



THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

Program

SUNDAY 4 JUNE			
14:00	Registration Open		Auditorium Foyer
14:30	Student/Early Researchers Workshop		Auditorium B
15:30	CONFERENCE OPENING		Auditorium B
	Welcome to Country Conference Opening Address Andrew Wong Panel Discussion: IUFRO Latest Research and Technology in Australia David Lee, Hulton King, Jeff Morrell, Sam van Holsbeek and Roger Meder		
17:00 – 19:00	Welcome Reception Sponsored by HQ Plantations		Terrace
MONDAY 5 JUNE			
08:00	Registration Open		Auditorium Foyer
09:00	Housekeeping		Auditorium B
09:10	Plenary		Auditorium B
	Certification and Sustainable Forest Management Matt de Jongh		Session Chair: Hulton King Sponsored by Responsible Wood
10:00	Morning Tea		Foyer
C1	S1.1: In-forest Wood Quality Assessment, 1 Sponsored by FWPA	S22&23: Application and Prospects of Interdisciplinary Forest Product Identification and Traceability Approaches	S4: Material Characterisation
Chair	Yvette Dickinson	Andrew Lowe, Victor Deklerck & Lichao Jiao	Franka Brüchert
Room	Auditorium B	Meeting Room M2	Meeting Room M3
10:30	An individual tree growth and wood properties model for plantation forests. David Drew	Unveiling the isotopic distribution of timber in the Peruvian Amazon. Charlie Watkinson	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. Joseph Dahlen
10:50	Impact of needle wear on resistance drilling to assess wood quality. Vilius Gendvilas	Ancient DNA uncovers the information of tree species used in ancient timber architecture to reveal the development of human civilization. Lichao Jiao	Condition assessment of wood structure of Jin Zhongdu watergate site. Houjiang Zhang
11:10	Acoustic wave behavior in standing trees and its implication to in-forest wood quality assessment. Xiping Wang	Multiple DNA approaches for identifying Southeast Asian timber species. Melita Low	Using Pilodyn for rapid field assessment of decay condition in hardwood trailer decking. Xinfeng Xie (Xiping Wang)
11:30	A microactuator device for the detection of termite damage in timber poles. Sebastian Oberst	World Forest ID - science-based solution to verifying forest product identity and origin. Victor Deklerck	Model interpretability vs model complexity: Comparing partial least squares and artificial neural network wood property near infrared spectroscopy models. Sameen Raut
11:50	Automated microscopy analysis for quantifying resin canals in loblolly pine experiencing dieback. Nawa Raj Pokhrel	Application of GCxGC-TOFMS-based metabolomic profiling for forensic identification of mahogany and rosewood species. Isabelle Duchesne	Unlocking the secrets of wood: The power of X-ray CT scanning on increment cores. Joris Van Acker



THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

12:10	LUNCH			Foyer
13:10	IAWS Academy Lecture Advances in the biomimicry of wood for development of novel additively manufactured materials. <i>Phil Evans</i>			Auditorium B Session Chair: Geoffrey Downes
C2	S21: IAWS-IUFRO Symposium: Promoting Data-Driven Methods for Species and Origin Identification of Forest Products	S20.1: Outcomes from Forest Products Culture 1	S18: Credence Attributes	
Chair	Yafang Yin	Charlotte Chia-Hua Lee	Sam van Holsbeeck	
	Auditorium B	Meeting Room M2	Meeting Room M3	
14:00	Applications in the scope of anatomical wood identification using sub- μ CT based volumetric images. <i>Volker Haag</i>	Wood culture in Burning man: the ritual use of wood. <i>Mona Wu</i>	The nexus between citizen preferences towards wooden building materials and choosing renovations over demolish & build. <i>Anne Toppinen</i>	
14:20	Developing integrated timber data to enhance legal timber trade of the APEC through Xylaria networking: progress. <i>Listya Dewi</i>	Woods used during 6th to 10th century in Himachal Pradesh state of India. <i>Sangeeta Gupta</i>	Perceived value of sustainable wine packaging. <i>Robert Radics</i>	
14:40	How to digitize a wood collection? <i>Yafang Yin</i>	The History and Impacts of World Wood Day <i>Howard Rosen</i>	New Zealand's reputation in the international timber market and the performance of the forestry sector in delivering credence attributes. <i>Karen Bayne</i>	
15:00	Afternoon Tea			Foyer
C3	S3: Roundwood Sorting and Grading	S15.1: Future Pathways to Forests, Business and Sustainability 1	S24: Wood and Forest Cultural Heritage in Australia, including Aboriginal Wood and Forest Culture	
Chair	Xiping Wang	Anne Toppinen	Laurence Boudreault	
	Auditorium B	Meeting Room M2	Meeting Room M3	
15:30	Distribution and quantification of wetwood in Silver fir (<i>Abies alba</i> Mill.) by x-ray-based computed tomography (CT). <i>Franka Bröchert</i>	Tradeoffs between forest ecosystem services in southeast Alaska: the influence of second growth timber management. <i>David Nicholls</i>	The culture of design with timber in Australia's commercial and industrial buildings. <i>Gregory Nolan</i>	
15:50	Investigating the Influence of Environmental and Silvicultural Factors on Wood Quality of Southern Pines grown in south-east Queensland and Northern New South Wales <i>Chandan Kumar</i>	Circular use of timber in Norway: Policy, possibilities, and projects. <i>Lone Ross</i>	Cultural presentations in reflection of forest and forest products culture in Australia. <i>Charlotte Chia-Hua Lee</i>	
16:10	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. <i>Udo Sauter</i>	Identification of suitable veneer-based engineered wood products for manufacturing using coconut veneer. A weighted decision matrix approach <i>Divnesh Swamy</i>	Ancient voice of the future. <i>David Hudson</i>	
16:30	Comparison of different roundwood measurement methods along the forestry-wood-chain. <i>Jörg Staudenmaier</i>	Carbon footprint of reused and recycled wood products. <i>Johann Kristian Næss</i>		
16:50	Day Close			
	FREE EVENING – SEE THE APP FOR SUGGESTIONS.			



THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

TUESDAY 6 JUNE

8:00	Registration and Trade Open			Foyer
08:20	Housekeeping			Auditorium B
08:30	Plenary			Auditorium B
	How long will my wood last? An overview of wood durability and protection. <i>Marie-France Thevenon</i>			Session Chair: Jeff Morrell Sponsored by: Forest & Wood Products Australia
C4	S13: Teakwood Quality: Challenges and Opportunities	IUFRO-IRGWP SESSION S5: Wood Protection Systems for Long Term Carbon Storage	S29: Wood Anatomy, Chemistry and Function	
Chair	Thulasidas PK	Marie-France Thevenon	David Drew	
	Auditorium B	Meeting Room M2	Meeting Room M3	
09:20	Supply chain management of forest biomass utilization for bioenergy industry development. <i>Jingxin Wang</i>	Zinc borate in wood coatings. <i>Claudia Marcela Ibañez</i>	Effect of mycorrhiza inoculation on the growth of <i>Khaya senegalensis</i> (a. Juss.) seedlings. <i>Adejoke Akinyele</i>	
09:40	Towards a total transformation of teak wood in Togo: the contribution of smallholders in the city of Asrama. <i>Komlan Houelete</i>	Analysis of changes of colour and contact angle of wettability after thermal treatment process under atmospheric conditions. <i>Marius Aleinikovas</i>	Among-family variations of radial variation patterns of wood properties in Japanese cedar, hinoki cypress, and Japanese larch. <i>Yusuke Takahashi</i>	
10:00	Situation and trends of trade and market access of tropical timber and timber products. <i>Tetra Yanuaridi</i>	Functionalised wood-based materials and products for carbon capture and storage. <i>Tripti Singh</i>	Valorisation of suberin from birch bark. <i>Risto Korpinen</i>	
10:20	TEAKNET update presentation <i>Thulasidas PK</i>	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. <i>Andrew Wong</i>	Evaluation of xylem maturation manner by radial variation modeling of wood properties in fast-growing tree species in Japan. <i>Ikumi Nezu</i>	
10:40	Morning Tea			Foyer
C5	S14: Biorefineries for Bio-based Products: A New Paradigm of Biomass Utilization Opportunities	IUFRO-IRGWP SESSION S8: Durable Hardwood Plantations S7: Natural durability of wood species		
Chair	David Nicholls	Andrew Wong		
	Auditorium B	Meeting Room M2		
11:00	Biomass derived nanomaterial coatings for postharvest fruit quality control. <i>Qinglin Wu</i>	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. <i>Nahuel Pachas</i>		
11:20	Phenolation of potassium hydroxide lignin to improve its reactivity. <i>M Sarwar Jahan</i>	Natural durability of mid-rotation plantation Gympie messmate and red mahogany <i>Maryam Shirmohammadi</i>		
11:40	Rapid chemical composition assessment of loblolly pine forest residues targeted for use in pyrolysis with near-infrared hyperspectral imaging. <i>Sameen Raut</i>	Marine performance of Papua New Guinea plantation and secondary forest timber species. <i>Elaine Galore</i>		
12:00	Advanced biomass inventory control models for biorefinery supply chain management. <i>Nate Anderson</i>	Naturally durable timbers in log buildings of New Zealand. <i>Tripti Singh</i>		
12:20	LUNCH			



THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

C6	S12: Plantations Meet Carbon Reduction	S2: Sensor Networks	S26: Community and First Nations Forestry
Chair	Juan Guo	Xiping Wang	Hulton King
	Auditorium B	Meeting Room M2	Meeting Room M3
13:20	Lignin a potential source for carbon-negative building materials. Zhiyong Cai	Discbot beyond radiata pine: expanding the use of a novel tool for mapping intra-stem wood quality. Yvette Dickinson	Environmental and economic analysis of small-scale wood energy systems within Alaskas Native communities. David Nicholls
13:40	Biomass and carbon sequestration in spotted gum <i>Corymbia citriodora</i> subsp. variegata (CCV) plantations. Trinh Huynh	Corebot- adaption of an existing robotic tree disc scanning platform for use with 12 mm increment cores. John Lee	Design guidelines for sustainable use and management of forests focusing on the empowerment of local people. Kazuyo Nagahama
14:00	Advances in solar wood drying. Gary Waugh	Online processing of Resi traces for commercial inventory of plantation wood quality. Geoffrey Downes	Mixedwood management in British Columbias boreal forest enhances biodiversity, sustainability, and First Nations traditional values. Christopher Hawkins
14:20	Evaluation of biogenic carbon content of xylem of representative plantation trees in China. Yafang Yin	A comparison of Resi and Discbot. John Lee	Building bridges for the Uapishka Biodiversity Reserve: a First Nation vision to think a better governance. Andréanne Girard-Lemieux
14:40	Analysis of carbon reduction effect by biomass production at short rotation coppice forest of Poplar species in South Korea. Yoon-Seong Chang	Using ground penetrating radar to predict log moisture content of commercially important Canadian softwoods. Isabelle Duchesne	
15:00	Afternoon Tea		
	Day Close		
	FREE AFTERNOON TO EXPLORE CAIRNS. See conference app for suggestions.		
	WEDNESDAY 7 JUNE		
08:00	Registration Open		Foyer
08:20	Housekeeping		Auditorium B
08:30	Plenary		Auditorium B Sponsored by Hurford's
	Title Massive Timber Session Chairs: Roger Meder & Jonathon Harrington		
C7	S10: Massive timber and EWP	S20.2: Outcomes from Forest Products Culture 2	S28: Forests, Climate and Environment
	Roger Meder	Jinling Su	Pekka Saranpää
	Auditorium B	Meeting Room M2	Meeting Room M3
09:20	Bonding and mechanical properties of cross-laminated timber (CLT) manufactured from tropical hardwoods. Alia Syahirah Yusoh	Importance of Educating Our Children About Forest Products Culture Ping Yang	Quantification of climate change impacts of harvested wood products with a consideration of time. Poonam Khatri
09:40	Investigation of the performances of manufactured bagasse particleboard with treated Bagasse particles by tannin/ furfural resin. Marie-France Thevenon	Socio-cultural relationships of non-wood forest products Michelle Baumflek	Phytoremediation of soil contaminated with spent lubricating oil using <i>Jatropha curcas</i> Linn. Adejoke Akinyele
10:00	Projecting US residential and nonresidential construction activities and carbon benefits	The importance of the International Journal of Wood Culture Michael Grabner	Investigating host preferences and environmental conditions for the



THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

	of adopting mass timber under contrasting socioeconomic futures. Prakash Nepal		development of sandalwood in the tropics Duc Bui
10:20	Is Eucalyptus pellita grown in the tropics suitable for EWP and massive timber? Roger Meder	Black ash as a cultural keystone species: W8banakiak issues and perspectives. Laurence Boudreault	Planting trees in areas affected by major tropical cyclones. Gelito Inácio Franco Sululu
10:40	Morning Tea		
C8	S27: Agroforestry	S15.2: Future Pathways to Forests, Business and Sustainability 2	
Chair	David Lee	Eric Hansen	
	Auditorium B	Meeting room M2	
11:00	Agroforestry systems for biodiversity conservation in human modified landscapes of Fiji Taioti Tiraon	Retrofitting with wood: the pathways to a sustainability transition in the rural context. Anne Viljanen	
11:20	Establishment of silvopastoral systems in private native forest in Southern Queensland, Australia. Nahuel Pachas	Perceived value of data for enhancing corporate environmental sustainability: Case tissue business. Anne Toppinen	
11:40	The economic contribution of coffee-based agroforestry for smallholder farmers in case of Guraferda District, Bench Maji Zone, Southwestern Ethiopia. Ferede Meseret		
12:00	LUNCH		
	Elevator Pitch Session		Auditorium B
	Chair: Sam van Holsbeeck		
12:50	Imaging and quantification of the cambium and developing xylem in eucalypts using X-ray micro- and nano-computed tomography (CT) David Drew		
12:55	Effects of steam-heating treatment on basic properties of rattan cane <i>Calamus simplicifolius</i> . Shumin Yang		
13:00	Information disclosure on environmental activities and corporate values of wood industry. Kenji Nagasaka		
13:05	A sustainable and clean future with bamboo: a substitute for plastic. Yanxia Li		
13:10	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. Benas Šilinskas		
13:15	Quantify and predict wood and fiber properties grown under intensively managed loblolly pine plantations. Nawa Raj Pokhrel		
13:20	The potential of bamboo as a substitute for plastic: A perspective from carbon footprint. Xiaohua Li		
13:25	Ironwood in Seri Land. Jinling Su		
13:30	Modeling and simulating the growth of thinned and non-thinned Eucalyptus forests at the individual tree level Renato Castro		
13:35	Wood anatomy of five native species of Paraguay of the Fabaceae family. Felicia Zárate		
13:40	Change of liquid-solid phase transition behaviour of water in wood with moisture contents. Jingbo Shi		
13:45	Analysis on Comprehensive Benefits of FSC Bamboo Forest Certification in China Enlong Xia		
13:50	In-planta gene editing of PeCCRs promote flavonoid accumulation and reduce lignin content in bamboo leaves. Zhimin Gao		
13:55	Ecotourism development as tool for environmental conservation and its implication to community livelihoods, in case of Sheka Forest biosphere reserve, in southwest Ethiopia. Ferede Meseret		
14:00	Afternoon Tea		



THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

C9	IUFRO-IRGWP SESSION S9: Global Timber Durability Research S6: Termite Management	S17: Bamboo & Rattan	S1.2: In-forest Wood Quality Assessment, 2
	Tripti Singh	Changhua Fang	Mr
	Auditorium B	Meeting Room M2	Meeting Room M3
14:30	Metal migration from treated wood vineyard trellising into soil and vine biomass 30 months after installation. Gerald Presley	Bamboo wastes to solid biofuel in China: Opportunities, technologies, applications, and challenges. Zhijia Liu	Compression strength of planted <i>Eucalyptus pellita</i> wood by near-infrared (NIR) spectroscopy. Adlin Roseley
14:50	Performance of CCA and ACQ treated radiata pine heartwood decking: 24-year trial. Jeffrey Morrell	Development of biomass-modified bamboo fibers for reinforcing asphalt-based composites. Renhui Qiu	Wood and timber properties in even- and uneven-aged Norway spruce stands modeled using a data-fusion approach. Jiri Pyörälä
15:10	Effects of moisture content cycles on screwed timber connections. Luis Yerman	Properties of ply bamboo manufactured from two Malaysian bamboo species. Alia Syahirah	A stand simulator to predict strength grade in Sitka spruce stands in Great Britain: a preliminary version. Ruben Manso
15:30	Study on biocide-free wood modification techniques and how they impact on the termite resistance of wood. Holger Militz	Photo-curing 3D printing of biocomposites from bamboo fibers and palm oil-based resins. Wendi Liu	Non-destructive wood quality assessment of commercially grown <i>Eucalyptus pellita</i> on the Tiwi Islands, Northern Australia. Listya Mustika Dewi
15:50	Assessment of termite damage in CLT sections using micro-computed tomography. Maryam Shirmohammadi	Innovative Utilization of Bamboo for drinking straws manufacturing with low cost and high performance. Changhua Fang	A comparison of radial wood property variation in southern pines between IML Resi predictions and wood increment cores analysed by SilviScan. David Lee
16:10	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. Andrew Wong	Research and application of bamboo bridge and building in China John Changzhan Shao	
16:30	Day Close		
19:00 – 22:00	CONFERENCE DINNER Sponsored by University of Sunshine Coast		
THURSDAY 8 JUNE			
8.20	Housekeeping		
8:30	PLENARY Forest products and bioeconomy strategies Session Chairs: David Nicholls & Pekka Saranpää		
C10	S11: New and Emerging Species for Forest Plantations	S16: Transitioning to the bioeconomy: the contributions of non-timber forest products	
Chair	Trinh Huynh	Carsten Smith-Hall	
	Auditorium B	Meeting Room M2	
9:10	Specialty timber market development - determining imported timber traits. Karen Bayne	Theorising and analysing the forest-based bioeconomy through a global production network lens. Carsten Smith-Hall	
9:30	Cape York Sandalwood, an emerging native species for Indigenous forestry. David Lee	Improving social resilience through Food Forests - an alternative plantation regime. Karen Bayne	
9:50	Exotic <i>Grevillea robusta</i> tree improvement programme in northern hemisphere. Maneesh Singh Bhandari	Current status and market analysis for aloe products in Samburu County, Kenya. Elyas Hassan Mohamed	



THE FOREST TREASURE CHEST

Delivering Opportunities for Everyone

Cairns, Australia 4-8 June 2023



Division 5

www.iufro-div5-2023.com

10:10	Selection of candidate species for productive tree plantations in Borneo, Malaysia Yani Japarudin (Roger Meder)	
10:30	Morning Tea	
10:50	Working Group Business Meetings RG-05.01 to RG-05.12	
12:15	LUNCH	
13:00	Division 5 Research Group Feedback and Discussion	
14:30	CLOSING Conference Close. Andrew Wong	
14:45	AFTERNOON TEA	