

HOLZFORSCHUNG

INTERNATIONAL JOURNAL OF THE BIOLOGY, CHEMISTRY,
PHYSICS AND TECHNOLOGY OF WOOD

EDITOR-IN-CHIEF

Lennart Salmén, Sweden

EDITORIAL BOARD

G. Daniel, Sweden

H. Militz, Germany

T. Rosenau, Austria

H. Sixta, Austria

T. Vuorinen, Finland

ADVISORY BOARD

D.S. Argyropoulos, USA

M.Y. Balakshin, Canada

J. Barnett, UK

I. Burgert, Germany

D.V. Evtuguin, Portugal

C.E. Frazier, USA

K. Fukushima, Japan

W. Gindl-Altmutter, Austria

W.G. Glasser, USA

B. Holmbom, Finland

A. Isogai, Japan

J.F. Kadla, Canada

G. Koch, Germany

D. Lachenal, France

C. Laine, Finland

S.D. Mansfield, Canada

J.J. Morrell, USA

P. Niemz, Switzerland

A. Potthast, Austria

A.J. Ragauskas, USA

J. Ralph, USA

R.W. Rice, USA

J. del Rio, Spain

J.-G. Salin, Finland

U. Schmitt, Germany

T.P. Schultz, USA

J. Sipilä, Finland

T. Takano, Japan

T. Tamminen, Finland

H. Theliander, Sweden

J. Welling, Germany

S.M. Willför, Finland

H. Yoshihara, Japan

DE GRUYTER

ABSTRACTED/INDEXED IN AGRICOLA (National Agricultural Library) · Baidu Scholar · Biobase · Cabell's Directory · CABI (over 50 subsections) · Chemical Abstracts Service (CAS): CAPlus; SciFinder · Chemical Engineering and Biotechnology Abstracts · CNKI Scholar (China National Knowledge Infrastructure) · CNPIEC: cnpLINKer · Compendex · Dimensions · EBSCO (relevant databases) · EBSCO Discovery Service · Engineering Village · Gale/Cengage · Genamics JournalSeek · Google Scholar · Inspec · Japan Science and Technology Agency (JST) · J-Gate · Journal Citation Reports/Science Edition · JournalGuide · JournalTOCs · KESLI-NDSL (Korean National Discovery for Science Leaders) · Microsoft Academic · Naviga (Softweco) · Norwegian Register for Scientific Journals, Series and Publishers · Paperbase · PaperChem · Pirabase · Polymer Library · Primo Central (ExLibris) · ProQuest (relevant databases) · Publons · PubsHub · QOAM (Quality Open Access Market) · ReadCube · Reaxys · SCImago (SJR) · SCOPUS · Sherpa/RoMEO · Summon (Serials Solutions/ProQuest) · TDNet · TEMA Technik und Management · Ulrich's Periodicals Directory/ulrichsweb · WanFang Data · Web of Science: Current Contents/Agriculture, Biology, and Environmental Sciences; Science Citation Index; Science Citation Index Expanded · WorldCat (OCLC)

The publisher, together with the authors and editors, has taken great pains to ensure that all information presented in this work (programs, applications, amounts, dosages, etc.) reflects the standard of knowledge at the time of publication. Despite careful manuscript preparation and proof correction, errors can nevertheless occur. Authors, editors and publisher disclaim all responsibility for any errors or omissions or liability for the results obtained from use of the information, or parts thereof, contained in this work.

The citation of registered names, trade names, trademarks, etc. in this work does not imply, even in the absence of a specific statement, that such names are exempt from laws and regulations protecting trademarks etc. and therefore free for general use.

ISSN 0018-3830 · e-ISSN1437-434X · CODENHOLZAZ

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/hfh.

RESPONSIBLE EDITOR Lennart Salmén, Professor MiU, Research Institutes of Sweden, RISE Bioeconomy/Biorefinery & Energy Principal Scientist, Box 5604 SE-114 86 Stockholm, Tel.: +46 8 676 7340 and +46 768 767 340, Email: lennart.salmen@ri.se

JOURNAL MANAGER Dr. Gunda Stöber, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05 – 279, Fax: +49 (0)30 260 05 – 325, Email: Holzforschung.editorial@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Claudia Neumann, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany, Tel.: +49 (0)30 260 05 – 226, Fax: +49 (0)30 260 05 – 264, Email: anzeigen@degruyter.com

© 2019 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING Compuscript Ltd., Shannon, Ireland

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim

COVER ILLUSTRATION Richter, H.G., and Dallwitz, M.J. 2000 onwards. Commercial timbers: descriptions, illustrations, identification, and information retrieval. In English, French, German, Portuguese, and Spanish. Version: 25th June 2009. <http://delta-intkey.com>



Contents

Original Articles

Nai-Wen Tsao, Shin-Hung Pan, Jeng-Der Chung, Yueh-Hsiung Kuo, Sheng-Yang Wang and Ying-Hsuan Sun
Accessing the natural variation of the abundances of major lignans in the heartwood of *Taiwania cryptomerioides* by ^1H -NMR and LC-MS profiling — 423

Shiou Yih Lee, Dhilia Udie Lamasudin and Rozi Mohamed
Rapid detection of several endangered agarwood-producing *Aquilaria* species and their potential adulterants using plant DNA barcodes coupled with high-resolution melting (Bar-HRM) analysis — 435

Christian Brischke, Simon Stricker, Linda Meyer-Veltrup and Lukas Emmerich
Changes in sorption and electrical properties of wood caused by fungal decay — 445

Lukas Sommerauer, Marie-France Thevenon, Alexander Petutschnigg and Gianluca Tondi
Effect of hardening parameters of wood preservatives based on tannin copolymers — 457

Yaoge Huang, Gaiyun Li and Fuxiang Chu
***In situ* polymerization of 2-hydroxyethyl methacrylate (HEMA) and 3-(methacryloxy)propyltrimethoxysilane (MAPTES) in poplar cell wall to enhance its dimensional stability — 469**

Ida Poljanšek, Primož Oven, Viljem Vek, Jan-Erik Raitanen, Jarl Hemming and Stefan Willför

Isolation of pure pinosylvins from industrial knotwood residue with non-chlorinated solvents — 475

Shanyuan Tan, Di Liu, Yong Qian, Jingyu Wang, Jinhao Huang, Conghua Yi, Xueqing Qiu and Yanlin Qin
Towards better UV-blocking and antioxidant performance of varnish via additives based on lignin and its colloids — 485

Daisuke Ando, Fumiaki Nakatsubo and Hiroyuki Yano
Thermal stability of lignin in ground pulp (GP) and the effect of lignin modification on GP's thermal stability: TGA experiments with dimeric lignin model compounds and milled wood lignins — 493

Cuihua Dong, Binshou Wang, Yahui Meng and Zhiqiang Pang
Preparation, structural changes and adsorption performance of heavy metal ions on sulfonated cellulose with varying degrees of substitution — 501

Jenny Bengtsson, Kerstin Jedvert, Artur Hedlund, Tobias Köhnke and Hans Theliander
Mass transport and yield during spinning of lignin-cellulose carbon fiber precursors — 509