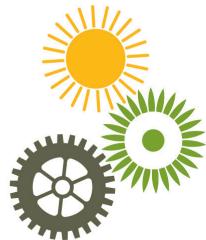




RRB-12
RENEWABLE RESOURCES & BIOPROCESSING



12th International Conference on
**Renewable Resources
and Biorefineries**

30-31 May & 1 June 2016
Ghent, Belgium



Final Program



GHENT
BIO-ECONOMY
VALLEY



POM
maakt werk van West-Vlaanderen

www.rrbconference.com

Welcome to RRB-12

Even though fossil energy prices are low at the moment, the need to study and look for alternative feedstocks for materials and energy sources remains highly important. An increasing awareness on carbon dioxide emission and the concern about fossil fuel dependency stimulates the conference to give an impetus to the further development of the bio-based economy.

Delegates from university, industry, governmental and non-governmental organizations will present their views on sustainable (green) chemistry, industrial biotechnology and agricultural policy related to the use of renewable raw materials for non-food applications and energy supply. This will be presented in plenary and oral presentation sessions and poster tours. New research concepts but also new policies related to the cyclic economy and the sustainable production of materials will be discussed and exchanged with several industrial companies and vice versa.

From 30 May to 1 June 2016, Ghent will host the 12th edition of the International Conference on Renewable Resources and Biorefineries.

This specialist forum for renewable resources, green chemistry, industrial biotechnology, nutrient recycling and biorefineries will stimulate the transition from a fossil-based to the bio-based economy.

The conference program is organized in 3 parallel sessions and includes 2 plenary talks, 1 keynote lecture, 17 invited lectures, 55 high quality oral presentations by international experts and 24 PhD short communications, covering both technical and policy aspects of the bio-based economy.

The sessions deal with these topics:

- Bioactive compounds from biomass
- Biobased materials (I & II)
- Biomass fractionation
- Biocatalysis for bioresource transformation (I & II)
- Bioenergy
- Bioproducts from woody biomass
- Biorefineries (I & II)
- Biosurfactants
- Chemical platform molecules (I & II)
- Downstream processing
- Metabolic engineering of fermentation processes
- Micro and macro algae technology
- Nutrient and energy cycling (I & II)
- Plant cell wall modification
- Pretreatment and transformation of lignocellulosics
- Sustainability
- Thermochemical transformations of biomass
- Valorization of biomass waste streams (I & II)

The eleven previous conferences were a real success, thus proving the importance of these conferences and the willingness to imply sustainable chemistry and renewable resources in the world industry.

All information on the preceding conferences can be found at www.rrbconference.com.

We hope that you will enjoy the Conference and the hospitality of Ghent!

The Organizing Committee

Prof. Christian Stevens
Prof. Wim Soetaert
Em. Prof. Erick Vandamme
Ir. Philippe Tavernier

Monday, 30 May 2016

09.00 – 10.00 Registration

10.15 – 10.30 **Official Opening of RRB-12 & Welcome Address**

Refter

Christian Stevens and Wim Soetaert, Ghent University, BE

Welcome to Ghent

Freddy Mortier, Vice-Rector, Ghent University, BE

Opening Plenary Session

Chairs: Christian Stevens and Erick Vandamme, Ghent University, BE

10.30 – 11.15 **Biobased Industries Initiative: Public-private partnerships as new business model in Europe**

Dirk Carrez, Clever Consult, Biobased Industries Consortium (BIC), BE

11.15 – 12.00 **Bio-based products serving the needs of the growing world**

Nigel Mouncey, DOW, USA

12.00 – 12.10 **Solvay's 3 levers for renewable-based chemistry**

Antoine Amory, Solvay Corporate Research and Innovation

12.10 – 13.00 Lunch offered by Solvay

Kapittel Room

Monday, 30 May 2016

13.00 - 14.30 Parallel sessions

Refter - Session 1A	Room Vermeylen - Session 1B	Room Blancquaert - Session 1C
Biomass fractionation Chair: Wim Soetaert, Ghent University, BE	Biobased materials - I Chair: Noureddine Abidi, Texas Tech University, USA	Valorisation of biomass waste streams - I Chair: Rafael Luque, University of Cordoba, ES
13.00 – 13.30 Low capital intensive biomass processing Johan Sanders, Wageningen UR, NL	13.00 – 13.30 Biobased fibers, blends, and composites - Lignin, starch, and cellulose meet plastics Johannes Ganster, Fraunhofer IAP, DE	13.00 – 13.30 Production and extraction of feed additives and fuel precursors from biomass using mixed culture fermentation Korneel Rabaey, Ghent University, BE
13.30 – 13.55 ChitoTex – Development and production of insect chitosan and chitosan-based functional coatings for textiles Susanne Zibek, Fraunhofer Institute of Interfacial Engineering and Biotechnology, DE	13.30 – 13.55 Improving PHA production from crude glycerol: Microbial selection Paulo Lemos, University NOVA of Lisbon, PT	13.30 – 13.55 Aerobic granular sludge systems as biopolymer factories Jolien D'aes, Antwerp University, BE
13.55 – 14.20 Recovery of organic acids by novel crystallization technologies Carol Roa Engel, TNO, NL	13.55 – 14.20 Alkali-O₂ oxidized lignin (LigniOx lignin) – A bio-based concrete plasticizer Anna Kallioja, VTT Technical Research Centre of Finland Ltd., FI	13.55 – 14.20 Enzymatic synthesis of alkyl glycoside surfactants based on hemicellulose Henrik Stålbbrand, Lund University, SE
14.20 – 14.30 Sesquiterpene lactone profile in the crop and root of Belgian endive (<i>Cichorium intybus</i> L. var. <i>foliosum</i>) as determined by means of UHPLC-HRMS Lies Kips, Institute of Agricultural and Fisheries Research (ILVO) / Ghent University, BE	14.20 – 14.30 Assessment of oxygen levels and redox potential in <i>Sugiyamaella lignohabitans</i> cultures Martina Bellasio, BOKU – VIBT University of Natural Resources and Life Sciences, AT	14.20 – 14.30 Integrated energy efficient microwave pretreatment of lignocellulosic waste with unique fermentation processes Jiajun Fan, University of York, UK
14.30 - 15.15 Coffee Break and Exhibition		Kapittel Room
15.15 - 16.00 Keynote Lecture Biorefinery survival in an era of cheap oil: Approaches to high value chemical products from carbohydrates and lignin Joe Bozell, University of Tennessee, USA		Refter

Referr - Session 2A	Room Vermeylen - Session 2B	Room Blancquaert - Session 2C
Bioactive compounds from biomass Chair: Thierry Talou, University of Toulouse, FR	Biobased materials - II Chair: Nigel Mouncey, DOW, USA	Plant cell wall modification Chair: Dominique Van Der Straeten, Ghent University, BE
16.00 – 16.30 LC-MS based metabolic approach applied to bioactive molecules identification: Case study of a comprehensive chemodiversity screening of viola genus Guillaume Marti, Université Paul Sabatier-Toulouse III, FR	16.00 – 16.30 Cellulose biotemplates for new functional materials Pedro Fardim, University of Leuven, BE and Åbo Akademi University, FI	16.00 – 16.30 Plant cell walls: Diverse and dynamic Zoe Popper, University of Galway, IE
16.30 – 16.55 Biopigment production on potato side streams by <i>Monascus purpureus</i> Iris Cornet, University of Antwerp, BE	16.30 – 16.55 Renewable macrobisphenols from bio-based polyols and lignocellulosic-derived ferulic acid: Production and membrane-based purification Andrea Teixeira, AgroParisTech, FR	16.30 – 16.55 Structure elucidation of two recalcitrant bio-based feeds: Lignins and humins Sandra Constant, Utrecht University, NL
16.55 – 17.20 Recovery of vanillin and syringaldehyde from oxidized industrial kraft liquor applying membrane and adsorption processes Inês Mota, University of Porto, PT	16.55 – 17.20 Sustainable packaging products from wheat straw and perennial ryegrass Rob Elias, Bangor University, UK	16.55 – 17.20 Catalytic copolymerization reaction of CO₂ and propylene oxide over polyalcohols under subcritical conditions Juan Serna, University of Valladolid, ES
17.20 – 17.30 Chitosan, a guardian against microbes Stein Mincke, Ghent University, BE	17.20 – 17.30 Modified soy protein microparticles of ibuprofen for oral controlled delivery Maria Antonieta Anaya Castro, Université de Toulouse, FR	17.20 – 17.30 Understanding the effect of alkaline pretreatments of lignocellulosic biomass on cell wall structure Hélène Laurence Thomas, INRA, FR
18.00	Welcome Reception at the Town Hall offered by the Mayor of Ghent	

Refer - Session 3A	Room Vermeylen - Session 3B	Room Blancquaert - Session 3C
Biocatalysis for bioresource transformation - I Chair: Tom Desmet, Ghent University, BE	Chemical platform molecules - I Chair: Chris Stevens, Ghent University, BE	Bioproducts from woody biomass Chair: Pedro Fardim, Åbo Akademi University, FI & University of Leuven, BE
09.00 – 09.30 Thermophilic enzymes and their importance as industrial catalysts Jennifer Littlechild, University of Exeter, UK	09.00 – 09.30 Tuning of zeolite catalysts for selective production of commodity chemicals from carbohydrates Anders Rilsager, Technical University of Denmark, DK	09.00 – 09.30 Biochemicals from Nordic forests to business Bjørne Holmbom, Åbo Akademi University, FI
09.30 – 09.55 Malic acid production from renewable resources by <i>Aspergillus oryzae</i> Katrín Ochseneithei, Karlsruhe Institute of Technology (KIT), DE	09.30 – 09.55 Renewable routes for the production of bio-based aromatic carboxylic acids using furans as feedstock Shanmugam Thiagarajan, Wageningen University and Research Centre & Utrecht University, NL	09.30 – 09.55 Functional polymeric materials with the highest levels of softwood lignin, ligninsulphonates and wheat straw lignin Simo Sarkkanen, University of Minnesota, USA
09.55 – 10.20 Polylactic acid from 2G feedstocks André de Haan, Corbion, NL	09.55 – 10.20 Itaconic acid derived polymers – Diverse opportunities from a promising platform molecule Thomas J. Farmer, University of York, UK	09.55 – 10.20 Dissecting acetylated sprucemannan by the enzyme toolbox of a <i>Firmicutes</i> species Bjørge Westereng, Norwegian University of Life Sciences, NO
10.20 – 10.30 Enzymatic synthesis of xylose and arabinose based fatty acid esters and evaluation of their surfactant properties Thomas Méline, Université de Reims Champagne Ardenne – INRA, FR	10.20 – 10.30 Efficient catalytic dehydration of methyl lactate to acrylic acid using sulphate and phosphate modified MCM-41 catalysts Chao Li, Beijing University of Chemical Technology, CN	10.20 – 10.30 Utilization of sawdust hydrolysates for polyhydroxyalkanoate production by <i>Burkholderia sp.</i> Dan Kucera, Brno University of Technology, CZ
		Kapittel Room
		10.30 - 11.15 Coffee Break and Exhibition

Referr - Session 4A	Room Vermeylen - Session 4B	Room Blancquaert - Session 4C
Pretreatment and transformation of lignocellulosics Chair: Andy Hunt, University of York, UK	Bioenergy Chair: Martin Mittelbach, Graz University, Austria	Nutrient & energy cycling - I Chair: Jeroen Buysse, Ghent University, BE
11.15 – 11.45 Role of heterogeneous catalysis in liquid phase lignoceluloso processing Bert Sels, KU Leuven, BE	11.15 – 11.45 Quality assessment of biomass fast pyrolysis liquids Ignacio V. Melian Cabrera, Aston University, UK	11.15 – 11.45 Recycling of aqueous phase during hydro-thermal liquefaction - Effect on bio-crude yields and quality Patrick Biller, Aarhus University, DK
11.45 – 12.10 Experimental study of the influence of the carbonization process for the production of activated carbon from lignin Catalina Rodriguez Correa, University of Hohenheim, DE	11.45 – 12.10 Fermentation of carbon monoxide-rich gases into butanol-ethanol (B-E) by <i>Clostridium carboxidivorans</i> Christian Kenne, University of La Coruña, ES	11.45 – 12.10 Microbial protein: Providing food for the world in a sustainable and future-oriented way Stef Vervaet, Avecom NV, BE
12.10 – 12.35 Tuning the bio-polymer properties based on lignin residues and biocatalytic process Madalina Tudorache, University of Bucharest, RO	12.10 – 12.35 Advanced biofuel processes by systematic product and process design – Investigation of 3-methyltetra-hydrofuran and 2-butanone Joern Viell, RWTH Aachen University, DE	12.10 – 12.35 Phosphate recovery for sewage sludge via hydrothermal carbonization Andrea Kruse, University of Hohenheim, DE
12.35 – 12.45 Principal component analysis of bio-crude and aqueous phase from hydrothermal liquefaction of thermally and chemically pretreated <i>Miscanthus giganteus</i> René Bjerregaard Madsen, Aarhus University, DK	12.35 – 12.45 Bio-refinery of food waste – Production of liquid and gaseous biofuels Ullrich Heinz Stein, University of Natural Resources and Life Sciences, AT	12.35 – 12.45 Can digestate derivatives be used to substitute fossil based mineral fertilizers? Ivona Sigurnjak, Ghent University, BE

12.45 - 13.30 Lunch
13.30 - 14.30 Poster Tour 1

Kapittel Room
Zuidergang

Refter - Session 5A	Room Vermeylen - Session 5B	Room Blancquaert - Session 5C
Biocatalysis for bioresource transformation - II Chair: Jennifer Littlechild, University of Exeter, UK	Thermochemical transformations of biomass Chair: Karen Wilson, Aston University, UK	Nutrient & Energy Cycling – II Chair: Erik Meers, Ghent University, BE
14.30 – 15.00 Chemo-enzymatic epoxidation of triacyl-glycerides: Influence of hydrogen peroxid addition on enzyme stability Fabian Haitz, Fraunhofer Institute for Interfacial Engineering and Biotechnology, DE	14.30 – 15.00 Development of biobased products for a py refinery Robert Brown, Iowa State University, US	14.30 – 15.00 Recovery of nitrogen from the liquid fraction of pig manure by ammonia stripping Satu Ervasti, Natural Resources Institute Finland, FI
15.00 – 15.25 New route for the synthesis of enantiopur dairy lactone Amandine L. Flourat, AgroParisTech, FR	15.00 – 15.25 Dual catalyst concept for catalytic pyrolysis of biomass Erik Heeres, University of Groningen, NL	15.00 – 15.25 Algae beads: A 'round' way to remove nutrient and recover energy Raffaella Villa, Cranfield University, UK
15.25 – 15.50 Laccase as versatile enzymes: From reducing glucose yields to enhancing ethanol production Elia Tomás-Pejó, IMDEA Energy, ES	15.25 – 15.50 Systems analysis of the bioliq process as a thermochemical biorefinery Nicolaus Dahmen, Karlsruhe Institute of Technology (KIT), DE	15.25 – 15.50 The influence of governance structure on the development of a corn stover value chain Anouk Mertens, ILVO, BE
15.50 – 16.00 Development of an automatic online enzyme activity assay for xylanases using HPAEC-PAD Christin Cürtén, RWTH Aachen University & Forschungszentrum Jülich, DE	15.50 – 16.00 Maximising value recovery from the hydro-thermal liquefaction of microalgae Jonathan L. Wagner, University of Bath, UK	15.50 – 16.00 Ionic liquid driven esterification of aqueous fermentation products Pieter Naert, Ghent University, BE

Kapittel Room

16.00 - 16.30 Coffee Break and Exhibition

Refter - Session 6A	Room Vermeylen - Session 6B	Room Blancquaert - Session 6C
Biorefineries - I Chair: James Clark, University of York, UK	Chemical platform molecules - II Chair: Chris Stevens, Ghent University, BE	Sustainability Chair: Philippe Tavernier, Development Agency of West Flanders (POM), BE
16.30 – 17.00 Hydrothermal conversion of biomass waste into high value added chemicals and materials Shicheng Zhang, Fudan University, CN	16.30 – 17.00 Renewable feedstock: Challenges and mitigations in/for catalyst deactivation Jean-Paul Lange, Shell, NL	16.30 – 17.00 Measuring sustainable production and use of renewables-based products Jo Dewulf, Ghent University, BE
17.00 – 17.25 Circularity on green sample preparation of complex matrices: Towards sustainable separations of organic compounds based on the biorefinery concept Vania G. Zuij, Federal University of São Carlos, BR & University of York, UK	17.00 – 17.25 Conversion of fructose to 5-hydroxymethylfurfural (HMF) in a biphasic system comprising of water and a new organic solvent Ulf Prüsse, Thünen Institute of Agricultural Technology, DE	17.00 – 17.25 Ranking commodity chemicals on their potential to become biobased Adrie J.J. Straathof, Delft University of Technology, NL
17.25 – 17.50 The future of pine chemistry Hironori Matsushima, Lawter, BE	17.25 – 17.50 Sulfonated polyaniline as novel solid acid for selective dehydration of fructose to 5-hydroxymethylfurfural Changwei Hu, Sichuan University, CN	17.25 – 17.50 LIFE SIAMEC - Integrated anaerobic system for wastewater reclamation Natividad Moya, Aguas de Murcia, ES
17.50 – 18.00 Characterization of cane and beet molasses for biorefinery application Mahshid Farzanehsa, University of Sydney, AU	17.50 – 18.00 Exploitation of <i>Lactobacillus diolivorans</i> as a cell factory for the industrial production of platform chemicals derived from crude glycerol Katharina Lindlbauer, University of Natural Resources and Life Sciences, AT	17.50 – 18.00 Sustainability in the Belgian chemical industry Saskia Walraedt, essenscia, BE

18.00

Guided Tour

20.00

Conference Dinner at the Old Fish Market

Refter - Session 7A	Room Vermeylen - Session 7B	Room Blancquaert - Session 7C
Biorefineries – II Chair: James Clark, University of York, UK	Downstream processing Chair: Erick Vandamme, Ghent University, BE	Valorisation of biomass waste streams – II Chair: Juan Serna, University of Valladolid, ES
09.00 – 09.30 Microbial biosurfactants: From lab to market - Hurdles and how to take them Sophie Roelants, University of Ghent & Bio Base Europe Pilot Plant, BE	09.00 – 09.30 Evaluation of appropriate mechanical and enzymatic feedstock treatment for the use in anaerobic digestion Stefan Junne, TU-Berlin, DE	09.00 – 09.30 Hydrothermal liquefaction of algae Frederik Ronsse, Ghent University, BE
09.30 – 09.55 Strategic evaluation of the lignin biorefinery Paul Stuart, Polytechnique, CA	09.30 – 09.55 Downstream processing of model polyalcohols by catalytic copolymerization reaction of CO₂ and propylene oxide under subcritical conditions Maria Pinilla, University of Valladolid, ES	09.30 – 09.55 Green chemical technologies for the valorisation of low value forestry wastes and residues Andrew J. Hunt, University of York, UK
09.55 – 10.20 Alternative business model: Stora Enso's biomaterials shift Mari Granström, Stora Enso Biomaterials, FI	09.55 – 10.20 Review of lignocellulolytic enzyme activity analyses and scale-down to microplate-based assays Alicia A. Mansour, Veolia Research and Innovation, FR	09.55 – 10.20 Microwave-assisted hydrothermal extraction of pectin from mango peel waste Covadonga Lucas-Torres, University of Castilla-La Mancha, ES
10.20 – 10.30 Recycling and characterization of 1-allyl-3-methylimidazolium chloride used in the dissolution of <i>Eucalyptus globulus</i> wood Victoria Rigual, Complutense University of Madrid, ES	10.20 – 10.30 Influence of various process conditions in protein extraction from rapeseed press cake on protein yield and functionality Andreas Fetzer, Fraunhofer Institute for Process Engineering and Packaging IVV, DE	10.20 – 10.30 Macroalgae <i>Laminaria digitata</i> as potential carbon source in heterotrophic <i>Chlorella protothecoides</i> cultivation Martina D'Este, Technical University of Denmark, DK

10.30 - 11.30 Coffee Break, Exhibition & Poster Tour 2

Kapittel Room & Zuidergang

Refter - Session 8A	Room Vermeylen - Session 8B	Room Blancquaert - Session 8C
Metabolic engineering of fermentation processes Chair: Erick Vandamme, Ghent University, BE	Micro and macro algae technology Chair: Willem Brändenburg, Wageningen University, NL	Biosurfactants Chair: Inge Van Bogaert, Ghent University, BE
11.30 – 12.00 Microbial production of natural plant metabolites: Decorating scaffolds Marjan De Mey, Ghent University, BE	11.30 – 12.00 Towards large scale seaweed cultivation in Europe Bert Groenendaal, Sioen, BE	11.30 – 12.00 Development of new microbial glycolipids: A physico-chemical perspective Niki Baccile, CNRS - UPMC - Collège de France, FR
12.00 – 12.25 Metabolic engineering of <i>Escherichia coli</i> for production of cinnamic and p-hydroxycinnamic acids from sugars derived from lignocellulosic material Guillermo Gosset, Universidad Nacional Autónoma de México, MX	12.00 – 12.25 Characterization of lipids produced by <i>Parachlorella kessleri</i>, cultured under nitrogen starving conditions Erika Clavijo, GEPEA UMR CNRS 6144, FR	12.00 – 12.25 A study on the biosynthesis of polyhydroxyalkanoates and rhamnolipids by <i>Burkholderia thailandensis</i> Constantina Kourmentza, Universidade Nova de Lisboa, PT
12.25 – 12.50 Production of platform chemicals in plants: Lysine and itaconic acid Jeroen van Arkel, Wageningen University, NL	12.25 – 12.50 Algae biorefinery: Protein for non-food applications Ben van den Broek, Wageningen UR Food & Biobased Research, NL	12.25 – 12.50 Characterizing biosurfactants from lactic acid bacteria Matilde Greve Rasmussen, Aarhus University, DK
12.50 – 13.00 Bioethanol production from sugarcane bagasse hydrolysate by inhibitors-tolerant yeast engineered for cellobiose fermentation Lorenzo Cagnin, University of Padova, IT	12.50 – 13.00 Selective extraction of intracellular components from the microalga <i>Chlorella vulgaris</i> by combined pulsed electric field-temperature treatment P. Richard Postma, Wageningen University, NL	12.50 – 13.00 Chemical modification of sophorolipids towards a platform of new derivatives Elisabeth Delbeke, Ghent University, BE
13.00 - 13.05	Presentation of the 5th Golden Crop Award	Refter
13.05 - 13.15	Closing Remarks and Presentation of RRB-13 Philippe Tavernier, Development Agency of West Flanders (POM), BE	Refter
13.15	Farewell Lunch	Kapittel Room
13.45	Visit of the Stora Enso Langerbrugge Plant (see page 116)	

Poster List – Poster Tour 1

Bioactive compounds from biomass

- P1 **Adding value to crop biorefineries: Efficient extraction of ferulic acid from wheat bran**
Victoria Pazo, O. Benito-Román, A. Navarrete, M.J. Cocero, E. Alonso (ES)
- P2 **Mixed culture polyhydroxyalkanoates production from fermented cheese whey: Productivity, composition and properties**
R. Calero, María Romasanta, B.Lagoa, C. Kennes, M.C. Veiga (ES)
- P3 **Evaluation of microalgae (*Chlamydomonas reinhardtii*) for the human consumption**
Patchaniya Eakpetch, R. Darwish, M. Robert, B. Wolf, D.A. Gray (UK)
- P4 **Isolation of alkyl glycerol ethers and n-3 polyunsaturated fatty acids from squid processing wastes**
E. Ermolenko, N. Latyshev, R. Sultanov, S. Kasyanov (RU)
- P5 **Study of plant extracts and natural products from Benin as bio-insecticides**
Sven Mangelinckx, A.D. Bossou, E. Ahoussi, E. Ruysbergh, A. Adams, G. Smagghe, N. De Kimpe, F. Avlessi, D.C.K. Sohounehloue (BE & BJ)
- P6 **Biorefining of *Foeniculum vulgare L.* seeds: Production of vegetable and essential oils, agromaterials and flavored flours**
B. Sayed Ahmad, O. Merah, A. Hijazi, Z. Saad, Thierry Talou (FR & LB)
- P7 **Metabolomics as a tool for biorefinery: Case study of a comprehensive chemotaxonomy screening of violets**
Justine Chervin, G. Marti, P. Perio, N. Martins, F. Nepveu, N. Fabre, C. Pharkeovilay, G. Vilarem, T. Talou (FR)
- P8 **Bioactive compounds producing rhizobacteria to combat iron deficiency anemia and crop enemies**
Riyaz Z. Sayyed (IN)

Biobased materials

- P9 **Crosslinked regerated cellulose membrane via carbamate dissolution system with microwave assisted and hydrothermal treatment**
Sarani Zakaria, H. Kaco, S.Y. Gan, F. N. Mohammad Padhil, C.H. Chia (MY)
- P10 **High cell-density P3HB production in a membrane bioreactor**
Cornelia Haas, T. El-Najjar, N. Virgolini, M. Smerilli, M. Neureiter (AT)
- P11 **Self-bonded fiberboard from lavender straw, an environmentally-friendly material**
Thierry Talou, L. Labonne, Ph. Evon (FR)
- P12 **Rheological and thermo-mechanical properties of styrene free bio-based unsaturated polyester resins**
Henning Storz, G. Laurenzano (DE)
- P13 **Use of wooden hydrolysates for biotechnological production of biopolymers by *Haloferax mediterranei***
Pavla Benesova, S. Obruca, D. Kucera, I. Marova (CZ)
- P14 **Microbial production of polyhydroxyalkanoates from fatty by-products**
E.J. Rodriguez Gamero, L. Favaro, Lorenzo Cagnin, S. Povolo, M.G. Romanelli, M. Basaglia, S. Casella (IT)
- P15 **Production, characterization and properties of polyhydroxyalkanoates and exopolysaccharides by *Pseudomonas* sp. using crude glycerol as carbon source**
Constantina Kourmentza, D. Araujo, F. Freitas, M.A.M. Reis (PT)
- P16 **Accumulation of arsenic induced by E-waste in fresh water fish, *Channa punctatus* in some regions of west U.P.**
Baby Tabassum, P. Bajaj, R. Sarah (IN)

- P17 Studies on bioplastic degradation by phb depolymerase of isolates obtained from plastic contaminated sites
Riyaz Z. Sayyed (IN)
- P18 Cloning of bioplastic producing genes enhances yield and bypasses the need of additional cultivation steps
Baby Tabassum (IN)
- P19 Estimation of protein extractability in legume and grass species across the spring growth
Zeinab Solati, U. Jørgensen, K. Søegaard (DK)

Biocatalysis for bioresource transformation

- P20 High itaconic acid production with *Aspergillus terreus*
Susan Krull, A. Hevekerl, A. Kuenz, U. Prüße, K.D. Vorlop (DE)
- P21 Carbon recycling with biotechnological processes
Cornelia Bähr, V. Haye, D. Herzberg, T. Schwarz (DE)
- P22 Characterizing *Yarrowia lipolytica* as a cell factory for sustainable bioprocesses
Patrice Lubuta, M. Workman (DK)
- P23 Chemo-enzymatic catalysis for selective conversion of α -pinene to value-added products
Madalina Tudorache, A. Gheorghe, S.M. Coman, V.I. Parvulescu (RO)
- P24 Biocatlytic autonomous nanorobots for biotransfortion
Martin Pumera, A.C. Fisher, B. Kherzi (SG & UK)
- P25 Processing of Norwegian spruce galactoglucomannan using an enzyme complex from firmicutes
Leszek Michalak, S. Leanti La Rosa, M.L. Leth, M. Abou Hachem, F.L. Aachmann, P.J. Nilsen, S.H. Knutsen, B. Westereng (NO & DK)

Bioenergy

- P26 Characterization of *Silphium perfoliatum* regarding a possible usage in a bio-refinery process
Anne Lunze, N. Anders, C. Cürten, A.C. Spiess (DE)
- P27 Consolidated bioprocessing of starchy substrates and residues into bioethanol
L. Favaro, M. Basaglia, Lorenzo Cagnin, M. Viktor, S.H. Rose, R. Cripwell, M. Bloom, S. Casella, W.H. van Zyl (ZA)
- P28 IGNIS-FUNGUS: Increasing the LCV of sludge by means of oleaginous fungus
Natividad Moya, F.J. Navarro, A. Gadea (ES)
- P29 A biogas production performance of Napier grass in a continuous stirrer reactor under mesophilic temperature
Akarin Angkurapinun, S. Chavadej, M. Leethochawalit, P. Intanoo (TH)

Biomass based pharmaceuticals

- P30 Production of statins by the valorisation of potato side streams
B. Konya, S. Apers, Iris Cornet (BE)

Biomass fractionation

- P31 Optimization and scale-up of inulin extraction from *Taraxacum koksaghyz*
Thomas Hahn, K. Harms, W. Wach, S. Rupp, T. Hirth, S. Zibek (DE)

- P32 **Low temperature stepwise pyrolysis of pubescens: Fractional conversion of the component and product distribution**
Changwei Hu, X.Y. Lv, Z.C. Jiang, L.L. Li (CN)
- P33 **Cleavage of inter- and intramolecular linkages of lignin in corncob residue in Na₂CO₃-H₂O-tetrahydrofuran system**
Zhicheng Jiang, H. Zhang, T. He, J. M. Li, C.W. Hu (CN)
- P34 **Lipids behaviour in aqueous solution of disrupted microalgae cultivated under nitrogen starving conditions: Molecular simulation compared to experimental study of representative synthetic mixtures**
Estelle Couallier, E. Clavijo, C. Monteux, B. Rousseau (FR)
- P35 **Enzymatic hydrolysis of wheat bran and separation of the ferulic acid fraction from the carbohydrate fraction**
Stephanie Dupoiron, H. Rakotoarivonina, M. Pommet, F. Allais, A. Teixeira, M.L. Lameloise, C. Rémond (FR)
- P36 **Towards high vegetable oil recoveries through combined pressing and green solvent extraction using twin-screw extrusion technology**
Evelien Uitterhaegen, O. Merah, T. Talou, C.V. Stevens, P. Evon (FR & BE)
- P37 **The production of furfural with high yield from the selective conversion of hemicellulose in pubescens**
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