



# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

## Draft Program

SUNDAY 4 JUNE			
1500	First timers and students' workshop (TBC)		
1700	Opening		
1800	Welcome drinks and canapes		
MONDAY 5 JUNE			
08:30	<b>OPENING</b> Welcome to Country Division 5 Coordinator Conference Chair Opening Video		
09:10	<b>Keynote</b> TBC		
10:00	Morning Tea		
C1	<b>S12: Plantations Meet Carbon Reduction</b>	<b>S29: Wood Anatomy, Chemistry and Function</b>	<b>S2: Sensor Networks</b>
Chair	<b>Juan Guo</b>	<b>Roger Meder</b>	<b>Xiping Wang, Peter Marshall</b>
10:30	Lignin a potential source for carbon-negative building materials. <b>Zhiyong Cai</b>	Effect of mycorrhiza inoculation on the growth of <i>Khaya senegalensis</i> (a. Juss.) seedlings. <b>Adejoke Akinyele</b>	Discbot beyond radiata pine: expanding the use of a novel tool for mapping intra-stem wood quality. <b>Yvette Dickinson</b>
10:50	Biomass and carbon sequestration in spotted gum <i>Corymbia citriodora</i> subsp. <i>variegata</i> (CCV) plantations. <b>Trinh Huynh</b>	First successful separation of freestanding nano lamella from wood cell wall. <b>Yun Lu</b>	Corebot- adaption of an existing robotic tree disc scanning platform for use with 12 mm increment cores. <b>John Lee</b>
11:10	Advances in solar wood drying. <b>Gary Waugh</b>	Valorisation of suberin from birch bark. <b>Risto Korpinen</b>	A comparison of Resi and Discbot. <b>Jonathan Harrington</b>
11:30	Enhanced green hydrogen production from woody biomass through thermochemical conversions and CO <sub>2</sub> capture. <b>Shusheng Pang</b>	Regulation of gene expression across ecotypes of wood transcriptome in <i>Tectona grandis</i> . <b>Maheswari Patturaj</b>	Online processing of resi traces for commercial inventory of plantation wood quality. <b>Geoffrey Downes</b>
11:50	Technical feasibility as structural component and the potential of carbon storage in house buildings: case study on <i>Albizia</i> wood. <b>Jamaludin Malik</b>	Among-family variations of radial variation patterns of wood properties in Japanese cedar, hinoki cypress, and Japanese larch. <b>Yusuke Takahashi</b>	Using ground penetrating radar to predict log moisture content of commercially important Canadian softwoods. <b>Isabelle Duchesne</b>
12:10	Evaluation of biogenic carbon content of xylem of representative plantation trees in China. <b>Yafang Yin</b>	Evaluation of xylem maturation manner by radial variation modeling of wood properties in fast-growing tree species in Japan. <b>Ikumi Nezu</b>	A microactuator device for the detection of termite damage in timber poles. <b>Sebastian Oberst</b>
12:30	LUNCH		
13:30	<b>IAWS Academy Lecture</b> Advances in the biomimicry of wood for development of novel additively manufactured materials. <b>Phil Evans</b>		
C2	<b>S21: IAWA-IUFRO Symposium: Promoting Data-Driven Methods for Species and Origin Identification of Forest Products</b>	<b>S28: Forests, Climate and Environment</b>	<b>S3: Roundwood Sorting and Grading</b>
Chair	<b>Yin Yafang, Ratih Damayanti</b>	<b>Sam van Holsbeeck</b>	<b>Udo Sauter, Franka Bruchert</b>



# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

14:20	Applications in the scope of anatomical wood identification using sub- $\mu$ CT based volumetric images. <b>Volker Haag</b>	Quantification of climate change impacts of harvested wood products with a consideration of time. <b>Poonam Khatri</b>	Distribution and quantification of wetwood in Silver fir ( <i>Abies alba</i> Mill.) by x-ray-based computed tomography (CT). <b>Franka Brüchert</b>
14:40	Developing integrated timber data to enhance legal timber trade of the APEC through Xylaria networking: progress. <b>Ratih Damayanti</b>	Planting trees in areas affected by major tropical cyclones. <b>Gelito Inácio Franco Sululu</b>	Comparison of predicted southern pine log MOE for various non-destructive tools. <b>Chandan Kumar</b>
15:00	The use of NIRS technology in the traceability of a commercial cargo of <i>Cedrela Odorata</i> from origin to the final consumer in the Brazilian market. <b>Jez Braga</b>	Phytoremediation of soil contaminated with spent lubricating oil using <i>Jatropha curcas</i> Linn. <b>Adejoke Akinyele</b>	Towards the use of small-diameter oak roundwood for structural purposes: Determination of mechanical properties by non-destructive and destructive testing as prerequisite for mechanical log grading. <b>Franka Brüchert</b>
15:20	How to digitize a wood collection? <b>Hans Beeckman</b>	Potential of wood modification technologies for mitigating climate change: A review. <b>Benson Gusamo</b>	Comparison of different roundwood measurement methods along the forestry-wood-chain. <b>Jörg Staudenmaier</b>
15:40	Afternoon Tea		
C3	<b>S18: Credence Attributes</b>	<b>S20: Outcomes from Forest Products Culture</b>	<b>S15.1: Future Pathways to Forests, Business and Sustainability 1</b>
Chair	<b>Karen Bayne</b>	<b>Jinling Su, Howard Rosen</b>	<b>Anne Toppinen, Lei Wang</b>
16:10	The nexus between citizen preferences towards wooden building materials and choosing renovations over demolish & build. <b>Anne Toppinen</b>	Woods used during 6th to 10th century in Himachal Pradesh state of India. <b>Sangeeta Gupta</b>	Tradeoffs between forest ecosystem services in southeast Alaska: the influence of second growth timber management. <b>David Nicholls</b>
16:30	Perceived value of sustainable wine packaging. <b>Robert Radics</b>	Black ash as a cultural keystone species: W8banakiak issues and perspectives. <b>Laurence Boudreault</b>	Circular use of timber in Norway: Policy, possibilities, and projects. <b>Lone Ross</b>
16:50	New Zealand's reputation in the international timber market and the performance of the forestry sector in delivering credence attributes. <b>Karen Bayne</b>	<a href="#">The History and Impacts of World Wood Day</a> <b>Howard Rosen</b>	Carbon footprint of reused and recycled wood products. <b>Lars Gunnar Furelid Tellnes</b>
17:10	Day Close		
<b>TUESDAY 6 JUNE</b>			
08:20	Housekeeping		
08:30	<b>Plenary</b>		
	Title TBA <b>Marie-France Thevenon</b>		
C4	<b>S17.1: Bamboo 1</b>	<b>S5: Wood Protection Systems for Long Term Carbon Storage</b>	<b>S24: Wood and Forest Cultural Heritage in Australia, including Aboriginal Wood and Forest Culture</b>
Chair	<b>Muralidharan Enarth Maviton, Fu Jinhe</b>	<b>Marie-France Thevenon</b>	<b>Howard Rosen, Charlotte Chia Hua Lee</b>
09:20	A novel engineered bamboo products made with arc-shaped bamboo strips. <b>Benhua Fei</b>	Analysis of changes of colour and contact angle of wettability after thermal treatment process under atmospheric conditions. <b>Marius Aleinikovas</b>	Understanding the language of the trees. <b>Victor Steffensen</b>



# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

09:40	Development of biomass-modified bamboo fibers for reinforcing asphalt-based composites. <b>Wendy Liu</b>	Zinc borate in wood coatings. <b>Claudia Marcela Ibañez</b>	The culture of design with timber in Australia's commercial and industrial buildings. <b>Gregory Nolan</b>
10:00	Innovative utilization of bamboo for drinking straws manufacturing with low cost and high performance. <b>Changhua Fang</b>	High subterranean termite resistance of H2- and H3-weathered tropical hardwood kempas ( <i>Koompassia malaccensis</i> ) envelope-treated with a vegetal extracts-cypermethrin-based formulation. <b>Andrew Wong</b>	Cultural presentations in reflection of forest and forest products culture in Australia. <b>Charlotte Chia-Hua Lee</b>
10:20	Properties of ply bamboo manufactured from two Malaysian bamboo species. <b>Mohd Khairun Anwar Uyup</b>	Functionalised wood-based materials and products for carbon capture and storage. <b>Tripti Singh</b>	Ancient voice of the future. <b>David Hudson</b>
10:40	Morning Tea		
11:00	Elevator pitches (90 min) See page 6 for details		
12:30	LUNCH		
C5	<b>S13: Teakwood Quality: Challenges and Opportunities</b>	<b>S8: Durable Hardwood Plantations</b> <b>S7: Natural durability of wood species</b>	<b>S26.1: Community and First Nations Forestry 1</b>
Chair	<b>Thulasidas, S Sandeep</b>	<b>Jeff Morrell, Andrew Wong</b>	
13:20	The role of National Policies and strategies in ensuring sustainable supply of wood from Teak plantations in Ghana. <b>Valerie Nassah</b>	Effect of stand density on Hoop pine ( <i>Araucaria cunninghamii</i> ) and Gympie messmate ( <i>Eucalyptus cloeziana</i> ) growth and stem volume over 31 years. <b>Nahuel Pachas</b>	Benefits and Challenges of Community Forest Projects in Ghana. <b>John Narh</b>
13:40	Supply chain management of forest biomass utilization for bioenergy industry development. <b>Jingxin Wang</b>	Natural durability of plantation and native forest spotted gum ( <i>Corymbia</i> spp.). <b>Lesley Francis</b>	Non-industrial private forest owners' attitudes and forest management decisions. <b>Altamash Bashir</b>
14:00	Analyzing the profitability of scaffolding poles market from teak first thinning. <b>Nelly Bedijo</b>	Marine performance of Papua New Guinea plantation and secondary forest timber species. <b>Elaine Galore</b>	Environmental and economic analysis of small-scale wood energy systems within Alaskas Native communities. <b>David Nicholls</b>
14:20	Site management models for optimum wood yield of <i>Tectona grandis</i> Linn. f plantations in Nigeria. <b>Peter Ige</b>	Naturally durable timbers in log buildings of New Zealand. <b>Tripti Singh</b>	Design guidelines for sustainable use and management of forests focusing on the empowerment of local people. <b>Kazuyo Nagahama</b>
14:40	<b>TBA</b>	<b>TBA</b>	Mixedwood management in British Columbias boreal forest enhances biodiversity, sustainability, and First Nations traditional values. <b>Christopher Hawkins</b>
15:00	Afternoon Tea		
15:20	Elevator pitches (70 min) See page 8 for details		
16:30	Working Group Business Meetings RG-05.01 to RG-05.12		
17:30	Day Close		



# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

## WEDNESDAY 7 JUNE

	Housekeeping		
08:20	<b>Plenary</b>		
08:30	Title TBA <i>Gavin Matthews</i>		
C6	<b>S10: Massive timber and EWP</b>	<b>S16: Transiting to the bioeconomy: the contributions of non-timber forest products</b>	<b>S17.2: Bamboo 2</b>
	<b>Roger Meder</b>	<b>Carsten Smith-Hall, James Chamberlain</b>	<b>Fang Changhua, Fu Jinhe</b>
09:20	Bonding and mechanical properties of cross-laminated timber (CLT) manufactured from tropical hardwoods. <i>Alia Syahirah Yusoh</i>	Theorising and analysing the forest-based bioeconomy through a global production network lens. <i>Carsten Smith-Hall</i>	Photo-curing 3D printing of biocomposites from bamboo fibers and palm oil-based resins. <i>Wendi Liu</i>
09:40	Investigation of the performances of manufactured bagasse particleboard with treated Bagasse particles by tannin/ furfural resin. <i>Marie-France Thevenon</i>	Improving social resilience through Food Forests - an alternative plantation regime. <i>Karen Bayne</i>	The role of bamboo pith ring in gluing interface. <i>Lin Chen</i>
10:00	Innovative mass timber seismic force resisting systems: full-scale testing of a three-story mass timber building. <i>Arijit Sinha</i>	Enzyme aided extraction of essential oils: A developmental approach towards oil processing. <i>Rashmi Sehrawat</i>	Research and application of bamboo bridge and building in China. <i>John Changhuan Shao</i>
10:20	Projecting US residential and nonresidential construction activities and carbon benefits of adopting mass timber under contrasting socioeconomic futures. <i>Prakash Nepal</i>	Opening the treasure chest: Nontimber forest products in a forest-based bioeconomy. <i>James Chamberlain</i>	Bamboo for landscape restoration: Case studies from around the world. <i>Muralidharan Enarth Maviton</i>
10:40	Is Eucalyptus pellita grown in the tropics suitable for EWP and massive timber? <i>Roger Meder</i>	Current status and market analysis for aloe products in Samburu county, Kenya. <i>Elyas Hassan Mohamed</i>	TBA
11:00	Morning Tea		
C7	<b>S1.1: In-forest Wood Quality Assessment, 1</b>	<b>S27: Agroforestry</b>	<b>S15.2: Future Pathways to Forests, Business and Sustainability 2</b>
Chair	<b>John Moore, Yvette Dickinson</b>	<b>David Lee</b>	<b>Anders Nyrud, Rajat Panwar, Amin Arian</b>
11:20	An individual tree growth and wood properties model for plantation forests. <i>David Drew</i>	Agroforestry in rural homegardens in Sri Lanka: Contributions to achieve the UN sustainable development goals (SDGs). <i>Mangala de Zoysa</i>	Retrofitting with wood: the pathways to a sustainability transition in the rural context. <i>Anne Viljanen</i>
11:40	Impact of needle wear on resistance drilling to assess wood quality. <i>Vilius Gendvilas</i>	Agroforestry of bamboo in Tana Toraja, Indonesia. <i>Merryana Kiding Allo</i>	Perceived value of data for enhancing corporate environmental sustainability: Case tissue business. <i>Anne Toppinen</i>
12:00	Acoustic wave behavior in standing trees and its implication to in-forest wood quality assessment. <i>Xiping Wang</i>	The economic contribution of coffee-based agroforestry for smallholder farmers in case of Guraferda District, Bench Maji Zone, Southwestern Ethiopia. <i>Ferede Meseret</i>	Market access opportunities for engineered wood products manufactured from senile coconut palms. <i>Divnesh Swamy</i>





# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

12:20	A comparison of radial wood property variation in southern pines between IML Resi predictions and wood increment cores analysed by SilviScan. <b>David Lee</b>	Establishment of silvopastoral systems in private native forest in Southern Queensland, Australia. <b>Nahuel Pachas</b>	TBA
12:40	LUNCH		
13:30	<b>Elevator Pitches (75 Min)</b> (See page 8/9 for details)		
14:45	Afternoon Tea		
C8	<b>S11: New and Emerging Species for Forest Plantations</b>	<b>S9: Global Timber Durability Research</b> <b>S6: Termite Management</b>	<b>S23: Interdisciplinary Wood Identification</b> <b>S22: From Wood Anatomy to DNA: Species and Provenance Tracking for Modern and Archaeological Woods</b>
	<b>Roger Meder</b>	<b>Tripti Singh, Jack Norton, Rod Stirling</b>	<b>Cady Lancaster, Victor Deklerck, Andrew Lowe, Paulo Cerutti</b>
15:00	Specialty timber market development - determining imported timber traits. <b>Karen Bayne</b>	Metal migration from treated wood vineyard trellising into soil and vine biomass 30 months after installation. <b>Gerald Presley</b>	Application of GC and GC-TOFMS-based metabolomic profiling for forensic identification of mahogany and rosewood species. <b>Isabelle Duchesne</b>
15:20	Cape York Sandalwood, an emerging native species for Indigenous forestry. <b>David Lee</b>	Performance of CCA and ACQ treated radiata pine heartwood decking: 24-year trial. <b>Jeffrey Morrell</b>	Ancient DNA uncovers the information of tree species used in ancient timber architecture to reveal the development of human civilization. <b>Lichao Jiao</b>
15:40	Exotic <i>Grevillea robusta</i> tree improvement programme in northern hemisphere. <b>Maneesh Singh Bhandari</b>	Effects of moisture content cycles on screwed timber connections. <b>Luis Yerman</b>	Multiple DNA approaches for identifying Southeast Asian timber species. <b>Melita Low</b>
16:00	Selection of candidate species for productive tree plantations in Borneo, Malaysia <b>Yani Japarudin</b>	Study on biocide-free wood modification techniques and how they impact on the termite resistance of wood. <b>Holger Militz</b>	Morphology and anatomy of bark and sapwood of six different Myanmar deciduous trees. <b>Kyi Kyi Khiang</b>
16:20	Population Structure of economically important <i>Shorea robusta</i> in thirteen Indian domains as an indicator of regeneration and future stability. <b>Garima Mishra</b>	Assessment of termite damage in CLT sections using micro-computed tomography. <b>Maryam Shirmohammadi</b>	World Forest ID - science-based solution to verifying forest product identity and origin. <b>Victor Deklerk</b>
16:40	Commercial scale plantations of African mahogany in northern Australia: research and management observations over a decade <b>Alex Lindsay</b>	Comparative durability against subterranean termite attack, white rot and soft rot decay among 68 Malaysian lesser-used or renown commercial hardwoods including planted exotic hardwoods and imported Burmese teak, radiata pine and Douglas Fir. <b>Andrew Wong</b>	Unveiling the isotopic distribution of timber in the Peruvian Amazon. <b>Charlie Watkinson</b>
17:00	Day Close		
19:00 – 22:00	<b>CONFERENCE DINNER</b>		



# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

## THURSDAY 8 JUNE

	<b>THURSDAY 8 JUNE</b>	
8.20	Housekeeping	
8:30	<b>Panel Discussion: Biorefineries</b>	
	<b>Sponsored by: Hurford's</b>	
C10	<b>S14: Biorefineries for Bio-based Products: A New Paradigm of Biomass Utilization Opportunities</b>	<b>S1.2: In-forest Wood Quality Assessment, 2</b>
Chair	<b>David Nicholls, Manuela Romagnoli</b>	<b>Alexis Achim, David Auty, Barry Gardiner</b>
9:10	Biomass derived nanomaterial coatings for postharvest fruit quality control. <b>Qinglin Wu</b>	Compression strength of planted <i>Eucalyptus pellita</i> wood by near-infrared (NIR) spectroscopy. <b>Adlin Roseley</b>
9:30	Phenolation of potassium hydroxide lignin to improve its reactivity. <b>M Sarwar Jahan</b>	Wood and timber properties in even- and uneven-aged Norway spruce stands modeled using a data-fusion approach. <b>Jiri Pyörälä</b>
9:50	Rapid chemical composition assessment of loblolly pine forest residues targeted for use in pyrolysis with near-infrared hyperspectral imaging. <b>Sameen Raut</b>	A stand simulator to predict strength grade in Sitka spruce stands in Great Britain: a preliminary version. <b>Ruben Manso</b>
10:10	Advanced biomass inventory control models for biorefinery supply chain management. <b>Nate Anderson</b>	Non-destructive wood quality assessment of commercially grown <i>Eucalyptus pellita</i> on the Tiwi Islands, Northern Australia. <b>Listya Mustika Dewi</b>
10:30	Pyrolysis self-activation in vacuum: An environmentally friendly method to transform biowaste into activated carbon and combustible gas. <b>Qi Gao</b>	Automated microscopy analysis for quantifying resin canals in loblolly pine experiencing dieback. <b>Nawa Raj Pokhrel</b>
10:50	Morning Tea	
C11	<b>S26.2: Community and First Nations Forestry 2</b>	<b>S4: Material Characterisation</b>
Chair	<b>Pekka Saranpää, Eric Hanson</b>	<b>Xiping Wang</b>
11:10	Design guidelines for sustainable use and management of forests focusing on the empowerment of local people. <b>Kazuyo Nagahama</b>	Radial scanning of loblolly pine samples using near-infrared hyperspectral imaging: impact of surface scanned, sample thickness and extractives on partial least squares regression models. <b>Joseph Dahlen</b>
11:30	Contribution of social enterprises in energy sector to conservation and gender-based violence reduction in communities adjacent to protected areas in Uganda. <b>Alex Agaba</b>	Condition assessment of wood structure of Jin Zhongdu watergate site. <b>Houjiang Zhang</b>
11:50	Building bridges for the Uapishka Biodiversity Reserve: How to bring together a First Nation and a conservation NGO behind a common vision? <b>Andréanne Girard-Lemieux</b>	Using Pilodyn for rapid field assessment of decay condition in hardwood trailer decking. <b>Xinfeng Xie</b>
12:10	LUNCH	
13:00	<b>Division 5 Research Group Feedback and Discussion</b>	
14:00	<b>CLOSING</b>	
14:30	AFTERNOON TEA	



# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

Elevator Pith Session 1 (Tuesday Morning)	
11:00	Performance evaluation of briquette produced from three selected tropical hard wood species in Nigeria. <b>Idowu Abimbola Adegoke</b>
11:05	Preview of the marketing of firewood in the Federal Capital Territory Abuja, Nigeria. <b>Michael M.A Oke</b>
11:10	A sustainable and clean future with bamboo: a substitute for plastic. <b>Yanxia Li</b>
11:15	Chess as a method of combination and observation in life cycle analysis of forest products versus chess pieces as certified forest products and services - a sustainable use of forest products. <b>Vitalie Gulca</b>
11:20	Pictorial representation of the forestry usage in the Federal Capital Territory, Abuja, Nigeria. <b>Michael M.A Oke</b>
11:25	Small-scale <i>Acacia decurrens</i> fuel wood production and its financial feasibility in Fagta Lekoma, Awi Zone, Ethiopia. <b>Takele Ferede Bayh</b>
11:30	Forests and forestry reserves as security threat in Federal Capital Territory, Abuja, Nigeria. <b>Michael M.A Oke</b>
11:35	Information disclosure on environmental activities and corporate values of wood industry. <b>Kenji Nagasaka</b>
11:40	Current state and future opportunities for social responsibility in New Zealand's Forest sector. <b>Grace B Villamor</b>
11:45	Wood anatomy of five native species of Paraguay of the Fabaceae family. <b>Felicia Zárate</b>
11:50	Unexpected snowfall events accelerated warming effect of heterotrophic respiration in Ailao Mountain subtropical evergreen broadleaf forest in Southwest China. <b>Zayar Phy</b>
11:55	Predicting the potential distribution areas of <i>Phacochoerus africanus</i> (Gmelin 1788) and <i>Potamochoerus porcus</i> (Linnaeus 1758) in Benin. <b>Florian Gbodja Codjia</b>
12:00	Ecotourism development as tool for environmental conservation and its implication to community livelihoods, in case of Sheka Forest biosphere reserve, in south west Ethiopia. <b>Ferede Meseret</b>
12:05	Socio-cultural relationships of non-wood forest products. <b>Michelle Baumflek</b>
12:10	
12:15	
12:20	
12:25	
Elevator Pith Session 2 (Tuesday Afternoon)	
15:20	Study on the coarse root distribution of standing trees in Northeast China based on ground penetrating radar (GPR). <b>Guangqiang Xie</b>
15:25	Non-destructive determination of Silver Birch ( <i>Betula pendula</i> Roth.) and Black Alder ( <i>Alnus glutinosa</i> (L.) Gaertn) wood hardness in different genetic families. <b>Benas Šilinskas</b>
15:30	Quantify and predict wood and fiber properties grown under intensively managed loblolly pine plantations.



# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

	<b>Nawa Raj Pokhrel</b>
15:35	Determination of NMR surface relaxivity for the macropore system from wood cell lumen. <b>Zhi Jin</b>
15:40	Model interpretability vs model complexity: Comparing partial least squares and artificial neural network wood property near infrared spectroscopy models. <b>Sameen Raut</b>
15:45	Unlocking the secrets of wood: The power of X-ray CT scanning on increment cores. <b>Joris Van Acker</b>
15:50	Comparative study on physical and mechanical properties of plywood produced from Eucalyptus and Poplar veneer. <b>Su Myint Than</b>
15:55	Effect of temperature on the structure and properties of rattan carbon-encapsulated iron particles. <b>Lili Shang</b>
16:00	Change of liquid-solid phase transition behaviour of water in wood with moisture contents. <b>Jingbo Shi</b>
16:05	Research on anti-fungal mechanism of <i>Dalbergia retusa</i> extract to <i>Gloeophyllum trabeum</i> . <b>Bin Xu</b>
16:10	Wood mechanical properties and their correlation with microstructure in Poplar clones. <b>Lanlan Shi</b>
16:15	Analysis of carbon reduction effect by biomass production at short rotation coppice forest of Poplar species in South Korea. <b>Yoon-Seong Chang</b>
16:20	Ironwood in Seri Land. <b>Jinling Su</b>
16:25	
	<b>Elevator Pith Session 3 (Wednesday Afternoon)</b>
13:30	Natural bamboo coil springs with high cyclic-compression durability fabricated via a hydrothermal-molding-fixing method. <b>Xin Wei</b>
13:35	Effects of steam-heating treatment on basic properties of rattan cane <i>Calamus simplicifolius</i> . <b>Shumin Yang</b>
13:40	Nonlinear mixed-effects height to crown base model for Moso bamboo ( <i>Phyllostachys heterocycla</i> (Carr.) Mitford cv. <i>Pubescens</i> ) in Eastern China. <b>Xiao Zhou</b>
13:45	Dynamics of stand productivity in Moso bamboo forest after strip cutting <b>Yaxiong Zheng</b>
13:50	Bamboo culm grading and its effect on the Properties of flattened bamboo boards. <b>Huanrong Liu</b>
13:55	Synergistic effects of bamboo cells during shrinkage process. <b>Jing Yuan</b>
14:00	Bamboo wastes to solid biofuel in China: Opportunities, technologies, applications, and challenges. <b>Zhijia Liu</b>
14:05	Modeling degraded bamboo shoots in Southeast China. <b>Xiao Zhou</b>
14:10	Study on manufacture process of bamboo/wood composite engineering laminated lumber. <b>Huanrong Liu</b>
14:15	Bamboo viscoelasticity mechanisms following hemicellulose degradation treatment. <b>Xinxin Ma</b>





# THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

[www.iufro-div5-2023.com](http://www.iufro-div5-2023.com)

14:20	Graded variations in ultrastructure and topochemistry of rattan cane ( <i>Calamus simplicifolius</i> ). <b>Long Feng</b>
14:25	Visualising preferential dissolution of hydroxycinnamates by Raman imaging in <i>Miscanthus Sinensis</i> . <b>Jianfeng Ma</b>
14:30	The potential of bamboo as a substitute for plastic: A perspective from carbon footprint. <b>Xiaohua Li</b>
14:35	Towards a total transformation of teak wood in Togo: the contribution of smallholders in the city of Asrama. <b>Komlan Houelete</b>