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Thermochemical Conversion - Combustion for Small Scale Applications

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OA3.1	Cogeneration of Electricity and Heat from Biogenous Solid Fuels in a Stationary Fluidised Bed Reactor Linked with an Externally Fired Micro Gas Turbine <i>T.S. Vincent, R. Strenziok, D. Steinbrecht</i>	1358
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OA6.3	Straw Pellets Combustion in Small-Scale Boilers. Part 1: Emissions and Emission Reduction with a Novel Heat Exchanger Technology <i>E. Wopienka, M. Schwabl, W. Emhofer, G. Friedl, W. Haslinger, M. Wörgetter, R. Merkl, A. Weissinger</i>	1386
OA6.4	Experimental Investigation of the Fluid Dynamics in Wood Combustion Processes <i>M. Baillifard, E. Casartelli, T. Nussbaumer</i>	1393
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OA9.2	Survey on Measurements and Emission Factors on Particulate Matter from Biomass Combustion in IEA Countries <i>T. Nussbaumer, N. Klippel, L. Johansson</i>	1415
OA9.3	Emissions from Small-scale Combustion of Energy Grain and Use of Additives to Reduce Particle Emissions <i>M. Rönnbäck, L. Johansson, F. Claesson, M. Johansson, C. Tullin</i>	1429
OA9.4	Measures and Strategies to Reduce Fine Dust Emissions from Residential Biomass Stoves and Boilers <i>V. Lenz, H. Hartmann, J. Gerth</i>	1436
OA9.5	Influence of Ignition and Operation Type on Particle Emissions from Residential Wood Combustion <i>T. Nussbaumer, A. Doberer, N. Klippel, R. Buhler, W. Vock</i>	1439
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VP2.5.3	Quantification and Characterisation of Particle Emissions from Residential Wood Stoves and Boilers <i>H. Hartmann, F. Ellner-Schuberth, P. Turowski, V. Lenz, J. Gerth</i>	1451

VP2.5.4	Operation and Efficiencies of a New Biomass Burner when Using Pellets from Herbaceous Energy Crops <i>A. Rezeau, M. Díaz, F. Sebastián, J. Royo</i>	1458
VP2.5.5	Saturated Fatty Acid Based Gels and Their Possible Use as Additives in Biomass Fired Thermal Power Plants - A Case Study in India <i>D.E. Solomon, R. Makam</i>	1464
VP2.5.6	Micro-scale Biomass Generation Plant Technology: Stand-alone Designs for Remote Customers <i>M. Loeser, M.A. Redfern</i>	1468
VP2.5.7	Cost Effective Biomass Conversion for Energy in Latvia <i>P. Shipkovs, G. Kashkarova, I. Purina, K. Lebedeva, Z. Budjko, M. Jirgens, A. Zigurs, A. Cers</i>	1478
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VP2.5.11	Straw Pellets Combustion in Small-Scale Boilers. Part 2: Corrosion and Material Optimization <i>W. Emhofer, E. Wopienka, M. Schwabl, G. Friedl, W. Haslinger, M. Wörgetter, T. Kölsch, A. Weissinger</i>	1500
VP2.5.12	Spheres Fuel Particles in Combustion Chambers. Físical Equilibrium Distribution <i>E. Granada, D. Patiño, J. Porteiro, J. Collazo, J. Moran, J.L. Míguez</i>	1504
VP2.5.14	Biofuels Behaviour during the Combustion Process in a Moving Grate Boiler <i>R. Ramos, E. Borjabad, J.M. Murillo, A. Pascual, R. Bados</i>	1509
VP2.5.16	Effect of Fuel Additive Sorbents (Kaolin and Calcite) on Aerosol Particle Emission and Characteristics during Combustion of Pelletized Woody Biomass <i>C. Boman, B. Boström, M. Í-hman</i>	1514
VP2.5.17	Alternative Grey Relational Analysis of Traditional Slagging and Fouling Index in Small Biomass Boilers <i>D. Patiño, J. Collazo, J.C. Moran, J. Porteiro, E. Granada, J.L. Míguez</i>	1518
VP2.5.18	Numerical Modelling of Gas Phase Wood Combustion in a Traveling Grate Furnace <i>T. Florea, S. Caillat, B. Taupin, B. Baudoin</i>	1523
VP2.5.19	Abatement of Corrosion and Deposits Formation in Combustion of Oats <i>D. Boström, A. Grimm, E. Lindström, C. Boman, E. Björnbom, M. Í-hman</i>	1528
VP2.5.22	Release of Inorganic Species and Ash Behaviour in Combustion of Different Miscanthus Genotypes and Switchgrass <i>C. Ramperez-Carrasco, M. Ramperez-Carrasco, A. Lippert, D. Porbatzki, A. Schlüter, R. Pude, M. Müller</i>	1535
VP2.5.25	Emission Reduction in Small Scale Wood Log Burning Appliances <i>K.H. Oravainen</i>	1543
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VP2.5.28	Detecting and Counteracting Agglomeration during Combustion of Agricultural Residues and Wood in a 1 MWth Bubbling Fluidized Bed Boiler <i>M. Bartels, J.R. van Ommen, J. Nijenhuis, M. Siedlecki, W. de Jong</i>	1551
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Biological Conversion - Fermentation Processes, Enzymatic Processes

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OA2.2	Dark Anaerobic Fermentation of Sucrose for Bio-hydrogen Production in a Pilot Plant <i>A. Scaletta, B. La Licata, A. Boulanger, F. Sagnelli, P. Zitella, T. Tommasi, B. Ruggeri</i>	1563
OA2.3	Co-digestion with Fruit Pulp Wastes as Option to Enhance Pig Manure Methanization <i>S. Astals, M. Ariso, T. Benabdallah El Hadj, A. Galí, J. Mata-Ílvarez</i>	1567
OA5.2	Analysis of Biogas Yield and Quality Produced by Anaerobic Digestion of Different Combination of Biomass and Inoculum <i>F. Fantozzi, S. Massoli, C. Morlino, C. Buratti</i>	1572
OA5.4	Optimization of Thermophilic (55°C) Anaerobic Digestion Process of Cattle Manure and Organic Wastes in Pilot Plant. Comparison with a Full Scale Plant Working at 47°C <i>C. Cavinato, L. Annibal, G. Carletti, P. Pavan</i>	1577
OA5.5	Standardization of Pretreatment Methods for the Hydrolysis of Varying Biomasses to Accelerate Co-fermentation Processes <i>H. Schneider, J. Born</i>	1581

VISUAL PRESENTATIONS: VP2.6

VP2.6.3	Research and Development of Mechanical Milling Technology for Bio-ethanol Production <i>T. Takahashi, A. Ito, J. Kobayashi, Y. Enda</i>	1584
VP2.6.8	Kinetic Model of Batch Ethanolic Fermentation <i>M. Díaz, E. Ruiz, I. Romero, C. Cara, M. Moya, E. Castro</i>	1590
VP2.6.9	Effect of Inhibitors during the Fermentation of Olive Tree Pruning Biomass Hydrolysates <i>M. Díaz, E. Ruiz, I. Romero, C. Cara, M. Moya, E. Castro</i>	1595
VP2.6.10	Potential of Power Generation with Biogas Obtained of Landfill in the Region of Valencia (Spain) <i>C. Vargas Salgado, D. Alfonso Solar, A. Perez-Navarro, C. Perpiñá, E. Peñalvo, R. Cárdenas</i>	1599
VP2.6.11	Trace Element Supplementation in Anaerobic Digestion <i>F. Susanto, G. Pesta</i>	1603
VP2.6.12	Evaluation of Different <i>Zymomonas Mobilis</i> Strains as Producers of Ethanol, Levan and Fructooligosaccharides <i>M. Bekers, M. Grube, A. Danilevich, A. Vigants</i>	1607
VP2.6.13	Jerusalem Artichoke Based Substrates as Raw Material for Ethanol Production by <i>Z. Mobilis</i> and <i>S. Cerevisiae</i> <i>A. Vigants, J. Lukjanenko, D. Upite, E. Kaminska, M. Bekers</i>	1610
VP2.6.14	Improved Bioconversion of Kenaf Core via Steam Explosion Pretreatment <i>S. Tedeschi, F. Zimbardi, E. Viola, A. Villone, V. Valerio, G. Cardinale</i>	1613
VP2.6.15	Organosolv Pretreatment of Sugar Cane Bagasse to Produce Ethanol <i>L. Mesa, E. Ruiz, C. Cara, I. Romero, M. Díaz, E. Castro, E. González</i>	1617

VP2.6.18	Environmental Sanitization of a Piggery through the Use of Biomass from Sewage <i>A. Di Nunzio, E. Pasquini, G. Montesi, G. Moca, E. Arras</i>	1621
VP2.6.20	Development of Ecobinders Using Technical Lignins Modified by Laccases <i>G. Sena-Martins, V. Lourenço, J. Santos, C. Duarte, P. Cortiço, L. Gil, J. Duarte</i>	1625
VP2.6.21	Exploitation of PVA and Silica Hydrogels for the Production of Bioethanol by Immobilized Cells of <i>Pichia Stipitis</i> <i>D. Cuna, I. De Bari, F. Liuzzi, G. Braccio</i>	1629
VP2.6.22	Biogas Production from Dairy Manure by Upflow Anaerobic Fixed Bed Reactors Packed with Tyre Rubber and a Combination of Tyre Rubber and Natural Zeolite <i>S. Nikolaeva, E. Sánchez, M. Duran-Chavarria, R. Borja, F. Raposo</i>	1634
VP2.6.24	About Real Cost Calculation for Biogas from Ethanol Stillage Biodigestion and its Energy Utilization <i>K.R. Salomon, E.E.S. Lora, M.H. Rocha</i>	1644

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ORAL PRESENTATIONS: OA8, OA11, OB2

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OA8.2	Bioethanol from Lignocellulosic Feedstock. Utilization of Pre-treatment Products <i>A.A.L. Giovannini, M. Juri, S. Wild, M.B. Huber, A. Palatinus</i>	1656
OA8.3	Organic Pulping of Cereal Straw: from the Pilot Plant to the First Factory <i>M. Delmas, B.B. Benjelloun-Mlayah</i>	1660
OA8.4	Sustainability and Biorefineries: Dissolution of Wood with Ionic Liquids <i>N. Puy, J. Rieradevall, J. Bartroli</i>	1665
OA8.5	Pretreatment of Promising Biomass Feedstocks for Biohydrogen Production <i>I.A. Panagiotopoulos, R.R. Bakker, M.A.W. Budde, T. de Vrije, P.A.M. Claassen, E.G. Koukios</i>	1670
OA11.1	Preliminary Results on Microbial Enrichment of Compost to Control Soilborne Plant Pathogens <i>M. Pugliese, M.L. Gullino, A. Garibaldi</i>	1676
OA11.3	Development of Integrated Lignocellulose Biorefinery for Co-production of Chemicals, Transportation Fuels, Electricity and Heat - Overview and First Results of the EU FP6 Integrated Project Biosynergy <i>J.H. Reith, R. van Ree, R. Capote Campos, P. Gutiérrez Gómez, R.R. Bakker, P.J. de Wild, F. Monot, B. Estrine, A.V. Bridgwater, B. Kavalov</i>	1681
OA11.4	Chestnut Shell and Eucalyptus Bark as Sources of Natural Antioxidants <i>G. Vázquez, E. Fontenta, J. Santos, M.S. Freire, J. González-Álvarez, G. Antorrena</i>	1686
OA11.5	Evaluation of Different Cultivation Techniques for the Production of High Value Products from Brewer's Spent Grain <i>C. Xiros, P. Christakopoulos</i>	1689
OB2.1	Lignocellulosic Materials as Low Cost Adsorbents for Wastewater Dye Removal <i>D. Sidiras</i>	1697

VISUAL PRESENTATIONS: VP2.7

VP2.7.2	Biodegradation of Azo Dyes by Natural Micro flora from Forest Residues Chips Cultivated on Swedish Soft Wood Chips <i>J. Forss, U. Welander</i>	1706
VP2.7.3	Recovery of By-products of Organosolv Pulping Process <i>M. González, M. Blanco, A. García, R. Llano-ponte, J. Labidi</i>	1713
VP2.7.4	Biological Treatment of Air Polluted with Alpha-pinene <i>P. Hejazi, F. Borenberg, G. Isik, K. Rupar-Gadd, G. Strandmark, A. Shojaosadati, U. Welander</i>	1720
VP2.7.5	Chitin and Chitosan as Sources of Biocompatible Polymers for Microcapsules and Membranes Production <i>M. Lopretti, A. Damboriarena, C. Ottati, A. Olivera, M. Sibaja, V. Zamora-Mora, M.M. Solano, F. Barreiro</i>	1722
VP2.7.6	Thermochemical Conversion of Waste Biomass to Obtain Activated Carbon Substitutes for Dye Adsorption. A Decision Making Approach on Kinetics <i>A.F. Batzias, D.K. Sidiras</i>	1727
VP2.7.7	Optimization of Lead and Zinc Adsorption on Pre-treated Chestnut Shell Using Factorial Design Analysis <i>G. Vázquez, M. Calvo, M.S. Freire, J. González-Álvarez, G. Antorrena</i>	1733
VP2.7.8	Antioxidant Activity of Liquors from Steam Explosion Pretreated Olive Tree Prunings <i>E. Conde, C. Cara, A. Moure, E. Ruiz, E. Castro, H. Domínguez</i>	1737
VP2.7.12	Reaction Kinetic Assessment for Selective Production of Furfural From C-5 Sugars Contained in Biomass <i>G. Marcotullio, H.J. Heidweiller, W. De Jong</i>	1741
VP2.7.15	Material Recovery from Solid and Liquid Residue of Supercritical Water Gasification with Chicken Manure as By-product Utilization <i>T. Yanagida, T. Minowa, A. Nakamura, Y. Matsumura, Y. Noda</i>	1745
VP2.7.18	Comparative Study of Different Lignocellulosic Feedstocks Enzymatic Hydrolysis for Fermentable Substrates Production <i>I.A. Panagiotopoulos, R.R. Bakker</i>	1749
VP2.7.23	Influence of Phosphoric Acid Concentration in the Hydrolysis of Sunflower Stalks <i>M.L. Martínez, V. Bravo, T. Cotes, S. Sánchez</i>	1753
VP2.7.24	Fractionation of Biodiesel Waste <i>M. Blanco, M. González, Z. Herseczki, G. Marton, R. Llano-Ponte, J. Labidi</i>	1756

Biofuels**ORAL PRESENTATIONS: OC2, OC5, OC8, OC11, OD2, OD5, OD8, OE2, OE5**

OC2.1	Electromobility - An Efficient Alternative to Conventional Biofuels to Put Biomass on the Road <i>M. Sterner, J. Schmid</i>	1761
OC2.3	Effective Model for Sustainable Management of Biofuels <i>K.N. Gowda, D. Doddahanumaiah, R. Vinay Kumar</i>	1766
OC2.4	When will Advanced Biofuel Production Become Cost Competitive? Combined Technological Learning and Engineering Approach <i>M.P. De Wit, H.M. Junginger, A.P.C. Faaij, E. Deurwaarder, S. Lensink, M. Londo</i>	1772
OC5.1	Mutagenic Potential of Particle Emissions of a Vegetable Oil Compatible Tractor <i>K. Thuneke, P. Emberger, T. Gassner, E. Remmele</i>	1776

OC5.2	Thermodynamic Modeling of Production of Biofuel by Catalytic Conversion at Near Critical Conditions in Aqueous Solution <i>R.P. Nielsen, S.B. Iversen, T. Larsen, K. Thomsen, N. von Solms, E.G. Sogaard</i>	1779
OC5.3	Low Pressure Catalytic Depolymerization of Biogenic Feedstocks <i>K. Giannakopoulou, M. Lukas, S. Schober, M. Mittelbach, H. Boechzelt, C. Brunner, H. Schnitzer</i>	1783
OC5.4	Non-catalytic Synthesis of Biodiesel in Supercritical Alcohol: from the Lab-scale Plant to the Industrial Continuous Process <i>R. Piñero, J.M. Antolín, A. López, F.J. Gutiérrez, G. Antolín</i>	1789
OC5.5	Clean, High Enthalpy Biofuels <i>N. Irving</i>	1793
OC8.1	Study of Glycerol Acetylation and Carbonatation Reactions in Order to Obtain Biodiesel Additives <i>A. Gog, C. Paizs, M. Chinteanu, M. Roman, E. Luca, F.D. Irimie</i>	1797
OC8.2	Promising Technologies for Biodiesel Production from Microalgae Growth Systems <i>A. Rengel</i>	1802
OC8.4	Importance of Biofuels in Transport and Electricity in Tanzania and Africa <i>H. Hongo</i>	1810
OC11.1	Biodiesel versus Natural Gas Fuelled Engines to Improve Contribution of Captive Fleets to Air Quality <i>M. Gómez, F. Sebastián, J. Royo</i>	1814
OC11.2	Impact of Cogeneration Systems and Land Use on Life Cycle Assessment for Palm Oil Biodiesel <i>E. Yáñez Angarita, E. Lora, C. Ugaya, O.J. Venturini, M.H. Rocha</i>	1823
OC11.3	Upgrading Orange Processing Waste for Fuel-ethanol Production <i>M. Ballesteros, P. Manzanares, M.J. Negro, J.M. Oliva, I. Ballesteros</i>	1832
OC11.4	Primary Energy Saving and GHG Mitigation from Ethanol Utilisation in the Thai Transport Sector: the Full Energy Chain Analysis <i>P. Suksuntornsiri, B. Limmeechokchai</i>	1837
OC11.5	Ecological and Economical Evaluation of Small-sized Bioethanol Plants Powered by Renewable Energy <i>B. Liebmann, A. Miltner, A. Bauer, T. Amon, G. Gwehenberger, M. Narodoslawsky, A. Friedl</i>	1845
OD2.3	A Novel Process Scheme for Selfsustaining Ethanol Production <i>P. Bösch, A. Bauer, P. Schausberger, T. Amon, A. Friedl</i>	1848
OD2.5	Process Design and Economic Estimation for Bio-ethanol Production Process from Woody Biomass Using Non-sulfuric Acid Pretreatment <i>S. Fujimoto, T. Minowa, H. Inoue, S. Yano, S. Sawayama, T. Endo</i>	1853
OD5.2	Life Cycle Assessment of BTL-fuels, Conversion Concepts and Comparison with Fossil Fuels <i>N. Jungbluth, M. Tuchschnid, R. Frischknecht</i>	1856
OD5.3	Fischer-tropsch Diesel Production in a WTW Chain Perspective <i>O. van Vliet, A. Faaij, W. Turkenburg</i>	1871
OD5.4	Process Simulation, Thermal and Economic Assessment of Several Technical Options for BTL Production <i>G. Boissonnet, M. Gassner, A. Duchadeau, I. Burdet, S. Rougé</i>	1875

OD8.2	Effect of the Biomass Origin and the Gasifier Operating Conditions on the Combustion Interchangeability of the Producer Gas <i>J. Hernández, C. Serrano, L. Ruiz, G. Aranda</i>	1884
OD8.3	Are Membrane Based Separation Processes for the Production of Bio-methane and Bio-hydrogen Energy-efficient? <i>M. Harasek</i>	1894
OD8.4	Hydrothermal Gasification of Glycerol in the Pilot Plant Scale <i>N. Boukis, U. Galla, H. Müller, E. Dinjus</i>	1898
OE2.1	Demonstration of the Production and Utilization of Synthetic Natural Gas from Solid Biofuels. Presentation of the European Project 'Bio-SNG' <i>M. Seiffert, F. Müller-Langer, M. Kaltschmitt</i>	1902
OE2.2	Application of Gas Permeation for Biogas Upgrade - Operational Experiences of Feeding Biomethane into the Austrian Gas Grid <i>M. Miltner, A. Makaruk, M. Harasek</i>	1905
OE2.4	Evaluation of Possible Pathways for the Sustainable Production of Hydrogen for the Automotive Sector <i>A. Miltner, A. Friedl, W. Wukovits, W. Schnitzhofer, W. Ahrer, K. Pollak</i>	1912
OE2.5	BIOGASMAX. Biogas as Vehicle Fuel - Market Expansion to 2020 Air Quality <i>M. Beil, U. Hoffstede</i>	1917
OE5.1	Bio-fuels Use in the Blast Furnace Ironmaking to Mitigate GHG Emissions <i>K. Wing Ng, W.P. Hutny, J.A. MacPhee, J. Gransden, J.T. Price</i>	1922
OE5.5	Quality and Efficiency Improvement of District Heating Biomass Plants by Design and Operation Quality Management <i>F. Promitzer, G. Ulz, H. Steiner</i>	1929
VISUAL PRESENTATIONS: VP3.1		
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BIOMASS INDUSTRY DAY

Introduction

Part 1 - Morning

- Project 1 Large Scale Supply of Agropellets for Biomass/coal Cofiring in Existing Power Plants
G. Grassi
- Project 2.1 Sweet Sorghum Modern Biorefinery for Co-production of Bioethanol and Power
G. Grassi
- Project 2.2 Introduction to Global Green
A. Hansraj
- Project 2.3 The First Ever Multi-feedstock + Multi-process System Biorefinery Based on Sweet Sorghum
A. Hansraj, J. Monteiro
- Project 3 Gasification of Biomass
G. Tillberg
- BID 1.1 Overview and Attractiveness of Biomass - Investments in the EU
C. Grütte

Part 2 - Afternoon

- BID 2.1 Latest EU Regulation in the Bioenergy Sector
E. Manning
- BID 2.2 Fiber, Fuel and Chemicals - A European Biorefinery in Operation
J. Lindstedt
- BID 2.3 Ultra-clean and Efficient Energy from Biogas - The Fuel Cell Power Station Type HotModule%uFFFFD
F. Hagstotz
- BID 2.4 Generating Pipeline Quality Gas from a Variety of Biomass Feed-stocks
O. Vigano
- BID 2.5 An Alternative Route for Ethanol Use - Ethylene from Ethanol
L. Conti
- BID 2.6 Heavy Vehicles for Ethanol Fuels 20 Years Experience
J. Lindstedt
- BID 2.7 Bus Moved by Ethanol - BEST Project: Bioethanol for Sustainable Transportation
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J.R. Moreira
- BID 2.8 Bio-ethanol: a Manufacturer's View on the Current Status and the Future
D. Dens
- BID 2.9 Realization of Large Scale Biomass Plants in India
C. Grütte
- BID 2.10 Energy Efficiency and Environmental Protection in Biomass-to-Energy Plants
G.G. Pranghofer

WORKSHOP ON PROJECT NILE: ADVANCES IN LIGNO-CELLULOSIC ETHANOL

Part 1 - Biochemical Routes to Ligno-cellulosic Ethanol: Initial Results

- NILE 1.1 Enzymatic Hydrolysis
S. Blanquet
- NILE 1.2 Pretreatment and Simultaneous Saccharification and Fermentation
G. Zacchi
- NILE 1.3 Process Technology
J. Lindstedt

Part 2 - Lignocellulosic Ethanol: Lifecycle Cost Analysis and Comparison of Biochemical and Thermochemical Routes

- NILE 2.1 Lifecycle Cost Analysis of Lignocellulosic Ethanol
R. Slade
- NILE 2.2 Lignocellulosic Ethanol in the UK - Results of a Feasibility Study
J. Tomkinson
- NILE 2.3 Abengoa Bioenergy's Approach to Biochemical and Thermochemical Ethanol Pathways
J. Caraballo

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