

Programme
IRG53 Scientific Conference on Wood Protection, 29 May to 2 June, Bled, Slovenia

Sunday 29 May		
9:00	Fun Run	
14:30-18:00	Registration Rikli Balance Hotel, Rosa Room	
18:00-20:00	Welcome reception, Rikli Balance Lobby	

Monday 30 May		
<i>Arnold</i>	Opening Plenary Session President: Lone Ross Vice-President: Rod Stirling Secretary-General: Mats Westin	
08:30-08:45	Opening Ceremony of the 53rd Annual Conference Opening address by Lone Ross, President, The International Research Group on Wood Protection Miha Humar, Local Organizing Committee Igor Kotnik, Deputy director at Wood Industry Directorate, Ministry of Economic Development and Technology	
08:45-09:20	Plenary 1. Opening of the meeting 2. Approval of the agenda 3. Membership issues - New regular and student members, new corporate members and members deceased 4. Announcement of this year's award recipients - Honorary Life Long Membership - Ron Cockcroft Award	 22-60500 22-60499

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<i>Arnold</i>	Scientific Main Session – keynotes Chair: Rod Stirling	
09:20-09:50	Protection of Venetian pilings from marine borers <u>Daive Tagliapietra</u>	22-10995
09:50-10:20	The influence of climate changes on Central European forests with an emphasis on Slovenia <u>J Gričar</u> , L Krajnc, M Westergren, S Rus, H Kraigher	22-50368
10:20-10:40	Coffee / Tea	
<i>Arnold</i>	Scientific Main Session – section papers Chairs: Dallin Brooks, Nadine Amusant, Erik Larnøy, Jun Zhang, Paul Merrick	
10:40-11:00	Section 5 – Sustainability and Environment Contributions by an academic society to the development of scientific research - the case of wood protection research in Japan <u>K Yamamoto</u>	22-50372
11:00-11:20	Section 1 - Biology Introduction to the project ‘Deterioration and decay of wooden cultural heritage in Arctic and Alpine environments’ (ArcticAlpineDecay) <u>G Alfredsen</u> , L Ross, A W Hegnes, M S Austigard, J Mattsson, N B Pedersen, A Sinitsyn, V V Martens, A-C Flyen	22-10997
11:20-11:40	Section 2 – Test methodology and assessment Combining MRI and X-ray CT to monitor fungal decay of plywood and OSB in a lab test <u>L De Ligne</u> , T Núñez Guitar, C Vanhove, B Descamps, J Van Acker, J Van den Bulcke	22-20683
11:40-12:00	Section 3 – Wood protection chemicals Properties of Iron(II) Sulphate treated Norway Spruce <u>B Lesar</u> , M Humar, M Škamlec	22-30765
12:00-12:20	Section 4 – Processes and properties Molecular dynamics investigation of wood modification with furfuryl alcohol <u>V Ponnuchamy</u> , J Sandak, A Sandak	22-40931
12:20-13:50	Lunch	

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<i>Arnold</i>	Working Party 4.1 Chemical Modification Conveners: Holger Militz	
13:50-14:10	Durability against fungal decay of sorbitol and citric acid (SorCA) modified wood <u>K Kurkowiak</u> , L Emmerich, H Militz	22-40928
14:10-14:30	CIOL[®]-protection of wood – an update <u>A Treu</u> , E Larnøy, J Biørnstad	22-40932
14:30-14:50	Biological assessment of bio-based phase change materials in wood for construction applications <u>S Palanti</u> , A Temiz, G Köse Demirel, G Hekimoğlu, A Sari, M Nazari, J Gao, M Jebrane, T Schnabel, N Terziev	22-40935
14:50-15:00	Discussion and Questions	
15:00-15:20	Coffee / Tea	
<i>Arnold</i>	Special Session: Circular Economy Convener: Liselotte De Ligne	
15:20-15:40	Make do and mend: Re-using timber in Smithfield Market <u>J R Williams</u>	22-50371
15:40-16:00	Sustainable wood products development in a bio-refinery perspective: case studies in French Guiana <u>E Houël</u> , N Amusant, J Passelande, J Bossu, R Lehnebach, E Wozniak	22-50370
16:00-16:20	A new project - Circular use of wood in Norway for improved sustainability and innovation (CircWOOD) <u>L Ross</u> , L Huang, E Trømborg, R Modaresi, H Sjøli, C A S Hill	22-50369
16:20-16:30	Discussion and Questions	
19:00-21:00	President's RECEPTION (upon invitation)	

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Tuesday 31 May		
Parallel Session A		
Arnold A	Working Party 1.1 Soft rot, bacteria, bluestain and moulds Working Party 1.2 Basidiomycetes Conveners: Jeff Morrell, Jonas Stenbaek	
08:30-08:50	Dynamics of fungi colonization on the surface of Scots pine wood during natural weathering in different European climate zones <u>F Poohphajai</u> , O Myronycheva, O Karlsson, L Rautkari, J Sandak, A Sandak	22-10984
08:50-09:10	Decay capacity and degradation patterns of <i>Xylaria hypoxylon</i> on different wood species <u>E Bari</u> , G Daniel, A Singh, J Morrell	22-10985
09:10-09:30	Changes in topochemistry and mechanical properties of Beech (<i>Fagus orientalis</i> L.) by natural fungus infestation <u>H Sivrikaya</u> , M Rehbein, F Divos, S Adamopoulos, <u>R Hosseinpourpia</u>	22-10986
09:30-09:50	In Vitro Growth of the Basidiomycetes <i>Physisporinus vitreus</i> strains in various conditions in comparison with some white rot fungi <u>E E Soytürk</u> , S N Kartal	22-10987
09:50-10:10	Evaluation of different wood by-products for sustainable building biomaterial production using fungal mycelium <u>C Charpentier-Alfaro</u> , M Poggerini, S Palanti, G Della Rocca, D Pellegrini, A Crisci	22-50373
10:10-10:20	Discussion and Questions	
10:20-10:40	Coffee / Tea	
Arnold A	Working Party 1.3 Insect Biology and Testing Working Party 1.5 Marine Conveners: Marie-France Thévenon, Nadine Amusant	
10:40-11:00	Assessing the Performance of Wood-based Materials Exposed to Termite Risk – A New Experimental Approach <u>M Kutnik</u>	22-10989

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11:00-11:20	Role of microbiota in wood degradation by <i>Reticulitermes grassei</i> and <i>Bursaphelenchus xylophilus</i> <u>L Robertson</u> , S Rames, M Uriel, J M González, F Llinares, S M Santos, M T Troya	22-20684
11:20-11:40	Wood modification reduces the feeding rate of the wood boring crustacean, <i>Limnoria quadripunctata</i> <u>L S Martin</u> , S Lande, M Westin, S M Cragg	22-10993
11:40-12:00	Results of the resistance of acetylated wood against marine borers at three Italian sites after five years of sea immersion <u>S Palanti</u> , F Stefani, M Andrenacci, M Faimali, I Guarneri, M Sigovini, D Tagliapietra	22-10994
12:00-12:10	Discussion and Questions	
12:10-13:40	Lunch	
Arnold A	Working Party 3.1 Inorganic Preservatives Working Party 3.2 Organic Preservatives Conveners: Morten Klamer, Gry Alfredsen	
13:40-14:00	Evaluation of anti-weathering and resistance against termite of the Myoung-oil as a wood preservative <u>S-M Yoon</u> , Y Park, W-S Jeon, H-M Lee, J-G Park, K Dal Nam, W-J Hwang	22-10996
14:00-14:20	Impregnation of wood with antifungal compounds from low-quality tree biomass <u>V Vek</u> , I Poljanšek, A Balzano, M Humar, P Oven	22-30763
14:20-14:40	A new approach to wood protection: Potential of biologically synthesised CuO and ZnO nanoparticle formulation as a wood preservative <u>K S Shiny</u> , R Sundararaj, N Mamatha	22-30758
14:40-15:00	Brief introduction to a research project on preparations of various paste formulations from boron, fluoride and copper for supplemental treatments <u>E E Soytürk</u> , D Bakır, E Terzi, C Köse, S N Kartal	22-30759
15:00-15:20	Wood Protection Using Nano Metal Oxides in Propylene Glycol <u>S Nair</u> , G B Nagarajappa, K K Pandey	22-30760
15:20-15:40	Efficiency of three resin fractions from <i>Aucoumea Klaineana</i> Pierre, <i>Canarium schweinfurthii</i> Engl and <i>Dacryodes edulis</i> (G. Don) H. J. Lam from Gabon combined with Tebuconazole as wood preservatives W F Bedounguindzi, K Candelier, P Edou Engonga, <u>S Dumarcay</u> , M-F Thevenon, P Gerardin	22-10998

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15:40-16:00	Environmentally Friendly Wood Modification based on Tannin-Furfuryl alcohol - Effect on stabilisation, mechanical properties and decay durability M Mubarok, E Azadeh, F O Akong, S Dumarçay, A Pizzi, C Charbonnier-Gérardin, <u>P Gérardin</u>	22-40929
16:00-16:10	Discussion and questions	
16:10-16:30	Coffee / Tea	

<i>Arnold/Voda</i>	Poster Session Convener: Rod Stirling	
16:30-18:00	POSTER PRESENTATIONS – 3 min each	
P01	Evaluation of ecotoxicological effects of different coniferous wood treatments on two marine bioindicator species <u>T Marčeta</u> , N Nesto, I Guarneri, D Tagliapietra, V Moschino	22-10999
P02	Chemotaxonomy of the genus <i>Aquilaria</i> (<i>Thymelaeaceae</i>) <u>C Zaremski</u> , N Amusant, C Andary, M Ducouso, S Hul, G Michaloud, A Zaremski	22-20687
P03	Using satellite-retrieved soil moisture data to model the decay risk of in-ground timber <u>P B van Niekerk</u> , M Schönauer, B N Marais, C Brischke	22-20689
P04	Effect of nanoparticle impregnation on the biological durability of wood <u>M Bak</u> , R Németh	22-30772
P05	Field tests of different tropical wood species in sea water <u>M Westin</u> , P Larsson Brelid	22-30773
P06	Utilization of Pressure Treated Lumber in Cross Laminated Timber Manufacture and its Impact on Bondline Integrity <u>G Presley</u> , C Wainscott, J Valenti, S Noble	22-40953
P07	Durability of thermally modified western hemlock lumber against wood decay fungi <u>G Presley</u> , J Cappellazzi, I Eastin	22-40954
P08	A Comparison of Cross-Laminated Timber (CLT) Floor Panels using Finite Element Analysis and Experimental Fire Testing <u>M Yasir</u> , A Macilwraith, K Ruane	22-40955

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P09	Evaluation of Decay Resistance for the Larch Wood Heat-treated with Superheated Steam <u>Y Park</u> , S-M Yoon, H Kim, W-J Hwang	22-40956
P10	Biocomposites based on PVA, cellulose nanofibrils and tannic acid <u>U Osolnik</u> , V Vek, I Poljansek, Poven	22-40957
P11	Application of an Ultrasound-based Instrument to Evaluate Condition of Drywood Termite Infested Timber Components <u>S Fauziyyah</u> , L Karlinasari, D Nandika, R Wimmer	22-11000
P12	Analysis of wooden shingles after seven years of exposure <u>M Humar</u> , B Lesar, D Kržišnik, E Keržič, B Jemec	22-20690
P13	Acetylation of Peruvian wood species <u>A Loayza</u> , L Quispe, R Chara, L Quispe	22-40958
P14	Novel bio-based tannin/furfurylic alcohol thermosets: application to wood preservation. C Gérardin-Charbonnier, E Azadeh, A Pizzi, P Gérardin	22-40959

Tuesday 31 May		
Parallel Session B		
Arnold B	Working Party 2.1 Prediction of Service Life Working Party 2.2 Microbial Test Methodology Conveners: Wim Willems, David Lorenzo	
08:30-08:50	Performance of wood exterior structures above ground in Spain. Performance and durability of a shelter of spruce in a shopping centre after 20 years <u>D Lorenzo</u> , A Lozano, M Alonso, J Fernández-Golfín, M Touza, J Benito	22-20680
08:50-09:10	Studies into the effect of soil type and soil layer on the in-ground decay of European beech <u>B N Marais</u> , S Kovacs, M Jansen, C Brischke	22-20681
09:10-09:30	Significance of the thermal design and the sorption isotherm shape in hygroscopic wood moisture dynamics and service life <u>W Willems</u>	22-20682

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09:30-09:50	The role of specimen format in wood durability testing <u>C Brischke</u> , L K Grünwald, S Bollmus	20-20672
09:50-10:10	Joints design considerations in indoor high humidity conditions <u>A Lozano</u> , D Lorenzo, M Alonso, F Álvarez, J E Martínez	22-40950
10:10-10:20	Discussion and Questions	
10:20-10:40	Coffee Break	
Arnold B	Working Party 4.2 Wood composites, WPCs and Engineered Wood Products Working Party 4.3 Treating Processes & Treatability of Timber Conveners: Kévin Candelier	
10:40-11:00	Steam Pre-conditioning Treatment Prior to Acetylation: Impact on Dimensional Stability, Moisture Response Behaviour, and White-Rot Fungal Resistance of <i>Hevea brasiliensis</i> and <i>Mitragyna ciliata</i> Wood <u>E Uchechukwu Opara</u> , J Mayowa Owoyemi, J Adeola Fuwape	22-40930
11:00-11:20	Chemical modification of cellulose nanofibrils for tailoring properties of composites <u>I Poljanšek</u> , V Vek, J Levanič, V Ž Bogataj, P Oven	22-40934
11:20-11:40	Surface chemical wood densification through in situ electron beam polymerization: description and dose study <u>J Triquet</u> , P Blanchet, V Landry	22-40933
11:40-12:00	Effect of densification of <i>Eucalyptus nitens</i> and <i>E. obliqua</i> on moisture uptake, swelling, decay resistance, and fire performance B Hassan, <u>J J Morrell</u> , F Wiesner, W Wu, B Belleville, K C Wood	22-40946
12:00-12:10	Discussion and Questions	
12:10-13:40	Lunch	
Arnold B	Working Party 4.5 Thermal Wood Modification Conveners: Joris Van Acker, Xiuping Jiang	
13:40-14:00	Evaluation of the physical properties of heat-treated native Peruvian woods for their application as coverings in buildings located in in arid, semi-warm and humid climates <u>K Ayala Castro</u>	22-40943

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14:00-14:20	The Resistance of Some Commercially Thermally Modified American Hardwoods to Termites and Fungi B Cortes, B Bond, A Taylor, J Lloyd	22-40944
14:20-14:40	Effect of Heat Treatment on Physical and Mechanical Properties of Oriental Beech Wood (<i>Fagus orientalis</i> L.) M D Ghalehno, D Chu, B N Sheshkal, M Humar, <u>M Bahmani</u>	21-40923
14:40-15:00	Mechanical Properties of Thermally Modified Wood after twelve Months of Field Exposure <u>R Hasanagić</u> , M Bahmani, L Fathi, M Humar	22-40945
15:00-15:20	Moisture sorption behaviour of poplar and thermally modified poplar using dynamic vapour sorption (DVS) <u>X Jiang</u> , J Van den Bulcke, L De Boever, M Minsart, A Mignon, J Van Acker	22-40947
15:20-15:40	Improving wood durability by mineralisation and thermal modification <u>R Repič</u> , A Pondelak, D Kržišnik, M Humar, A S Škapin	22-40948
15:40-16:00	Durability of thermotreated <i>Pinus sylvestris</i> and <i>Eucalyptus nitens</i> against wood decay organisms <u>M T Troya</u> , S M Santos, L Robertson, N Pérez-Molina, V Baños, A Dieste	22-40949
16:00-16:10	Discussion and Questions	
16:10-16:30	Coffee / Tea	
<i>Arnold/Voda</i>	Poster Session Convener: Rod Stirling	
16:30-18:00	POSTER PRESENTATIONS – 3 min each See Page 6 for List of Posters	

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Wednesday 1 June		
Parallel Session A		
Arnold A	Working Party 3.3 Performance Lab and Field Tests Conveners: Notburga Pfabigan, Bruce Breedt	
08:30-08:50	Evaluation of Decay Resistance of Copper-based Preservatives Treated-Wood exposed to different field test sites in Korea <u>W-J Hwang</u> , S-M Yoon, Y Park, Y-S Choi, H-M Lee, J-W Kim	22-20679
08:50-09:10	Service trial of different materials exposed in jetties at Öresund. Progress report No. 5 <u>J Jermer</u>	22-30764
09:10-09:30	Post-layup protection of mass timber elements in above ground protected exposures: 2 year results M E Mankowski, T G Shelton, G T Kirker, <u>J J Morrell</u>	22-30766
09:30-09:50	Above-Ground Termite Resistance of Naturally Durable Species in Ontario and Mississippi <u>R Stirling</u> , M Mankowski	22-30767
09:50-10:10	Effect of nano-particle characteristics and concentration on UV protection of timber: A field exposure test <u>T Yi</u> , J J Morrell	22-40941
10:10-10:30	Phenol formaldehyde modification and termite resistance under laboratory testing L Nunes, A Pitman, B Stefanowski, <u>D Jones</u>	22-40952
10:30-10:40	Discussion and Questions	
10:40-11:00	Coffee / Tea	
Arnold A	WP 3.4. Fire Retardants Conveners: Udo Warncke, Clara Zaremski	
11:00-11:20	Impact of swetting agents on polyelectrolyte complex impregnation for wood fire-retardancy <u>M Soula</u> , J B Grenier, S Duquesne, F Samyn, V Landry	22-30768
11:20-11:40	Green approach in wood mineralisation for improvement of fire properties <u>A Pondelak</u> , R Repič, L Škrlep, N Knez, F Knez, A S Škapin	22-30769
11:40-11:50	Discussion and Questions	
12:30	Excursion	

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Wednesday 1 June		
Parallel Session B		
<i>Arnold B</i>	Working Party 1.4 Natural Durability Conveners: Christian Brischke, Eric Gelhaye	
08:30-08:50	Chemical composition of agarwood of <i>Aquilaria crassna</i> Pierre ex. Lecomte induced by Basidiomycetes from French Guiana <u>C Zaremski</u> , M Ducouso, C Andary, G Michaloud, C Menut, A Zaremski, N Amusant	22-10988
08:50-09:10	Biological durability of sapling wood <u>C Brischke</u> , L Emmerich, D G B Nienaber, S Bollmus	20-10967
09:10-09:30	Antifungal and antitermite activities of acetonic extractives from <i>Cedrus Atlantica</i> heartwood R Dijoux, R Ducret, E Kieny, D Aznar, C Cayzac, L Bidel, C J Allemand, K Candelier	22-10990
09:30-09:50	The effect of sapwood and heartwood differences on durability of short rotation teak wood <u>R Martha</u> , M Mubarok, F O Akong, B George, C Gérardin, S Dumarçay, I S Rahayu, I Batubara, W Darmawan, P Gérardin	22-10991
09:50-10:10	Natural durability and moisture dynamics of commercially important European wood species after weathering <u>E Keržič</u> , M Humar	22-10992
10:10-10:30	Discussion and Questions	
10:30-11:00	Coffee / Tea	
<i>Arnold B</i>	Working Party 2.3 Chemical/Physical Analysis Working Party 2.4 International Standardisation Conveners: Per-Otto Flæte, Gerald Presley	
11:00-11:20	Measurement of copper concentration in Cu-HDO treating solutions by handheld XRF <u>P-O Flæte</u>	22-20685

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11:20-11:40	Discrimination of five commercial wood preservatives by handheld near-infrared spectrometers and Multivariate Data Analysis <u>M Rubini</u> , P Dulucq, B Charrier	22-20686
11:40-12:00	Copper-octanoate - a possible reference preservative substitute for CCA in field test standards? <u>R Ringman</u> , M Westin, M Klamer, A Christof, F Friese	22-20688
12:00-12:10	Discussion and Questions	
12:30	Excursion	

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Thursday 2 June		
<i>Arnold</i>	Working Party 4.4 Coatings, hydrophobic treatments and surface aspects Conveners: Elena Conti, Ulrich Hundhausen	
08:30-08:50	Comparative study of the properties of silicate coatings with different mineral pigments (titanium dioxide, iron (III) oxide, copper (II) oxide) on the surface of wood <u>A M Cheumani Yona, M Petrič</u>	22-40936
08:50-09:10	Premature adhesion failure of exterior wood coatings – The influence of substrate temperature at coating application and moisture accumulation during storage <u>U Hundhausen</u>	22-40937
09:10-09:30	Extraction of fungal colorants for their use in coloured coatings for wood K Kusstatscher, <u>N Pfabigan</u> , M Senoner, L Orłowsky, A Steitz, B Forsthuber, S Niedermayer, R Gründlinger	22-40938
09:30-09:50	Optimized composition of alkyd emulsion with nanoparticles of iron oxide for enhancing protection of thermally modified wood <u>E Sansonetti, D Cîrule, I Andersone, B Andersons, E Kuka</u>	22-40940
09:50-10:10	The influence of thermal modification and surface charring to different levels on wettability of Norway spruce wood <u>J Žigon, C Gerardin, M E P Wålinder, P Gerardin</u>	22-40942
10:10-10:30	Influence of weathering on the mechanical properties and performance of exterior wood coatings <u>L Podgorski, J-D Lanvin</u>	22-40951
10:30-10:40	Discussion and Questions	
10:40-11:00	Coffee / Tea	
<i>Arnold</i>	Special Session New Wood Preservatives and Applications Convener: Kevin Archer	
11:00-11:20	Comparative study on the efficacy of biobased wood preservative over conventional wood preservatives against fungi and termites <u>A Kumar, A John, B N Hazarika</u>	22-30761
11:20-11:40	An Update on the Status of Industrial Heavy Duty Preservatives in Europe <u>S Uphill, H Griffiths, M Giannuzzi, A Hughes</u>	22-30762

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11:40-12:00	Copper Naphthenate – A Data and Capability Update J-W Kim, <u>J D Lloyd</u>	22-30771
12:00-12:20	A novel wood preservation technology improving durability and water-related properties L Emmerich, <u>H Militz</u> , M Vila	22-40926
12:20-12:30	Discussion and Questions	
12:30-14:00	Lunch	
<i>Arnold</i>	Scientific Plenary Session – Discussion Forum Session Chairs: Rod Stirling	
14:00-15:00	IRG in a Post-Pandemic World	
15:00-15:20	Coffee / Tea	
<i>Arnold</i>	Final Plenary Session President: Lone Ross Vice-President: Rod Stirling Secretary-General: Mats Westin	
15:20-16:40	<ul style="list-style-type: none"> 5. Approval of the Annual Report 2021 and Auditor’s report (IRG/WP 22-60452) 6. Granting discharge for the Executive Council and Secretary-General from the administration and accountancy for 2021 7. Approval of membership fees for 2023 8. Approval of the budgets for 2022 (forecast May 2022) and 2023 9. Election of new officers 10. Appointment of auditors 11. Future venues 12. Any other business 	22-60502 22-60503
19:30	CONFERENCE BANQUET – Hotel Toplice	