1st International Lignin Symposium Program

1st Day September 13 (Fri.)
Venue: Clark Hall

12:00 – 14:00	Registration
14:00 – 14:30	Opening ceremony
14:30 – 15:15	Keynote speech Prof. Takao Masuda, Hokkaido University, Japan
15:30 – 16:30	Organ concert Player: Prof. Thomas Rosenau, University of Natural Resources and Life Sciences, Austria
17:30 – 19:30	Banquet at Sapporo Beer Garden

2nd Day September 14 (Sat.)
Venue: Frontier Research in Applied Sciences Building (Open: 8:30)

Oral presentation 9:00 – 10:20

【Chair: H. Miyafuji (Kyoto Prefectural Univ., Japan)】

201 Strategy of lignocellulose conversion using catalysts with controlled affinity to lignin
(Kyoto Univ., Japan) ○Takashi Watanabe, Yuki Tokunaga, Satoshi Oshiro, Kaori Saito, Hiroyuki Okano, Hiroshi Nishimura, Takashi Nagata, Keiko Kondo, Masato Katahira, Katsuhiro Isozaki, Hikaru Takaya Masaharu Nakamura

202 Chemodivergent hydrogenolysis of lignin into isolatable monomeric phenols
(Beijing Forestry Univ., China) ○Guoyong Song

203 LigniOx process concept for hydrolysis lignin - Converting lignin into dispersants and carbohydrate-rich residue to ethanol
(St1 Oy, Finland[1], VTT Tech. Res. Centre, Finland[2]) ○Minna Yamamoto[1], Anna Kalliola[2], Tom Granström[1], Tiina Liitiä[2]

204 Direct bio-butanol production from lignocellulosic material by the co-cultivation of white rot fungus and bacterium
(Univ. Miyazaki, Japan) ○Chu Luong Tri, Ichiro Kamei

Break 10:20 – 10:40

Oral presentation 10:40 – 12:00

【Chair: T. Yokoyama (Univ. Tokyo, Japan)】

205 Organosolv pulping of wheatstraw and miscanthus for vanillin production
(Univ. Dresden, Germany) ○Anton Hoffmann, Jan Friedrich Thuene, Martina Bremer, Steffen Fischer

206 Vanillin production by aerobic oxidation of native softwood lignin in tetrabutylammonium hydroxide as a novel reaction medium
(Kyoto Prefectural Univ., Japan[1], Forestry and Forest Products Research Institute, Japan[2]) Takashi Hosoya[1], ○Hisashi Miyafuji[1], Tatsuhiko Yamada[2]

207 Electro-oxidation of artificial lignin with natural mediators (phenolic compounds)
(Kyoto Univ., Japan) ○Kenichiro Naka, Yuki Tobimatsu, Hiroshi Kamitakahara, Yoshikuni Teramoto, Toshiyuki Takano

208 Lignin-based polymer composites for 3D printing
(North Carolina State Univ., USA) Xiaohang Sun, Heather Starkey, Anvita Panajkar, Hou-min Chang, Hasan Jameel, ○Lokendra Pal

Lunch break 12:00 – 13:20

Oral presentation 13:20 – 15:00

【Chair: T. Yamada (Forestry and Forest Products Research Institute, Japan)】

209 Difference in the MnO_2 oxidations between *p*-hydroxyphenyl, guaiacyl, and syringyl type lignin model compounds
(Univ. Tokyo, Japan) ○Shirong Sun, Takuya Akiyama, Tomoya Yokoyama, Yuji Matsumoto

210 Lignin isolation, depolymerization, demethylation, and quantitation with inorganic ionic liquid
(Univ. Wisconsin-Madison, USA) Ning Li, Zheng Li, Tianjiao Qu, ○Xuejun Pan

211 Techno-economic assessment of industrial-scale lignin fractionation
(North Carolina State Univ., USA) Xiao Jiang, Camilla Abbati de Assis, ○Hasan Jameel, Hou-min Chang, Ronalds Gonzalez

212 On the structure of softwood milled wood lignin
(Aalto Univ., Finland[1], RISE, Sweden[2], University of Natural Resources and Life Sciences, Austria[3]) ○Mikhail Balakshin[1], Ewellyn A. Capanema[2], Antje Potthast[3], Thomas Rosenau[3]

【Chair: T. Akiyama (Forestry and Forest Products Research Institute, Japan)】

213 Need for speed in lignin characterisation
(University of Natural Resources and Life Sciences, Austria[1], Wageningen Univ. Res., Netherland[2]) ○Ivan Sumerskii[1], Hubert Hettegger[1], Markus Bacher[1], Hassan Amer[1], Grigory Zinovyev[1], Katharina Dorninger[1], (Wageningen Univ. Res.) Roelant Hilgers[2], Mirjam Kabel[2], Thomas Rosenau[1], Antje Potthast[1]

Break 15:00 – 15:20

Oral presentation 15:20 – 17:20

214 Effects of autohydrolysis pretreatment on sweetgum lignin structures
(North Carolina State Univ., USA) Xiao Jiang, Robert H. Narron, Qiang Han, Sunkyu Park, ○Hou-min Chang, Hasan Jameel

215 Catechol-type lignan and neolignans are specifically present in the endocarp of seeds of Tung tree
(Kagawa Univ., Japan) ○Toshisada Suzuki, Yuma Onishi, Ayako Katagi, Takeshi Katayama

【Chair: K. Koda (Hokkaido Univ., Japan)】

216 Characteristics of lignin derivatives produced from acid catalyzed solvolysis system of softwood with high boiling alcohols
(Forestry and Forest Products Research Institute, Japan)○Eri Takata, Thi Thi Nge, Shiho Takahashi, Yasunori Ohashi, Tatsuhiko Yamada

217 Lignin co-polymer for coating metal surfaces
(Aarhus Univ., Denmark) ○Marleny Cáceres Najarro, Miroslav Nikolic, Joseph Iruthayaraj, Anders Feilberg, Ib Johannsen

218 Nature-inspired lignin-based sunscreen
(South China Univ. Tech., China) ○Yong Qian, Yijie Zhou, Dongjie Yang, Xueqing Qiu

219 Model lignin films by spin-coating
(VTT Tech. Res. Centre., Finland[1], Aalto Univ., Finland[2]) ○Marc Borrega[1], Taina-Ohra-aho[1], Orlando Rojas[2], Tarja Tamminen[1]

Poster presentation 17:30 – 19:30

3rd Day September 15 (Sun.)
Venue: Frontier Research in Applied Sciences Building (Open: 8:30)

Oral presentation 9:00 – 10:20

【Chair: T. Watanabe (Kyoto Univ., Japan)】

301 Biomimetic engineering for high performance lignin/polymer composite materials
(South China Univ. Tech., China) ○Weifeng Liu, Jinhao Huang, Xueqing Qiu

302 Lignin as a functional material at carbon fiber-polymer interphases
(Kanazawa Univ., Japan[1], Kanazawa Institute of Technology, Japan[2]) ○László Szabó[1], Romain Milotskyi[1], Tetsuo Fujie[1], Takayuki Tsukegi[2], Naoki Wada[1], Kenji Takahashi[1]

303 Highly stretchable and tough hydrogels derived from lignin
(Shaanxi Univ. Sci. Tech., China) ○Xiangyu You, Xuelian Wang, Huijie Zhang, Xinping Li

304 Chemical modification of plasticized lignins using reactive extrusion
(Institute of Molecular Chemistry-Reims, France[1], Kanazawa Univ., Japan[2]) ○Romain Milotskyi[1], László Szabó[2], Kenji Takahashi[2], Christophe Bliard[1]

Break 10:20 – 10:40

Oral presentation 10:40 – 11:40

【Chair: Y. Tobimatsu (Kyoto Univ., Japan)】

305 Synthesis and antibacterial activity of oligomeric DHP from coniferin and syringin
(Hubei Univ. Tech., China) ○Yimin Xie, Xuekuan Chen, Chen Jiang, Shaoqiong Zeng

306 Conversion of byproduct lignin generated during bioethanol generation from woody biomass into plant growth promotor
(Nagoya Univ., Japan) ○Qiang Liu, Tsubasa Kawai, Yasuyuki Matsushita, Yoshiaki Inukai, Dan Aoki, Kazuhiko Fukushima

307 Engineering approaches for diverting lignin biosynthesis towards the production of platform chemicals in plants
(Lawrence Berkeley National Laboratory, USA[1], Brookhaven National Laboratory, USA[2]) ○Aymerick Eudes[1], Chien-Yuan Lin[1], Edward Baidoo[1], Patrick Shih[1], Chang-Jun Liu[2], Henrik Scheller[1]

Lunch break 11:40 – 13:00

Oral presentation 13:00 – 14:00

【Chair: T. Umezawa (Kyoto Univ., Japan)】

308 New lignin monomers
(Univ. Wisconsin-Madison, USA[1], Univ. British Columbia, Canada[2], Institute of Natural Resources and Agrobiology of Seville, Spain[3]) ○John Ralph[1], Hoon Kim[1], Rebecca A Smith[1], Steven D. Karlen[1], Shawn D. Mansfield[2], Jorge Rencoret[3], Ana Gutiérrez[3], José Carlos del Río[3]

309 Regulation of differentiation and growth by plant peroxidase CWPO-C
(Kyushu Univ., Japan) ○Diego A. Yoshikay, Yusuke Yokoyama , Jun Shigeto, Yuji Tsutsumi

310 A laccase oxidizes *p*-coumaryl alcohol in the compression wood cell walls of Japanese cypress.
(Kyoto Univ., Japan[1], Nagoya Univ., Japan[2]) ○Hideto Hiraide[1], Yuki Tobimatsu[1], Yasuyuki Matsushita[2], Kazuhiko Fukushima[2], Masaru Kobayashi[1], Arata Yoshinaga[1], Keiji Takabe[1]

Break 14:00 – 14:20

Oral presentation 14:20 – 15:40

【Chair: K. Fukushima (Nagoya Univ., Japan)】

311 Commercial production of lignin-based biodegraded materials from industrial bioethanol by-products in China
(Dalian Polytechnic Univ., China) ○Runcang Sun

312 CRISPR/Cas9-based engineering of lignin in poplar
(Ghent Univ., Belgium[1], VIB Center for Plant Systems Biology, Belgium[2], Univ. Wisconsin-Madison, USA[3], VIVES, Belgium[4]) Barbara De Meester[1,2], Barbara Madariaga[1,2], Lisanne de Vries[1,2], Alexandra Chanoca[1,2], Marlies Brouckaert[1,2], Kris Morreel[1,2], Hoon Kim[3], John Ralph[3], Jan Van Doorsselaere[4], Ruben Vanholme[1,2], ○ Wout Boerjan[1,2]

313 Regulation of lignin aromatic composition in grasses: a rice model study
(Kyoto Univ., Japan[1], Great Lakes Bioenergy Research Center, USA[2], Univ. Wisconsin-Madison, USA[3], Tokushima Univ., Japan[4]) ○Yuri Takeda[1], Yuki Tobimatsu[1], Shiro Suzuki[1], Steven D. Karlen[2,3], John Ralph[2,3], Keishi Osakabe[4], Yuriko Osakabe[4], Masahiro Sakamoto[1], Toshiaki Umezawa[1]

314 Using the *brown midrib* (*bmr*) mutants to identify nonredundant genes that impair lignin synthesis in sorghum
(U.S. Department of Agriculture[1], USA, Univ. Nebraska-Lincoln, USA[2]) ○Scott E. Sattler [1,2], Hannah M. Tetreault[1,2], Deanna L. Funnell-Harris[1,3]

Closing ceremony 15:40 – 16:00

Poster presentation

(2nd Day 17:30 – 19:30)

P01 Study on the optimal conditions for generation of lignin-derived aromatic aldehyde and acid under hydrogen peroxide bleaching conditions
(Univ. Tokyo, Japan) ○Tatsuyuki Sakai, Takuya Akiyama, Tomoya Yokoyama, Yuji Matsumoto

P02 Enzymatic polymerization of monolignols in organic solvents
(Toyama Prefectural Univ., Japan) ○Ayana Yamashita, Takao Kishimoto, Masahiro Hamada, Noriyuki Nakajima, Daisuke Urabe

P03 Effects of lignin extraction and structural differences on nanoparticle formation
(Seoul National Univ., South Korea) ○Jae Hoon Lee, In-Gyu Choi, Joon Weon Choi

P04 Structural characterization of lignin extracted from willow by deep eutectic solvents (DESs)
(Qilu Univ. Technol., China) ○Yu Liu, Tengfei Li, Gaojin Lyu

P05 Efficient depolymerization of lignin in methanol/formic acid media by microwave heating
(Qilu Univ. Technol., China) ○Lupeng Shao, Feng Xu

P06 Structural and thermochemical analysis of lignin extracted from willow by deep eutectic solvents
(Qilu Univ. Technol.) ○Gaojin Lyu, Chao Wang, Xingxiang Ji, Guihua Yang, Jiachuan Chen

P07 Generation of lignin-enriched grass biomass by targeted knockout of transcriptional repressors for lignification
(Kyoto Univ., Japan[1], Tokushima Univ., Japan[2]) ○Takuji Miyamoto[1], Rie Takada[1], Yuki Tobimatsu[1], Yuri Takeda[1], Shiro Suzuki[1], Masaomi Yamamura[1], Keishi Osakabe[2], Yuriko Osakabe[2], Masahiro Sakamoto[1], Toshiaki Umezawa[1]

P08 Effects of mutations in *hirA* encoding a putative chromatin remodeler on lignin degradation and transcriptional expression of wood degrading enzyme genes in *Pleurotus ostreatus*

(Kyoto Univ., Japan) ○Hongli Wu, Takehito Nakazawa, Ryota Morimoto, Shivani, Masahiro Sakamoto, Yoichi Honda

P09 Altered lignin structure and improved biomass properties of rice mutants deficient in tricin biosynthetic genes
(Kyoto Univ., Japan[1], Univ. Hong Kong, China[2]) ○Pui Ying Lam[1,2], Yuki Tobimatsu[1], Toshiaki Umezawa[1], Clive Lo[2]

P10 NMR study on binding sites of ^{13}C lignin oligomer models with carbohydrate binding module of Cel7A from *Trichoderma reesei*
(Kyoto Univ., Japan) Yuki Tokunaga, Takashi Nagata, Keiko Kondo, Masato Katahira, ○Takashi Watanabe

P11 Analysis of cell wall components of *GUX*, *XAT* -RNAi transformants of rice
(Kyoto Univ., Japan) ○Tomohiko Hasegawa, Takuji Miyamoto, Masaomi Yamamura, Takehito Nakazawa, Yoichi Honda, Toshiaki Umezawa, Masahiro Sakamoto

P12 Utilization of plant biomass as nanoparticulated lignin derivative via simultaneous enzymatic saccharification and comminution
(National Institute of Advanced Industrial Science and Technology, Japan[1], Tokyo Univ. Agri. Tech., Japan[2], Forestry and Forest Products Research Institute, Japan[3]) ○Kazuhiro Shikinaka[1], Yoichi Tominaga[2], Masaya Nakamura[3], Yuichiro Otsuka[3]

P13 Elastic and self-healable polyelectrolyte complexes from lignosulfonate
(National Institute of Advanced Industrial Science and Technology, Japan) ○Kazunori Ushimaru, Tomotake Morita, Tokuma Fukuoka

P14 Performance of lignin antioxidants - effects of lignin demethylation and reaction time of DPPH radical assay
(VTT Tech. Res. Centre., Finland) ○Petri Widsten, Taina Ohra-aho, Marc Borrega, Tarja Tamminen, Tiina Liitiä

P15 Stereoselective formation of β-*O*-4 structures from quinone methides: Effects of solvent, and the structures of quinone methide lignin models
(Univ. Tokyo, Japan[1], Forestry and Forest Products Research Institute, Japan[2]) Xuhai Zhu[1], ○Takuya Akiyama[2], Tomoya Yokoyama[1], Yuji Matsumoto[1]

P16 Mechanistic study of diaryl ether bond cleavage during lignin hydrogenolysis using advanced lignin model compounds
(Univ. Wisconsin-Madison, USA, Great Lakes Bioenergy Research Center, USA)
○Yanding Li, Benginur Demir, Steven D. Karlen, Hoon Kim, James A. Dumesic, John Ralph

P18 Distribution of monolignol glucosides in *Pinus thunbergii* compression and opposite woods
(Nagoya Univ., Japan) ○Dan Aoki, Naoki Maeda, Yasuyuki Matsushita, Masato Yoshida, Kazuhiko Fukushima

P19 Softwood-derived polyethylene glycol (PEG)-modified glycol lignins (GLs): Thermal properties and structural insights
(Forestry and Forest Products Research Institute, Japan[1], Kyoto Univ., Japan[2]) ○Thi Thi Nge[1], Shiho Takahashi[1], Eri Takata[1], Yasunori Ohashi[1], Masaomi Yamamura[2], Yuki Tobimatsu[2], Toshiaki Umezawa[2], Tatsuhiko Yamada[1]

P20 Effect of structure of technical lignin on the electrochemical performance of lignin-derived porous carbon
(South China Univ. Tech., China) ○Dongjie Yang, WeiFeng Liu, Yong Qian, Xueqing Qiu

P21 Cytotoxicity of lignin-derived compounds isolated from bamboo (*Phyllostachys pubescence*) on cancer cell line
(Kyushu Univ., Japan) ○Hiroshima Shota, Kakoi Takumi, Hayashi Junya, Tsutsumi Yuji, Shimizu Kuniyoshi

P22 Synthesis and evaluation of lignin-binding 5-residue peptides
(Kyoto Univ., Japan[1], JST CREST, Japan[2]) ○Yuya Nakatani[1], Hikaru Takaya[1], Kazuhiro Hayashi[1,2], Eiji Nakata[1], Takashi Morii[1], Masaharu Nakamura[1]

P23 Difference in the acidolytic reactions between phenolic and non-phenolic lignin model compounds
(Univ. Tokyo, Japan[1], Forestry and Forest Products Research Institute, Japan[2]) ○Qiao-qiao Ye[1], Takuya Akiyama[2], Tomoya Yokoyama[1], Yuji Matsumoto[1]

P24 Effects of multiple disruption of putative ligninolytic enzyme genes on wood lignin degradation in *Pleurotus ostreatus*.
(Kyoto Univ., Japan) ○Yufan Zhang, Takehito Nakazawa, Rina Kodera, Chinami Saka, Hongli Wu, Masahiro Sakamoto, Yoichi Honda

P25 Iron acquisition pathways essential for the catabolism of lignin-derived aromatics in *Sphingobium* sp. SYK-6
(Nagaoka Univ. Tech., Japan) ○Masaya Fujita, Taichi Sakumoto, Kenta Tanatani, Naofumi Kamimura, Eiji Masai

P26 The inner membrane transporter system for lignin-derived aromatic compounds in *Pseudomonas putida*
(Nagaoka Univ. Tech., Japan) ○Ayumu Wada, Kosuke Mori, Naofumi Kamimura, Eiji Masai

P27 Discovery of *vceA* and *vceB* involved in the conversion of a metabolite of arylglycerol-β-aryl ether and the metabolic design for lignin valorization utilizing these genes
(Nagaoka Univ. Tech., Japan) ○Yudai Higuchi, Ryo Kato, Koichiro Tsubota, Naofumi Kamimura, Eiji Masai

P28 Structural alterations of corncob lignin during cellulosic ethanol production process
(Qilu Univ. Technol., China) ○Chao Wang, Lupeng Shao, Gaojin Lyu, Guihua Yang

P29 Catalytic depolymerization of softwood kraft lignin for liquid fuel production
(Univ. Sci. Technol. China[1], North Carolina State Univ., USA[2]) Wenzhi Li[1], ○Hou-min Chang[2], Hasan Jameel[2]

P30 A method to regioselectively iodine-tag free-phenolic aromatic endgroups in lignin for ^{1}H-^{13}C–HSQC NMR analysis
(Univ. Wisconsin-Madison, USA[1], Great Lakes Bioenergy Research Center, USA[2])
○Daisuke Ando[1], John Ralph[1,2]

P31 Utilization of all components in lignocellulosic biomass by means of Multi-Phase Separation
(Idemitsu Kosan Co.,Ltd., Japan[1], Hokkaido Univ., Japan[2]) ○Yoshihito Koyama[1,2], Yuki Kawamata[2], Takuya Yoshikawa[2], Yuta Nakasaka[2], Takao Masuda[2]

P32 Exploring enzymatic genes for lignin engineering
(National Institute of Advanced Industrial Science and Technology, Japan[1],, Nagaoka Univ. Tech., Japan[2], Tokyo Univ. Agri. Tech., Japan[3]) ○Koichiro Tsubota[1,2], Shingo Sakamoto[1], Naofumi Kamimura[2], Shinya Kajita[3], Eiji Masai[2], Nobutaka Mitsuda[1]

P33 Synthesis of new phenyl glycoside type LCC model compounds for NMR analysis of native LCC
(Kyoto Univ., Japan) ○ Sayaka Sakurai, Yuki Tobimatsu, Hiroshi Kamitakahara, Yoshikuni Teramoto, Toshiyuki Takano

P34 Hydrogen peroxide involved in ligninolytic enzymes of a white-rot fungus *Phanerochaete crassa* WD1694"
(Forestry and Forest Products Research Institute, Japan) ○Mariko Takano

P35 Electro-oxidation of artificial lignin with mediators (promazine hydrochloride, linoleic acid)
(Kyoto Univ., Japan) ○Bing Xie, Yuki Tobimatsu, Hiroshi Kamitakahara, Yoshikuni Teramoto, Toshiyuki Takano

P36 A quantitative study on lignin in tree leaves, using methoxy content and yields of nitrobenzene oxidation products
(Hokkaido Univ., Japan) ○Shutaro Tomiyama, Keiichi Koda, Toshizumi Miyamoto, Yasumitsu Uraki

P37 Effect of solvent on formation of benzyl cation structure in lignin acidolysis
(Univ. Tokyo, Japan) ○Masaki Hirata, Takuya Akiyama, Tomoya Yokoyama, Yuji Matsumoto

P38 Immunolocalization of lignin substructures, non-cellulosic polysaccharides and arabinogalactan protein in G-layers of S_1+G type tension wood fibers in several Japanese hardwoods
(Kyoto Univ., Japan[1], Hokkaido Univ., Japan[2]) ○Arata Yoshinaga[1], Tatsuya Awano[1], Keiichi Koda[2], Yutaka Tamai[2], Yasumitsu Uraki[2], Keiji Takabe[1]

P39 Synthesis of epoxy resin using cedar-derived glycol lignin modified in ethanol
(National Institute of Advanced Industrial Science and Technology, Japan[1], Forestry and Forest Products Research Institute, Japan[2]) ○Osamu Tanaike[1], Kenta Ono[1], Ryo Ishii[1], Kazuhiro Shikinaka[1], Takeo Ebina[1], Thi Thi Nge[2], Tatsuhiko Yamada[2]

P40 Comprehensive utilization of bioethanol fermentation residues for production of value-added resins: Synergistic effect of lignin and carbohydrates
(Beijing Forestry Univ., China[1], Power Dekor (JiangSu) Wood Research Co., Ltd., China[2], Univ. Malaysia Terengganu, Malaysia[3], Dalian Polytechnic Univ., China[4]) Bo Pang[1], Bao-Cheng Zhao[2], Su Shiung Lam[3], ○Tong-Qi Yuan[1], Run-Cang Sun[4]

P41 A metal-free and flexible supercapacitor based on redox-active lignin functionalized graphene hydrogel
(Qilu Univ. Technol., China[1], Beijing Forestry Univ., China[2]) ○Fengfeng Li[1], Guihua Yang[1], Xiluan Wang[2], Runcang Sun[2]

P42 Vanillin production from lignin in 1 L tetrabutylammonium hydroxide solution
(Kyoto Prefectural Univ., Japan[1], Forestry and Forest Products Research Institute, Japan[2]) ○Daiki Okamoto[1], Takashi Hosoya[1], Hisashi Miyafuji[1], Tatsuhiko Yamada[2]

P43 Delignification of bamboo via organosolv treatment using *n*-butanol/water biphasic system
(Hokkaido Univ., Japan[1], Kindai Univ., Japan[2]) ○Takuya Yoshikawa[1], Yuki Kawamata[1], Misuzu Matsumoto[1], Yuta Nakasaka[1], Akio Inoue[2], Motohiro Sato[1], Takao Masuda[1]

P44 Simultaneously enhancing the stress and strain of cellulose nanofibril films by lignosulfonic acid
(South China Univ. Tech., China) ○Zhiqiang Fang, Jie Zhou, Weifeng Liu, Yu Liu, Dongjie Yang, Guanhui Li, Xueqing Qiu

P45 Conversion of lignin side-streams originating from novel biorefineries into high-performance dispersants by LigniOx technology
(VTT Tech. Res. Centre., Finland[1], Fortum, Finland[2]) Anna Kalliola[1], Tapio Vehmas[1], Patrik Borenius[2], Hanne Wikberg[2], ○Tiina Liitiä[1]

P46 Ternary deep eutectic solvents as an effective liquid for regenerating lignin in application of rigid polyurethane foam
(Shaanxi Univ. Sci. Tech., China) Yang Yang, Rui Tang, Danwei Xue, ○Bailiang Xue

P47 Artificial lignification improves mechanical property of cellulose microfibril gel
(Kyoto Univ., Japan) ○Tsubasa Yonekawa, Kentaro Abe, Hiroyuki Yano

P48 Multidetector gas chromatography for the identification and absolute quantification of volatiles from lignin with multiple headspace sampling-solid-phase microextraction
(University of Natural Resources and Life Sciences, Austria[1], Åbo Akademi Univ., Finland[2]) Matthias Guggenberger[1], Antje Potthast[1], Thomas Rosenau[1,2], ○ Stefan Böhmdorfer[1]

P49 Lignin derivative application as wood surface coating agent and its chemical properties from Sengon pulp black liquor
(Forest Products Research and Development Center, Indonesia[1], Research Center for Chemistry Indonesian Institute of Science PUSPIPTEK Serpong, Indonesia[2]) ○Ina Winarni[1], Totok K Waluyo[1], T. Beuna Bardant[2], Gustan Pari[1], Adi Santoso[1]

P50 Estimation of physical properties of polymer composites consisting of nanoparticulated lignin obtained by simultaneous enzymatic saccharification and comminution of plants
(Tokyo Univ. Agri. Tech., Japan[1], Forestry and Forest Products Research Institute, Japan[2], National Institute of Advanced Industrial Science and Technology, Japan[3]) ○Ai Tsukidate[1], Haruka Sotome[1], Masaya Nakamura[2], Yuichiro Otsuka[2], Ronald R. Navarro[2], Kazuhiro Shikinaka[3], Yoichi Tominaga[1]

P51 Expression of a rice ferulate monolignol transferase in Arabidopsis improves cell wall suitability for biorefining
(Univ. Oklahoma, USA[1], Univ. Wisconsin-Madison, USA[2], Joint BioEnergy Institute, USA[3], Michigan State Univ., USA[4], Kyoto Univ., Japan[5]) Chengcheng Zhang[1], Rebecca A. Smith[2], Steven D. Karlen[2], Alex Tsai[3], Matthew L. Peck[1], Mary F. LaPorte[1], Nicholas Santoro[4], Mahbobeh Lesani[1], Henrik V. Scheller[3], John Ralph[2], ○Laura E. Bartley[1,5]

P52 Down-regulation of pyruvate decarboxylase gene of white-rot fungus *Phlebia* sp. MG-60 modify the productivity of extracellular peroxidase activity
(Univ. Miyazaki, Japan) ○Taichi Motoda, Ichiro Kamei

P53 Identification of the differentially-expressed genes in *Novosphingobium* sp. MBES04 in response to lignin related compounds
(Gunma Univ., Japan[1], JAMSTEC, Japan[2], Kyoto Univ., Japan[3]) ○ Yukari Ohta[1], Shun'ichi Ishii[2], Tohru Yarimizu[1], Misato Yamada[3], Hiroshi Nishimura[3], Takashi Watanabe[3]

P54 Quantitative study on condensation reaction of lignin under alkaline cooking conditions
(Univ. Tokyo, Japan) ○Toshihiro Komatsu, Takuya Akiyama, Tomoya Yokoyama, Yuji

Matsumoto

P55 Structural analyses of covalent linkages between lignin and hemicellulose in wood cell walls
(Kyoto Univ., Japan) ○Hiroshi Nishimura, Kazuma Nagata, Misato Yamada, Takashi Nagata, Masato Katahira, Takashi Watanabe

P56 Fractionation and analysis of lignin-carbohydrate complex using lignin-degrading enzymes
(Kyoto Univ., Japan[1], JAMSTEC, Japan[2], Gunma Univ., Japan[3]) ○Saho Kashima[1], Hiroshi Nishimura[1], Shizuka Sakon[1], Misato Yamada[1], Yasuhiro Shimane[2], Yukari Ohta[2,3], Keiko Kondo[1], Yudai Yamaoki[1], Takashi Nagata[1], Masato Katahira[1], Takashi Watanabe[1]

P57 How lignin properties can define its application in polyurethane?
(Michigan State Univ., USA) Mona Alinejad, Christian Henry, ○Mojgan Nejad

P58 Structural features of LignoBoost® *Eucalyptus globulus* kraft lignin with respect to its potential applications
(Univ. Aveiro, Portugal[1], RAIZ, Portugal[2]) ○Fernanda R. Vieira[1], Ana B. Timmons[1], Dmitry Evtyugin[1], Paula C. R. Pinto[2]

P59 A study on the mineralization of low-molecular weight aromatic compounds by white-rot fungi
(Hokkaido Univ., Japan) ○Shota Nagai, Kengo Shigetomi, Makoto Ubukata

P60 Development and properties of novel functional materials using a metabolicintermediate of lignin, 2-pyrone-4,6-dicarboxylic acid
(Hosei Univ., Japan[1], Forestry and Forest Products Research Institute, Japan[2])
○Hironori Ogata[1], Masaru Ide[1], Yuichiro Otsuka[2], Masaya Nakamura[2]

P61 Comparison of molar masses obtained by size-exclusion chromatography combined with multi-angle laser light-scattering detectors between technical lignins and 8-*O*-4' type of polymeric lignin models under two solvent systems
(Hokkaido Univ., Japan[1], South China Univ. Tech., China[2]) ○Linping Wang[1], Kengo Shigetomi[1], Keiichi Koda[1], Aori Gele[2], Yasumitsu Uraki[1]

P62 Current status of molar mass determination of lignin by size exclusion chromatography

(University of Natural Resources and Life Sciences, Austria[1], Wyatt Tech., Germany[2], Univ. Pardubice, Czech Republic[3], Åbo Akademi Univ., Finland[4]) ○Grigory Zinovyev[1], Irina Sulaeva[1], Stepan Podzimek[2,3], Ivan Sumerskii[1], Thomas Rosenau[1,4], Antje Potthast[1]

P63 Modeling pyrolytic behavior of pre-oxidized lignin using representative β-ether-type lignin models
(Qilu Univ. Technol.) ○Yu Liu

P64 Structural features of cork lignin from *Quercus suber*
(Univ. Aveiro, Portugal[1], Amorim & Irmãos SA, Portugal[2]) ○Diana G. Branco[1], Joana R. Campos[1], Luís Cabrita[2], Dmitry.V. Evtuguin[1]

P65 Structural changes in lignin during eucalypt wood thermal pretreatment
(Univ. de Lisboa, Portugal[1], Univ. Aveiro, Portugal[2]) Ana C.S. Lourenço[1], ○Dmitry V. Evtuguin[2]

P66 Genome sequence of fungus *Inonotus obliquus* strain IO-B2 (NBRC 113408) reveals insights into wood degradation
(Tokyo Univ. Agri. Tech., Japan[1], Utsunomiya Univ., Japan[2], Palangka Raya Univ., Indonesia[3], Forest Tree Breeding Center, Kyushu Regional Breeding Office, Japan[4], Forestry and Forest Products Research Institute, Japan[5]) ○Retno Agnestisia[1,2,3], Rei Chino[4], Kaito Nodera[2], Haruna Aiso-Sanada[5], Nezu Ikumi[2], Tomohiro Suzuki[2], Futoshi Ishiguri[2], Shinso Yokota[2]

P67 Structural variations of lignin macromolecule from different growth stages of Poplar (*Populus tomentosa*)
(Beijing Forestry Univ., Japan) Han-Min Wang, Cheng-Ye Ma, ○Jia-Long Wen, Tong-Qi Yuan, Run-Cang Sun

P68 Construction of a synthetic consortium of bacteria and white rot fungus exhibiting higher ligninolytic activities
(Shizuoka Univ., Japan) ○Toshio Mori, Masaki Matsumura, Taiki Terashima, Hirokazu Kawagishi, Hirofumi Hirai

P69 Microwave-assisted degradation of woody biomass for application as antiviral agent against encephalomycarditis virus
(Kyoto Univ., Japan) ○Ruibo Li, Ryota Ouda, Chihiro Kimura, Hiroshi Nishimura, Takashi Fujita, Takashi Watanabe

P70 Thermal superinsulating monolithic lignin-phenol-formaldehyde aerogels and carbon aerogels of high internal surface

(University of Natural Resources and Life Sciences, Austria[1], University of Vienna, Austria[2], Kompetenzzentrum Holz GmbH, Austria[3], Mines ParisTech, France[4], Elettra - Sincrotrone Trieste, Italy[5]) Budjav, E.[1], Ghorbani, M. [2], Konnerth, J. [2], Mitterer, C.[1], Unterweger, C.[3], Rigacci, A.[4], Ilbizian, P.[4], Rennhofer, H.[1], Lichtenegger, H.[1], Bernstorff, S.[5], ○Liebner, F.[1]

P71 Analysis of transgenic poplar transformed with a gene for double bond reductase derived from *Parvibaclum lavametivorans* DS-1

(Tokyo Univ. Agri. Tech., Japan[1], Univ. Tokyo, Japan[2], Forestry and Forest Products Research Institute, Japan[3], Nagaoka Univ. Tech., Japan[4], Univ. Wisconsin-Madison, USA[5], Great Lakes Bioenergy Research Center, USA[6]) ○Shi Hu[1], Nuoendagula[1], Li Mei[1], Masanobu Yamamoto[1], Haruka Hirayama[2], Takuya Akiyama[3], Shingo Watanabe[4], Naofumi Kamimura[4], Eiji Masai[4], John Ralph[5,6], Shinya Kajita[1]

P72 Chemical characteristics of bamboo (*Phyllostachys pubescens*) thermomechanical pulp fractions

(Zhejiang University of Science and Technology, China[1], Univ. Tsukuba, Japan[2], Vietnamese Academy of Forest Sciences, Vietnam[3]) Guangfan JIN[1], Vu Thang Do[2,3], Yinchao Xu[1], ○Akiko Nakagawa-Izumi[2]

P73 High-purity lignin isolated from poplar wood meal through dissolving treatment with deep eutectic solvents

(Nanjing Forestry Univ., China) Yujie Chen, ○Lili Zhang, Jin Xia, Yiqian Yang, Yimin Fan, Zhiguo Wang

P74 Comparison of properties of Eucalyptus and Bamboo kraft pulping black liquor after partial removal lignin

(Nanjing Forestry Univ., China) Tao Wang, Chen Wang, Hao Ren, Yi Jing, ○Guolin Tong

P75 Structure-antioxidant activity relationship of active oxygen catalytic lignin and lignin-carbohydrate complex

(Nanjing Forestry Univ., China) ○Bo Jiang, Yu Zhang, Lihui Gu, Yongcan Jin

P76 Lignin as a wood-inspired binder enabled strong, water stable and biodegradable paper for plastic replacement

(Nanjing Forestry Univ., China[1], Univ. Maryland, USA[2]) Bo Jiang[1,2], Liangbing Hu[2], ○Yongcan Jin[1]

P77 Carbonate-oxygen pretreatment of waste wheat straw for enhancing enzymatic saccharification

(Nanjing Forestry Univ., China[1], Guangxi Univ., China[2]) Chen Hui[1], Mao Jiangyun[1], Min Douyong[2], Jin Yongcan[1]