

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

The 38th Annual Meeting of IRG

Scientific programme

**IRG Secretariat
Box 5609
SE-114 86 Stockholm
Sweden
www.irg-wp.com**

MONDAY 21 MAY

Explorers

09.00-10.00 Scientific Main Session

Chairman: Dr Gérard Deroubaix **Co-chairs:** Dr Frederick Green III, Dr Michael Kennedy, Prof Dr Marko Petrič,
Dr Koichi Yamamoto, Prof Dr D Pascal Kamdem

IRG/WP 07-10610

Beetle-Fungus Associations in Woody Substrates in the Context of International Trade

A Uzunovic

IRG/WP 07-20351

A roadmap for performance-based specification of wooden components based on service life prediction

C Brischke, A O Rapp

Explorers

10.30-12.00

Scientific Main Session , cont'd

IRG/WP 07-30415

Nanotechnology: Implications for the Wood Preservation Industry

C A Clausen

IRG/WP 07-40372

Electrokinetic Accelerated Ingress of Boron After Surface Treatment of Wood

I V Christensen

IRG/WP 07-50245

The Role of Moisture Content in Above-ground Leaching

S Lebow, P Lebow

MONDAY 21 MAY

Moose/Grizzly

Wrangler/Prospector/Homesteader

13.30-15.00

WP 2.1 Topical issue: Prediction of service life

WP 3.4 Performance - field tests

Convener: Ms Lesley Francis

Convener : Dr Niels Morsing

IRG/WP 07-20368

Predicting the decay resistance of timber above-ground: 2. When can reliable field data be obtained?

L P Francis, A J Swain, J J Morrell

IRG/WP 07-20367

Service life prediction of plywood

J Van Acker, J De Smet

IRG/WG 07-20372

Expected service life of outdoor wooden structures such as guard fences and noise barriers indicated by questionnaire survey

K Yamamoto, A Makita, A Yamaguchi, T Shiraishi, K Maeda, D Tezuka, S Katsumata, M Higaki

IRG/WP 07-20357

Decay Hazard Classifications in China for Exterior Above-Ground Wood

J Wang, X Wu, M Jiang, P I Morris

IRG/WP 07-30413

Permethrin: A Critical Review of an Effective Wood Preservative Insecticide

M H Freeman, D N Obanda, T F Shupe

IRG/WP 07-30425

Amine Oxides for Use in Wood Protection: I. A Formulation Adjuvant and Performance Enhancer for Wood

Xiao Jiang, L Walker

IRG/WP 07-30426

Amine Oxides for Use in Wood Protection: II: Water Repellent Agents for Wood

Xiao Jiang, L Walker

IRG/WP 07-30439

Tropical In-Ground Durability of CCB-treated Keruing and other Structural Sarawak Timbers after 8 – 10 Years Exposure

A H H Wong, Ling Wang Choon

MONDAY 21 MAY

Moose/Grizzly

15.30-17.30

WP 1.1 Physiology of decay

Convener: Dr Sungmee Choi

IRG/WP 07-10606

Effect of chitosan on the morphology and ultrastructure of two wood inhabiting fungi

T Singh, A P Singh, G Daniel

IRG/WP 07-10615

Phenol oxidase activity and one-electron oxidation activity in wood degradation by soft-rot deuteromycetes

H Tanaka, M Yamakawa, S Itakura, A Enoki

IRG/WP 07-10618

Chelator-Mediated Fenton Chemistry in Wood Degraded by Fungi

B Goodell, G Daniel, J Jellison, Yuhui Qian

IRG/WP 07-10621

Detecting fungal DNA in treated and non-treated wood

C Freitag, M Freitag, J Morrell

IRG/WP 07-10622

The use of X-ray diffraction for analyzing biomodification of crystalline cellulose by wood decay fungi

C Howell, A C Steenkjær Hastrup, J Jellison

IRG/WP 07-10624

Gypsum effects on 'dry rot' wood degradation as a function of environment

J Schilling, J Jellison

Video presentation

Mode of action of α -aminoisobutyric acid in remedial control of *Serpula lacrymans*

M Tlalka, M D Fricker, S C Watkinson

Wrangler/Prospector/Homesteader

WP 5.1/5.2 Environment

Conveners: Dr Ed Baines and Dr Stan Lebow

IRG/WP 07-50244

Refinement of emission values for preserved wood in the 'Storage Scenario', for use in the environmental risk assessment of Wood Preservatives under the Biocidal Products Directive

E F Baines

IRG/WP 07-30420

Silver as a Wood Preservative Environmental Requirements and Concerns

J R Ellis

IRG/WP 07-30437

The influence of pentachlorophenol on mycelial growth of wood decay fungi *Trametes versicolor*, *Grifola frondosa*, *Hypoxylon fragiforme*, and *Coniophora puteana*

F Pohleven, B Boh

IRG/WP 07-30436

Copper fixation in ACQ-D treated Chinese fir at various temperature and relative humidity conditions

Jinzhen Cao, Lili Yu

IRG/WP 07-50246

The effect of additives on copper losses from alkaline copper treated wood

J Mitsuhashi, J J Morrell, L Jin, A F Preston

TUESDAY 22 MAY

Moose/Grizzly

Wrangler/Prospector/Homesteader

08.30-10.00

WP 3.2 New wood protecting chemicals

WP 1.5/2.5 Termites and other insects

Convener: Dr Gry Alfredsen

Conveners: Dr Lina Nunes and Dr Berhan Ahmed

IRG/WP 07-30414

Efficacy of chitosan in combination with GRAS (Generally Recognised As Safe) compounds as a potential wood preservative
C Chittenden, K Thämelt, T Singh

IRG/WP 07-30417

Some textile auxiliaries as wood protective agents
E Dizman, A Temiz, N Terziev, Ü C Yıldız

IRG/WP/07-30433

Antifungal activity of plant derived extracts against *G. trabeum*
M Maoz, I Weitz, M Blumenfeld, C Freitag, J J Morrell

IRG/WP 07-30432

Preventing fungal attack of freshly sawn lumber using cinnamon extracts
Shujun Li, C Freitag, J J Morrell

IRG/WP 07-10604

Seasonal response of feeding, differentiation, and growth in the eastern subterranean termite *Reticulitermes flavipes* (Kollar) in Wisconsin
R A Arango, F Green III, G R Esenther

IRG/WP 07 -10605

Foraging Behavior of the Formosan Subterranean Termite (*Isoptera: Rhinotermitidae*) in Response to Borate Treated Wood
C E Campora, J K Grace

IRG/WP 07-10602

The effect of high and low boron soils on foraging termite behaviour and their metabolic systems
B M Ahmed, J R J French, P Vinden

IRG/WP 07-10608

Termite baiting system: A new dimension of termite control in the Philippines
C M Garcia, M Y Giron, S G Broadbent

TUESDAY 22 MAY

Moose/Grizzly

Wrangler/Prospector/Homesteader

10.30-12.00

WP 3.2 New wood protecting chemicals, cont'd

WP 1.5/2.5 Termites and other insects, cont'd

Convener: Dr Gry Alfredsen

Conveners: Dr Lina Nunes and Dr Berhan Ahmed

IRG/WP 07-30427

Effects of caffeine on growth of wood-decaying fungi

S Lekounougou, J P Ondo, J P Jacquot, G Nevers, P Gérardin,
E Gelhayé

IRG/WP 07-30419

Silver – The Next Generation Wood Preservative

J R Ellis, K Jayachandran, D Nicholas

IRG/WP 07-30XXX

**Cell Wall Penetration of Particulate Copper Wood Preservative
Systems in Southern Pine**

Kevin J Archer

Illustrated comment to poster

Kyanite extract wood preservative

A Da Cruz

IRG/WP 07-10623

**Potential for controlling carpenter ants in utility poles with
borates**

M Mankowski

IRG/WP 07-10619

Tunneling patterns of the subterranean termite species

Reticulitermes grassei (Isoptera: Rhinotermitidae)

T Nobre, L Nunes, D E Bignell

IRG/WP 07-20365

Comparison of laboratory termite test methods

H-U Kruschinski, W Unger, A F Preston

IRG/WP 07-20366

**A method and apparatus for rapid assessment of termite
barriers.**

D McG Ewart

TUESDAY 22 MAY

Explorers	Moose/Grizzly	Wrangler/Prospector/Homesteader
13.30-15.00		
Special seminar: Coatings and aesthetics, cont'd Conveners: Dr Radu Craciun and Prof Dr Marko Petrič	WP 4.2 Substrate modification and non-biocidal treatments, cont'd Convener: Dr Mats Westin	WP 1.5/2.5 Termites and other insects, cont'd Conveners: Dr Lina Nunes and Dr Berhan Ahmed
<u>Session 1: Aesthetics issues</u> IRG/WP 07-30421 Growth and succession of mould on commercial paint systems in two field sites L R Gobakken, K M Jenssen IRG/WP 07-40356 The Effect of Solar Radiation on the Surface Checking of Wood P Evans, K Urban IRG/WP 07-30438 Formulating aesthetic coatings to prevent carpenter bee infestation N Vidovic IRG/WP 07-30424 Theory of Aesthetics – Charm in Furniture and an Aesthetic Evaluation of Bleaching of the Natural Color of Wood through the Application of Experimental Bleaching Process I Usta	IRG/WP-07-40364 Water repellency and dimensional stability of wood treated with waterborne resin acids/TOR T P Schultz, D D Nicholas, J Shi IRG/WP 07-40358 Mold resistance of heat-treated wood S N Kartal IRG/WP 07-40361 Fire, flame resistance and thermal properties of oil thermally-treated wood Jieying Wang, P Cooper IRG/WP 07-40367 Multivariate analysis of infrared spectra for the prediction of the mechanical performance and dimensional stability of thermally modified wood M M González-Peña, M D C Hale IRG/WP 07-40363 The effects of chemical modification on the biological properties of alder and spruce particleboards Ü C Yıldız, E Dizman, S Yıldız, A Temiz, M Aslan, E D Gezer	IRG/WP 07-20353 Accelerated assessment tests of new termiticides M T Troya, M J Prieto, D Lorenzo, F Rubio IRG/WP 07-30422 Wood Protection by Commercial Silver Formulations against Eastern Subterranean Termites F Green III, R A Arango IRG/WP 07-10625 Laboratory evaluation comparing three commercial termite baits based on chitin synthesis inhibitor (CSIs) against the subterranean termites <i>Coptotermes acinaciformis</i> (Froggatt) and <i>Mastotermes darwiniensis</i> (Froggatt) B Ahmed IRG/WP 07-XXXXX Aboveground subterranean termite test of borate-treated rubberwood (<i>Hevea brasiliensis</i>) chipboard A H H Wong, J K Grace, M J Manning

TUESDAY 22 MAY

Explorers	Moose/Grizzly	Wrangler/Prospector/Homesteader
15.30-17.30		
Special seminar: Coatings and aesthetics, cont'd Conveners: Dr Radu Craciun and Prof Dr Marko Petrič	WP 4.2 Substrate modification and non-biocidal treatments, cont'd Convener: Dr Mats Westin	WP 2.3 Chemical/Physical analysis Convener: Dr Ed Suttie
<p>IRG/WP 07-20360 Preliminary Observations of the Effect of Kerfing on the Surface Checking and Warping of Flat Sawn Southern Pine Decking R Ratu, J Weizenegger, P Evans</p> <p><u>Session 2 : Coatings</u></p> <p>IRG/WP 07-30416 Photo-degradation of modified and non- modified wood, coated with water borne acrylic coatings during artificial light exposure M Deka, M Tomažič, M Petrič</p> <p>IRG/WP 07-40380 Micro- and hydro-sandblasting for wood and wood coatings L Podgorski, V Georges, P Svane</p> <p>IRG/WP 07-30440 Natural Weathering of Coated Oil Heat Treated Wood M Petrič, B Kričej, M Pavlič, A Rapp</p> <p>IRG/WP 07-30441 The effect of brighteners on wood surface aesthetics – exploring the use of various organo-phosphonates based precursors R Craciun, P Mitchell</p>	<p>IRG/WP 07-40374 Effects of heat treatments on decay resistance and material properties of ponderosa pine and yellow poplar C Vidrine, C Freitag, J Nicholson, J J Morrell</p> <p>IRG/WP 07-40378 Protection of wood for above ground application through modification with a fatty acid modified N- methylol/paraffin formulation Nguyen Hong Minh, H Militz, C Mai</p> <p>IRG/WP 07-40371 Microwave curing of furfuryl alcohol modified wood A Treu, E Larnøy, H Militz</p> <p>IRG/WP 07-40375 Marine Borer Resistance of Modified Wood - Results from Seven Years in Field M Westin, A O Rapp, T Nilsson</p> <p>IRG/WP 07-40376 Wood furfurylation process development. Part 1: Oscillating Pressure Method E Larnøy, M Westin, B Källander, S Lande</p> <p>IRG/WP 07-40377 Wood furfurylation process development. Part 2: Lowry impregnation trials M Westin, E Larnøy, S Lande</p>	<p>IRG/WP 07-20355 Bifenthrin recovery from glue-line-treated plywood J Norton, L Stephens</p> <p>IRG/WP 07-20369 Quantitative Determination of Cyproconazole in Wood treated with Tanalith CY I Momohara, T Miyauchi, M Mori</p> <p>IRG/WP 07-20362 Assaying Pentachlorophenol-treated Wood Using XRF H M Barnes, C R McIntyre, D W Bullock, M H Freeman, G B Lindsey</p> <p>IRG/WP 07-20373 Use of X-Ray Fluorescence (XRF) Spectroscopy to Determine 4,5-Dichloro-2-n-Octyl-4-Isothiazolin-3- one (DCOIT) in Wood P Walcheski, J Ashmore, D M Laganella</p> <p>IRG/WP 07-20371 Use of the Digital Refractometer for the On-site Analysis of Copper-based Preservative Systems L Jin, T Cashman, A Preston, J Trompetter, H Trompetter</p> <p>IRG/WP 07-40382 Use of Moisture Meters with Treated Wood W B Smith, Hwan Myeong Yeo, C Stark, B Morey, C Tascioglu, P Schneider, D Herdman, M Freeman</p>

IRG/WP 07-20364 Wood printing plates from the Dürer era – species identification and anatomical study M Penkuhn, W Unger	IRG/WP 07-40381 Furfurylated wood – withdrawal load for fasteners J Jermer, A Clang	
Trappers		
17.30-18.30		
Poster session Preliminary study on the possibility of accelerated decay test by using stress relaxation method Jinzhen Cao, Zhi Liu Biomimetic studies of wood decay Anne Christine Steenkjær Hastrup, Caitlin Howell and Jody Jellison Analysis of fungal extracts by HLPLC/MS – Looking for new fungicides M P Martínez, F Rubio, M T Troya, M J Prieto, D Lorenzo Remedial control of <i>Serpula lacrymans</i> by targeting fungal nitrogen recycling and translocation Monika Tlalka, Mark Fricker and Sarah Watkinson Composition for treating wood using natural Kyanite Amelia DaCruz, Carey Garst Application of a new bioassay method to control stored product and wood destroying insects using nitrogen fumigation in an historical library Wibke Unger, Gerhard Binker and Georg Fröba Discolorations in Southern Hardwood Logs: Biological and Non-biological Staining Control Practices Nate Irby and Kevin Ragon IRG/WP 07-40359 Comparative study between full cell and passive impregnation method of wood preservation for laser incised Douglas-fir lumber Md N Islam, K Ando, H Yamauchi, Y Kobayashi, N Hattori		

WEDNESDAY 23 MAY

Moose/Grizzly

Wrangler/Prospector/Homesteader

08.30-10.00

WP 3.3 Performance – lab tests

WP 2.2 Microbiological test methodology

Convener: Dr Xiao Jiang

Convener: Dr Shuichi Doi

IRG/WP 07-30423

Influence of ethanolamine on lignin depolymerization and copper leaching from treated Norway spruce and beech wood

M Humar, B Bučar, M Zupančič, D Žlindra, F Pohleven

IRG/WP 07-30430

Laboratory test of blue stain control by chemicals

Zhijuan Wang, Zehui Jiang, Mingliang Jiang, Chungeng Piao

IRG/WP 07-10616

Determination of the lethal dose of fipronil for workers of *Coptotermes formosanus* (Isoptera: Rhinotermitidae)

K Tsunoda, R Yamaoka

IRG/WP 07-20370

Corrosion of metal fasteners in contact with copper preservative treated wood

BaekYong Choi, John NR Ruddick

IRG/WP 07-20358

Accelerated Above-ground Testing of Wood Preservatives

P I Morris, S McFarling

IRG/WP 07-20361

Molecular methods as a tool within the field of wood protection – available methods and new possibilities

G Alfredsen, A M Hietala, C G Fossdal, H Solheim

IRG/WP 07-10620

Wood decay fungi from New Zealand 'leaky' buildings: PCR identification and laboratory decay tests of wood preservative-treated *Pinus radiata* (Part 1)

D Stahlhut, R L Farrell, R Wakeling, M Hedley

IRG/WP 07-20363

Effect of fungal attack on maximum load capacity of simulated wall assemblies

N Melencion, J J Morrell

WEDNESDAY 23 MAY

Moose/Grizzly

Wrangler/Prospector/Homesteader

10.30-11.30

WP 3.1 Diffusible wood preservatives

WP 2.2 Microbiological test methodology, cont'd

Convener: Dr Mark Mankowski

Convener: Dr Shuichi Doi

IRG/WP 07-30431

The effect of wood moisture content and rod dosage on movement of boron through Douglas-fir heartwood

Y Cabrera, J J Morrell

IRG/WP 07-30435

Synthesis of boric acid ammonium oleate salt for wood preservation: Leachability and termite resistance test

F Lyon, A Pizzi, Y Imamura, M F Thevenon, S N Kartal, J Gril

IRG/WP 07-10609

The response of the Formosan subterranean termite (*Coptotermes formosanus* Shiraki) to different boron compounds

M C Gentz, J K Grace

IRG/WP 07-20352

The characteristics of biodegradation mechanism of gamma-irradiated wood

R Despot, M Hasan, F Pohleven, M Humar, G Rep

IRG/WP 07-20354

Current state of world standardization in the toxicometric methods for testing of wood preservatives

J Wazny

THURSDAY 24 MAY

Moose/Grizzly

08.30-10.00

WP 4.4 Treating processes and treatability of timber

Convener : Dr Mark Manning

IRG/WP 07-40360

Micro-Distribution of Metals in Wood Treated with a Nano-Copper Wood Preservative

H Matsunaga, M Kiguchi, P Evans

IRG/WP 07-40362

Effects of sodium hypochlorite on compression strength and copper retention of spruce wood treated with copper azole and alkaline copper quat

S Yıldız, E Dizman, A Temiz, Ü C Yıldız

IRG/WP/07-40365

Effect of ozone treatment on survival of termites and wood decay fungi

A M Taylor, L J Mason, J J Morrell

IRG/WP 07-40366

Comparison of permeability at different levels of moisture content in Bornmullerian fir (*Abies bornmulleriana* Mattf.) and Eastern spruce (*Picea orientalis* L.) impregnated under vacuum/pressure through full-cell method by using CCA and CCB of different concentrations

I Usta

Wrangler/Prospector/Homesteader

WP 1.3 Bluestain and moulds

Convener: Dr Miha Humar

IRG/WP 07-10612

Biological Protection of Composite Panel from Moulds and Decay

Dian-Qing Yang, Xiang-Ming Wang, Hui Wan

IRG/WP 07-30429

Effects of chlorothalonil (CTN) and butylated hydroxytoluene (BHT) on microbial communities involved in the deterioration of wood using T-RFLP II: Results from field studies

G T Kirker, M L Prewitt, S V Diehl

IRG/WP 07-20359

Efficacies of physical barriers for preventing blue-stain of Japanese red pine logs

H Taniuchi, T Koiwa, H Masuya, S Doi

IRG/WP 07-30428

End Coating Masson Pine Grown in South China to Prevent the Development of Blue Stain

Zhao Youke, Qin Li, Huang Rongfeng, Lu Jianxiong

Illustrated comment to poster

Discolorations in Southern Hardwood Logs: Biological and Non-biological Staining Control Practices

N Irby, K Ragon

THURSDAY 24 MAY

Moose/Grizzly

Wrangler/Prospector/Homesteader

10.30-12.00

WP 4.4 Treatment processes and treatability of timber, cont'd

WP 1.7 Natural durability

Convener: Dr Mark Manning

Convener: Dr Andrew H H Wong

IRG/WP 07-40368

The influence of different creosote process parameters on penetration, retention and bleeding on glulam

F G Evans

IRG/WP 07-10607

Lyctine susceptibility testing and dealing with rarely susceptible hardwood species

L J Cookson, J Carr, N Chew, J W Creffield

IRG/WP 07-40369

Effect of barriers on moisture content of treated and non-treated utility poles

C S Love, J J Morrell

IRG/WP 07-10611

On the reasons of *Prunus africana* natural durability

F Mburu, S Dumarçay, M F Thévenon, P Gérardin

IRG/WP 07-40373

The Current Situation Of Wood Poles Installed In Ilha Do Mel: A Wood Pole Biodegradation Diagnostic

C C Borges, J C Moreschi

IRG/WP 07-10617

Study of natural durability of Spanish *Eucalyptus globulus* wood

D Lorenzo, M T Troya, M J Prieto, C Baso, M Touza

IRG/WP 07-40370

Preventing the introduction of *Xylosandrus crassiusculus* by dipping green lumber in insecticides prior to shipment

C F Schauwecker, R F Mizell III, J J Morrell

IRG/WP 07-20356

Methods for Determining the Role of Extractives in the Natural Durability of Western Redcedar Heartwood

R Stirling, C R Daniels, J E Clark, P I Morris

Tabled papers

Section 1 Biology

IRG/WP 07-10603

The influence of wood density on the durabilities of three Ghanaian hardwoods (*Nauclea diderrichii* (de Wild.) Merr., *Nesogordonia papaverifera* (A. Chev.) R. Capuron and *Corynanthe pachyceras* (Welw.))
C Antwi-Boasiako, A J Pitman, J R Barnett

IRG/WP 07-10613

An investigation of the use and durability of some industrial and domestic woods of Iran against destructives factor in Caspian Sea
S M Kazemi

IRG/WP 07-10614

Marine exposure assessment in southern Portugal of the natural resistance of a number of lesser known species of tropical hardwoods to teredinid and limnoriid borers
J R Williams, S M Cragg, L M S Borges, J D Icely, G S Sawyer

Section 3 Wood protecting chemicals

IRG/WP 07-30418

Potentiality of use extracts from *Tetraclinis articulata* like biocide against wood destroying organisms: *Reticulitermes santonensis*
F El hanbali, N Amusant, F Mellouki, M Akssira, C Baudasse

IRG/WP 07-30434

Treatment of Selected Lesser Used Timber Species against Subterranean Termites using Heartwood Extracts from Teak (*Tectona grandis*) and Dahoma (*Piptadeniastrum africanum*)
A Asamoah, C Antwi-Boasiako

Section 4 Processes and properties

IRG/WP 07-40355

Bamboo Protection Research: Contributions from India
S Kumar

IRG/WP 07-40357

The effect of an ionic liquid of imidazolium tetrafluoroborates series on Scots pine wood properties
A Fojutowski, R Szukała, J Pernak

IRG/WP 07-40359

Comparative study between full cell and passive impregnation method of wood preservation for laser incised Douglas-fir lumber
Md N Islam, K Ando, H Yamauchi, Y Kobayashi, N Hattori

IRG/WP 07-40379

Preservative treatment of Golla cane (*Daemonorops jenkinsiana*) by pressure process
K Akhter, M Hoque Chowdhury

IRG/WP 07-40383

Influence of Grain Direction on Penetration, Retention, and Leaching of CCA(C) in Sapwood and Heartwood of Kenyan-Grown *Eucalyptus saligna* and *Acacia mearnsii*
R Venkatasamy

IRG/WP 07-40384

Influence of Grain Direction on Penetration, Retention, and Leaching of CCA(C) in Sapwood and Heartwood of Kenyan-Grown *Cupressus lusitanica* and *Pinus patula*
R Venkatasamy

Section 5 Environmental aspects

IRG/WP 07-50243

Reduction of Environmental Toxicity Through Eco-friendly Wood Biopreservative
A Humayan Kabir, M Firoz Alam