

CONFERENCE PROGRAMME
TUESDAY, 13 JUNE 2017

TUESDAY

08:30	1BO.1 T1.5	2BO.2 T2.4	3BO.3 T3.6	5BO.4 T5.1	2BV.1 T2.1/2.2/ 2.3	EXHIBITION
10:30	Break					
10:45	Plenary Session 1BP.1					
	Plenary Session 2BP.2					
	Plenary Session 3BP.3					
12:30	Lunch Break					
13:30	1BO.5 T1.5	2BO.6 T2.4	3BO.7 T3.6	1BO.8 I6.5	5BV.2 T5.1/5.2	
15:00	Break					
15:15	4BO.9 T4.1	2BO.10 T2.5	3BO.11 T3.2	1BO.12 I6.4	3BV.3 T3.6	
16:45	Break					
17:00	4BO.13 T4.2	2BO.14 T2.5	3BO.15 T3.2	1BO.16 I6.3	3BV.4 T3.7	
18:30						

1 Biomass Resources T1.5 Municipal and industrial wastes
2 Biomass Conversion Technologies for Heating, Cooling and Electricity T2.1 Production and supply of solid biofuels T2.2 Biomass and bioliquids combustion for small and medium scale applications T2.3 Biomass combustion in large utilities T2.4 Gasification for power, CHP and polygeneration T2.5 Gasification for synthesis gas production
3 Biomass Conversion Technologies for fuels, chemicals and materials T3.2 Pyrolysis and other biomass liquefaction technologies T3.6 Biorefineries T3.7 Production and application of biobased chemicals
4 Biomass Policies, Markets and Sustainability T4.1 Market implementation, investments & financing T4.2 Sustainability, certification and standards
I Industry Sessions 6.3 Power & Heat processes and systems 6.4 Biochemical Conversion 6.5 Policy
5 Bioenergy in integrated energy systems T5.1 Integration of bioenergy with other renewable and conventional energy sources, combination of energetic and material use T5.2 Bioenergy and grid balancing

08:30 - 10:00

ORAL SESSION 1BO.1

Innovations in Municipal and Industrial Biowaste Feeding a Biobased and Circular Economy

ROOM: K21

CHAIRPERSONS:

Silvia MALTAGLIATI, ARPAT-Environmental Protection Agency of Tuscany
seconded at the European Commission DG Research, BELGIUM

Peter KUIKMAN, Alterra Wageningen UR, THE NETHERLANDS

1BO.1.1

THE BIO2ENERGY PROJECT: BIOENERGY, BIOFUELS AND BIOPRODUCTS FROM MUNICIPAL SOLID WASTE AND SEWAGE SLUDGE

Francesco BALDI, PIN S.c.r.l., ITALY

Co-authors: I. Pecorini, University of Florence, Department of Industrial Engineering, Italy; D. Bacchi, E. Albini, PIN S.c.r.l. - Servizi didattici e scientifici per l'Università di Firenze, Italy; P. Rossi, P. Paoli, E.A. Carnevale, G. Ferrara, DIEF - Department of Industrial Engineering, University of Florence, Italy; L. Ferrari, DESTEC - Department of Energy, Systems, Territory and Construction Engineering, University of Pisa, Italy; M. Peruzzini, Italian National Council for Research, ICCOM, Florence, Italy; L. Lombardi, University Niccolò Cusano, Rome, Italy

1BO.1.2

BIOPLASTICS AND BIOFUELS FROM URBAN ORGANIC WASTES

Paolo PAVAN, University Cà Foscari of Venice, Environmental Sciences Dpt., ITALY

Co-authors: M. Majone, University of Rome La Sapienza, Italy; D. Bolzonella, University of Verona; F. Fatone, Polytechnical University of Marche Region, Ancona, Italy; F. Cecchi, Innoven srl, Verona, Italy

1BO.1.3

ENHANCED FATTY ACID GENERATION FROM MEAT PROCESSING DISSOLVED AIR FLOTATION SLUDGE USING A QUASI-HOMOGENOUS CATALYST

Zhifa SUN, Otago University, Physics Dpt., NEW ZEALAND

Co-authors: O. Okoro, J. Birch, Otago University, Dunedin, New Zealand

1BO.1.4

EVALUATION OF INDUSTRIAL PRUNUS CERASUS LIQUOR WASTE AS A SOURCE OF ADDED VALUE CHEMICAL PRODUCTS AND ENERGY

Ana Luisa FERNANDO, Universidade Nova de Lisboa, Ciências e Tecnologia Biomassa Dpt., PORTUGAL

Co-authors: E. Mauricio, CBIOS/Universidade Lusofona; Elisa Camara, Lisboa, Portugal; M.P. Duarte, METRICs/DCTB/FCT/UNL, Lisboa, Portugal; C. Rosado, CBIOS/Universidade Lusofona, Lisboa, Portugal; A.M. Diaz-Lanza, Universidad de Alcalá, Madrid, Spain

1BO.1.5

MAPPING ORGANIC WASTE POTENTIALS FROM HOUSEHOLDS

Lea BOEHME, Institute for Sanitary Engineering, Water Quality and Solid Waste Management, SKA Dpt., GERMANY

Co-authors: A. Fritzsche, P. Pilsl, D. Clauss, M. Kranert, University of Stuttgart, Germany

08:30 - 10:00

ORAL SESSION 2BO.2

Gasification Integrated Systems

ROOM: K2

CHAIRPERSONS:

Wiebren DE JONG, Delft University of Technology, THE NETHERLANDS

Matthias KUBA, Bioenergy 2020+, AUSTRIA

2BO.2.1

CLOSING THE LOOP: CHEMICAL COMPOSITION AND ECONOMICS OF BUILDING BLOCKS/MONOMERS FROM INDIRECT GASIFICATION OF WASTE

Berend VREUGDENHIL, Energy Research Centre of the Netherlands, Bio Energy & Efficiency Dpt., THE NETHERLANDS

Co-authors: A.J. Grootjes, G. Aranda Almansa, P. Kroon, Energy Research Centre of the Netherlands, Petten, The Netherlands

2BO.2.2

SORPTION ENHANCED REFORMING WITH THE NOVEL DUAL FLUIDIZED BED TEST PLANT AT TU WIEN

Johannes Christian SCHMID, TU Wien, Institute of Chemical Engineering, AUSTRIA

Co-authors: J. Fuchs, F. Benedikt, S. Mueller, H. Hofbauer, TU Wien, Vienna, Austria

2BO.2.3

CATALYTIC GASIFICATION OF PIGHAIR BIOWASTES WITH HYDROGEN GENERATION OVER NIO/AL₂O₃ CATALYST FOR AN INTEGRATED FUEL PROCESSOR

Chao-Lung CHIANG, Yuan Ze University, Chemical Engineering and Material Science Dpt., TAIWAN

Co-authors: K.S. Lin, Yuan Ze University, Taoyuan, Taiwan; J.C.S. Wu, K.C.W. Wu, National Taiwan University, Taipei, Taiwan; Y.Z. Huang, Chung Yuan Christian University, Taoyuan, Taiwan

2BO.2.4

GASIFICATION OF GRAPEVINES PRUNING RESIDUES INTO A FUEL FLEXIBLE GASIFICATION SYSTEM: EXPERIMENTAL INVESTIGATION

Roberto MUSSI, Yanmar R&D Europe, ITALY

Co-authors: L. Pezzola, A. Bellissima, Yanmar R&D Europe, Florence, Italy; A.M. Rizzo, University of Florence, Florence, Italy; H. Wakizaka, Yanmar biomass power generation group, Maibara, Japan; D. Chiamonti, RE-CORD, Florence, Italy

2BO.2.5

CONVERSION OF TARS ON SOFC ANODES

Tobias HERRMANN, University of Erlangen-Nuremberg, Chair of Energy Process Engineering, GERMANY

Co-authors: M. Dillig, J. Karl, Chair of Energy Process Engineering, Friedrich-Alexander-University of Erlangen-Nuremberg, Nürnberg, Germany

08:30 - 10:00

ORAL SESSION 3BO.3

Biorefinery Processes

ROOM: K1

CHAIRPERSONS:

Yukihiko MATSUMURA, Hiroshima University, JAPAN

Wouter HUIJGEN, Energy Research Centre of the Netherlands, THE NETHERLANDS

3BO.3.1

MILD ORGANOSOLV FRACTIONATION OF LIGNOCELLULOSIC BIOMASS FOR FEEDSTOCK FLEXIBLE BIOREFINERIES.

Arjan SMIT, Energy Research Center of the Netherlands, Biomass & Energy Efficiency Dpt., THE NETHERLANDS

3BO.3.2

CATALYTIC REDUCTIVE FRACTIONATION: INTRODUCING THE LIGNIN-FIRST BIOREFINERY

Tom RENDERS, KU Leuven, Center for Surface Chemistry and Catalysis, BELGIUM
Co-authors: W. Schutyser, S. Van den Bosch, S.-F. Koelewijn, B. Sels, KU Leuven, Leuven, Belgium

3BO.3.3

PALM KERNEL MEAL (PKM) AND GRASS: VALORISATION OF NON-WOODY BIOMASS STREAMS BY CONVERSION TO BIO-ENERGY AND BIO-BASED PRODUCTS

Pavlina NANOOU, Energy Research Centre of the Netherlands, Biomass and Energy Efficiency Dpt., THE NETHERLANDS

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3BO.3.4

MECHANOCATALYSIS OF LIGNOCELLULOSIC BIOMASS - AN INNOVATIVE BIOECONOMIC SOLUTION FOR BIOFUEL, BIOCHEMICAL AND ENERGY PRODUCTION

Laura SCHNEIDER, Oulu University, Research Unit of Sustainable Chemistry, FINLAND

Co-authors: J. Haverinen, M. Jaakkola, CEMIS Oulu, Kajaani, Finland; U. Lassi, Oulu University, Finland

3BO.3.5

IMPROVEMENT OF BIOENERGY YIELDS OBTAINED FROM DUCKWEED BY SEQUENTIAL ETHANOL FERMENTATION AND ANAEROBIC DIGESTION

Ozgul CALICIOGLU, The Pennsylvania State University, Civil and Environmental Engineering Dpt., USA

Co-author: R. Brennan, Penn State University, Department of Civil and Environmental Engineering, University Park, USA

08:30 - 10:00

ORAL SESSION 5BO.4

Bioenergy Integration in Energy Systems

ROOM: K23+K24

CHAIRPERSONS:

Bernd KRAUTKREMER, Fraunhofer IWES, GERMANY

Andreas HORNING, Fraunhofer-Institut UMSICHT, GERMANY

5BO.4.1

**“THINK AND PRODUCE” INSTEAD OF “PRODUCE AND FORGET” -
INTEGRATION OF RES INTO AN ECONOMIC MARKET SYSTEM**

Kilian HARTMANN, Aschaffenburg University of Applied Sciences, Faculty of
Engineering, GERMANY

Co-author: D. I. Candra, Aschaffenburg University of Applied Sciences, Germany

5BO.4.2

**THE ROLE OF BIOECONOMY IN CO2 MITIGATION THROUGH THE ENERGY
SYSTEM - A SCENARIO ANALYSIS FOR THE NETHERLANDS**

Ric HOEFNAGELS, Utrecht University, Copernicus Institute, THE NETHERLANDS

Co-authors: I. Tsiropoulos, M. van den Broek, Utrecht University, The Netherlands; M.K. Patel, Geneva
University, Switzerland; A.P.C. Faaij, Groningen University, The Netherlands

5BO.4.3

**FLEXIBLE BIOGAS PLANTS AS SERVANT FOR POWER PROVISION SYSTEMS
WITH HIGH SHARES OF RENEWABLES: CONTRIBUTIONS TO THE REDUCTION
OF THE RESIDUAL LOAD IN GERMANY.**

Markus LAUER, DBFZ-German Biomass Research Centre, Bioenergy Systems Dpt.,
GERMANY

Co-authors: P. Röppischer, University of Leipzig, Faculty of Mathematics and Computer Science,
Germany; D. Thrän, UFZ Helmholtz-Zentrum für Umweltforschung, Leipzig, Germany

5BO.4.4

**INTEGRATED UTILIZATION PATHWAYS FOR BIOGENIC CO2 IN BIOMASS
DRIVEN INDUSTRY SECTORS**

Janne KÄRKI, VTT Technical Research Centre of Finland, FINLAND

Co-authors: E. Tsupari, C. Bajamundi, S. Kouri, M. Hurskainen, VTT Technical Research Centre of
Finland, Jyväskylä, Finland

5BO.4.5

**CHEMICAL LOOPING COMBUSTION OF SOLID BIOMASS - PERFORMANCE OF
ILMENITE AND BRAUNITE AS OXYGEN CARRIER MATERIALS**

Toni PIKKARAINEN, VTT Technical Research Centre of Finland, Renewable Energy
Processes, FINLAND

Co-authors: S. Teir, I. Hiltunen, VTT Technical Research Centre of Finland, Espoo, Finland

08:30 - 10:00

VISUAL PRESENTATIONS 2BV.1

Innovative Methods and Tools for Small and Large Scale Combustion Technologies Modelling. Solid Biofuels Characterisation and Production Systems Assessment

ROOM: Poster Area

CHAIRPERSONS:

Lasse ROSENDAHL, Aalborg University, DENMARK

Juan Esteban CARRASCO, CIEMAT, SPAIN

Marco BARATIERI, Free University of Bolzano, ITALY

2BV.1.2

INFLUENCE OF THE GRANULOMETRY AND WATER CONTENT ON THE ENERGY CONSUMPTION OF MILLING SORGHUM AND BAMBOO

Bruno GODIN, Walloon Agricultural Research Center, Biomass, Bioproducts and Energy Unit, BELGIUM

Co-authors: A. Arimont, M. Temmerman, J. Delcarte, Walloon Agricultural Research Center - CRA-W, Gembloux, Belgium

2BV.1.3

INFLUENCE OF THE TYPE OF MILL ON THE ENERGY CONSUMPTION OF MILLING BIOMASS

Bruno GODIN, Walloon Agricultural Research Center, Biomass, Bioproducts and Energy Unit, BELGIUM

Co-authors: O. Prajara, M. Temmerman, J. Delcarte, Walloon Agricultural Research Center - CRA-W, Gembloux, Belgium

2BV.1.4

INFLUENCE OF REACTION PARAMETERS OF HYDROTHERMAL CARBONIZATION ON THE ALKALI AND FOULING INDEX OF HYDROTHERMALLY CARBONIZED BIOMASS

Lynn HANSEN, TU Munich, Mechanical Engineering Dpt., GERMANY

Co-authors: M. Ulbrich, S. Fendt, H. Spliethoff, TU Munich, Garching, Germany

2BV.1.5

BRIQUETTING LIKE AN ALLTERNATIVE TO BENEFIT THE SUGAR CANE HARVEST RESIDUES (RAC) IN THE COGENERATION PROCESS ON THE COLOMBIAN SUGAR CANE INDUSTRY

Julian LUCUARA, Cenicana, COLOMBIA

Co-authors: A. Gomez Perla, N. Gil Zapata, W. Ojeda, Cenicana, Cali, Colombia

2BV.1.7

INFLUENCE OF ROAD SALTING ON CHLORINE CONTENT OF ROAD SIDE WOODY BIOMASS

Harald THORWARTH, Rottenburg University of Applied Sciences, Firing Technology Dpt., GERMANY

Co-authors: M. Woehler, S. Rieder, University of Applied Forest Sciences Rottenburg, Germany

2BV.1.10

INFLUENCE OF OUTDOORS STORAGE OF SHRUB BIOMASS ON EMISSIONS AND SLAGGING DURING ITS COMBUSTION

Elena BORJABAD, CIEMAT, Energy Dpt., SPAIN

Co-authors: I. Mediavilla, A. Pascual, S. García, M.J. Fernández, J.E. Carrasco, L.S. Esteban, R. Ramos, CEDER-CIEMAT, Soria, Spain

2BV.1.13

THE IMPACT OF BLENDING METHOD AND THE ASHING TEMPERATURE ON THE MELTING CHARACTERISTICS OF ASHES OF BIOMASS BLENDS

Siim LINK, Tallinn University of Technology, Energy Technology Dpt., ESTONIA

Co-authors: P. Yrjas, L. Hupa, Åbo Akademi University, Turku, Finland

2BV.1.15

NUMERICAL SIMULATION OF DEVOLATILIZATION OF WOOD LOGS AND PRESSURE GENERATION IN THE WOOD LOG CENTER

Inge HABERLE, Norwegian University of Science and Technology, Energy and Process Engineering Dpt., NORWAY

Co-authors: O. Skreiberg, Sintef Energy Research, Trondheim, Norway; N. Haugen, NTNU/Sintef Energy Research, Trondheim, Norway

2BV.1.16

TRANSIENT CFD SIMULATIONS OF WOOD LOG COMBUSTION IN A WOOD STOVE

Øyvind SKREIBERG, SINTEF Energy Research, Thermal Energy Dpt., NORWAY

Co-authors: M. Bugge, N.E.L. Haugen, O. Skreiberg, SINTEF Energy Research, Trondheim, Norway

2BV.1.18

GRATEADVANCE - ADVANCED ADJUSTABLE GRATE SOLUTIONS FOR FUTURE FUEL FLEXIBLE BIOMASS COMBUSTION TECHNOLOGIES

Sabine FELDMEIERS, Bioenergy 2020+, AUSTRIA

Co-authors: E. Wopienka, M. Schwarz, Bioenergy2020+, Wieselburg, Austria; R. Mehrabian, Bioenergy2020+, Graz, Austria

2BV.1.19

BIOMASS MATERIAL FOR RESEARCH WORK - REPRESENTATIVITY, SAMPLING, AND SAMPLE HANDLING

Magnus RUDOLFFSSON, Swedish University of Agricultural Sciences, Forest Biomaterials and Technology Dpt., SWEDEN

Co-authors: G. Kalen, S.H. Larsson, Swedish University of Agricultural Sciences, Umea, Sweden; M. Segerström, Swedish University of Ab, Umea, Sweden

2BV.1.20

METHANE EMISSIONS FROM SMALL SCALE APPLIANCES BURNING WOOD AND PELLETS

Senem OZGEN, Polytechnic of Milan, Civil and Environmental Engineering Dpt., ITALY

Co-authors: G. Migliavacca, INNOVHUB - Stazione Sperimentale per i Combustibili, Milano, Italy; C. Morreale, Politecnico INNOVHUB - Stazione Sperimentale per i Combustibili di Milano, Italy

2BV.1.21

OPTIMIZATION OF THE COMBUSTION OF VEGETABLE OILS IN A SEMI INDUSTRIAL BOILER

Julio SAN JOSÉ, Universidad de Valladolid, Ingeniería Energética y Fluidomecánica Dpt., SPAIN

Co-authors: M.A. Sanz-Tejedor, Y. Arroyo, Universidad de Valladolid, Spain

2BV.1.22

MAIN GOAL OF THIS RESEARCH - TO PROMOTE A MORE EFFICIENT USE OF WHEAT STRAW FOR CLEANER ENERGY PRODUCTION BY CO-FIRING STRAW PELLETS WITH SOLID AND GASEOUS FUELS (WOOD PELLETS, PROPANE) AND ASSESSING

Inesa BARMINA, University of Latvia, Institute of Physics, LATVIA
Co-author: R. Valdmanis, Institute of Physics, University of Latvia, Salaspils, Latvia

2BV.1.23

THE ROLE OF AEROSOLS FROM BIOMASS COMBUSTION

Thomas NUSSBAUMER, Verenum Research and Lucerne University of Applied Sciences, SWITZERLAND

2BV.1.27

RESEARCH FACILITY ASSESSMENT FOR BIOMASS COMBUSTION IN MOVING GRATE FURNACE

Francesco GALLUCCI, CREA-ING, ITALY
Co-authors: M. Salerno, CREA, Roma, Italy; E. Guerriero, CNR, Roma, Italy; M. Amalfi, F. Palmieri, G. Chiatti, Uniroma3, Roma, Italy

2BV.1.28

UTILIZATION OF NATURALLY OCCURRING MATERIALS IN THE BIO-BASED CHEMICAL LOOPING COMBUSTION

Martin F. SUNDING, SINTEF Energy Research, Materials and Chemistry Dpt., NORWAY
Co-authors: M. Pishahang, Y. Larring, SINTEF, Oslo, Norway

2BV.1.29

COUPLED VENTILATION AND FLUE GAS HEAT EXCHANGER SYSTEM FOR USE IN LOW ENERGY DWELLINGS: AN INVESTIGATION USING DYNAMIC ENERGY SIMULATIONS.

Axel CABLE, INSA, FRANCE
Co-authors: A. Cablé, K. Chetehoua, INSA Centre Val de Loire, PRISME Laboratory, Bourges, France & SINTEF Building and Infrastructure, O, Bourges, France; L. Georges, NTNU, Trondheim, Norway; P. Peigné, Laboratoire CERIC, Poujoulat Group, Saint-Symphorien, France, St Symphorien, France; Ø. Skreiberg, SINTEF Energy Research, Trondheim, Norway, Bourges, France

2BV.1.30

DEVELOPMENT OF AN INNOVATIVE LOW-COST/LOW-EMISSION PELLET-BASED STOVE TECHNOLOGY

Ali SHIEHNEJAD-HESAR, Bioenergy 2020+, AUSTRIA
Co-authors: T. Gruber, R. Mehrabian, Bioenergy 2020+, Graz, Austria; T. Bauer, HET Heiz- und Energietechnik Entwicklungs GmbH, Seekirchen am Wallersee, Austria; A. Anca-Couce, R. Scharler, Institute for Thermal Engineering; TU-Graz, Austria;

2BV.1.32

CO₂ CAPTURE FROM COMBUSTION OF BIOMASS VOLATILES WITH A CHEMICAL-LOOPING COMBUSTION PROCESS

Carl LINDERHOLM, Chalmers University of Technology Göteborg, Energy and Environment Dpt., SWEDEN
Co-authors: P. Moldenhauer, M. Biermann, T. Mattisson, Chalmers University of Technology, Gothenburg, Sweden

2BV.1.34

EVALUATION OF THE BIO-OIL COMBUSTION PRODUCED FROM COCONUT ENDOCARP VIA NUMERICAL STUDIES

Shirley DUARTE, Universidad Nacional de Asuncion, Facultad de Ciencias Químicas, Industrial Applications, PARAGUAY

Co-authors: D. Alviso, Universidad de Buenos Aires, Buenos Aires, Argentina; N. Alvarenga, Universidad Nacional de Asuncion, San Lorenzo, Paraguay; J.C. Rolón, Centrale-Supélec, Université Paris Saclay, Paris, France

2BV.1.36

EFFECTIVE SYSTEM INTEGRATION OF DECENTRALISED BIOMASS COGENERATION PLANTS

Rafal STRZALKA, Stuttgart University of Applied Sciences, GERMANY

Co-authors: A. Strzalka, U. Eicker, Stuttgart University of Applied Sciences, Germany; J. Kalina, Silesian University of Technology, Gliwice, Poland

2BV.1.37

EVALUATION OF ACOUSTIC INTENSIFICATION IN AN HYBRID WATER/FIRE TUBE BOILER'S FURNACE BURNING EUCALYPTUS CHIPS

Electo Eduardo SILVA LORA, Universidade Federal de Itajubá, Instituto de Engenharia Mecânica, BRAZIL

Co-authors: L.R. de Mello e Pinto, P.S. Pedroso Corrêa Jr, D.M. Yepes Maya, A.M. Martinez Reyes, O.J. Venturini, R. Vieira Andrade, L.J. Mendes Neto, UNIFEI, Itajubá, Brazil; A. Ratner, UIOWA, Iowa, USA

2BV.1.38

BEREAL-METHOD FOR PELLET STOVES: FIELD TEST AND ROUND ROBIN

Hans BACHMAIER, Technology and Support Centre in the Centre of Excellence for Renewable Resources, Solid Biofuels Dpt., GERMANY

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2BV.1.39

BEREAL: A PRACTICAL TEST METHOD FOR FIREWOOD ROOMHEATERS - REAL-LIFE RELEVANCE AND REPRODUCIBILITY

Christoph SCHMIDL, Bioenergy 2020+, Biomass Combustion Dpt., AUSTRIA

Co-authors: G. Reichert, H. Stressler, R. Sturmlechner, Bioenergy2020+, Wieselburg-Land, Austria; M.G. Jespersen, DTI, Aarhus, Denmark; H. Hartmann, R. Mack, H. Oehler, TFZ, Straubing, Germany; S. Pelz, M. Woehle, HFR, Rottenburg, Germany; H. Persson, M. Ronnback, SP, Boras, Sweden;

2BV.1.40

THE USE OF OPEN SORPTION TECHNOLOGY FOR HEAT RECOVERY IN BIOMASS COMBUSTION APPLICATIONS

Ernst HÖFTBERGER, Bioenergy 2020+, AUSTRIA

Co-authors: R. Riepl, B. Hebenstreit, L. Golicza, A. Weissinger, C. Schmidl, W. Haslinger, Bioenergy 2020+, Graz, Austria; K. Paar, Güssing Energy Technologies, Güssing, Austria; R. Zweiler, Güssing Energy Technologies, Güssing, Austria; C. Hochenauer, TU Graz, Graz, Austria

2BV.1.41

SLAGGING PREVENTION AND PLANT OPTIMIZATION BY MEANS OF NUMERICAL SIMULATION

Thomas PLANKENBÜHLER, Friedrich-Alexander-University Erlangen, Chair of Energy Process Engineering, GERMANY

Co-authors: D. Müller, J. Karl, Friedrich-Alexander-University Erlangen-Nuremberg, Nuremberg, Germany

2BV.1.43

EXPERIMENTAL EVALUATION OF INTERACTIONS BETWEEN K, CA AND P AND MN/SI-BASED OXYGEN CARRIERS

Henrik LEION, Chalmers University of Technology, Chemistry and Chemical Engineering Dpt., SWEDEN

Co-authors: D. Zhao, P. Knutsson, B.-M. Steenari, Chalmers University of Technology, Göteborg, Sweden

2BV.1.44

NUMERICAL ANALYSIS FOR THE LOW-EMISSION DUAL FUEL COMBUSTION IN A BOILER TYPE OP-230

Przemyslaw MOTYL, Kazimierz Pulaski University of Technology and Humanities in Radom, POLAND

Co-author: J. Lach, Kazimierz Pulaski University of Technology & Humanities in Radom, Faculty of Mechanical Engineering, Radom, Poland

2BV.1.45

PERFORMANCE EVALUATION OF A WASTE TO ENERGY POWER PLANT: AN EXERGETIC APPROACH

Francis Chinweuba EBOH, University of Borås, Swedish Centre for Resource Recovery, SWEDEN

Co-authors: P. Ahlström, T. Richards, University of Borås, Borås, Sweden

2BV.1.48

INVESTIGATION OF CONGLOMERATES IN THE FUEL BED AND DEPOSITS ON HEAT EX-CHANGER TUBES IN A FLUIDIZED BED PILOT PLANT

Britta BERGFELDT, Karlsruhe Institute of Technology, ITC Dpt., GERMANY

Co-authors: G. Pfrang-Stotz, Karlsruhe Institute of Technology, Germany; J. Reichelt, IBR, Bruchsal, Germany; E. Karrer, INTEC, Bruchsal, Germany

2BV.1.49

EFFECTS OF FUEL PROPERTIES ON COMBUSTION AND EMISSIONS OF A DIRECT INJECTION DIESEL ENGINE FUELED WITH N-BUTANOL-DIESEL BLENDS

Miao YANG, Energy Research Institute Co., Ltd, Henan Academy of Science, P.R. CHINA

Co-authors: Z.W. Wang, S.M. Guo, X.F. Xin, T. Qi, T.Zh. Lei, Energy Research Institute Co., Ltd, Zhengzhou, P.R. CHINA; X.Y. Yan, University of Exeter Penryn Campus, Penryn, UNITED KINGDOM

2BV.1.50

PYROLYSIS OIL COMBUSTION IN A HORIZONTAL BOX FURNACE WITH AN EXTERNALLY MIXED NOZZLE

Akwasi A. BOATENG, U.S. Department of Agriculture, Eastern Regional Research Center, USA

Co-authors: F.C. Lujaji, Nelson Mandela African Institution of Science and Technology, WyndArusha, Tanzania; M.A. Schaffer, C.A. Mullen, USDA-ARS, Wyndmoor, USA

2BV.1.51

ENERGETIC POTENTIAL OF TROPICAL BIOMASSES

Deyvison SOUZA RODRIGUES, UFABC, BRAZIL

Co-authors: D.R. Rodrigues, A.R. Santana, J.M.G. Rios, K.B.B. Marana, C.A. Silva, J.T.C.L. Toneli, G.C. Antonio, UFABC, Santo André, Brazil

2BV.1.52

CO-COMBUSTION OF COAL AND BIOMASS: COMBUSTION CHARACTERISTICS, FOULING AND BED AGGLOMERATION TENDENCY

Suneerat FUKUDA, King Mongkut's University of Technology Thonburi, The Joint Graduate School of Energy and Environment, THAILAND

Co-authors: S. Krerkkaiwan, P. Chaivatamaset, King Mongkut's University of Technology Thonburi, Bangkok, Thailand

2BV.1.53

NOVEL ELECTRICAL CHARGING CONDENSING HEAT EXCHANGER FOR PARTICLE EMISSION REDUCTION AND EFFICIENT HEAT RECOVERY IN SMALL BOILERS

Olli SIPPULA, University of Eastern Finland, Environmental and Biological Sciences Dpt., FINLAND

Co-authors: J. Grigonyte, H. Suhonen, M. Kortelainen, J. Tissari, P. Tiitta, A. Lähde, J. Keskinen, J. Jokiniemi, A. Laitinen, University of Eastern Finland, Department of Environmental and Biological Sciences, Kuopio, Finland

2BV.1.56

THE COMBUSTION CHARACTERISTICS AND DIFFERENCES IN NITROGEN CONTENT OF UK GROWN BIRCH AND SITKA SPRUCE

Douglas PHILLIPS, University of Leeds, School of Chemical and Process Engineering, UNITED KINGDOM

Co-authors: G. Allison, Aberystwyth University, United Kingdom; J.M. Jones, University of Leeds, United Kingdom

10:00 - 10:15

BREAK

10:15 - 11:00

PLENARY SESSION 1BP.1

Biomass Resources Leading Towards Lower Carbon Emissions

ROOM: K1

CHAIRPERSON:

Berien ELBERSEN, Alterra, THE NETHERLANDS

1BP.1.1

IMPACT OF WASTE WOOD RECYCLING ON THE EU BIOECONOMY. OVERVIEW ON THE MOST ADOPTED VALUE CHAIN IN EUROPE

Magdalena BORZECKA-WALKER, Institute of Soil Science and Plant Cultivation, Bioeconomy and System Analysis Dpt., POLAND

Co-author: D.Boulday, Institute of Soil Science and Plant Cultivation, Poland

1BP.1.2

NEGATIVE CARBON EMISSIONS FROM PERENNIAL RHIZOMATOUS GRASSES USED AS BIOMASS CROPS

Michael JONES, Trinity College Dublin, Botany Dpt., IRELAND

11:00 - 11:45

PLENARY SESSION 2BP.2

Biomass Application in Large Power Plants and in Supercritical Gasification

ROOM: K1

CHAIRPERSON:

Ingwald OBERNBERGER, Bios Bioenergiesysteme, AUSTRIA

2BP.2.1

UNDERSTANDING BIOMASS IGNITION IN POWER PLANT MILLS

Lars SCHWARZER, Technical University of Denmark, Chemical and Biochemical Engineering Dpt., DENMARK

Co-authors: P. A. Jensen, P. Glarborg, K. Dam-Johansen, DTU Chemical Engineering Dpt., Kgs Lyngby, Denmark; J. K. Holm, DONG Energy, Fredericia, Denmark

2BP.2.2

SEPARATION OF SALTS DURING THE GASIFICATION OF SPENT GRAIN IN SUPERCRITICAL WATER

Nikolaos BOUKIS, Karlsruhe Institute of Technology, Institute of Catalysis Research and Technology, GERMANY

Co-authors: I.K. Stoll, J. Sauer, Karlsruhe Institute of Technology, Germany; J. Fischer, R. Kansy, Paulaner, Munich, Germany

11:45 - 12:30

PLENARY SESSION 3BP.3

Advances in Biomass Conversion Technologies and Processes

ROOM: K1

CHAIRPERSON:

David CHIARAMONTI, University of Florence, RE-CORD, ITALY

3BP.3.1

BIOCONVERSION PROCESSES FOR THE BIO-BASED ECONOMY-DEVELOPMENT OF ENZYMES, ROBUST CELL FACTORIES AND ROBUST PROCESSES

Lisbeth OLSSON, Chalmers University of Technology, Chemical & Biological Engineering Dpt., SWEDEN

Co-authors: M. Bettiga, C.J. Franzén, Chalmers University of Technology, Gothenburg, Sweden

3BP.3.2

STATUS OF PYROLYSIS AND UPDATE ON THE EMPYRO PYROLYSIS DEMONSTRATION PLANT

Gerhard MUGGEN, BTG BioLiquids, THE NETHERLANDS

12:30 - 13:30

LUNCH

13:30 - 15:00

ORAL SESSION 1BO.5

Municipal and Industrial Biowaste: Specific Technologies and Case Studies

ROOM: K21

CHAIRPERSONS:

Samir BINDER, Fraunhofer-Institut UMSICHT, GERMANY

Magdalena BORZECKA, Institute of Soil Science and Plant Cultivation, Pulawy, POLAND

1BO.5.1

RESOURCE EFFICIENCY OF BIOENERGY FROM MUNICIPAL WASTE - A CASE STUDY FROM MUNICIPALITY OF STUTTGART IN SOUTHERN GERMANY

Gerold HAFNER, University of Stuttgart, ISWA - Institute for Sanitary Engineering, Water Quality and Solid Waste Management Dpt., GERMANY

Co-author: C. Maurer, University of Stuttgart, Germany

1BO.5.2

POWER GENERATION BASED ON AGRICULTURAL RESIDUES GASIFICATION: THE POTENTIAL OF CORN COBS

Maria GÓMEZ, Universidad de La Sabana, Chemical Engineering Dpt., COLOMBIA

Co-authors: M. Gomez, Universidad de La Sabana, Bogotá, Colombia; L. Martinez, Universidad de La Sabana, Bogotá, Colombia; A. Sanches-Pereira, Universidade de Sao Paulo, Sao Paulo, Brazil; A. Manrique, KTH Royal Institute of Technology, Stockholm, Sweden

1BO.5.3

TECHNO-ECONOMIC OPTIMISATION OF COMBINED ANAEROBIC DIGESTION AND GASIFICATION OF FOOD WASTE AS INTEGRATED WASTE MANAGEMENT AND ENERGY SYSTEM

Rory MONAGHAN, National University of Ireland Galway, Mechanical Engineering Dpt., IRELAND

Co-authors: A. Singlitico, K. Dussan, J. Goggins, National University of Ireland, Galway, Ireland; R. O'Shea, D. Wall, J. Murphy, University College Cork, Ireland

1BO.5.4

ASSESSMENT OF CITRUS WASTES GASIFICATION THROUGH A FLUIDIZED BED REACTOR: EXPERIMENTAL ANALYSIS FOR INTEGRATION IN AN EXISTING CITRUS JUICE INDUSTRY

Mauro PRESTIPINO, University of Messina, Engineering Dpt., ITALY

Co-authors: V. Chiodo, G. Zafarana, CNR-ITAE, Messina, Italy; A. Galvagno, University of Messina, Italy

1BO.5.5

INCREASED BIOGAS PRODUCTION FROM SEWAGE SLUDGE AND MANURE WITH HIGHLY EFFICIENT DEWATERING AND PHOSPHATE RECOVERY

Jaap KIEL, Energy Research Centre of the Netherlands, Biomass & Energy Efficiency Dpt., THE NETHERLANDS

Co-authors: A.J. Grootjes, J.R. Pels, M.C. Carbo, Energy Research Centre of the Netherlands, Petten, The Netherlands; H. Kuipers, Waterschap Zuiderzeeland, Lelystad, The Netherlands; J. Vogelaar, Paques B.V., Balk, The Netherlands

13:30 - 15:00

ORAL SESSION 2BO.6

Research and Development Concerning Aspects of Gasification, Gas Cleaning and CHP

ROOM: K2

CHAIRPERSONS:

Marco BARATIERI, Free University of Bolzano, ITALY

Markus BOLHÀR-NORDENKAMPF, Valmet, AUSTRIA

2BO.6.1

ASH AND BED MATERIAL RESEARCH IN DUAL FLUIDIZED BED GASIFICATION OF BIOMASS IN LAB- AND INDUSTRIAL-SCALE

Matthias KUBA, Bioenergy 2020+, AUSTRIA

Co-author: H. Hofbauer, TU Wien, Vienna, Austria

2BO.6.2

GASIFICATION OF ANAEROBIC DIGESTATE FROM MIX OF BIOMASS RESIDUES, MANURES AND MSW TO COMBINED HEAT AND POWER PRODUCTION

Donatella BARISANO, ENEA Research Centre, Energy Technologies Dpt., ITALY

Co-authors: F. Nanna, A. Villone, R. Agostini, C. Freda, G. Cornacchia, ENEA Research Centre, Rotondella, Italy; S. Brandani, Ladurner Srl, Bolzano, Italy

2BO.6.3

SEWAGE SLUDGE PYROLYSIS IN AN INDIRECTLY HEATED ROTARY KILN: PRIMARY MEASURES FOR TAR REDUCTION.

Sonia L. RINCON PRAT, National University of Colombia, Mechanical and Mechatronics Engineering Dpt., COLOMBIA

Co-authors: L. Mendoza Geney, A. Gomez, S. Rincon, Universidad Nacional de Colombia, Bogotá, Colombia

2BO.6.4

THE ROLE OF INORGANICS IN MODELLING OF BIOMASS GASIFICATION

Jukka KONTTINEN, Tampere University of Technology, Chemistry and Bioengineering Dpt., FINLAND

Co-authors: J. Krumb, Tampere University of Technology, Tampere, Finland; N. DeMartini, Åbo Akademi Process Chemistry Centre, Turku, Finland; A. Gomez-Barea, University of Seville, Spain

2BO.6.5

KINETIC STUDY OF SUPERCRITICAL WATER GASIFICATION IN THE MIXTURE OF GLUCOSE, XYLOSE, AND GUAIACOL

Nattacha PAKSUNG, Hiroshima University, Mechanical Sciences and Engineering Dpt., JAPAN

Co-author: Y. Matsumura, Hiroshima University, Higashi-Hiroshima, Japan

13:30 - 15:00

ORAL SESSION 3BO.7

Biorefinery Concepts

ROOM: K1

CHAIRPERSONS:

Gerfried JUNGMEIER, Joanneum Research Forschungsgesellschaft, AUSTRIA

Pavlina NANOU, Energy Research Centre of the Netherlands, THE NETHERLANDS

3BO.7.1

TECHNOLOGICAL ADVANCES AND OPPORTUNITIES FOR THE DEVELOPMENT OF SUSTAINABLE BIOREFINERIES

Solange MUSSATTO, Technical University of Denmark, Novo Nordisk Foundation Center for Biosustainability, DENMARK

3BO.7.2

TECHNO-ECONOMIC EVALUATION OF A SMALL SCALE INTEGRATED BIOREFINERY BASED ON OLIVE TREE PRUNING BIOMASS

Ana Isabel SUSMOZAS, CIEMAT, Energy Dpt., SPAIN

Co-authors: I. Ballesteros, M.J. Negro, J.M. Oliva, M. Ballesteros, CIEMAT, Madrid, Spain

3BO.7.3

SMIBIO: A GERMAN BUSINESS CASE STUDY

Ingo BALL, WIP, Project Dpt., GERMANY

Co-authors: R. Janssen, D. Rutz, WIP, Munich, Germany

3BO.7.4

BLACK RICE STRAW AS A FEEDSTOCK FOR THE EXTRACTION OF ANTHOCYANIN AND SUGARS IN A COMBINED BIOREFINERY

Kamaljit MOIRANGTHEM, University of Nottingham, Biosciences Dpt., UNITED KINGDOM

Co-authors: P. Ramakrishna, A. Ghumra, G. Tucker, University of Nottingham, Loughborough, United Kingdom; R. Rajkumari, D.M. College of Science, Imphal, India

3BO.7.5

MACROALGAE BIOREFINERY IN A NORDIC PERSPECTIVE

Anne-Belinda BJERRE, Danish Technological Institute, Biomass and Biorefinery Dpt., DENMARK

Co-authors: X. Hou, R. Neerup, D.B. Karakashev, Danish Technological Institute, Taastrup, Denmark

13:30 - 15:00

ORAL SESSION IBO.8

Biomass Utilisation Perspectives

ROOM: K23+K24

CHAIRPERSONS:

Kees KWANT, Netherlands Enterprise Agency, Ministry of Economic Affairs, THE NETHERLANDS

Nathalie DEVRIENDT, VITO - Flemish Institute Technological Research, BELGIUM

IBO.8.1

PROMOTING A NEW EUROPEAN STRATEGY FOR ORGANIC WASTE VALORISATION INTO HIGH VALUE BIO-SYNGAS AS A NEW DIRECTION TOWARDS THE EUROPEAN BIOFUELS SECTOR DEVELOPMENT

Giuliano GRASSI, Secretary General, European Biomass Industry Association, BELGIUM
Co-authors: L. Tita, EUBIA, Bruxelles, Belgium

IBO.8.2

FROM GREEN FOREST TO GREEN COMMODITY CHEMICALS

Jonas JOELSSON, SP Processum, SWEDEN

Co-authors: M. Warneryd, SP Technical Research Institute of Sweden, Gothenburg, Sweden; Y. Alwarsdotter, SEKAB, Örnsköldsvik, Sweden; J. Brücher, Holmen, Örnsköldsvik, Sweden; L. Heuts, West Sweden Chemicals and Materials Cluster, Gothenburg, Sweden

IBO.8.3

SUSTAINABLE REGIONAL SUPPLY CHAINS FOR WOODY BIOENERGY IN EASTERN EUROPE

Frank MISCHLER, GIZ- German Development Cooperation, GERMANY

IBO.8.4

ASH REMOVAL FROM ASH-RICH BIOMASS AND SLUDGE: THE BIAR PROCESS

Gian Claudio FAUSSONE, Inser Energia, ITALY

Co-authors: M. Grilc, B. Likozar, National Institute of Chemistry, Ljubljana, Slovenia Republic

IBO.8.5

BIOENERGY IN BALANCING GRIDS AND PROVIDING STORAGE OPTIONS - RESULTS OF IEA BIOENERGY AGREEMENT SPECIAL PROJECT

Antti ARASTO, VTT Technical Research Centre of Finland, FINLAND

Co-authors: D. Chiamonti, University of Florence, Italy; J. Kiviluoma, K. Sipilä, VTT Technical Research Centre of Finland, Espoo, Finland; E. van den Heuvel, studio Gear Up, Amsterdam, The Netherlands; L. Waldheim, Waldheim Consulting, Stockholm, Sweden; K. Maniatis, European Commission DG ENER, Brussels, Belgium

13:30 - 15:00

VISUAL PRESENTATIONS 5BV.2

Integration of Bioenergy with other Renewable and Conventional Energy Sources

ROOM: Poster Area

CHAIRPERSONS:

David BAXTER, Former European Commission, Joint Research Centre, UNITED KINGDOM

Ursel HORNING, Karlsruhe Institute of Technology, GERMANY

Jeffrey SKEER, IRENA-International Renewable Energy Agency, GERMANY

5BV.2.1

BIOBATTERY: INTEGRATION OF THERMO-CATALYTIC REFORMING, PRESSURE SWING ADSORPTION AND HYDROTREATMENT FOR THE PRODUCTION OF 100% GREEN FUELS, BIOCHAR, HEAT AND POWER

Miloud OUADI, Fraunhofer-Institut UMSICHT, GERMANY

Co-authors: S. Binder, A. Hornung, Fraunhofer UMSICHT, Sulzbach-Rosenberg, Germany

5BV.2.2

ENERGETIC ANALYSIS OF INNOVATIVE HYBRID BIOMASS/SOLAR ORGANIC RANKINE CYCLES (ORCS) FOR MICRO-SCALE CHP APPLICATIONS

Angelo ALGIERI, University of Calabria, Mechanical, Energy and Management Engineering Dpt., ITALY

Co-authors: P. Morrone, F. Rovense, University of Calabria, Arcavacata di Rende, Italy

5BV.2.3

BIOENERGY INTEGRATION IN ETHANOL PLANTS: AN ALTERNATIVE END USE FOR BIOGAS TO ENABLE 2G ETHANOL PRODUCTION

Alessandro SANCHES-PEREIRA, University of Sao Paulo, Institute of Energy and Environment, BRAZIL

Co-authors: C. L. Joppert, M.M. Santos, H.K.M. Costa, S.T. Coelho, Institute of Energy and Environment of the University of São Paulo, São Paulo, Brazil

5BV.2.5

RELIABLE BIO-BASED REFINERY INTERMEDIATES - BIOMATES

Tim SCHULZKE, Fraunhofer-Institut UMSICHT, Biorefinery and Biofuels Dpt., GERMANY

Co-authors: V. Heil, Fraunhofer UMSICHT, Oberhausen, Germany; S. Bezergianni, CERTH/CPERI, Thessaloniki, Greece; N. Rettenmaier, ifeu - Institut für Energie- und Umweltforschung Heidelberg GmbH, Heidelberg, Germany; U. Pfisterer, BP Europa SE, Hamburg, Germany; M. Martin, Ranidosro, Prague, Czech Republic; M. Mulder, Hydrogen Efficiency Technologies (HyET) BV, Arnhem, The Netherlands; R. Diaz-Chavez, Imperial College of Science, Technology and Medicine, London, United Kingdom; D. Kubicka, University of Chemistry and Technology Prague, Czech Republic

5BV.2.6

THE COMBINATION OF BIOMASS WITH SOLAR THERMAL ENERGY AND OTHER RENEWABLES FOR SMALL HEATING GRIDS

Dominik RUTZ, WIP, Biomass Unit, GERMANY

Co-authors: R. Mergner, R. Janssen, WIP, Munich, Germany; M. Hofmeister, L. Laurberg Jensen, PlanEnergi, Århus, Denmark; C. Doczekal, R. Zweiler, Güssing Energy Technologies GmbH, Güssing, Austria; T. Puksec, N. Duic, University of Zagreb (UNIZAG FSB), Zagreb, Croatia; R. Sunko, B. Sunko, Skupina fabrika d.o.o., Ljutomer, Slovenia Republic; N. Markovska, M. Karanflovka, International Centre for Sustainable Development of Energy, Water and Environment Systems, Skopje, Macedonia; N. Rajkovic, I. Batas Bjelic, School of Electrical Engineering and Computer Science, Belgrade, Serbia; A. Kazagic, A. Ademovic-Tahirovic, Elektroprivreda, Sarajevo, Bosnia and Herzegovina; S. Jerotic, Municipality of Sabac, Serbia; E. Fejzovic, Municipality of Visoko, Bosnia and Herzegovina; T. Zrinski, Municipality of Ljutomer, Slovenia Republic

5BV.2.9

ELECTRICITY PRODUCTION VIA BIOGAS PLANTS IN ELECTRICITY GRIDS WITH A HIGH SHARE OF INSTALLED VOLATILE POWER PRODUCERS

Katharina BÄR, Technische Hochschule Ingolstadt, Institute of New Energy Systems, GERMANY

Co-authors: M. Sonnleitner, W. Zörner, Technische Hochschule Ingolstadt, Germany

5BV.2.12

UNCERTAINTY IN CLIMATE BENEFITS OF BIOENERGY WITH CARBON CAPTURE AND STORAGE

Steeff HANSEN, Radboud University, Environmental Science Dpt., THE NETHERLANDS

Co-authors: Z.J.N. Steinmann, M.A.J. Huijbregts, Radboud University, Nijmegen, The Netherlands

13:30 - 17:00

WORKSHOP

Wood Stoves 2020 - Towards high efficiency and low emissions

15:00 - 15:15

BREAK

15:15 - 16:45

ORAL SESSION 4BO.9

From Research to Implementation in an International Context

ROOM: K21

CHAIRPERSONS:

Giuliano GRASSI, Secretary General, European Biomass Industry Association, BELGIUM

Maurizio COCCHI, ETA-Florence Renewable Energies, ITALY

4BO.9.1

BIOENERGY SUSTAINING THE FUTURE AND ERA-NET BIOENERGY RESULTS

Kees KWANT, Netherlands Enterprise Agency, Ministry of Economic Affairs, RVO, THE NETHERLANDS

Co-authors: R. van Leeuwen - Jones, RVO.nl, Roermond, The Netherlands; B. de Leeuw, BEIS, London, United Kingdom

4BO.9.2

RESOURCE EFFICIENT MARKET STIMULATION POLICIES FOR INDIGENOUS BIOMASS VALUE CHAINS AT EU MEMBER STATES

Calliope PANOUTSOU, Imperial College London, Centre for Energy Policy and Technology, UNITED KINGDOM

Co-authors: A. Singh, Imperial College London, United Kingdom; A. Uslu, J. van Stralen, ECN, Amsterdam, The Netherlands; L. Pelkmans, VITO, Mol, Belgium; B. Elbersen, DLO, Amsterdam, The Netherlands

4BO.9.3

FUTURE MARKET SHARE ESTIMATION OF RENEWABLE GAS IN GERMANY USING A SYSTEM DYNAMICS MODELLING APPROACH

Thomas HORSCHIG, DBFZ-German Biomass Research Centre, Bioenergy Systems Dpt., GERMANY

Co-author: D Thrän, DBFZ-German Biomass Research Centre, Leipzig, Germany

4BO.9.4

INTERNATIONAL TRADE OF ENERGY BIOMASS - AN OVERVIEW OF THE GLOBAL STATUS

Svetlana PROSKURINA, Lappeenranta University of Technology, Laboratory of Sustainable Energy Systems, FINLAND

Co-authors: M. Junginger, Copernicus Institute, Utrecht University, Utrecht, The Netherlands; J. Heinimo, Mikkeli Development Miksei Ltd, Mikkeli, Finland; E. Vakkilainen, Lappeenranta University of Technology, Finland

4BO.9.5

SUPPLY-SIDE PERSPECTIVES ON THE EURO-AMERICAN PELLET TRADE

William HUBBARD, Southern Regional Extension Forestry, USA

Co-author: D.P. Geller, University of Georgia, Athens, GA, USA

15:15 - 16:45

ORAL SESSION 2BO.10

Advances in Gasification for Synthesis Gas Production

ROOM: K2

CHAIRPERSONS:

Christoph PFEIFER, University of Natural Resources & Life Sciences, AUSTRIA

Elmer LEDESMA, University of St. Thomas, USA

2BO.10.1

EUBCE STUDENT AWARDEE PRESENTATION

EXPERIMENTAL INVESTIGATION ON STEAM-OXYGEN FLUIDIZED BED GASIFICATION OF BIOGENIC RESIDUES

Max SCHMID, University of Stuttgart, Institute of Combustion and Power Plant Technology, GERMANY

Co-authors: M. Beirow, D. Schweitzer, R. Spörl, G. Scheffknecht, IFK University of Stuttgart, Stuttgart, Germany

2BO.10.2

GASIFICATION OF PINE FOREST RESIDUES AS FIRST STAGE FOR THE PRODUCTION OF JET FUEL VIA FISCHER-TROPSCH

Isabel FONTS, Centro Universitario de la Defensa, Chemical and Environmental Engineering Dpt., SPAIN

Co-authors: J. Abrego, N. Gil-Lalaguna, M. Atienza-Martinez, Z. Afailal, J.A Mateo-Román, Aragon Institute for Engineering Research (I3A), Universidad de Zaragoza, Zaragoza, Spain

2BO.10.3

RECIRCULATION OF REACTIVE FINES. AN OPTIMIZATION STRATEGY FOR EXISTING DUAL FLUIDIZED BED GASIFICATION SYSTEMS

Sébastien PISSOT, Chalmers University of Technology, Energy Technology Division, SWEDEN

Co-authors: T. Berdugo, M. Seemann, Chalmers University of Technology, Göteborg, Sweden

2BO.10.4

METHANATION-ENHANCED GASIFICATION - DESIGN OF A HIGH PRESSURE GASIFICATION REACTOR TO INVESTIGATE AND BOOST THE BIOMASS TO SNG CONVERSION EFFICIENCY

Gebhard WAIZMANN, University of Stuttgart IFK, Institute of Combustion and Power Plant Technology, GERMANY

Co-authors: R. Spörl, G. Scheffknecht, IFK - University of Stuttgart, Germany

2BO.10.5

ALKALI COMPOUNDS AS TAR AND SOOT SUPPRESSORS IN ENTRAINED FLOW GASIFICATION.

Albert BACH-OLLER, Luleå University of Technology, Division of Energy Science, SWEDEN

Co-authors: G. Haggstrom, K. Kirtania, E. Furusjo, K. Umeki, Division of Energy Science, Lulea University of Technology, Lulea, Sweden

15:15 - 16:45

ORAL SESSION 3BO.11

Liquefaction Processes, Kinetics and Products

ROOM: K1

CHAIRPERSONS:

Wim VAN SWAAIJ, University of Twente, THE NETHERLANDS

Ursel HORNUNG, Karlsruhe Institute of Technology, GERMANY

3BO.11.1

MICROWAVE PYROLYSIS OF BIOMASS: TURNING THE FUNDAMENTALS INTO COMMERCIAL PLANTS

Daniel BENEROSO VALLEJO, University of Nottingham, Chemical and Environmental Engineering Dpt., UNITED KINGDOM

Co-authors: J. Robinson, The University of Nottingham, Nottingham, United Kingdom

3BO.11.2

HYDROTHERMAL PROCESSING OF WASTEWATER WILLOW WITH INTEGRATED NUTRIENTS RECOVERY

Federica CONTI, Aalborg University, Energy Technology Dpt., DENMARK

Co-authors: T.H. Pedersen, L. Rosendahl, Aalborg University, Aalborg, Denmark; H.L. Bach, Ny Vraa Bioenergy, Tylstrup, Denmark

3BO.11.3

NEW PSEUDO-COMPONENTS OF HEMICELLULOSE AND LIGNIN

Karla DUSSAN, National University of Ireland, Mechanical Engineering Dpt., IRELAND

Co-authors: S. Dooley, Trinity College Dublin, Dublin, Ireland; R. Monaghan, National University of Ireland Galway, Galway, Ireland

3BO.11.4

EFFECT OF BIOMASS PARTICLE SIZE ON THE FAST PYROLYSIS CHARACTERISTICS OF PALM KERNEL SHELL TO PRODUCE THE BIOCRUDE-OIL

Sang-Kyu CHOI, Korea Institute of Machinery & Materials, Eco-Machinery System Dpt., KOREA

Co-authors: Y.S. Choi, S.J. Kim, S.Y. Han, Y.W. Jeong, Korea Institute of Machinery and Materials, Daejeon, Korea; T. Rahman, Korea University of Science and Technology, Daejeon, Korea

3BO.11.5

BIO-OIL PRODUCTION FROM PALM-OIL INDUSTRY RESIDUES EMPLOYING CONVENTIONAL AND CATALYTIC HYDROTHERMAL LIQUEFACTION

Jeerattikul KAHARN, Kasetsart University, Mechanical Engineering Dpt., THAILAND

Co-authors: A. Suemanotham, Thailand Institute of Scientific and Technological Research, Pathum Thani, Thailand; K. Somkeattikul, T. Thuechart, M. Haruthaithanasan, C. Areeprasert, Kasetsart University, Bangkok, Thailand

15:15 - 16:45

ORAL SESSION IBO.12

Commercialization of Bioenergy and Biorefinery Concepts

ROOM: K23+K24

CHAIRPERSON:

Stefan RUYTERS, Ghent Bio-Economy Valley, BELGIUM

IBO.12.1

POWER2GAS PLANT OPERATION SCHEMES - FIRST RESULTS FROM GP JOULE'S POWER GAP FILLER

Lars JÜRGENSEN, Aalborg University Esbjerg, Energy Technology Dpt., DENMARK

IBO.12.2

OPTIMISED LOW-CAPEX CONCEPT FOR THE PRODUCTION OF DROP-IN BIOFUELS VIA GASIFICATION

Ilkka HANNULA, VTT Technical Research Centre of Finland, FINLAND

Co-author: E. Kurkela, VTT Technical Research Centre of Finland, Espoo, Finland

IBO.12.3

CELLUAPP - TECHNOLOGY ENABLING WOOD BASED VALUE CHAINS

Thore LINDGREN, SEKAB E-Technology, SWEDEN

Co-author: J. Lindstedt, SEKAB E-Technology, Örnsköldsvik, Sweden

IBO.12.4

CAN BIOMASS PLAY A ROLE IN REDUCING GREENHOUSE GAS EMISSIONS FROM CANADA'S OIL SANDS?

Jamie STEPHEN, TorchLight Bioresources, CANADA

Co-authors: W.E. Mabee, Queen's University, Kingston, Canada; J. Bergerson, University of Calgary, Canada; H.L. MacLean, University of Toronto, Canada

IBO.12.5

A NOVEL ROBUST AND SELECTIVE SOLVENT FOR BIOMASS FRACTIONATION

Igor BABICH, BIOeCON, THE NETHERLANDS

Co-authors: J. Moulijn, P. O'Connor, BIOeCON, Hoevelaken, The Netherlands

15:15 - 16:45

VISUAL PRESENTATIONS 3BV.3

Biomass to Biobased Products and Bioenergy

ROOM: Poster Area

CHAIRPERSONS:

Maria GEORGIADOU, European Commission, DG Research, BELGIUM

Gerfried JUNGMEIER, Joanneum Research Forschungsgesellschaft, AUSTRIA

3BV.3.1

TECHNO-ECONOMIC ANALYSIS OF A HTL-BASED ALGAE BIOREFINERY

Kay SUWELACK, Fraunhofer INT, GERMANY

Co-authors: D. López Barreiro, F. Ronsse, W. Prins, Department of Biosystems Engineering, Ghent University, Ghent, Belgium; U. Hornung, Institute for Catalysis Research and Technology, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany; A. Kruse, Life Cycle Assessment of Renewable Resources (440f), Institute of Agricultural Engineering, University of Hohenheim, Stuttgart, Germany

3BV.3.5

BIOETHANOL AND XYLOOLIGOSACCHARIDES PRODUCTION FROM AGRICULTURAL RESIDUE

Paloma MANZANARES, CIEMAT, Biofuels Unit, Renewable Energy Division, SPAIN
Co-authors: C. Álvarez, A. González, M. Ballesteros, M.J. Negro, P. Manzanares, I. Ballesteros, J.M. Oliva, F. Saéz, CIEMAT, Madrid, SPAIN

3BV.3.6

BIOGAS BIOREFINERY: TECHNO-ECONOMIC ANALYSIS OF SEVERAL PATHS

Andrey KUTSAY, Czech Technical University in Prague, Process Engineering Dpt., CZECH REPUBLIC

Co-authors: Lukas Kratky, Tomas Jirout, Czech Technical University in Prague, Prague, Czech Republic

3BV.3.7

SUSTAINABILITY ANALYSIS OF CO-PRODUCING HIGH VALUE-ADDED BIOPRODUCTS AND BIOFUELS IN INTEGRATED BIOREFINERIES USING LIGNOCELLULOSIC RESIDUES. THE CASE OF OLIVE TREE PRUNING

Arturo SANCHEZ, Centro de Investigacion y de Estudios Avanzados del IPN, Bioenergy Futures Laboratory, MEXICO

Co-author: G. Rendon-Acosta, Laboratorio de Futuros en Bioenergía, Centro de Investigación y de Estudios Avanzados (CINVESTAV), Zapopan, Mexico

3BV.3.8

WELL-TO-TANK DATA FOR ADVANCED TAILOR-MADE BIOFUEL ALTERNATIVES

Stefan HEYNE, CIT Industriell Energi, SWEDEN

Co-authors: R. Hackl, IVL Swedish Environmental Research Institute, Stockholm, Sweden; K. Pettersson, SP Technical Research Institute of Sweden, Göteborg, Sweden; S. Harvey, M. Grahn, Chalmers University of Technology, Göteborg, Sweden

3BV.3.9

SIMULATION TOOL FOR A QUICK EVALUATION OF MOLECULES AS GASOLINE ALTERNATIVES - A CASE STUDY WITH BIO-OIL DERIVED COMPOUNDS IN BIOREFINERIES

Dominic GSCHWEND, Paul Scherrer Institute, ENE Dpt., SWITZERLAND

Co-authors: P. Soltic, EMPA, Dübendorf, Switzerland; S. Müller, F. Vogel, PSI, Villigen, Switzerland

3BV.3.10

THERMAL CONVERSION OF LIGNIN-RICH RESIDUES FROM LIGNOCELLULOSE BIOREFINING: FROM THERMOGRAVIMETRY TO UPDRAFT GASIFICATION

Francesco ZIMBARDI, ENEA Research Centre, Energy Technologies Department, ITALY

Co-authors: N. Cerone, M. Prestipino, M. Carnevale, A. Villone, ENEA, Rotondella, ITALY

3BV.3.11

LIGNOCELLULOSE-BASED INTEGRATED BIOREFINERY TECHNOLOGY IN TAIWAN TOWARDS BIO-ECONOMIC DEVELOPMENT

Chiung-Fang HUANG, Institute of Nuclear Energy Research, Division of Chemistry, TAIWAN

Co-authors: T. Y. Ma, W. H. Chen, G. L. Guo, W. S. Huang, Institute of Nuclear Energy Research, Taoyuan, Taiwan

3BV.3.12

INNOVATIVE CHAR-BASED CATALYSTS FOR THE CONVERSION OF BIOMASS-DERIVED SYNGAS TO LIQUID HYDROCARBONS

Vittoria BENEDETTI, Free University of Bolzano, Faculty of Science and Technology, ITALY

Co-authors: S. Ail, F. Patuzzi, M. Baratieri, Free University of Bolzano, Italy

3BV.3.13

USE OF EXPERIMENTAL CATALYSTS FOR PRODUCTION OF BIO-METHANE FROM BIOMASS: TESTS OF METHANATION WITH REAL SYNGAS AND PERFORMANCE EVALUATIONS

Donatella BARISANO, ENEA Research Centre, Energy Technologies Dpt., ITALY

Co-authors: A. Lotierzo, A. Villone, R. Agostini, F. Nanna, ENEA, Rotondella, Italy; F. Basile, E. Lombardi, University of Bologna, Italy

3BV.3.14

INFLUENCE OF SULFUR COMPONENTS ON THE CATALYTIC MIXED ALCOHOL SYNTHESIS BASED ON WOOD GAS DERIVED FROM BIOMASS STEAM GASIFICATION

Matthias BINDER, Bioenergy 2020+, AUSTRIA

Co-authors: R. Rauch, Bioenergy 2020+, Güssing, Austria; H Hofbauer, TU Wien, Vienna, Austria

3BV.3.15

THE PREPARATION METHOD COMPARISON OF NICKEL BASED CARBON FIBERS-ALUMINA COMPOSITE SUPPORT FOR THE CATALYTIC REFORMING OF BIOGAS

Min SONG, Southeast University, School of Energy and Environment, P.R. CHINA

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3BV.3.16

ORGANOSOLV TREATED BARLEY STRAW FOR INDUSTRIAL LIQUID WASTE CLEANING

Dimitrios SIDIRAS, University of Piraeus, Industrial Management and Technology Dpt., GREECE

Co-authors: I. Salapa, D. Politi, G. Giakoumakis, University of Piraeus, Greece

3BV.3.18

EFFICIENT FRACTIONATION OF CORN STOVER BY ORGANOSOLV PRETREATMENT AND ENZYMATIC HYDROLYSIS OF THE OBTAINED CELLULOSIC RESIDUE

Francesco ZIMBARDI, ENEA Research Centre, Energy Technologies Department, ITALY

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3BV.3.19

HYDROGEN FREE CATALYTIC CONVERSION OF LIGNIN COUPLED WITH BIOMASS FRACTIONATION

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3BV.3.20

LIGNOCELLULOSIC BIOREFINERIES BASED ON MIXED CULTURES

Idania VALDEZ-VAZQUEZ, Universidad Nacional Autónoma de México, Instituto de Ingeniería, MEXICO

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3BV.3.22

VALORIZATION OF EXTRACTED OLIVE OIL POMACE RESIDUE THROUGH CONVERSION INTO BIOETHANOL AND BIOPRODUCTS

Paloma MANZANARES, CIEMAT, Biofuels Unit, Renewable Energy Division, SPAIN

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3BV.3.23

PROPERTIES AND POSSIBLE APPLICATIONS FOR LIGNIN STREAMS OBTAINED FROM RICE STRAW PROCESSING

Solange MUSSATTO, Technical University of Denmark, Novo Nordisk Foundation Center for Biosustainability, DENMARK

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3BV.3.26

VALORISATION OF BLACK LIQUOR CARBOHYDRATES BY MEANS OF HALOALKALINE MICROORGANISMS

Viktoria LEITNER, Kompetenzzentrum Holz, WCB Dpt., AUSTRIA

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3BV.3.27

BIOFUEL PRECURSORS FROM BEER BAGASSE UNDER MICROWAVE RADIATION.

Andrés MORENO, University of Castilla-La Mancha, Organic Chemistry Dpt., SPAIN

Co-authors: A. Lorente, C. Lucas-Torres, M.P. Sanchez-Verdu, B. Cabañas, UCLM, Ciudad Real, Spain

3BV.3.28

BIOCOMPATIBILITY PROFILING FOR CORNCOB BENEFICIATION TO BIOCOMMODITIES IN MOLTEN ZINC CHLORIDE SALT PRE-TREATMENT MEDIUM

Michael DARAMOLA, University of the Witwatersrand, School of Chemical and Metallurgical Engineering, SOUTH AFRICA

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R. Adeleke, Agricultural Research Council – Institute for Soil, Climate, Pretoria, South Africa

3BV.3.29

MICROWAVE CATALYTIC CONVERSION OF CELLULOSE INTO BIOFUEL PRECURSORS AND ITS APPLICATION TO LIGNOCELLULOSIC WASTES.

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3BV.3.30

OLIVE MILL LEAVES AS A RAW MATERIAL IN A BIOREFINERY APPROACH. COMPARISON OF SUGAR RECOVERIES AFTER DELIGNIFICATION BY ALKALINE-PEROXIDE AND ORGANOSOLV PRETREATMENTS

Encarnacion RUIZ RAMOS, Universidad de Jaen, Chemical, Environmental and Materials Engineering Dpt., SPAIN

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3BV.3.32

CONTRIBUTING TO A JATROPHA-BASED BIOREFINERY: SEED CAKE VALORISATION FOR BIOH2

Rita FRAGOSO, Instituto Superior de Agronomia, Universidade de Lisboa, DCEB Dpt., PORTUGAL

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3BV.3.33

HYDROTREATING OF BIO-OIL FROM THERMO-CATALYTIC REFORMING - A NOVEL BIOREFINING ROUTE TO RENEWABLE CHEMICALS AND FUEL

Andreas HORNING, Aston University, UNITED KINGDOM

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3BV.3.35

SAPROPEL AND LIME AS A BINDER FOR DEVELOPMENT OF COMPOSITE MATERIALS

Vaira OBUKA, University of Latvia, Environmental Science Dpt., LATVIA

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3BV.3.36

PRODUCTION OF 1,3-PRODPANEDIOL FROM GLYCEROL USING A NOVEL ISOLATE LACTOBACILLUS REUTERI CH53

Baekrock OH, Korea Research Institute of Bioscience and Biotechnology, KOREA

Co-authors: S.-Y. Heo, J.-H. Ju, J.-W. Seo, C.H. Kim, Korea Research Institute of Bioscience and Biotechnology, Jeongup, Korea

3BV.3.38

A NEW VALUE CHAIN FOR RUBBER AND INULIN PRODUCTION IN THE EUROPEAN BIOECONOMY

Maria HINGSAMER, Joanneum Research Forschungsgesellschaft, AUSTRIA

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3BV.3.40

SEQUENTIAL UTILIZATION OF SUGARS IN MICROALGAL HYDROLYSATE FOR ETHANOL AND DAGA PRODUCTION

Juyi PARK, Korea Advanced Institute of Science and Technology, Advanced Biomass R&D Center, KOREA

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3BV.3.41

UTILIZATION OF LIPID-EXTRACTED CHLORELLA VULGARIS HYDROLYSATE BY USING SOLID AND LIQUID ACIDS

Gyeongho SEON, Korea Advanced Institute of Science and Technology, Chemical Bio Engineering Dpt., KOREA

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3BV.3.42

HYDROLYSIS OF MICROALGAE BY USING LAYERED TRANSITION METAL OXIDE

Soonjae KWON, Korea Advanced Institute of Science and Technology, KOREA
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3BV.3.43

IDENTIFICATION OF A NOVEL CELLULOSE-BINDING DOMAIN WITHIN THE ENDO- β -1,4-XYLANASE KRICT PX-3 FROM PAENIBACILLUS TERRAE HPL-003

In Taek HWANG, Korea Research Institute of Chemical Technology, Carbon Resources Institute, KOREA
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3BV.3.44

BIOREFINERY: A CRITICAL TECHNICAL REVIEW

Lukas KRATKY, Czech Technical University in Prague, Department of Process Engineering, CZECH REPUBLIC
Co-authors: T. Jirout, A. Kutsay, Czech Technical University in Prague, Faculty of Mechanical Engineering, Department of Process Engineering, Prague, Czech Republic

16:45 - 17:00

BREAK

17:00 - 18:30

ORAL SESSION 4BO.13

Sustainability for Biomass Systems

ROOM: K21

CHAIRPERSONS:

Alexa LUTZENBERGER, ALRENE, GERMANY

Katja OEHMICHEN, DBFZ-German Biomass Research Centre, GERMANY

4BO.13.1

BIOECONOMY WITH ALGAE - LIFE CYCLE SUSTAINABILITY ASSESSMENT INCLUDING BIOPHYSICAL CLIMATE IMPACTS (ALBEDO) OF AN ALGAE-BASED BIOREFINERY

Maria HINGSAMER, Joanneum Research Forschungsgesellschaft, AUSTRIA
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4BO.13.2

CLEANAIR BY BIOMASS - STATUS QUO ANALYSIS OF THE MODEL REGION

Christoph SCHMIDL, Bioenergy 2020+, Biomass Combustion Dpt., AUSTRIA
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4BO.13.3

THE GLOBAL BIOENERGY PARTNERSHIP AND ITS SUSTAINABILITY INDICATORS

Marco COLANGELI, GBEP - FAO, Climate and Environment Dpt., ITALY

Co-authors: A. Rossi, M. Morese, Food and Agriculture Organization of the United Nations, Rome, Italy

4BO.13.4

STRENGTHENING THE FOOD SECURITY PROVISIONS IN BIOFUEL SUSTAINABILITY CERTIFICATION SYSTEMS

Stephen THORNHILL, University College Cork, Food Business and Development Dpt., IRELAND

4BO.13.5

COMPARATIVE SOCIO-ECONOMIC INDICATORS FOR SUSTANABLE LIGNOCELLULOSIC BIOMASS IN BRAZIL AND THE SOUTHEAST OF THE USA

Rocio DIAZ-CHAVEZ, Imperial College London, Centre for Environmental Policy, UNITED KINGDOM

Co-authors: A. Walter, Universidade Estadual de Campinas, Campinas, Brazil; P. Gerber, Universidade de Campinas, Camoinas, Brazil

17:00 - 18:30

ORAL SESSION 2BO.14

Advances in Gas Cleaning and Tar Removal from Gasification Gas for Synthesis Gas Production

ROOM: K2

CHAIRPERSONS:

Nikolaos BOUKIS, Karlsruhe Institute of Technology, GERMANY

Donatella Barisano, ENEA, Rotondella, Italy

2BO.14.1

TAR CRACKING OVER OLIVINE AND SAND IN A CELLULAR FLUIDIZED BED REACTOR

Mathieu MORIN, INP Laboratoire de Genie Chimique, FRANCE

Co-authors: X. Nitsch, S. Pecate, M. Hemati, Laboratoire de Genie Chimique, Toulouse, France

2BO.14.2

TAR REMOVAL FROM BIOMASS PRODUCER GAS BY USING BIOCHAR

Giulia RAVENNI, Technical University of Denmark, Chemical Engineering Dpt., DENMARK

Co-authors: J. Ahrenfeldt, U.B. Henriksen, Z. Sárossy, Technical University of Denmark, Roskilde, Denmark

2BO.14.3

BIOMASS GASIFICATION AND BIOSNG PRODUCTION: USE OF SORBENTS FOR SIMULTANEOUS H₂ ENRICHMENT AND CO₂ REMOVAL FOR THE CONDITIONING OF GAS COMPOSITION

Giacobbe BRACCIO, ENEA Research Centre, Solar Testing Laboratory and Biomass Section, ITALY

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2BO.14.4

REACTIVE TEST GAS GENERATION COMBINED WITH ON-LINE TAR-MONITORING AND COMPARISON WITH OFF-LINE LIQUID SAMPLES ANALYSIS

York NEUBAUER, TU Berlin, Institute of Energy Engineering, GERMANY
Co-authors: A. Gredinger, University of Stuttgart, Germany; J. Borgmeyer, TU Berlin, Germany; M. Kleinhappl, Weiz, Austria; R. Farias Fujita, S.M.A. Biollaz, PSI, Villigen, Switzerland

2BO.14.5

CHAR CONVERSION CHARACTERIZED BY X-RAY TOMOGRAPHY AND SEM-EDS ANALYSIS

Anna STRANDBERG, University of Umea, Applied Physics and Electronics Dpt., SWEDEN
Co-authors: M. Thyrel, R. Backman, N. Skoglund, M. Brostrom, Umea University, Umea, Sweden; M. Rudolfsson, T.A. Lestander, Swedish University of Agricultural Sciences, Umea, Sweden

17:00 - 18:30

ORAL SESSION 3BO.15

Fundamental Investigation of Liquefaction Processes

ROOM: K1

CHAIRPERSONS:

Paul DE WILD, Energy Research Centre of the Netherlands, THE NETHERLANDS
Patrick BILLER, Aarhus University, DENMARK

3BO.15.1

FERMENTATION OF BIO-OIL DERIVED FROM MICROWAVE PYROLYSIS

Emily KOSTAS, University of Nottingham, Microwave Process Engineering Research Group, UNITED KINGDOM
Co-authors: B. Shepherd, J. Robinson, University of Nottingham, United Kingdom

3BO.15.2

CONSTANT VOLUME PYROLYSIS OF BIOMASS FOR THE PRODUCTION OF CHAR WITH HIGH FIXED-CARBON CONTENT.

Maider LEGARRA ARIZALETA, Hawaii Natural Energy Institute, USA
Co-authors: S. Van Wesenbeeck, S. Turn, T. Morgan, M. Antal, Hawaii Natural Energy Institute, Honolulu, USA; O. Skreiberg, L. Wang, SINTEF Energy Research, Trondheim, Norway; G. Grønli, Norwegian University of Science and Technology, Trondheim, Norway

3BO.15.3

THE CHALLENGE OF LIGNIN AS A CHEMICAL RESOURCE

Julia SCHULER, Karlsruhe Institute of Technology, Institute of Catalysis Research and Technology, GERMANY
Co-authors: U. Hornung, J. Sauer, Karlsruhe Institute of Technology, Germany

3BO.15.4

UNDERSTANDING OF RELATIONSHIP BETWEEN LIGNIN STRUCTURE AND DEPOLYMERIZATION BEHAVIORS IN SUPERCRITICAL ETHANOL AND FORMIC ACID MIXTURE

Jaeyong PARK, Sungkyunkwan University, Mechanical Engineering Dpt., KOREA
Co-authors: A. Riaz, J. Kim, Sungkyunkwan University, Suwon, Korea

3BO.15.5

EXPANDING THE FEEDSTOCK BASE FOR THERMOCHEMICAL BIOMASS CONVERSION

Daniel CARPENTER, National Renewable Energy Laboratory, National Bioenergy Center, USA

Co-authors: T. Westover, INL, Idaho Falls, USA; D. Howe, PNNL, Richland, USA; S. Deutch, National Renewable Energy Laboratory, Golden, USA

17:00 - 18:30

ORAL SESSION IBO.16

Large Scale Industrial Application for Heat and Power

ROOM: K23+K24

CHAIRPERSONS:

Yves RYCKMANS, Laborelec, BELGIUM

Jaap KOPPEJAN, Procede Biomass, THE NETHERLANDS

IBO.16.1

GLOBAL WOOD PELLET INDUSTRY AND MARKET - CURRENT DEVELOPMENTS AND OUTLOOK

Daniela THRÄN, DBFZ-German Biomass Research Centre, Bioenergy Systems Dpt., GERMANY

Co-author: D. Peetz, DBFZ-German Biomass Research Centre, Leipzig, Germany

IBO.16.2

CO-FIRING TESTS OF SUGAR CANE HARVESTING RESIDUES (RAC) WITH COAL AND PITH IN A LARGE-SCALE BOILER.

Julian LUCUARA, Cenicana, COLOMBIA

Co-authors: J. Lucuara Medina, A. Gomez, N. Gil Zapata, Cenicaña, Cali, Colombia; J. Castillo, J. Paredes, Ingenio La Cabaña, Cali, Colombia; J. Molina, Carvajal Pulpa Y Papel, Cali, Colombia

IBO.16.3

FACING SAFETY ISSUES IN HANDLING AND STORAGE OF BIOMASS PELLETS IN LARGE SCALE

Jan HINNERSKOV JENSEN, Danish Technological Institute, DENMARK

Co-authors: J. Nyborg, M.G. Jespersen, Danish Technological Institute, Aarhus, Denmark; J.K. Holm, DONG Energy, Gentofte, Denmark

IBO.16.4

HYDROCHAR POTENTIAL APPLICATION IN EUROPEAN STEEL INDUSTRY

Chuan WANG, Swerea MEFOS, SWEDEN

Co-authors: A. Salimbeni, Ingelia, Valencia, Spain; G. Wang, Ingelia/University of Science and Technology, Beijing, P.R. China

IBO.16.5

LARGE SCALE UTILITY CFB TECHNOLOGY IN WORLDS LARGEST GREENFIELD 100% BIOMASS POWER PLANT

Teemu NEVALAINEN, Foster Wheeler Energia, Global Technology Dpt., FINLAND

Co-authors: C. Moqvist, Amec Foster Wheeler Energi, Norrköping, Sweden; T. Eriksson, Amec Foster Wheeler Energia, Espoo, Finland; K. Nuortimo, Amec Foster Wheeler Energi, Varkaus, Finland; M. Nikkilä, Amec Foster Wheeler Energia, Varkaus, Finland

17:00 - 18:30

VISUAL PRESENTATIONS 3BV.4

Advances on Biomass Conversion and Application in Different Sectors

ROOM: Poster Area

CHAIRPERSONS:

Wouter HUIJGEN, Energy Research Centre of the Netherlands, THE NETHERLANDS

Solange MUSSATTO, Technical University of Denmark, DENMARK

Arturo SANCHEZ, Centro de Investigacion y de Estudios Avanzados del IPN, Zapopan, Mexico

3BV.4.1

COMPARING APPROACHES FOR LIGNIN VALORISATION BY FORMIC ACID ASSISTED SOLVOLYSIS - WHAT IS THE BEST OPTION ?

Tanja BARTH, University of Bergen, Chemistry Dpt., NORWAY

Co-authors: M. Oregui Bengoechea, C. Løhre, M. Kleinert, University of Bergen, Norway

3BV.4.9

EUBCE STUDENT AWARDEE PRESENTATION

PRODUCTION OF VALUE-ADDED CHEMICALS THROUGH GLYCEROL AQUEOUS PHASE REFORMING USING NI BASED CATALYSTS: INFLUENCE OF OPERATING CONDITIONS

Clara JARAUTA-CÓRDOBA, Universidad de Zaragoza, Chemical Engineering and Environmental Technologies Dpt., SPAIN

Co-authors: L. García, J. Ruíz, M. Oliva, J. Arauzo, Universidad de Zaragoza, Spain

3BV.4.11

METAL-ORGANIC FRAMEWORKS (MOFS)-DERIVED CATALYSTS FOR AN EFFECTIVE HMF-TO-FDCA AND HMF-TO-DMF CONVERSIONS

Jyun-yi YEH, National Taiwan University, Chemical Engineering Dpt., TAIWAN

Co-author: K.C.W. Wu, National Taiwan University, Taipei, Taiwan

3BV.4.12

ETHYLENE GLYCOL PRODUCTION FROM GLUCOSE OVER W-RU CATALYSTS: MAXIMIZING YIELD BY KINETIC MODELING AND SIMULATION

Mingyuan ZHENG, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, P.R. CHINA

Co-authors: G. Zhao, R. Sun, Z. Tai, J. Pang, A. Wang, X. Wang, T. Zhang, Dalian Institute of Chemical Physics, CAS, Dalian, P.R. China

3BV.4.15

CATALYTIC CONVERSION OF ETHYLENE FROM BIOMASS GASIFICATION PRODUCER GAS INTO VALUABLE AROMATIC COMPOUNDS

Berend VREUGDENHIL, Energy Research Centre of the Netherlands, Bio Energy & Efficiency Dpt., THE NETHERLANDS

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3BV.4.17

REUSABLE HETEROGENEOUS AMBERLYST-16 CATALYST FOR ACETIC ACID ESTERIFICATION

Jorge Mario MARCHETTI, Norwegian University of Life Science, Mathematical Science and Technology Dpt., NORWAY

Co-authors: M. R. Avhad, M. V. Osborg, Norwegian University of Life Sciences, ÅS, Norway

3BV.4.18

HETEROGENEOUSLY CATALYSED ACETYLATION OF GLYCEROL TOWARDS TRIACETIN IN BATCH AND CONTINUOUS MODE

Udo ARMBRUSTER, Leibniz Institute for Catalysis at University of Rostock, GERMANY

Co-authors: S. Kale, A. Martin, LIKAT, Rostock, Germany

3BV.4.21

PREPARATION AND CHARACTERIZATION OF SOLID SUPERBASIC-SUPERACIDIC CATALYSTS FOR BIODIESEL SYNTHESIS USING CATALYZED TRANSESTERIFICATION

Chao-Lung CHIANG, Yuan Ze University, Chemical Engineering and Material Science Dpt., TAIWAN

Co-authors: K.S. Lin, C.W. Shu, H.Y. Chan, Yuan Ze University, Taoyuan, Taiwan; J.C.S. Wu, K.C.W. Wu, National Taiwan University, Taipei, Taiwan; Y.T. Huang, Chung Yuan Christian University, Taoyuan, Taiwan

3BV.4.22

SYNTHESIS AND CHARACTERIZATION OF MESOPOROUS POLYMER-BASED SOLID ACID CATALYSTS FOR BIODIESEL PRODUCTION VIA TRANSESTERIFICATION OF PALMITIC OIL

Kuen-Song LIN, Yuan Ze University, Department of Chemical Engineering & Materials, TAIWAN

Co-authors: C.L. Chiang, H.Y. Chan, Yuan Ze University, Taoyuan, Taiwan; J.C.S. Wu, K.C.W. Wu, National Taiwan University, Taipei, Taiwan; Y.T. Huang, Chung Yuan Christian University, Taoyuan, Taiwan

3BV.4.23

ACTIVITY AND SELECTIVITY OF NOBLE AND TRANSITION METAL CATALYSTS FOR HDO OF LIGNIN MONOMER MODEL COMPOUND EUGENOL: A MICROKINETIC APPROACH

Ana BJELIC, National Institute of Chemistry, Chemical Engineering Dpt., SLOVENIA REPUBLIC

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3BV.4.24

DIRECT CONVERSION OF CELLULOSE TO HIGH-YIELD METHYL LACTATE OVER GA-DOPED ZN/H-NANOZEOLITE Y CATALYSTS IN SUPERCRITICAL METHANOL

Jaehoon KIM, Sungkyunkwan University, School of Mechanical Engineering & SKKU Advanced Institute of Nano Technology, KOREA

Co-author: D. Verma, Sungkyunkwan University, SuwonSuwon, Korea

3BV.4.26

IMPROVED FEASIBILITY OF THE BIOMASS SUPPLY CHAIN THROUGH SOLAR ENHANCED DRYING

Janne KÄRKI, VTT Technical Research Centre of Finland, FINLAND

Co-authors: E. Tsupari, J. Raitila, VTT Technical Research Centre of Finland, Jyväskylä, Finland

3BV.4.27

HYDROGEN PRODUCTION VIA STEAM REFORMING OF SIMULATED BIO-OIL: INFLUENCE OF INTERACTION BETWEEN MODEL COMPOUNDS

Junyu TAO, Tianjin University, School of Environmental Science and Engineering, P.R. CHINA

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3BV.4.30

NANOBIOCATALYTIC SYSTEMS AS EFFICIENT TOOL TO RELEASE BIOACTIVE COMPOUNDS FROM OLIVE OIL BY-PRODUCTS

Ioannis ZARKADAS, Aristotle University of Thessaloniki, Chemical Engineering Dpt., GREECE

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3BV.4.31

EFFECT OF COMPOSTED BIOMASS MOISTURE ON PELLETTED FERTILIZERS FROM SWINE MANURE SOLID FRACTION

Massimo BRAMBILLA, Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria, Unità di Ricerca per l'ingegneria agraria, ITALY

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3BV.4.33

NOVEL SYNTHESIS OF 1,6-HEXANEDIOL UNDER MILD CONDITIONS AND TWO STEPS UTILIZING METAL ORGANIC FRAMEWORK DERIVED BIFUNCTIONAL CARBON SUPPORTED NOBLE METAL WITH LIQUID HYDROGEN SOURCE

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3BV.4.36

PRODUCTION OF REACTIVE BOTTOM ASHES FROM COMBUSTION OF SUGARCANE LEAVES BRIQUETTES IN A FIXED BED REACTOR FOR USE AS A CEMENTITIOUS MATERIAL

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3BV.4.37

EMISSIONS AND PERFORMANCE OF A DIESEL ENGINE FUELLED WITH BLENDS OF DIESEL AND BIODIESEL ADDITIVATED WITH BIO-OIL

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3BV.4.38

PRODUCTION OF A BIO-PLASTIC FROM WET LIGNOCELLULOSIC RESIDUAL FEEDSTOCKS WITH HYDROTHERMAL CARBONIZATION AS KEY-STEP

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3BV.4.39

PURPOSEFUL FUNCTIONALIZATION OF WASTE HARDWOOD LIGNOCELLULOSES FOR MAKING RECYCLED POLYMER-BASED COMPOSITES

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3BV.4.40

CAN BIOBASED CHEMICALS BE PRODUCED VIA THE PATHWAY OF ANAEROBIC DIGESTION? A FIRST OVERVIEW.

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3BV.4.41

SYNTHESIS, PHYSICO-CHEMICAL PROPERTIES OF DBU/CH₃OH/CO₂ AND ITS UTILIZATION IN DISSOLVING BIOMASS

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3BV.4.42

SORPTION ENHANCED CHEMICAL LOOPING REFORMING PROCESS OF BIOGAS FOR CLEANER HYDROGEN PRODUCTION

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3BV.4.43

ACTIVATED CARBON PRODUCTION FROM WOOD BASED PANELS WASTE AND ITS APPLICATION AS AN ADDITIVE OF UREA FORMALDEHYDE RESIN

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3BV.4.47

PRODUCTION OF BACTERIAL CELLULOSE USING OPUNTIA AND CITRUS WASTE AS FEEDSTOCKS

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3BV.4.48

PROPERTIES OF BIOCHAR PRODUCED BY SLOW PYROLYSIS OF STABILIZED SEWAGE SLUDGE

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3BV.4.49

PERSPECTIVES OF HIGH-VALUED CHEMICAL PRODUCTION FROM MARINE FUNGAL-LIKE PROTISTS

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3BV.4.50

DEGRADATION OF LIGNIN IN IONIC LIQUID WITH MESOPOROUS SOLID ACIDS AS CATALYSTS

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3BV.4.51

CRYSTAL-PLANE EFFECT OF CERIA ON THE ACTIVITY OF CU/CEO2 FOR OXIDATIVE STEAM REFORMING OF METHANOL

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3BV.4.53

PREPARATION OF LIGNIN BLEND BEADS FOR THE REMOVAL OF HEXAVALENT CHROMIUM IONS

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3BV.4.54

ESTABLISHING A VALUE CHAIN FOR PRODUCTION OF A PLATFORM CHEMICAL AND CURRENT OUT OF PAPER TOWELS

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3BV.4.57

INTEGRATED BIOCONVERSION OF ALGAL CARBOHYDRATES AND PROTEINS TO LIQUID FUELS AND INTERMEDIATE VALUE PRODUCTS

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