

THE INTERNATIONAL RESEARCH GROUP ON WOOD PROTECTION

The 36th Annual Meeting of IRG

Technical programme and Abstracts

**IRG Secretariat
SE-100 44 Stockholm
Sweden
www.irg-wp.com**

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Part 1 Technical programme

**IRG Secretariat
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MONDAY 25 APRIL

J N Tata Auditorium

10.30-12.00

Keynote presentations

Chairman: Dr Gérard Deroubaix

IRG/WP 05-30386

Status of wood preservation in India

S Gairola, P Aggarwal

IRG/WP 05-10568

Natural Durability of Tropical Species – Variations and Prospects

A H H Wong, Y S Kim, A P Singh, W C Ling

MONDAY 25 APRIL

Seminar Hall A

13.30-15.00

WP 1.1/WP 1.3 Physiology of decay/Bluestain and moulds

Chairpersons: Dr Frederick Green III and Ms Isabelle Le Bayon

IRG/WP 05-10555

Serpula lacrymans, The Dry Rot Fungus and Tolerance Towards Copper-Based Wood Preservatives

A C Steenkjær Hastrup, F Green III, C Clausen, B Jensen

IRG/WP 05-10562

Evaluation of decay fungi in Norwegian buildings

G Alfredsen, H Solheim, K Mohn Jenssen

IRG/WP 05-10566

Studies on the resistance of DMDHEU treated wood against white-rot and brown-rot fungi

P Verma, C Mai, A Krause, H Militz

IRG/WP 05-10565

The influence of fungi causing blue – stain on absorptiveness of Scotch pine wood

A Fojutowski

Seminar Hall B

WP 4.2 Substrate modification and non-biocidal treatments

Chairman: Dr Andreas Rapp

IRG/WP 05-40296

Corrosion of fasteners in heat-treated wood – progress report after two years' exposure

J Jermer, B-L Andersson

IRG/WP 05-40304

Properties of hot oil treated wood and the possible chemical reactions between wood and soybean oil during heat treatment

J Wang, P A Cooper

IRG/WP 05-40300

The effects of chemical modification on the physical properties of alder and spruce particleboards

E Dizman, Ü C Yildiz, H Kalaycioglu, S Yildiz, A Temiz, E D Gezer

IRG/WP 05-40302

Effects of artificial UV weathering and soft rot decay on heat treated wood

M D Hale, S C Ghosh, M J Spear

IRG/WP 05-40303

Influences of the hydro-thermal treatment on physical properties of beech wood (*Fagus orientalis*)

B Mohebbi, I Sanaei

MONDAY 25 APRIL

Seminar Hall A

15.30-17.30

WP 5.2/WP 5.1 Environmental risk assessment/ Environmental management of timber products

Chairman: Ms Carol Clausen

IRG/WP 05-50224

Proceedings from the 6th International Wood Preservation Symposium "Environment and wood preservation" – Short report from the symposium
G Deroubaix

IRG/WP 05-50232

Leaching of Arsenic from Mulch Made from Recycled Construction and Demolition Wood
T Shibata, H Solo-Gabriele, T Townsend, B Dubey

IRG/WP 05-50236

Comparison of Temporal Changes in Metal Leaching and Aquatic Toxicity from Wood Treated with CCA and Alternative Preservatives
B Dubey, T Townsend, G Bitton, H Solo-Gabriele

IRG/WP 05-50234

Inorganic preservative levels in soil near a noise barrier treated with different preservatives after 8 years in service in Sweden
P Cooper, T Ung, M-L Edlund, J Jermer, O Söderström

IRG/WP 05-50235

Disposal of Pressure Treated Wood in Construction and Demolition Debris Landfill
T Townsend, B Dubey, J Jambeck, H Solo-Gabriele

IRG/WP 05-50230

Removal of copper, chromium and arsenic from CCA treated wood using boron compounds
B Tarakanadha, T Hata, S N Kartal, W J Hwang, Y Imamura

IRG/WP 05-50225

Leaching Characteristics of Alder Wood Treated with Copper Based Wood Preservatives
A Temiz, Ü C Yildiz, E D Gezer, S Yildiz, E Dizman

Seminar Hall B

WP 1.7 Natural durability

Chairman (acting): Dr Mark Mankowski

IRG/WP 05-10551

Durability of *Anogeissus acuminata* timber used for plank-built catamarans
M V Rao, M Balaji, V Kuppusamy, K S Rao

IRG/WP 05-10552

Cleistanthus collinus (Roxb.) Benth. ex Hook. f. and *Wrightia tinctoria* (Roxb.) R. Br. -- two timbers with promising durability under marine conditions
M V Rao, M Balaji, V Kuppusamy, K S Rao

IRG/WP 05-10567

Biological Durability of Laminated Veneer Lumber from Durable and Non-Durable Wood Species
P Nzokou, J Zyskowski, S Boury, D P Kamdem

IRG/WP 05-20310

Effect of permeability and extractives on the decay rate of southern pine sapwood in above ground exposure
D D Nicholas, T P Schultz, L Sites, D Buckner

IRG/WP 05-20311

Effect of felling time related to lunar calendar on the durability of wood and bamboo -Fungal degradation during above ground exposure test for 2 years - (Preliminary report)
K Yamamoto, S Uesugi, K Kawakami

IRG/WP 05-10545

A monograph on *Sonneratia apetala* (Keora)
M A Islam, G N M Ilias, M A Rahman

IRG/WP 05-10546

Introducing bamboos for their importance and conservation
A K Lahiry

IRG/WP 05-50228

Effects of hard water, sea water and humic acid on the release of CCA components from treated wood

S N Kartal, W-J Hwang, Y Imamura

IRG/WP 05-50229

Remediation of CCA-treated wood by chitin and chitosan

S N Kartal, Y Imamura

TUESDAY 26 APRIL

J N Tata Auditorium

08.30-10.00

Section 3 Wood protecting chemicals. Main session

Chairman: Dr Jeff Lloyd

Vice chairman (acting): Dr Radu Craciun

IRG/WP 05-10554

Characterisations of the mode of action(s) of Methylene bithiocyanate (MBT) in *Ophiostoma floccosum*

T Singh, B Kreber, A Stewart, M Jaspers

IRG/WP 05-30364

Performance of Oriented Strandboard, Medium Density Fiberboard, Plywood, and Particleboard Treated with Tebuconazole in Supercritical Carbon Dioxide

J J Morrell, M N Acda, A R Zahora

IRG/WP 05-30379

Long-term efficacy of wood dip-treated with multicomponent biocides

C A Clausen, V W Yang

IRG/WP 05-30366

A comparison of effectiveness of three waterborne preservatives against decay fungi in underground mines- An appraisal

P Narayanappa

IRG/WP 05-30375

Preliminary evaluation of new quaternary ammonia compound, didecyl dimethyl ammonium tetrafluoroborate for preventing fungal decay and termite attack

S N Kartal, W-J Hwang, Y Imamura

TUESDAY 26 APRIL

J N Tata Auditorium

10.30-12.00

Section 5 Environmental aspects. Main session

Chairman: Prof Dr D Pascal Kamdem

Vice-chairman (acting): Dr Jenna Jambeck

IRG/WP 05-50233

Inorganic preservative levels in soil under treated wood decks after 8 years natural exposure in Borås, Sweden

P Cooper, T Ung, M-L Edlund, J Jermer

IRG/WP 05-50226

Removal of heavy metals from treated wood using biological methods

D-W Son, D-H Lee

IRG/WP 05-50227

Long-Term Release of Arsenic, Chromium, and Copper from CCA-Treated Wood and Ash

H Yoon, H Kang, Y-C Jang

IRG/WP 05-50231

CCA-treated Wood Disposed in Landfills and Life-cycle Trade-Offs With Waste-to-Energy and MSW Landfill Disposal.

J Jambeck, K Weitz, T Townsend, H Solo-Gabriele

TUESDAY 26 APRIL

Seminar Hall A

13.30-15.00

WP 3.2/WP 3.3 New wood protecting chemicals/Wood preservative performance

Chairman (acting): Dr Radu Craciun

IRG/WP 05-30365

Influence of carboxylic acids on leaching of copper amine based preservatives
M Humar, P Kalan, F Pohleven

IRG/WP 05-30372

Preliminary Studies on ZiBOC- A Potential Eco-friendly Wood Preservative
S Tripathi, J K Bagga, V K Jain

IRG/WP 05-30374

Adsorption of ACQ and CuMEA Wood Preservatives in Red pine
C Tascioglu, P Cooper, T Ung

IRG/WP 05-30383

Permanence of permethrin and bifenthrin in framing timbers subjected to hazard class 3 exposure
A C Hunt, D G Humphrey, R Wearne, L J Cookson

IRG/WP 05-30371

Differential retention and leaching of CCA (C) in sapwood and heartwood of Kenyan-grown blue gum (*Eucalyptus saligna*) and black wattle (*Acacia mearnsii*)
R Venkatasamy

IRG/WP 05-30369

Kinetic modelling of adsorption of quaternary ammonium compounds by Scots pine wood sawdust (*Pinus sylvestris* L.)
J Zabielska-Matejuk

Seminar Hall B

WP 2.2 Microbiological test methodology

Chairman: Dr Shuichi Doi

IRG/WP 05-10556

Development on Damage Functions of Wood Decay for Building Envelope Design
H Suzuki, Y Kitadani, K Suzuki, A Iwamae, H Nagai

IRG/WP 05-20319

Some Experiences with Stake Tests at BAM Test Fields and in the BAM Fungus Cellar
Part 1: Comparison of Results of Visual Assessments and Determinations of Static Moduli of Elasticity (MOE)
M Grinda, S Göller

IRG/WP 05-20320

Some Experiences with Stake Tests at BAM Test Fields and in the BAM Fungus Cellar
Part 2: Comparison of Static and Dynamic Moduli of Elasticity (MOE)
M Grinda, S Göller

IRG/WP 05-20316

How to document the Performance of Super-Critical Treated Wood in above Ground Situations?
N Morsing, A H H Wong, F Imsgard, O Henriksen

TUESDAY 26 APRIL

Seminar Hall A

15.30-17.30

WP 3.2/WP 3.3 New wood protecting chemicals/Wood preservative performance, cont'd
Chairman (acting): Dr Darrel Nicholas

Part B: (Plant/Animal extractives)

IRG/WP 05-30368

Evaluation of copperised cashew nut shell liquid and Neem oil as wood preservatives
D Venmalar, H C Nagaveni

IRG/WP 05-30367

Fungal decay resistance of Rubber wood treated with heartwood extract of Rosewood
A K Sethy, H C Nagaveni, S Mohan, K T Chandrashekar

IRG/WP 05-30370

Neem leaves, a potential source for protection of hardwood against wood decaying fungus
S Dhyani, S Tripathi, V K Jain

IRG/WP 05-30373

Chemical compounds from *Eperua falcata* and *Eperua grandiflora* heartwood and their biological activities against wood destroying fungus (*Coriolus versicolor*)
N Amusant, C Moretti, B Richard, E Prost, J M Nuzillard, M-F Thévenon

IRG/WP 05-30377

Solution stability and Mechanical properties of Chitosan treated Pine
E Larnøy, M Eikenes, H Militz

IRG/WP 05-30378

Chitosan for wood protection - state of the art
M Eikenes, G Alfredsen, E Larnøy, H Militz, B Kreber, C Chittenden

IRG/WP 05-30387

Reduction of preservatives leaching from wood by the application of animal proteins
B Mazela, I Ratajczak, M Bartkowiak

Seminar Hall B

WP 1.5/WP 2.5 Biology of termites and other insects/Insect test methodology
Chairpersons: Professor Dr J Kenneth Grace and Mr Jim Creffield

IRG/WP 05-10547

Termite durability of sugi (*Cryptomeria japonica*) heartwood kiln-dried under a high-temperature process in relation to wood extractives
S Shibutani, E Obataya, K Hanata, S Doi

IRG/WP 05-10548

Termite response to Agricultural fiber composites: Hemp
J K Grace

IRG/WP 05-10549

Termite response to Agricultural fiber composites: Bagasse
J K Grace

IRG/WP 05-10558

Incursion of *Hylotrupes bajulus* Linnaeus (European House Borer) into Western Australia
M Grimm

IRG/WP 05-20307

Laboratory and field evaluation of Plasmite Reticulation System using bifenthrin as a chemical barrier within wall cavities against subterranean termites
J R J French, B Ahmed, J Thorpe, A Anderson

IRG/WP 05-20315

Protection for whole-of-house timbers from subterranean termites in Australia
B M Ahmed, J R J French, P Vinden, P Blackwell, J Hann

IRG/WP 05-20309

A modified method to determine the toxic values of chemicals against *Lyctus africanus* (Lesne) by larval transfer method (laboratory method)
R Muthukrishnan, O K Remadevi

IRG/WP 05-30389

Performance of Two Imidacloprid-Treated Malaysian Hardwoods in an Accelerated Aboveground Termite Test
A H H Wong

WEDNESDAY 27 APRIL

J N Tata Auditorium

08.30-10.00

Section 2 Test methodology and assessment. Main session

Chairman: Dr Ina Stephan

Vice-chairman: Ms Isabelle Le Bayon

IRG/WP 05-10550

Laboratory bioassays with termites – The importance of termite biology

M Lenz

IRG/WP 05-20308

Field test design for service life prediction of wooden components

A O Rapp, C Brischke

IRG/WP 05-20314

Above-Ground Durability Estimation in Australia. Results after 16 years exposure

L P Francis, J Norton

WEDNESDAY 27 APRIL

J N Tata Auditorium

10.30-12.00

Section 4 Processes and properties. Main session

Chairman: Dr Koichi Yamamoto

Vice-chairman: Dr Andreas Rapp

IRG/WP 05-40294

A Preliminary Investigation of the Properties of Engineered Wood Composite Panels Treated with Copper Naphthenate

J W Kirkpatrick, H M Barnes

IRG/WP 05-40312

Durability of different heat treated materials from industrial processes in ground contact

C R Welzbacher, A O Rapp

IRG/WP 05-40316

Durability of Wood Plastic Composites Relative to Natural Weathering and Preservative Treatment With Zinc Borate

M E Mankowski, F M Ascherl, M J Manning

IRG/WP 05-40305

Strategies for enhancing usage of treated wood in Indian context

P K Aggarwal, S Gairola

WEDNESDAY 27 APRIL

J N Tata Auditorium

13.30-15.30

IRG-IUFRO symposium “Tropical Wood Protection”

Chairman: Dr Andrew H H Wong

Vice-chairman: Mr Jack Norton

Introduction

Brief remarks on IUFRO Research Group 5.03 (Wood Protection)

Session 1: Natural Durability

IRG/WP 05-10553

Durability of Bamboos in India against termites and fungi and chemical treatments for its enhancement

O K Remadevi, R Muthukrishnan, H C Nagaveni, R Sundararaj, G Vijayalakshmi

IRG/WP 05-10557

Natural decay resistance of some lesser known /used timber species from the forests of Tanzania

S A Amartey, P R Gillah, R C Ishengoma, J Gabriel, D H Kitojo

IRG/WP 05-10563

Natural durability of eight tropical hardwoods species from Africa

P Nzokou, K Wehner, D P Kamdem

IRG/WP 05-10561

Natural durability of some commercial timbers of Sarawak, Malaysia in tropical marine environment

K Jenang, W C Ling

Session 2: Field Test Performance of Treated Wood and Treatability

IRG/WP 05-30382

Performance of *Paraserianthus falcataria* treated with ACZA, ACQ, CC or CCA and exposed in Krishnapatnam harbour, India
B Tarakanadha, K S Rao, J J Morrell

IRG/WP 05-40321

Protection and efficient utilization of plantation grown lesser-known timbers of arid region in India - *Acacia tortilis*, *Prosopis juliflora* and *Prosopis cineraria*
S H Jain, H Kumar, R Arya, R L Srivastava

IRG/WP 05-40299

Preservative technique of three commercially important timber species – Sissoo (*Dalbergia sissoo*), Akasmoni (*Acacia auriculiformis*) and Ghoraneem (*Melia azedarach*) of Bangladesh
M R Bulbul, M O Hannan, P K Sarker, A A Mahafuz, G N M Ilias

IRG/WP 05-30384

Tropical In-Ground Durability of Structural Sarawak Hardwoods Impregnated to High Retention with CCA-salts, CCA-oxide and FCAP after 20 Years Exposure
W C Ling, A H H Wong

IRG/WP 05-20318

Venezuelan net of test fields for the study of the effectiveness of treatments of non commercial timbers from natural tropical forests
O Encinas, N Mora

IRG/WP 05-30385

Industrial wood preservation in Kenya. Present status – future prospects
R Venkatasamy

Conclusions

Closing remarks, announcements and proposals

THURSDAY 28 APRIL

J N Tata Auditorium

08.30-10.00

Section 1. Biology. Main session

Chairman (acting): Dr Frederick Green III

Vice-chairman (acting): Dr Laurie Cookson

IRG/WP 05-10560

Termite Field Tests of Various Timber Species Treated with Permethrin using Supercritical Carbon Dioxide
A Qader, L J Cookson, J W Creffield, D K Scown

IRG/WP 05-10564

Black Stain of Western red-cedar by *Aureobasidium pullulans* and its Relationship with Tropolone Depletion
R Chedgy, R Daniels, P I Morris, C Breuil

IRG/WP 05-40306

Moisture Adsorption Behaviour of Rubber Wood Decayed by White and Brown Rot Fungi
S S Chauhan, and H C Nagaveni

IRG/WP 05-40314

Utility, deterioration and preservation of marine timber in India
B Tarakanadha, M V Rao, M Balaji, P K Aggarwal, K S Rao

THURSDAY 28 APRIL

Seminar Hall A

10.30-12.00

WP 2.3 Chemical/Physical analysis

Chairman: Mr Ed Suttie

IRG/WP 05-20313

Preliminary observations of the effect of growth ring orientation on the surface checking of flat sawn Southern pine decking
K Urban, P D Evans

IRG/WP 05-40301

Correlation between changes in colour and chemical composition during photo-degradation of wood surfaces
K K Pandey

IRG/WP 05-20317

An investigation to assess the feasibility of developing an accelerated laboratory test to determine the abrasion resistance of lesser-used timber species for use in marine construction
G S Sawyer, J R Williams

Seminar Hall B

WP 4.3/WP 4.4 Engineered wood products/ Processes and treatability

Chairman (acting): Dr Koichi Yamamoto

IRG/WP 05-40308

Shockwaves in wood preservation
G Jagadeesh, R Lal, G Ravikumar, K S Rao

IRG/WP 05-20312

Biological resistance of wood-based composites under protected aboveground conditions
K Tsunoda

IRG/WP 05-40295

Non-pressure treatability of plywood by CCA, CCB and boron
A K Lahiry

IRG/WP 05-40310

Specific gravity and moisture content of particleboards treated with various chemicals
Ü C Yildiz, A A Var, H Kalaycioglu, S Yildiz

IRG/WP 05-40309

Treating *Eucalyptus tereticornis* wood with boron: Optimizing treatment conditions
T K Dhamodaran, R Gnanaharan

IRG/WP 05-40311

Treatment of fresh green round bamboos culms (*Dendrocalamus strictus*) by sap-displacement (wick) method
R Lal and C N Vani

IRG/WP 05-40315

A review of the configuration of bordered pits to stimulate the fluid flow
I Usta

IRG/WP 05-40317

A note on the distribution of copper-chrome-boric (CCB) along the culm length of freshly felled bamboo treated by modified Boucherie process.
R Lal, C N Vani

THURSDAY 28 APRIL

Seminar Hall A

13.30-15.00

WP 4.1 Local aspects

Chairman (acting): Dr Satish Kumar

IRG/WP 05-40307

Need to develop processing technologies (for value addition) of the species evaluated for their properties and uses

S R Shukla, S K Sharma, Y M Dubey, P Kumar, R V Rao, K S Shashidhar

IRG/WP 05-40313

Strategies for popularizing wood preservation technologies. Role of Extension Support Division of IWSST

A M Kanfade, S C Gairola, P Aggarwal

IRG/WP 05-30388

Status of wood preservation industry in India

S Kumar

IRG/WP 05-40319

Rubber wood for fishing canoe construction

L Edwin, S N Thomas, B Meenakumari

IRG/WP 05-40320

Preservative treatment of rubber wood (*Hevea brasiliensis*) to increase its service life

K Akhter

IRG/WP 05-40297

Conservation of *Nypa fruticans* and indigenous timber species of Sundarban mangrove forest of Bangladesh by using preservative treatment

G N M Ilias

IRG/WP 05-40298

The present status, characteristics and problems of wood based turning handicrafts industry in Bangladesh

A K M A Bosunia, M A Islam, M M Rahman, A K Lahiry

IRG/WP 05-40318

Performance of CCA wood preservative and CCA treated wooden materials (pole, anchor log, cross-arm etc) with special reference to Bangladesh

G N M Ilias

Seminar Hall B

WP 3.2/WP 3.3 New wood protecting chemicals/Wood preservative performance, cont'd

Chairman (acting): Dr Andy Pitman

IRG/WP 05-30376

Surface protection of wood with titanium, zirconium and manganese compounds

K J Schmalzl, P D Evans

IRG/WP05-30381

Standard and accelerated L-joint testing of boron-additive wood protection systems

A Mohareb, J Van Acker, M Stevens

IRG/WP 05-10559

Timber deterioration and its prevention in marine environment

B S Swami, M Udhayakumar, P Kumar, A B Samui

IRG/WP 05-30380

Effect of borate on uptake and efficacy of an anti-sapstain treatment

J Luo, H Chen, J J Morrell