to Fellow Cyril Heitner who took over responsibility for the election process. There was an intense discussion on the possibility of reapplication of rejected fellowship candidates and on how often a candidate could reapply. The EC will come up with suggestions on how to handle reapplications of unsuccessful fellowship candidates.

Treasurer Rosen informed EC members about the financial situation of the Academy, which is currently healthy. The year 2009 was an exceptionally good financial year. A detailed treasurer's report will be published in the May Bulletin. Treasurer Rosen presented a list of Fellows and supporting members who had not paid their 2008 and 2009 dues. He will continue contacting them to collect their dues; thus, it is important that treasurer and secretary keep their address and e-mail lists up to date. All the 2010 newly elected Fellows have paid dues so that their membership becomes active. Due to the loss of three Supporting Members (Finnish Pulp and Paper Research Institute-Espoo, CSIRO-Melbourne, and possibly Western India Plywoods Ltd.-Kerala), the Academy will increase its effort in getting new Supporting Members which is very important for the future of the Academy. The EC welcomes suggestions for appropriate candidates.

Vice-President Salmén gave a brief overview on the planning of the coming plenary IAWS/ IAWA meeting in Madison. Fellow Regis Miller is responsible for the organization of this meeting and put together a very interesting programme. Details can be found on the meeting web page (a special link is put on the Academy's web page). IAWS is well represented by oral presentations, session chairs and especially in the scheduled Academy Lecture which will be presented by Fellow and Treasurer Howard Rosen.

Bulletin Editor John Barnett informed the EC about the situation with Wood Science & Technology journal. There was a remarkable increase of the Impact Factor from 0.54 in 2005 to 1.49 in 2009. From 218 submitted manuscripts about one-third could be accepted directly or were sent back to the authors for revision, whereas the rest were rejected. The EC thanked the editors of WST Fellow Gerd Wegener and Fellow John Barnett for their excellent work in improving the quality of our journal. EC also expressed thanks to the Springer Company for the continuing good and close cooperation during recent years. Fellow Barnett will prepare information about the 2010 newly elected Fellows for the coming issue of WST.

Vice-President Salmén offered suggestions of places for future meetings. The EC decided to hold the 2011 EC Meeting in Brazil and the 2011 Plenary Meeting in Stockholm. Vice-President Salmén will be responsible for the organization of the Stockholm Meeting.

The EC also briefly discussed how to deal with the IAWS archive which is in Hamburg. According to the Bylaws, the secretary is responsible. Secretary Schmitt will look through the materials before the end of this year.

There was a discussion on the election process of the new Board Chair assuming office on 2 June 2010. President Beall will contact Board members about this matter.

Regarding the problem of the “visibility” of IAWS, Vice-President Salmén again pointed out that IAWS should raise its profile in the scientific and industrial community. One step in this direction could be a proposed prize for the best PhD dissertation in “wood science” involving transnational exchange. Fellows will be asked for submitting nominations of potential PhD theses.

The meeting closed at 19-30 h.

Uwe Schmitt / Hamburg

NEW ACADEMY BOARD MEMBERS

The Academy congratulates the four Fellows have been elected to the Academy Board to replace Fellows Allison, Faix, Meshitsuka and Ruel who retire after their six-year term of office in June 2010. The thanks of the Academy go to the retiring Fellows.

The new Board members are:

Holger Militz, Institute of Wood Biology and Wood Technology, Georg-August-Universität Göttingen, Germany.

Christian Sales, CIRAD-FORET, Montpellier, France.

Peter Vinden, School of Forest and Ecosystem Science, The University of Melbourne, Australia.

Ulla Westermark, Luleå Tekniska Universitet, Luleå, Sweden

These Fellows will serve on the Board until 2016.

NEWLY ELECTED FELLOWS 2010



Anatoly Chubinsky

Head of the Department of Sawmilling and Wood Drying, St. Petersburg State Forest Technical Academy (SPbFTA), Russia

Professor Dr Chubinsky was elected a Fellow of the Russian Academy of Natural Sciences in 1996. His research interests include the relationship between wood properties and processing, in particular veneer pressing and gluing, and the use of X-rays for estimation of the quality of glue-laminated beams. During his career at SPbFTA he has served as Vice-Rector for Education Activities and Head of the Department of Industrial Management.



Pedro Fardim

Head of the Laboratory of Fibre and Cellulose Technology, Åbo Akademi, Åbo, Finland University Email address: pfardim@abo.fi

Professor Fardim's research has been aimed at understanding the chemistry and morphology of different wood cells and their resultant impact on the manufacture and creation of new wood based materials. The focus for his research has been the chemistry and surface chemistry of eucalyptus wood cells and the effects of pulping, bleaching and stock preparation on physicochemical interactions with water and selected chemicals. He helped to develop the use

of Time-of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS) to investigate the surface chemistry of Eucalyptus cells using and also to assess the influence of fibre surface chemical composition on mechanical properties of papers. He has developed methods for separating vessel elements from pulp for determining the content of carboxyl groups on fibre and vessel surfaces.

Guanben Du

Vice President/, Southwest Forestry University (SWFU), Kunming 650224, P.R.China

Professor Guanben Du works in the field of wood adhesives and wood composite. He leads a research group devoted to basic and applied knowledge on wood and wood processing and has made important contributions in the field of wood surface treatment by plasma, a technology which has proven to be effective to improve the adhesion performance of wood/bamboo. He has contributed significantly to the preparation and modification of wood resin adhesives with low emissions and has developed press release techniques for hot pressing of medium density fiberboard and particleboard which improve the IB strength of panels.



Callum Hill

Professor in Materials Science, Centre for Timber Engineering, Edinburgh University, Scotland

Professor Hill has made significant contributions towards research in wood modification and more recently the wood water relationship. His research into wood modification has been involved primarily with chemical modification, investigating the kinetics of modification, and mechanisms of dimensional stabilization, reduction in water sorption, decay and weathering resistance.



Yuji Imamura

Research Institute for Sustainable Humansphere, Kyoto University, Japan

Professor Imamura's main research interest is in wood anatomy and its relationship to the degradation of wood and wood-based materials and their resistance against decay fungi, termites and weathering. He also works on the fundamental and practical development of integrated methods on decay and termite control of wood, emphasizing on chemical modification of wood by acetylation and resin treatment, and non-destructive detection of deterioration of wood

and wood constructions by acoustic emission and micro-waves. H has been involved in the development of the novel methods of chemical impregnation into wood by pre-compression before pressure treatment.

Takao Itoh

Professor Emeritus, Kyoto University, Japan

Professor Itoh's research has centred on the ultrastructure and composition of the cell wall. Using the technique of freeze fracture labelling he demonstrated that terminal complexes (TCs) contain a catalytic subunit and/or related proteins of cellulose synthase. He also used deep-etching electron microscopy combined with immunogold labeling to investigate the wall fine structure. He demonstrated the different localations within the wall of two types of xylan, low-branched xylan and highly-substituted xylan in the tissue of bamboo and the other monocots. He also developed a database of wood species used for a number of wooden artifacts excavated from archaeological sites in Japan.



Tetsuo Kondo

Kyushu University, Japan



Professor Kondo has contributed extensively to wood chemistry using cellulose as a main subject. He started to synthesize regioselectively substituted cellulose derivatives as the model compounds for understanding the hydrogen bonding formation in native cellulose. He has also worked on cell wall architecture in native and artificial systems, studying wood cell wall cellulose to investigate β -glucan association using physicochemical approaches such as microscopic FT-IR and in situ AFM. He also developed new

analytical techniques for polysaccharides. His studies showed that stress-induced effects may alter cell wall structure and even the higher suprastructure in plants.



Gilles Pilate

Head of the Breeding, Genetic and Physiology Research Unit, Unité de Recherches Amélioration Génétique et Physiologie Forestières (AGPF), INRA-Orléans Research Centre, France

Dr Pilate has worked mainly on tree physiology and since 1991 essentially on wood formation. He has been involved in collaborative projects with the aim of investigating the effects on wood formation, tree growth and development of lignin modification through genetic engineering. His major achievement was to produce and identify field-grown lignin-modified poplars with regular growth and development and with a wood that produce a better quality paper, with an improved yield, while using less chemicals.

Laurie Schimleck

D. B. Warnell School of Forestry and Natural Resources (WSFNR), University of Georgia (UGA), Athens, GA 30602-2152, USA

Professor Schimleck is Associate Professor of Wood Quality and is internationally recognized in the areas of wood quality and near infrared (NIR) spectroscopy. His research has focused on the development of NIR spectroscopy as a rapid technique for estimating the wood properties of plantation grown trees in Australia (*Eucalyptus globulus*, *Eucalyptus nitens* and *Pinus radiata*), the United States of America (*Pinus taeda* and poplar clones), and South America (various eucalypt species, hybrids and clones).



Francis W.M.R. Schwarze

Albert-Ludwigs-Universität, Freiburg im Br. Germany.

Professor Dr Schwarze has made highly significant contributions to fundamental understanding of wood decay by fungi and has applied his results to wood science and technology areas including permeability enhancement of heart-woods and refractory timbers, detection of tree rings, performance evaluation of thermomechanically densified wood, enhancement of acoustic properties of violins, and biocontrol of decay fungi affecting urban tree health.



Shigehiko Suzuki

Department of Forest Resources Science, Shizuoka University, Japan

Professor Suzuki is currently also Vice Dean of the Faculty of Agriculture at Shizuoka University. His research interest is in wood-based materials in relation to their long term durability performance, the characteristics of potential raw materials, rheological properties of wood elements when hot-pressed, and utilization of recycled wood.

Kelin Ye

Director, Research Institute of Wood Industry, Chinese Academy of Forestry, China

Professor Ye has made major contributions to composite products research from non-wood fibrous raw materials, bamboo, plantation wood, He initiated research on wood-based eco-materials in China in 1994 by analyzing environmental quality of wood products and inventing a new method of making high quality particleboard with recycled particleboard. He also initiated research on structural application for wood materials in 2006 by developing processing and evaluation technologies for larch dimension timber in China.



Dingguo Zhou

Director, Fast-growing Trees& Agri-fibre Materials Engineering Centre of Jiangsu Province in China,

Professor Zhou is also Managing Director of the Chinese Society of Forestry and Poplar Committee. He works in the field of wood and non-wood composites. He has made important research contributions in the development of new wood composites and processes to utilize fast-growing poplar and has developed manufacturing technology for making straw-based panels and particle board and MDF.

ACADEMY LECTURE UWE SCHMITT

Presented during the 2010 Joint EC/7TH ESTB Meeting in Rabat & Ifrane/Morocco, March 23, 2010

“Wounding of Trees: Consequences and Defence Strategies”

Wounding of trees induces various reactions at the tissue and cell level. At the wound surface cells mostly die rapidly by desiccation, whereas the tissue beneath is stimulated to develop a protection zone against the penetration of air and microorganisms. In hardwoods, the major reaction to wounding in the differentiated xylem is the occlusion of water conducting vessels by tyloses and/or fibrillar/granular material. Very intense wound reactions occur in a narrow zone beneath from the wound surface. This zone is called the boundary layer and shows distinct discoloration.

Tylosis formation has been investigated in detail by transmission electron microscopy (TEM) for oak and black locust, and vessel occlusions by fibrillar/granular material have been described for birch, beech and lime trees. Vessel-adjacent parenchyma cells are responsible both for the production of tyloses and synthesis of fibrillar/granular materials, which are then secreted into lumens of vessels and fibres. Such a secretion process requires the modification of pit membranes between parenchyma cells and vessels or fibres. Cellular UV-microspectrophotometry allowed a more detailed chemical characterisation of the wound reaction compounds. Their absorbance pattern, with a distinct maximum beyond 300 nm, identified them as flavonoid compounds. Precursor substances with an additional maximum at 278nm were found in parenchyma cells. In addition to the occlusion of water conducting elements, parenchyma cells especially within the boundary layer develop a suberin-like layer, which is attached to the secondary wall. Modified wall structures were also observed in fibres and vessels of the boundary layer.

Wounds later become closed by callus tissue formed at the wound edges. In some cases, however, wounding of trees, e.g. by debarking during the growth period, results in the formation of callus tissue which develops over the entire wound surface or parts of it. The development of such a surface callus is divided into three stages. During the first stage, numerous cell divisions take place in regions where differentiating xylem remains at the wound surface. During the second stage, cells in the callus undergo differentiation by forming a wound periderm. In the third stage, a new cambial zone develops between wound periderm and xylem laid down prior to wounding, which is then producing wound xylem and wound phloem. These various wound-associated processes lead to compartmentalization around a wound, which restricts the spread of damage and thus maintains the functionality of inner xylem. The principles of this compartmentalization strategy were originally formulated by Alex L. Shigo in his CODIT model, which was later variously modified, e.g. by Walter Liese and co-workers.

HONOURS AWARDED TO FELLOWS

Peter Axegård awarded the 2010 Ekman medal



The Ekman Medal is one of the most prestigious prizes in the Swedish forestry industry. It is awarded annually for “Meritorious technical or scientific efforts in the Swedish forestry industry” by the Swedish Association of Pulp and Paper Engineers (SPCI). This year’s award ceremony took place during the conference “Ekmandagarna” in Stockholm on the 26th January, 2010.

Associate Professor Peter Axegård, Director at Innventia, is a renowned expert in the field of cellulose technology and is regarded as one of the world’s leading pioneers in the development of the pulp mill biorefinery. He was, among other things, deeply involved in the work of replacing chlorine with chlorine dioxide in the bleaching process, which then became the dominant technique in the industrial world. In recent years, Peter Axegård has been working on the development of biorefining technologies. The research has been very productive and today, this technically and scientifically interesting field employs more than 30 scientists at Innventia.



Peter Axegård’s extraordinary scientific expertise in areas of interest and relevance, together with his skilled industrial experiences, have been decisive factors when it comes to bringing ideas from research to industrial applications.

Graeme P. Berlyn

A Festschrift for Professor Berlyn has now been published as a special issue of the Journal of Sustainable Forestry (Volume 28, Numbers 1-2, 2009). The title is “Trees and Forests in Space and Time, A Festschrift for Graeme P. Berlyn.

At this summer’s meeting of the Botanical Society of America in Providence, Rhode Island there will be a symposium in Professor Berlyn’s honor. He will be giving the introductory address entitled, “Using Spectral Reflectance for Estimating Leaf Functional Traits and Plant Health”.

Walter Liese

Professor Dr. Walter Liese has been elected to Honorary Membership of the Bamboo Network of the Philippines for his outstanding accomplishments in bamboo science, technology and education.

Gerd Wegener

Professor Dr. Gerd Wegener will retire this year and on October 6, 2010, He will be officially honoured into retirement within the context of the 15. Munich Wood Colloquium / "Münchener Holzkolloquium" of the Society of Friends and Sponsors of the "Holzforschung München" at the main lecture hall "Audimax", Munich Technical University (TUM). Among others, the program will comprise contributions by:

- * Prof. Dr. W. Herrmann, President TUM
- * Minister of State H. Brunner, StMin ELF
- * W. Schatt, Schattdecor, Thansau
- * Prof. Dr. H. Graßl, MPI Hamburg
- * Prof. Dr. H. Pizzi, Nancy University, France (FIAWS)
- * Prof. Dr. B. Holmbom, Turku University, Finland (FIAWS)
- * Prof. Dr. S. Winter, TUM
- * Prof. Dr. A. Frühwald, Hamburg University (FIAWS)
- * - as well as the Schörghuber Prizes Award 2010.

Notification of the final program including entry form will be circulated in May 2010.

NEWS OF FELLOWS

Valentin Popa has been appointed Editor in chief of Cellulose Chemistry and Technology. Fellow Popa reports that The National Council for Scientific Research in Higher Education recently awarded a special prize to "Cellulose Chemistry and Technology" published by Romanian Academy Publishing House for its highest impact factor among Romanian journals. The journal was founded 40 years ago by Cristofor Simionescu following a proposal by renowned scientists in the field .

THE END OF FOREST PRODUCTS RESEARCH AT CSIRO

Fellows of the Academy will have been dismayed to learn of the demise of forest products research at CSIRO, long a world-leader in the field with a reputation second-to-none. The following account of the closure was sent to the Bulletin by fellow Harry Greaves.

CSIRO ends Forest Products Research after almost 100 Years of Endeavours

Under the guise of “portfolio restructuring”, CSIRO Materials Science and Engineering management has recently sent letters of redundancies to the remaining 28 staff of what was called the Forest Fibre Science Group, the remnants of staff surviving the last big cull of forest products research activities in 2008-9. That cull took place after a decade of struggling and shrinking activities following the merger shake-up of Forestry and Forest products in 1999-2000.



CSIRO Division of Forest Products, c 1970.

The once familiar site is now home to Melbourne’s Crown casino complex

It was a little over 90 years ago that the Institute of Science and Industry, the forerunner of the Council for Scientific and Industrial Research, later called the Commonwealth Scientific and Industrial Research Organisation or CSIRO, established a national forest products laboratory jointly with the Western Australia government. The laboratory was located at the University of Western Australia. Prior to that time forest products research was being carried out in a number of states in Australia, including New South Wales in the Museum of Technology. The CSIRO Division of Forest Products (DFP) came into being as an independent government funded entity in May 1928 with its research activities being undertaken at different locations. Eventually the Division was relocated to a site on the banks of the Yarra River where the once-familiar red brick building was erected.

The South Melbourne site was deemed to be an ideal location close to transport, government and, most importantly (even then) the forest products industry. Over the years the original 4-storey building acquired another floor and roof-top green houses and, much later, a modern cement block wing.

The early research activities at Yarra Bank Road included preservation, seasoning, wood chemistry, and wood structure, and developed over the years to also include timber physics and timber mechanics (later known as engineering), utilisation, and glueing and veneering (forerunner of the timber conversion section). The section names evolved along with the Division's work with research in the late 1960s being organised into sections like Physiology and microstructure, physics, preservation (a name that was retained until the late 1970s when it became Conservation and Biodegradation), engineering, and timber conversion. Along the way pulp and paper research (in the guise of paper science) was added to the portfolio and statistics and photography completed the broad endeavours of what had become a world renowned forest products research laboratory.

The bulk of the work was funded by the government but there was also some support, particularly in the later years of its existence, from the forest products industry (it is tempting to remark, with the benefit of hindsight, that the industry's support for forest products research was too little and too late).

During the 1970s DFP began its slow downward spiral as decision after decision by the hierarchy of CSIRO fragmented its work over the next three decades, re-aligning its activities on a discipline basis rather than an end-user orientation. CSIRO argued that if DFP research was worthwhile from the industry's viewpoint (we had almost ceased to work on purely fundamental issues) then the industry should pay for it! In truth, the forest products industry did little to halt this slide, even as the mainstream efforts like preservation, seasoning, sawmilling and composite products research were being touted as endeavours for and in collaboration with the industry.

Over the years the Division of Forest Products achieved a remarkable international reputation for excellence in research and industrial innovation; at the height of its activities there were some 300 personnel working on scientific and industrial research, as espoused by CSIRO's charter at the time. The Division's contributions to the basic understanding of forest products and to the operations and processes of the current forest products industries will long remain a testimony to its achievements even after its death!

Harry Greaves / Melbourne

OBITUARY

**Professor Dr. Chen-Loung Chen (1930-2009)**

Dr. Chen-Loung Chen passed away on November 14, 2009 in Raleigh, North Carolina at the age of 79. He was born on October 20th 1930 in Taipei, Taiwan. He was survived by his wife, Gretel, to whom he was married for over 40 years, and their twin daughters Claudia and Stefanie J Chen, who live in Munich, Germany and Dornbirn, Austria, respectively.

Dr. Chen received a bachelor degree in chemistry, from the National Taiwan University. After his graduation he served as a Teaching Assistant at the National Taiwan University until 1959 when he went to Germany to pursue his advanced studies. Under the supervision of the late Prof. Karl Freudenberg, he obtained a Diplom-Chemiker degree (1960) and his Dr. rer. nat. degree (1962) from Heidelberg University. His thesis "Oxydation des methylierten Lignins" on elucidation of lignin structures by permanganate oxidation was one of the highlights in the study of lignin chemistry in the world at that time and was a pioneer work leading to the permanganate oxidation method. Dr. Chen, often mentioned his mentor, Professor Freudenberg, and his years at Heidelberg University had a profound influence on his life.

After his graduation, he spent an additional 5 years as Research Associate at the Institute of Organic Chemistry of Heidelberg University. In 1967, he moved to Madison, Wisconsin and held the position of research chemist at the US Forest Products Laboratory for two years. He returned to Germany in 1969 as a research associate for the Institute of Plant Physiology of the Ruhr University in Bochum (1969-1970) and as a research chemist for Helm Chemie-Werk, Dieburg (1971-1972).

In 1972, Dr. Chen and his family migrated to the United States. He joined the Department of Wood Pulp and Paper Science at North Carolina State University as a research associate, and later as senior research associate. He worked here for 30 years until his retirement at the end of 2002. He published book chapters and more than one hundred papers in peer-reviewed journals. He had a great passion for research and continued to use his office at the university after his retirement until a few months before his death. His research mostly focused on the analysis of lignin and extractives, chemical behaviour of lignin during pulping and bleaching treatments, lignin biodegradation, biobleaching, lignin utilization and chemistry of N-modified lignins.

Dr. Chen was a concurrent professor of chemistry at Nanjing Forestry University in Nanjing, Northeast Forestry University in Harbin and Tianjin Institute of Light Industry in Tianjin, China. He was an honorary member of the Chinese Society of Chemistry and Engineering of Forest Products. He was a member of the editorial board of *Holzforschung*. He was elected to the fellowship of the International Academy of Wood Science in 1996 for his outstanding contributions to the chemistry of lignin. The passing of Dr. Chen represents a loss for the scientific community of one of its leading experts in lignin chemistry. To his friends, former students, and his family, his death represents a loss of a great human being, teacher, and scientist. His scientific legacy will persist; his crowning achievements as a teacher of human qualities will live on in the hearts of his students and friends.

Ewellyn Capanema and Hou-min Chang

FORTHCOMING MEETINGS OF INTEREST TO FELLOWS

IAWS Plenary meeting 2010

The 2010 meeting in Madison, Wisconsin, USA jointly with the Pan-American Regional Group of the International Association of Wood Anatomists and Division 5.01 (Wood Quality) of IUFRO will be held shortly after publication of this Bulletin. It will take place from June 23 – 26 and will celebrate 100 years of wood science and wood anatomy research at the Forest Products Laboratory. If you are interested in attending, send an email message to Regis B. Miller (rmiller1@wisc.edu). You can check the IAWA or IAWS websites at <http://www.iawa-website.org/> or <http://www.iaws.uhp-nancy.fr/> for updates.

The conference will include all aspects of wood anatomy from wood science, forest products, wood identification and wood quality to wood formation, tree ring analysis, and paleobotany. All fellows and guests are welcome.

The 53rd International Convention of the Society of Wood Science and Technology.

This will be held in Geneva, Switzerland, October 11-15, 2010. Information on the event can be found at <http://www.swst.org/meetings/AM10/>

International Conference on Structural Health assessment of Timber Structures

Lisbon 16-17 June 2011. Abstract deadline June 1st 2010. Further information may be found on <http://shatis11.lnec.pt/r>

14th Annual Symposium on Cellulose Chemistry and Technology

Iasi, Romania September 8-10, 2010. The meeting will be in memory of Cristofor I Simionescu. Further information on <http://pulp-paper.eu>. Registration by email to fciolacu@ch.tuiasi.ro or by fax to 040 232 271311 Attn. Prof. Valentin Popa or Dr Florin Ciolacu.

The 7th Tannin Conference

This will be held in conjunction with the 58th International Congress and annual meeting of the Society for Medicinal Plant and Natural Product Research in Berlin, Germany August 29 to September 2, 2010.

IAWS fellows Herbert Hergert and Richard Hemingway are among the past Tannin Conference Awardees.

At the 7th Tannin Conference attendees will find exceptional opportunities for those of us involved in wood chemistry with potential partners studying natural products in pharmaceuticals and animal (human) nutrition. For additional details please contact Prof. Dr. Herbert Kolodziej Institut for Pharmacy, Freie University of Berlin; kolpharm@zedat.fu-berlin.de.

The 11th European Workshop on Lignocellulosics and Pulp, Hamburg / Germany, August 16 - 19, 2010

Further information available on <http://www.ewlp-2010.org>

The 4th International Symposium on Emerging Technologies of Pulp and Papermaking, November 8-10, 2010, Guangzhou, China

Further information on <http://www.ppeskl.labs.gov.cn/isetpp>

XXIII IUFRO World Congress 23-28 August 2010 – Seoul, Korea

The theme for the XXIII IUFRO World Congress is “Forests for the Future: Sustaining Society and the Environment.”

There are two sessions dealing with wood quality:

A-14 Quality wood from forests in a changing climate

Session coordinator: Pekka Saranpää

E-06 Properties and utilization of plantation timbers

Session coordinators: KeeSeng Gan & Pekka Saranpää

Online submission of abstracts: <http://www.iufro2010.com/>

Wood Science for Conservation of Cultural Heritage

This is a meeting held under the auspices of EC COST Action IE0601 and will take place in Izmir (Turkey) on 20-22 October 2010.

Further information on www.woodculther.org

3rd Nordic Wood Biorefinery Conference

This will be held in Stockholm from 22-24 March 2011. For further information go to <http://www.innventia.com/nwbc2011>

BOOKS BY FELLOWS

Verlag-Kessel is a German Publisher producing mainly forestry titles. They have recently re-published two works by Fellows of the Academy.

Wood: Chemistry, Ultrastructure, Reactions by Dietrich Fengel and Gerd Wegener (First published in 1983).

Science and Technology of Wood – Structure, Properties, Utilisation by George Tsoumis (First published in 1991).

Verlag-Kessel have also recently republished **Tropical Timbers of the World** by Martin Chudnoff (first published in 1984) and a German-English/English-German Dictionary of Environment and Forestry, which may be of interest to some Fellows. For more information visit www.VerlagKessel.de

A NEW JOURNAL**Communicated by Philip Evans**

I'd like to bring to the attention of IAWS Fellows the launch of a new wood science and tech journal to replace the Journal of the Institute of Wood Science. The new journal is called

International Wood Products Journal (IWPJ). IWPJ will retain the broad coverage of the Journal of the Institute of Wood Science, but will have an international outlook, reflected in the new Editorial Board, and an active policy of commissioning papers and reviews. Within its remit of wood engineering and technology, IWPJ will have a particular interest in: mechanical properties; testing and characterisation; drying; preservation, including insect and fungal response; processing and machining; structural applications, including design and construction; products and applications; and recycling. The journal will apply for listing in the Science Citation Index (as well as Scopus) and will be published by Maney Publishing, which is the publishing partner of the Institute of Materials, Minerals and Mining. Manley is based in London, UK (see www.maney.co.uk/materials).

HIGHLIGHTS

EMPA violin outdoes Stradivarius!

Communicated by Valentin Popa

From the EMPA Website: Francis Schwarze is one of our newly elected fellows (see above).

At the 27th “Osnabrücker Baumpflegetagen” (one of Germany’s most important annual conferences on all aspects of forest husbandry) Empa researcher Francis Schwarze’s «biotech violin» dared to go head to head in a blind test against a Stradivarius – and won! A brilliant outcome for the Empa violin, which is made of wood treated with fungus, against the instrument made by the great master himself in 1711

September 1st 2009 was a day of reckoning for Empa scientist Francis Schwarze and the Swiss violin maker Michael Rhonheimer. The violin they had created using wood treated with a specially selected fungus was to take part in a blind test against an instrument made in 1711 by the master violin maker of Cremona himself, Antonio Stradivarius. In the test, the British star violinist Matthew Trusler played five different instruments behind a curtain, so that the audience did not know which was being played. One of the violins Trusler played was his own Stradivarius, worth two million dollars. The other four were all made by Rhonheimer – two with fungally-treated wood, the other two with untreated wood. A jury of experts, together with the conference participants, judged the tone quality of the violins. Of the more than 180 attendees, an overwhelming number – 90 persons – felt the tone of the violin made with wood treated with fungus «Opus 58» to be the best. Trusler’s Stradivarius reached second place with 39 votes. Amazingly, 113 members of the audience thought that «Opus 58» was actually the Stradivarius! «Opus 58» was made from wood which had been treated with fungus for nine months the longest treatment time used.



Hidden from the eyes of the audience, the British star violinist Matthew Trusler played five different violins. (Photo: Egmont Seiler)

Scepticism before the blind test

Judging the tone quality of a musical instrument in a blind test is, of course, an extremely subjective matter, since it is a question of pleasing the human senses. Empa scientist Schwarze is fully aware of this, and as he says, “There is no unambiguous scientific way of measuring tone quality.” He was therefore, understandably rather nervous before the test. Since the beginning of the 19th century violins made by Stradivarius have been compared to instruments made by others in so called blind tests, the most serious of all probably being that organized by the BBC in 1974. In that test the world famous violinists Isaac Stern and Pinchas Zukerman together with the English violin dealer Charles Beare were challenged to identify blind the «Chaconne» Stradivarius made in 1725, a «Guarneri del Gesu» of 1739, a «Vuillaume» of 1846 and a modern instrument made by the English master violin maker Roland Praill. The result was rather sobering – none of the experts was able to correctly identify more than two of the four instruments, and in fact two of the jurors thought that the modern instrument was actually the «Chaconne» Stradivarius.

Biotech wood, a revolution in the art of violin making

Violins made by the Italian master Antonio Giacomo Stradivarius are regarded as being of unparalleled quality, with enthusiasts being prepared to pay millions for a single example. Stradivarius knew nothing of fungi which attack wood, but he received help from the

Ice Age” which occurred from 1645 to 1715. During this period Central Europe suffered long winters and cool summers which caused trees to grow slowly and uniformly – ideal conditions for producing wood with excellent acoustic qualities.

Horst Heger of the Osnabrück City Conservatory is convinced that the success of the “fungus violin” represents a revolution in the field of classical music. He believes that in the future even young musicians will be able to afford a violin with the same tonal quality as an impossibly expensive Stradivarius. In his opinion, the most important factor in determining the tone of a violin is the quality of the wood used in its manufacture. This has now been confirmed by the results of the blind test in Osnabrück. The fungal attack changes the cell structure of the wood, reducing its density and simultaneously increasing its homogeneity. “Compared to a conventional instrument, a violin made of wood treated with the fungus has a warmer, more rounded sound,” explains Francis Schwarze.

Wallenberg Wood Science Center (WWSC)

Communicated by Lennart Salmén

The Centre was established in 2009 and is a joint research center at Royal Institute of Technology (KTH) and Chalmers which aims to build a material research program that can develop new products using Swedish forests. The base funding was a donation from the Knut and Alice Wallenberg Foundation.

The Swedish forest industry has a strong position internationally. It is the fourth largest nation with respect to export of pulp and paper and together with Finland leads technology and product development in Europe. Yet the Eucalyptus based industries around the world show strong competitive advantages. In addition, the strongest market developments are taking place away from the locations of Swedish forests, which thus faces challenges.

In this scenario, gradual improvements of existing products and technologies are no longer sufficient. For this reason, a strategic research program was launched, where the general objective underpinning research is to stimulate innovations and new products in the long-term. The focus is on new processing and material concepts and their development. The WWSC combines the best resources from KTH and Chalmers and the process of formulating the center has generated considerable enthusiasm. This is because unexpected synergies and competences have been identified. The net result is more powerful than a simple additive effect. Objectives are also better focused and there is a strong ambition to combine scientific quality with industrial relevance. An important mechanism is provided by a study on the potential development of the forest industry, including rational utilization of existing infrastructure.

As compensation for potential losses of wood utilization in “old” products, a substantial part of our future wood production will be utilized in new products. Biocomposites and new materials based on wood fibers offer a large potential in this context, since product characteristics can be vastly improved. These biocomposite products are likely to be used in packaging, mass-produced furniture, automotive and general industrial applications.

Since there is strong competition from cheaper Eucalyptus products, new products for the Nordic forest industries need other advantages. Products need to be founded on innovations and development of new technologies, including new processing schemes. A likely consequence is also that this development will require corresponding changes in the industrial infrastructure.

WWSC will stimulate industrial development by establishing a well-equipped laboratory, by providing results from the program, by attracting internationally renowned researchers, and by training a new generation of researchers and industry staff. The best people will be brought together in concerted actions. The center will lead the development of a modern Wood Science and Engineering discipline in Sweden, with a strong position in higher education. Developments in nanotechnology, biotechnology, and materials disciplines are combined with the established competences in pulp & paper, fiber and wood technologies. The center aims for industrial relevance and strong scientific ambitions. The cross-disciplinary nature of the center combined with a strong wood material focus is vital. An important aspect is also to develop non-traditional ways of working in collaborative teams.

The overall mission of WWSC is to create opportunities for a new and sustainable forest industry by building a first class research center. The objective is to build a competence platform aimed towards New materials from trees. This includes associated processing routes, where large volume applications are of particular interest. To meet the objectives, a comprehensive research program has been defined. This program is organized in 5 themes. Theme 1 starts with the tree (primarily spruce, pine, birch and aspen), which is viewed as a renewable resource from which building blocks for new materials can be extracted. It also deals with identification of new building blocks (chemicals, biopolymers, strong fibers), and development of processing approaches, including chemo-enzymatic routes.

The other themes (2-5) start with building blocks from Theme 1 and develop these further into new material concepts. Theme 2 has its focus on biopolymers, for instance for use as barriers, coatings and as bioplastics. Wood modified by chemical or physical means for hygromechanical performance is also investigated in a sub-group of Theme 2. Theme 3 concerns fibers and fibrous materials. This includes man-made fibers (regenerated cellulose, carbon fibers) as well as porous fiber materials, used for instance in liquid absorption applications. Theme 4 is on biocomposites, including engineering biocomposites for synthetic composites

and plastics substitution. Biocomposites from cellulose nanofibers is an important part of this work. Research on nanostructured functional composites is carried out, where nanocelluloses and hybrid organic/inorganic approaches are important.

Integration between the themes is ensured by sharing of generic technology platforms and by coordinated research efforts towards building blocks of particular interest. Examples include various forms of nanocellulose, new biopolymers, and new wood-based fibers. These building blocks are modified and assembled in various combinations in order to create new materials with improved functions.

Research in the field of natural aromatic compounds at the Technical University of Iasi, Romania

Communicated by Valentin Popa

The Technical University of Iasi is one of the best universities in Romania measured by scientific performance. In this university there is the only department in Romania in the field of pulp and paper, founded 60 years ago. The main research interests in this department are the characterization and processing of renewable and recyclable resources based on the biorefinery principle. One of the main directions of study is connected with polyphenols and lignins. Research in the field of polyphenols began in 1990 in the Department of Pulp and Paper of the Faculty of Industrial Chemistry in a program involving complex processing of biomass. The extraction of polyphenols has been considered as a one of the treatment steps in a technological scheme which was proposed by us to process biomass (named at present as biorefining). To separate polyphenols different sources such as wood bark (spruce wood, beech wood), *Asclepias syriaca* (a latex bearing plant), vine stems and grape seeds have been used. The isolated products have been tested for their biological properties in plant and animal systems and microorganism development. The main experimental results revealed the important role of polyphenols in the cell metabolism of different biosystems. In the case of plants development the polyphenols were tested in the following processes: germination, plant cultivation, tissues culture and grafting. The influence of polyphenols can be associated with stimulation and regulation of the cell differentiation evidenced by genetic studies and enzyme biosynthesis. In the case of animal systems polyphenols may inhibit proliferation of tumor cells and regulate different parameters in diabetes. The polyphenols may also participate in metabolism regulation of different yeast strains or they can inhibit the development of bacteria or fungi. An association between polyphenols and soil cultivation can be used for bioremediation of arid and polluted soils. The action of polyphenols could be managed using their interaction with different compounds to regulate their release in different biological systems. The results of this work have been published in forty papers and 10 PhD theses have been defended. The influences of polyphenols in the studied systems depend on

the sources, composition and dosage used. The researches were supported by national and European funding (e.g. Eurolignin, Ecobinders). At present we are looking for partners to approach the following objectives: (1) the establishment the most convenient technique to separate and evaluate the polyhenols; (2) the characterization of polyphenols separated from different sources; (3) the fractionation of polyphenols and the characterization of isolated products with the aim of recommending their utilization in different fields; (4) the establishment a correlation between polyphenols' structure and their influence on different biological systems; (5) the establishment of the polyphenols' action mechanism at the cellular level; (6) the development new uses for polyphenols in fields such as crop cultivation and protection, wood protection, control of microorganism development to produce different metabolites and to influence some processes, virus, pathogens and cancer inhibition, regulation of chemical and biochemical synthesis etc..

Valentin I.Popa, vipopa@ch.tuiasi.ro; vipopa15dece@yahoo.com

Bioenergy Research Institute, Chonnam National University, Gwangju, South Korea

Communicated by Prof. Hyeun Jong Bae and Fellows Yoon Soo Kim and Adya Singh

High energy prices, limited reserves of petroleum based fuels and environmental concerns are driving research and development aimed at exploring the use of plant biomass as a renewable source of raw material for generating energy and liquid fuel. The second generation bioenergy defines cellulosic matter as that which is available on a renewable or recurring basis and includes agricultural crop residues and wood wastes. Production of cellulosic ethanol has the potential to offset some of the concerns related to energy security, the environment, and the economy. Chonnam National University in Gwangju, South Korea has taken a lead at the global scale to advance developments towards efficient production of bioenergy and biofuel by creating a dedicated research organization 'Bioenergy Research Institute', which began its operation in 2006. Research activities of the Bioenergy Research Institute span across a range of biological and chemical disciplines, bringing together technical and scientific expertise and instrumentation from chemistry, molecular biology, and plant and wood sciences, and the collaborative efforts are proving successful in achieving rapid advances in technologies for maximizing biofuel production from plant and wood residues. The Bioenergy Research Institute has also developed an extensive international network, USA, Canada, Vietnam and India being some of the countries with which the institute is involved in active research collaboration and exchange visits by scientists and technologists. The institute is actively promoting exchange of information by organizing seminars, symposia, work-shops and international conferences (seven in the last two years), and inviting leading international experts to present overviews on current and emerging trends on research and development related to bioenergy and biofuel. The main areas of the institute's research activities include:

1. Pretreatment of biomass using physical, biological and mechanical processes
2. Screening of novel cellulases and genetic engineering for biomass degradation
3. Production of own enzyme cocktail system to degradation of biomass lignocellulose
4. Molecular farming in the plant cell as a bioreactor to produce recombinant cellulases at low cost
5. Improvement of fermentation for bioethanol production via yeast genetic engineering and immobilization
6. Development of cellulose bioconversion process with our own technologies.

For more information, please contact institute director Professor Hyeun Jong Bae (email: baehj@chonnam.ac.kr).

Characterization of CO₂ precipitated Kraft lignin to promote its utilization

Communicated by Art Ragauskas

Our publication titled “Characterization of CO₂ precipitated Kraft lignin to promote its utilization”, *Green Chemistry* (2010), 12(1), 31-34, was one of the top ten accessed articles on the web from the online version of *Green Chemistry* at www.rsc.org/greenchem.

This article examines the fundamental chemistry of lignin fractions isolated from softwood kraft cooking liquor via the LignoBoost methodology. These studies were undertaken by researchers at Chalmers University of Technology (Professor H. Theliander’s group) and Georgia Institute of Technology (Professor Ragauskas’ group) while Dr. Ragauskas held the Fulbright Chair in Alternative Energy. Our studies in this field are continuing and are directed at converting select fractions of kraft black liquor lignin to a valuable green biopower, diesel and bio-material derivatives.

A copy of the journal cover highlighting a portion of these studies can be found at:

- http://www.ipst.gatech.edu/faculty_new/faculty_bios/ragauskas/journal_covers/Green%20Chemistry%202010.pdf

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 (user name: fellows; password: IAWSWOOD) 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.

Frank Beall

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: frank.beall@berkeley.edu

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: frank.beall@berkeley.edu

IAWS



www.iaws-web.org