



Preliminary Scientific Program of the  
Sixth International Conference  
CATALYSIS FOR RENEWABLE SOURCES:  
FUEL, ENERGY, CHEMICALS

CRS-6

<http://conf.nsc.ru/CRS6>

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Kevin Van Geem, Ghent University, Belgium  
Karen Wilson, Royal Melbourne Institute of Technology, Australia

Conference Chair

Professor Vadim Yakovlev  
Boreskov Institute of Catalysis SB RAS

## PLENARY LECTURES

- PL-1. Professor Anker Degn Jensen  
*Technical University of Denmark, Lyngby, Denmark*  
CATALYTIC HYDROPYROLYSIS OF BIOMASS FOR PRODUCTION OF GREEN FUELS
- PL-2. Dr. Catherine Pinel  
*Research Institute for Catalysis and Environment of Lyon (IRCELYON), Lyon, France*  
TO BE SPECIFIED
- PL-3. Professor Alírio E. Rodrigues  
*University of Porto, Porto, Portugal*  
ADDED-VALUE CHEMICALS (VANILLIN, SYRINGALDEHYDE, DCA ; DHA AND SOLKETAL)  
FROM BIORENEWABLES (LIGNIN AND GLYCEROL)
- PL-4. Professor Dr. P.C.A. (Pieter) Bruijnincx  
*Utrecht University, Utrecht, the Netherlands*  
TO BE SPECIFIED
- PL-5. Professor Rafael Luque  
*University of Cordoba, Cordoba, Spain*  
BENIGN-BY-DESIGN METHODOLOGIES FOR A MORE SUSTAINABLE FUTURE: FROM  
NANOCATALYSIS TO BIOMASS/WASTE VALORIZATION FOR FUELS AND CHEMICALS  
PRODUCTION
- PL-6. Professor Can Li  
*Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, China*  
SOLAR FUEL PRODUCTION VIA ARTIFICIAL PHOTOSYNTHESIS WITH RENEWABLE ENERGY

## KEYNOTE LECTURES

- KL-1. Dr. Nolven Guilhaume  
*Research Institute for Catalysis and Environment of Lyon, (IRCELYON, CNRS-University of Lyon), Lyon, France*  
CATALYSTS DEVELOPMENT AND CHARACTERIZATION FOR THE TREATMENT OF PYROLYSIS VAPORS TO PRODUCE IMPROVED BIO-OILS
- KL-2. Professor Boris Kuznetsov<sup>1</sup>, Taran O.P.<sup>1</sup>, Sudakova I.G.<sup>1</sup>, Garyntseva N.V.<sup>1</sup>, Baryshnikov S.V.<sup>1</sup>, Miroshnikova A.V.<sup>1</sup>, Kazachenko A.S.<sup>1</sup>, Lavrenov A.V.<sup>2</sup>  
BIOREFINERY OF BIRCH WOOD BASED ON BIOMASS FRACTIONATION WITH THE USE OF OPTIMIZED CATALYTIC AND EXTRACTION PROCESSES  
<sup>1</sup>*Institute of Chemistry and Chemical Technology SB RAS, FRC KSC SB RAS, Krasnoyarsk, Russia*  
<sup>2</sup>*Center of New Chemical Technologies Boreskov Institute of Catalysis, Omsk, Russia*
- KL-3. Dr. Tomas Ramirez Reina  
*University of Surrey, Guildford, United Kingdom*  
INVESTIGATION MULTIFUNCTIONAL CATALYSTS TO ENABLE NEW ROUTES FOR BIOMASS CONVERSION
- KL-4. Assistant Professor, Dr. Eleni Heracleous  
*Chemical Process & Energy Resources Institute, Centre for Research and Technology Hellas (CPERI/CERTH), International Hellenic University, Thessaloniki, Greece*  
EFFICIENT CONVERSION OF BIODERIVED LACTONES TO HIGH-ADDED VALUE CHEMICALS
- KL-5. Professor Jordi Llorca  
*Polytechnic University of Catalonia, Barcelona, Spain*  
CATALYST APPLICATION FOR CLEAN SYNGAS AND CLEAN HYDROGEN PRODUCTION

## ORAL PRESENTATIONS

### SECTION I.

#### CATALYSIS FOR BIOMASS DEPOLYMERIZATION AND DOWN-STREAM UPGRADING

*Catalytic systems for hemicellulose, cellulose and lignin depolymerization*

*Catalytic processing of tall oil and tar*

*Selective conversion of biomass derived sugars and phenolics to fuels, chemicals and polymers*

*Catalysis in dendrochemistry for valuable products*

### SECTION II.

#### BIOMASS DERIVATIVES IN PETROCHEMISTRY

*Catalyst application for clean syn-gas and clean hydrogen production*

*Lipids in petrochemical synthesis*

*Co-processing of biomass derivatives and oil feedstock*

### SECTION III.

#### HYDROGEN AS A BASIS OF LOW CARBON ECONOMY

*Biomass HYDROprocessing into valuable products*

*Hydrogen production from fossil and renewable feedstocks*

*CO<sub>2</sub> activation, capture and utilization*

*Hydrogen storage and usage*

### SECTION IV.

#### CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION

*Catalytic interesterification and hydrocracking of lipids to kerosene and diesel fractions*

*Catalytic approaches to biomass pyrolysis processes*

*Conversion of carbon rich unconventional fossil resources and biomass feedstock into biofuel*

### SECTION V.

#### CATALYTIC PROCESSING FOR VALUABLE CHEMICALS PRODUCTION

*Bio-catalysis for chemicals production*

*Lipids conversion to valuable products*

*Electrochemical biomass conversion*

*Catalytic transformations of CO<sub>2</sub> to lignin cellulose*

### SECTION VI.

#### CATALYSIS FOR ENVIRONMENT AND SUSTAINABILITY

*Catalytic processes for energy efficiency and ecology*

*Catalytic processing of waste*

*Photo-catalysis for environmental protection*

*Electro-catalytic conversion of renewables*

Monday

Hall 1

Section I.

CATALYSIS FOR BIOMASS DEPOLYMERIZATION  
AND DOWN-STREAM UPGRADING

OP-I-1 Antunes M.M.<sup>1</sup>, Silva A.<sup>1</sup>, Fernandes A.<sup>2</sup>, Pillinger M.<sup>1</sup>, Ribeiro F.<sup>2</sup>, Valente A<sup>1</sup>  
EFFICIENT MULTIFUNCTIONAL CATALYSTS FOR THE VALORIZATION OF FURFURAL  
TO GAMMA-VALEROLACTONE

<sup>1</sup>*CICECO- Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal*

<sup>2</sup>*Instituto Superior Técnico, Lisboa, Portugal*

OP-I-2 Taran O.P.<sup>1</sup>, Baryshnikov S.V.<sup>1</sup>, Miroshnikova A.V.<sup>1</sup>, Kazachenko A.S.<sup>1</sup>, Sychev V.V.<sup>1</sup>,  
Kuznetsov B.N.<sup>1</sup>, Lavrenov A.V.<sup>2</sup>  
REDUCTIVE BIOREFINERY OF LARCH WOOD WITH THE USE OF BIFUNCTIONAL  
Ru and Pt – CONTAINING CATALYSTS

<sup>1</sup>*Institute of Chemistry and Chemical Technology of SB RAS, FRS KSC SB RAS, Krasnoyarsk, Russia*

<sup>2</sup>*Center of New Chemical Technologies Boreskov Institute of Catalysis, Omsk, Russia*

OP-I-3 Margellou A.<sup>1</sup>, Iakovou G.<sup>1</sup>, Lazaridis P.<sup>1</sup>, Charisteidis I.<sup>1</sup>, Fotopoulos A.<sup>1</sup>, Ipsakis D.<sup>3</sup>,  
Triantafyllidis K.S.<sup>1,2</sup>  
CATALYTIC FAST PYROLYSIS OF LIGNIN FOR THE PRODUCTION OF GREEN AROMATICS AND  
PHENOLICS: AN EXPERIMENTAL AND PROCESS SIMULATION STUDY

<sup>1</sup>*Aristotle University of Thessaloniki, Thessaloniki, Greece*

<sup>2</sup>*Chemical Process and Energy Resources Institute, Centre for Research and Technology Hellas,  
Thessaloniki, Greece*

<sup>3</sup>*Technical University of Crete, Chania, Greece*

OP-I-4 Ruijten D., Sels B.  
TERTIARY AMINES FROM LIGNIN-DERIVED AROMATIC ALCOHOLS BY HYDROGEN  
BORROWING AMINATION  
*KU Leuven, Leuven, Belgium*

OP-I-5 Lugovoy Y., Chalov K., Kosivtsov Y., Sulman M.  
THE INFLUENCE OF TRANSITION METAL COMPOUNDS ON THE PYROLYSIS OF FLAX  
PRODUCTION WASTE  
*Tver State Technical University, Tver, Russia*

OP-I-6 Calderon Ardila S.<sup>1</sup>, Péruch O.<sup>2</sup>, Morvan D.<sup>2</sup>, Bellière-Baca V.<sup>2</sup>, Dusselier M.<sup>1</sup>, Sels B.<sup>1</sup>  
MECHANISTIC INSIGHT INTO THE LEWIS ACID CATALYZED SYNTHESIS OF METHIONINE  
HYDROXY ANALOGUES FROM TETROSSES  
<sup>1</sup>*KU Leuven, Leuven, Belgium*

<sup>2</sup>*Adisseo France SAS, Antony, France*

OP-I-7 Karlinskii B., Ananikov V.  
CATALYTIC C–H FUNCTIONALIZATION OF RENEWABLE FURANIC PLATFORM CHEMICALS  
*N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia*

OP-I-8 Turkin A.<sup>1</sup>, Makshina E.<sup>1</sup>, Sels B.<sup>1</sup>  
CONVERSION OF BIOBASED HMF TO DMF AND DMTHF FOR LIQUID FUELS  
*KU Leuven, Leuven, Belgium*

OP-I-9 Malyar Y.N., Borovkova V.S., Chudina A.I., Sudakova I.G., Kazachenko A.S.  
INFLUENCE OF CATALYSTS ON STRUCTURAL CHARACTERISTICS OF HEMICELLULOSES ISOLATED  
IN THE PROCESS OF OXIDATIVE CATALYTIC DELIGNIFICATION OF SPRUCE WOOD  
*Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia*

OP-I-10 Abusuek D.<sup>1,2</sup>, Nikoshvili L.<sup>1</sup>, Matveeva V.<sup>1,2</sup>  
SYNTHESIS OF GAMMA-VALEROLACTONE USING RUTHENIUM-CONTAINING PARTICLES  
SUPPORTED ON ZEOLITES  
<sup>1</sup>*Tver State Technical University, Tver, Russia*  
<sup>2</sup>*Tver State University, Tver, Russia*

Tuesday  
Hall 2

Section II.  
BIOMASS DERIVATIVES IN PETROCHEMISTRY

OP-II-1 Chesnokov V.V., Dik P.P., Chichkan A.V.  
FORMIC ACID AS A HYDROGEN DONOR FOR CATALYTIC TRANSFORMATIONS OF TAR  
*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

OP-II-2 Vutolkina A.V.<sup>1</sup>, Baygildin I.G.<sup>1</sup>, Maksimov A.L.<sup>1,2</sup>, Karakhanov E.A.<sup>1</sup>  
TRANSITION METAL SULFIDES IN HYDROPROCESSING OF UNCONVENTIONAL WATER-  
CONTAINING FEEDS: DISPERSED CATALYSTS VS MESOPOROUS SUPPORTED ONES  
<sup>1</sup>*Lomonosov Moscow State University, Moscow, Russia*  
<sup>2</sup>*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*

OP-II-3 Godinho T.d.<sup>1</sup>, Rijo B.<sup>1</sup>, Briceno Torres J.F.<sup>1</sup>, Lemos M.<sup>1</sup>, Carabineiro H.<sup>2</sup>,  
Tarelho L.<sup>3</sup>, Lemos F.<sup>1</sup>  
CATALYTIC CO-PYROLYSIS OF MIXED PLASTIC WASTE WITH VACUUM GAS OIL  
<sup>1</sup>*Instituto Superior Técnico Lisboa, Lisbon, Portugal*  
<sup>2</sup>*Galp, Sines, Portugal*  
<sup>3</sup>*Universidade de Aveiro, Aveiro), Portugal*

OP-II-4 Sadykov V.<sup>1</sup>, Krasnov A.<sup>1</sup>, Bespalko Y.<sup>1</sup>, Eremeev N.<sup>1</sup>, Smorygo O.<sup>2</sup>  
CATALYTIC MEMBRANE REACTORS FOR BIOFUELS TRANSFORMATION INTO SYNGAS  
AND HYDROGEN  
<sup>1</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*  
<sup>2</sup>*Powder Metallurgy Institute, Minsk, Belarus*

OP-II-5 Stepacheva A.<sup>1</sup>, Dmitrieva A.<sup>2</sup>, Markova M.<sup>1</sup>, Schipanskaya E.<sup>2</sup>, Lugovoy Y.<sup>1</sup>,  
Matveeva V.<sup>1</sup>, Sulman M.<sup>1</sup>  
CATALYTIC CO-PROCESSING OF PYROLYSIS OIL AND HEAVY OIL COMPOUNDS IN  
SUPERCritical SOLVENTS  
<sup>1</sup>*Tver State Technical University, Tver, Russia*  
<sup>2</sup>*Tver State University, Tver, Russia*

OP-II-6 Fedorova V., Simonov M., Bespalko Y., Valeev K., Smal E., Sadykov V.  
CATALYSTS BASED ON CERIA-ZIRCONIA OBTAINED IN SUPERCritical MEDIUM FOR METHANE  
DRY REFORMING  
*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

Tuesday  
Hall 2

Section III.  
HYDROGEN AS A BASIS OF LOW CARBON ECONOMY

OP-III-1 Díaz-Sainz G.<sup>1</sup>, Alvarez-Guerra M.<sup>1</sup>, Avila-Bolivar B.<sup>2</sup>, Solla-Gullón J.<sup>2</sup>, Montiel V.<sup>2</sup>, Irabien A.<sup>1</sup>

IMPROVEMENT OF THE PERFORMANCE OF CONTINUOUS CO<sub>2</sub> ELECTROCATALYTIC REDUCTION TO FORMIC ACID PROCESS WITH HIGH ENERGY EFFICIENCY

<sup>1</sup>*University of Cantabria, Santander, Spain*

<sup>2</sup>*University of Alicante, Spain*

OP-III-2 Merino-Garcia I.<sup>1</sup>, Diego-Rucabado A.<sup>1</sup>, Espeso J.<sup>1</sup>, Valiente R.<sup>1</sup>, Cano I.<sup>1,2</sup>, Martín-Rodríguez R.<sup>1</sup>, de Pedro I.<sup>1</sup>, Albo J.<sup>1</sup>

ARTIFICIAL PHOTOSYNTHESIS USING MICROFLUIDICS AND Ce/TiO<sub>2</sub> PHOTOCATALYSTS: CLEAN ALCOHOL PRODUCTION

<sup>1</sup>*University of Cantabria, Santander, Spain*

<sup>2</sup>*Complutense University of Madrid, Spain*

OP-III-3 Simakov D.

HIGHLY SELECTIVE DIRECT HYDROGENATION OF CO<sub>2</sub> TO LOWER HYDROCARBONS OVER Fe-K/Al<sub>2</sub>O<sub>3</sub> SYNTHESIZED VIA REVERSE MICROEMULSION METHOD  
*University of Waterloo, Waterloo, Ontario, Canada*

OP-III-4 Gorlova A.M.<sup>1,2</sup>, Potemkin D.I.<sup>1,2</sup>, Stonkus P.A.<sup>1</sup>, Pakharukova V.P.<sup>1,2</sup>, Snytnikov P.V.<sup>1</sup> PLATINUM-BASED CATALYSTS FOR LOW-TEMPERATURE WATER GAS SHIFT REACTION

<sup>1</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

<sup>2</sup>*Novosibirsk State University, Novosibirsk, Russia*

Tuesday  
Hall 1

Section IV  
CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION

OP-IV-1 Vassou M.<sup>1,2</sup>, Heracleous E.<sup>1,2</sup>, Lappas A.A.<sup>1</sup>, Chiaberge S.<sup>3</sup>, Bianchi D.<sup>3</sup>

INSIGHTS IN THE COMPLEX HYDROTREATING REACTIONS OF HYDROTHERMAL LIQUEFACTION BIOCRUDE FROM SEWAGE SLUDGE VIA ADVANCED PRODUCT CHARACTERIZATION

<sup>1</sup>*Chemical Process & Energy Resources Institute, Centre for Research and Technology Hellas (CPERI/CERTH), Thessaloniki, Greece*

<sup>2</sup>*International Hellenic University, Thessaloniki, Greece*

<sup>3</sup>*Eni s.p.a. Renewable Energy & Environmental R&D, Novara, Italy*

OP-IV-2 Glotov A.<sup>1</sup>, Zasypalov G.O.<sup>1</sup>, Boev S.S.<sup>1</sup>, Nedolivko V.V.<sup>1</sup>, Vinokurov V.A.<sup>1</sup>, Lvov Y.M.<sup>1,2</sup>

NATURAL CLAY NANOTUBES SUPPORTED CATALYSTS FOR BIO-OIL COMPONENTS HYDROUPGRADING

<sup>1</sup>*Gubkin Russian State University of Oil and Gas, Moscow, Russia*

<sup>2</sup>*Institute for Micromanufacturing, Louisiana Tech University, Ruston, LA, USA*

OP-IV-3 Reynoso Estevez A.<sup>1</sup>, Ayastuy J.<sup>1</sup>, Iriarte Velasco U.<sup>1</sup>, Vivier L.<sup>2</sup>, Espeel C.<sup>2</sup>, Gutierrez Ortiz M.<sup>1</sup>

AQUEOUS-PHASE TRANSFORMATION OF SORBITOL OVER COBALT ALUMINATE-BASED CATALYSTS

<sup>1</sup>*University of the Basque Country UPV/EHU, Bilbao, Spain*

<sup>2</sup>*Université de Poitiers, Poitiers, France*

OP-IV-4 Hernando H.<sup>1</sup>, Fermoso J.<sup>1</sup>, Ochoa-Hernández C.<sup>3</sup>, Čejka J.<sup>4</sup>, Serrano D.P.<sup>1,2</sup>

ENHANCED BIO-OIL DEOXYGENATION OVER MULTIFUNCTIONAL SBA-15 BASED TECHNICAL CATALYSTS

<sup>1</sup>*IMDEA Energy Institute, Móstoles, Spain*

<sup>2</sup>*Rey Juan Carlos University, Móstoles, Spain*

<sup>3</sup>*Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany*

<sup>4</sup>*Charles University in Prague, Prague, Czech Republic*

OP-IV-5 Rijo B., Briceno Torres J.F., Godinho T.d., Lemos F., Lemos M.

PLASTIC WASTE PYROLYSIS WITH A MIXTURE OF CATALYSTS IN A REACTIVE DISTILLATION SYSTEM

*Instituto Superior Técnico Lisboa, Lisbon, Portugal*

OP-IV-6 Alekseeva M.<sup>1,2</sup>, Sukhorukov D.A.<sup>1,2</sup>, Zaikina O.O.<sup>1</sup>, Kazakov M.O.<sup>1</sup>, Grachev A.N.<sup>3</sup>, Kikhtyanin O.<sup>4</sup>, Kubička D.<sup>4</sup>, Yakovlev V.A.<sup>1,2</sup>

CATALYTIC HYDROCONVERSION OF SLUDGE PYROLYSIS BIO-OIL AND ITS MODEL COMPOUNDS

<sup>1</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

<sup>2</sup>*Novosibirsk State University, Novosibirsk, Russia*

<sup>3</sup>*Kazan National Research Technological University, Kazan, Russia*

<sup>4</sup>*University of Chemistry and Technology Prague, Czech Republic*

OP-IV-7 Briceno Torres J.F., Rijo B., Godinho T.d., Lemos F., Lemos M.

EFFECT OF HBeta ZEOLITE CATALYST ON PYROLYSIS OF WASTE POLYMER MIXTURES

*Instituto Superior Técnico Lisboa, Lisbon, Portugal*

OP-IV-8 Artillo F.<sup>1</sup>, Moreno J.<sup>1</sup>, Pizarro P.<sup>1,2</sup>, Serrano D.<sup>1,2</sup>

CATALYTIC HYDROPYROLYSIS OF LIGNOCELLULOSIC BIOMASS UNDER MILD PRESSURES USING  
Ni<sub>2</sub>P-BASED CATALYSTS

<sup>1</sup>IMDEA Energy Institute, Móstoles, Madrid, Spain

<sup>2</sup>ESCAT, Universidad Rey Juan Carlos, Móstoles, Madrid, Spain

OP-IV-9 Haider M.S., Castello D., Pedersen T.H., Rosendahl L.A.

CONTINUOUS HYDROTREATMENT OF HYDROTHERMAL LIQUEFACTION BIOCRUDES: DIFFERENT  
CATALYSTS FOR DIFFERENT ORGANIC CONTAMINANTS

Aalborg University, Denmark

OP-IV-10 Justicia J., Souza A., Baeza J.A., Calvo L., Heras F., Gilarranz M.A.

AQUOUS-PHASE REFORMING OF BIOMASS-DERIVED PYROLYSIS BIO-OIL AQUEOUS FRACTION

Autonomous University of Madrid, Madrid, Spain

Wednesday

Hall 1

Section V.

CATALYTIC PROCESSING FOR VALUABLE CHEMICALS PRODUCTION

OP-V-1    Bols M.L.<sup>1</sup>, Plessers D.<sup>1</sup>, Snyder B.<sup>2</sup>, Rhoda H.<sup>2</sup>, Devos J.<sup>1</sup>, Dusselier M.<sup>1</sup>, Schoonheydt R.<sup>1</sup>, Solomon E.<sup>2</sup>, Sels B.<sup>1</sup>

METHANOL FUEL FROM RENEWABLE, SMALL SCALE METHANE SOURCES USING IRON ZEOLITE CATALYSTS

<sup>1</sup>*KU Leuven, Leuven, Belgium*

<sup>2</sup>*Stanford University, Stanford, USA*

OP-V-2    EL Mohammad S., Larmier K., Chizallet C.

REACTIVITY OF GLUCOSE OVER HOMOGENEOUS TUNGSTEN- AND MOLYBDENUM-BASED CATALYSTS

*IFP-Lyon, Solaize, France*

OP-V-3    El Fergani M.A., Podolean I., Coman S., Parvulescu V., Candu N.

SYNTHESIS OF DICARBOXYLIC ACIDS USING AN EFFICIENT MULTIFUNCTIONAL MAGNETIC CORE-SHELL CATALYST

*University of Bucharest, Bucharest, Romania*

OP-V-4    Santos J., Sels B., Makshina E.

METHYL METHOXY PROPIONATE, AN ALTERNATIVE ROUTE FOR THE HIGH SELECTIVE ALKYL ACRYLATE PRODUCTION FROM LACTATE ESTER

*KULeuven University, Leuven, Belgium*

OP-V-5    Matveeva V.<sup>1</sup>, Salnikova K.<sup>1</sup>, Larichev Y.<sup>2</sup>, Bykov A.<sup>1</sup>, Sidorov A.<sup>1</sup>, Sulman M.<sup>1</sup>

SELECTIVE HYDROGENATION OF LIGNOCELLULOSE BIOMASS DERIVED FURFURAL: IMPROVED CATALYTIC PERFORMANCE OF METAL NANOPARTICLES IN POROUS POLYMER

<sup>1</sup>*Tver State Technical University, Tver, Russia*

<sup>2</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

OP-V-6    Lemos F., Santos E., Briceno Torres J.F., Rijo B., Godinho T.d., Kol R., Pereira P., Martins M., Lemos M.

SIZE MATTERS – USING REACTIVE DISTILLATION TO CONTROL THE MOLECULAR WEIGHT OF PRODUCTS OF PLASTIC PYROLYSIS

*Instituto Superior Técnico Lisboa, Lisbon, Portugal*

OP-V-7    Wu X., Bai S., Van Aelst K., Vermandel W., Liao Y., Sels B.

PRODUCING RENEWABLE CATECHOL FROM WOODY BIOMASS

*KU Leuven, Leuven, Belgium*

OP-V-8    Nuzhdin A.L.<sup>1</sup>, Wang Y.<sup>2</sup>, Shamanaev I.V.<sup>1</sup>, Bukhtiyarova G.A.<sup>1</sup>

REDUCTIVE AMINATION OF ETHYL LEVULINATE TO N-HEXYL-5-METHYL-2-PYRROLIDONE OVER NICKEL PHOSPHIDE CATALYSTS IN A FLOW REACTOR

<sup>1</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

<sup>2</sup>*Novosibirsk State University, Novosibirsk, Russia*

Thursday  
Hall 1

Section V.

CATALYTIC PROCESSING FOR VALUABLE CHEMICALS PRODUCTION

- OP-V-9 Podolean I., Marinica S., El Fergani M., Parvulescu V., Coman S., Candu N.  
Ru-BASED MAGNETIC CATALYSTS FOR SELECTIVE OXIDATION AND REDUCTIVE AMINATION  
OF BIOMASS  
*University of Bucharest, Bucharest, Romania*
- OP-V-10 Veryasova N., Sels B., Makshina E.  
DESIGN OF EXPERIMENT AS A TOOL FOR TUNING OPERATION CONDITIONS: CONVERSION  
OF BIOMASS INTO ETHYL LEVULINATE  
*KU Leuven, Leuven, Belgium*
- OP-V-11 Zasypalov G., Glotov A., Boev S., Nedolivko V., Ivanov E., Vinokurov V.  
Ru-CONTAINING CATALYSTS TEMPLATED ON CLAY NANOTUBES FOR HYDRODEOXYGENATION  
OF GUAIACOL  
*Gubkin Russian State University of Oil and Gas, Moscow, Russia*
- OP-V-12 Dusselier M.J., Khalil I., Ivanushkin G.  
CUSTOM ZEOLITES FOR CATALYZING THE ISOMERIZATION OF BIOBASED PLATFORM  
CHEMICALS: FLIPPING CONJUGATED DOUBLE BONDS IN MUCONIC ACID  
*KU Leuven, Leuven, Belgium*
- OP-V-13 Miroshnikova A.V.<sup>1</sup>, Kazachenko A.S.<sup>1</sup>, Tarabanko V.E.<sup>1</sup>, Sychev V.V.<sup>1</sup>, Skripnikov A.M.<sup>1</sup>,  
Malyar Y.N.<sup>1</sup>, Baryshnikov S.V.<sup>1</sup>, Taran O.P.<sup>2</sup>  
REDUCTIVE CATALYTIC FRACTIONATION OF FLAX SHIVE OVER Ru/C CATALYSTS IN SUB- AND  
SUPERCritical SOLVENTS  
<sup>1</sup>*Institute of Chemistry and Chemical Technology of SB RAS, Krasnoyarsk, Russia*  
<sup>2</sup>*Institute of Chemistry and Chemical Technology of SB RAS, FRS KSC SB RAS, Krasnoyarsk, Russia*
- OP-V-14 Banzarakaeva S., Surmina M., Ovchinnikova E., Chumachenko V.  
THE EFFECT OF IMPURITIES IN MISCANTHUS-DERIVED ETHANOL ON ETHYLENE PRODUCTION  
*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

Thursday  
Hall 1

Section VI.  
CATALYSIS FOR ENVIRONMENT AND SUSTAINABILITY

OP-VI-1 Uskov S.<sup>1</sup>, Potemkin D.<sup>1,2</sup>, Snytnikov P.<sup>1</sup>

THE NEXUS BETWEEN FLARE GAS CONDITIONING, ELECTRICITY GENERATION, CRYPTOCURRENCY MINING, CARBON DIOXIDE CAPTURE AND ENHANCED OIL RECOVERY

<sup>1</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

<sup>2</sup>*Novosibirsk State University, Novosibirsk, Russia*

OP-VI-2 Plessers D.<sup>1</sup>, Rhoda H.<sup>2</sup>, Bols M.L.<sup>1</sup>, Heyer A.<sup>2</sup>, Schoonheydt R.<sup>1</sup>, Solomon E.<sup>2</sup>, Sels B.<sup>1</sup>

SPECTROSCOPIC INVESTIGATION OF THE COPPER-OXYGEN ACTIVE SITES IN Cu-CHA FOR SMALL MOLECULE ACTIVATION

<sup>1</sup>*KU Leuven, Leuven, Belgium*

<sup>2</sup>*Stanford University, Stanford, USA*

OP-VI-3 Selishchev D., Kovalevskiy N., Asmedianova A., Lyulyukin M., Kozlov D.

NANOCOMPOSITE SEMICONDUCTING MATERIALS FOR PHOTOCATALYTIC DEGRADATION OF POLLUTANTS AND WATER SPLITTING

*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

OP-VI-4 Kolb G., Pennemann H., Weissenberger T., Zapf R., Kolb G.

CATALYST DEVELOPMENT FOR THE OFF-GAS PURIFICATION OF AMMONIA FUEL CELLS

Fraunhofer IMM, Mainz, Germany

OP-VI-5 Bulushev D.A.<sup>1</sup>, Golub F.S.<sup>1</sup>, Beloshapkin S.<sup>2</sup>, Parmon V.N.<sup>1</sup>

HYDROGEN PRODUCTION FROM BIOMASS DERIVED FORMIC ACID OVER Pd CATALYSTS:

MODIFICATION OF THE CARBON SUPPORT BY N-SPECIES THROUGH DEPOSITION OF MELAMINE

<sup>1</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

<sup>2</sup>*University of Limerick, Limerick, Ireland*

OP-VI-6 Saeed M., Baig A.

$\text{Co}_3\text{O}_4\text{-Bi}_2\text{O}_3$  HETEROJUNCTION; AN EFFECTIVE PHOTOCATALYST FOR PHOTODEGRADATION OF RHODAMINE B DYE

*Government College University Faisalabad Pakistan, Faisalabad, Pakistan*

OP-VI-7 Nesterov N., Philippov A., Martyanov O.

SUPERCRITICAL FLUID APPROACHES FOR THE SYNTHESIS OF CATALYST FOR H<sub>2</sub>-FREE BIOFUEL HYDRODEOXYGENATION

*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

OP-VI-8 Zhukova A.I.<sup>1</sup>, Asabina E.A.<sup>2</sup>, Osaulenko D.A.<sup>1</sup>, Fionov Y.A.<sup>1</sup>, Kharlanov A.N.<sup>3</sup>, Pet'kov V.I.<sup>2</sup>

FRAMEWORK-STRUCTURED PHOSPHATES FOR THE DEHYDRATION OF ETHANOL INTO ETHYLENE: RELATIONSHIP BETWEEN ACIDIC AND CATALYTIC PROPERTIES

<sup>1</sup>*RUDN University, Moscow, Russia*

<sup>2</sup>*Lobachevsky Nizhny Novgorod State University, Nizhny Novgorod, Russia*

<sup>3</sup>*Lomonosov Moscow State University, Moscow, Russia*

## POSTER SESSION

PP-1. Abarca J., Díaz-Sainz G., Merino-García I., Albo J., Irabien A.

PHOTOELECTROCHEMICAL CHARACTERIZATION OF BiVO<sub>4</sub>/WO<sub>3</sub> PHOTOANODES FOR  
CONTINUOUS VISIBLE LIGHT-DRIVEN CO<sub>2</sub> CONVERSION TO FORMATE  
*University of Cantabria, Santander, Spain*

PP-2. Samatov S., Ziyadullaev O., Abdurakhmanova S., Otamukhamedova G., Saliyeva M.,  
Ablakulov L.

CATALYST DEVELOPMENT FOR THE OFF-GAS PURIFICATION OF AMMONIA FUEL CELLS  
*Chirchik State Pedagogical Institute, Chirchik, Uzbekistan*

PP-3. Allabergenova R.K., Ojigina A.R., Kryuchkova T.A., Hayrullina I.A., Sheshko T.,  
Cherednichenko A.G.

SYNGAS PRODUCTION FROM CH<sub>4</sub> AND CO<sub>2</sub> OVER Gd-Ni-Fe OXIDE SYSTEMS  
*People's Friendship University of Russia, Moscow, Russia*

PP-4. Borovkova V.S., Malyar Y.N., Kazachenko A.S., Miroshnikova A.

SOLVENT AND CATALYSTS INFLUENCE ON THE PROCESS OF TECHNICAL LIGNIN SULFATION  
*Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia*

PP-5. Cecca N.G.<sup>1</sup>, Yakimenko O.<sup>2</sup>

THE REDUCTION OF ACUTE TOXICITY OF NORFLOXACIN IN WASTEWATERS BY  
PHOTODEGRADATION WITH TITANIUM DIOXIDE IN A SOLAR SIMULATOR

<sup>1</sup>MIUR - I.I.S.S. "A. Moro", Margherita di Savoia, Italy

<sup>2</sup>M.V. Lomonosov Moscow State University, Moscow, Russia

PP-6. Dadashova N.R., Alimardanov Kh.M., Aliyeva N.M.

STUDY OF POLYOXO- AND PEROXOMETALATES CONTAINING RARE EARTH ELEMENTS CATALYSTS  
BY PHYSICOCHEMICAL METHODS

*Mamedaliyev Institute of Petrochemical Processes ANAS, Baku, Azerbaijan*

PP-7. Dubrovskiy V., Sapunov V.N., Kozlovskiy I., Zolotarev E., Grivin A., Medvedev V.

CATALYTIC CONVERSION OF ETHANOL TO ETHYL ACETATE

*D. Mendeleev University of Chemical Technology of Russia, Moscow, Russia*

PP-8. Fernandez-Caso K., Díaz-Sainz G., Alvarez-Guerra M., Irabien A.

CONTINUOUS CO-ELECTROLYSIS OF CO<sub>2</sub> AND GLYCEROL FOR THE EFFICIENT PRODUCTION OF  
FORMATE AND DIHYDROXYACETONE

*University of Cantabria, Santander, Spain*

PP-9. Gulyaeva Y.K., Alekseeva (Bykova) M., Bulavchenko O., Kremneva A., Yakovlev V., Kaichev V.

NICKEL-BASED SOL-GEL CATALYSTS FOR METHYLCYCLOHEXANE DEHYDROGENATION

*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

PP-10. Guskov R.D., Popov M.P., Kovalev I., Nemudry A.P.

THE STUDY OF SrCo<sub>0.9</sub>Ta<sub>0.1</sub>O<sub>3-δ</sub> OXIDE WITH PEROVSKITE STRUCTURE USING THE OXYGEN  
PARTIAL PRESSURE RELAXATION TECHNIQUE

*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*

PP-11. Hagemeyer A.G., Sokolovskii V.

CHEMOCATALYTIC CONVERSION OF BIORENEWABLE SUGAR FEEDSTOCKS INTO MARKET  
CHEMICALS

*Alvacat, Mountain View, USA*

PP-12. Hassan K., Latoof B.

STRUCTURAL STUDY OF SPENT AND VIRGIN NiMo/  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> HDS CATALYSTS

*Bilad Alrafidain University College, Baghdad, Iraq*

PP-13. Imizcoz M., Pellejero I., Navajas A., Gandía L.

NEW NICKEL-BORON COMPOSITES FOR THE PHOTOTHERMAL CO<sub>2</sub> CATALYTIC REDUCTION

*Public University of Navarre, Pamplona, Spain*

PP-14. Justicia J., Souza A., Baeza J.A., Calvo L., Heras F., Gilarranz M.A.

Pt-BASED BIMETALLIC CATALYSTS FOR AQUEOUS-PHASE REFORMING OF WATER-SOLUBLE FRACTION OF BIOMASS PYROLYSIS BIO-OIL

*Autonomous University of Madrid, Madrid, Spain*

PP-15. Justicia González J., Souza A. , Baeza J. , Calvo L. , Heras F., Gilarranz M.

AQUEOUS-PHASE REFORMING OF MODEL COMPOUNDS OF PYROLYSIS BIO-OILS HYDROSOLUBLE FRACTION

*Autonomous University of Madrid, Madrid, Spain*

PP-16. Kakamouka K.<sup>1</sup>, Giannakoudakis D.<sup>2</sup>, Salonikidou E.<sup>1</sup>, Samanidou V.<sup>1</sup>, Triantafyllidis K.<sup>1</sup>, Deliyanni E.<sup>1</sup>

CATALYTIC OXIDATIVE DESULFURIZATION OF DIBENZOTHIOPHENE (DBT) CONTAINING MODEL FUEL BY METAL-FREE ACTIVATED CARBONS: THE KEY ROLE OF SURFACE CHEMISTRY

<sup>1</sup>*Aristotle University of Thessaloniki, Thessaloniki, Greece*

<sup>2</sup>*Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland*

PP-17. Kazachenko A.S.<sup>1,2</sup>, Malyar Yu.N.<sup>1,2</sup>, Vasilieva N.Yu.<sup>1,2</sup>, Karacharov A.A.<sup>1</sup>, Antonov A.V.<sup>1</sup>, Fetisova O.Yu.<sup>1</sup>

CATALYTIC SULFATION OF GUAR AND XANTHAN GUMS WITH SULFAMIC ACID

<sup>1</sup>*Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia*

<sup>2</sup>*Siberian Federal University, Krasnoyarsk, Russia*

PP-18. Kholin K.V., Nizameev I.R., Minzanova S.T., Kadirov M.K.

SODIUM POLYGALACTURONATE COMPLEX WITH MANGANESE IN THE CATALYTIC CARBON DIOXIDE ELECTROREDUCTION REACTION IN WATER

*Arbuzov Institute of Organic and Physical Chemistry, FRC Kazan Scientific Center, Russian Academy of Sciences, Kazan, Russia*

PP-19. Kozlovskiy R.A., Kozlovskiy I., Voronov M., Kozlovskiy M., Ibatov Y.A., Brinko N.S.

KINETIC STUDY OF ESTERIFICATION OF AMMONIUM LACTATE WITH n-BUTANOL FOR BUTYL LACTATE PRODUCTION

*D. Mendeleev University of Chemical Technology of Russia, Moscow, Russia*

PP-20. Kovalev I., Guskov R.D., Sivcev V., Popov M.P., Bulina N., Nemudry A.P.

NB(V)-DOPED MIEC OXIDE La<sub>0.5</sub>Sr<sub>0.5</sub>FeO<sub>3- $\delta$</sub>  AS CATHODE MATERIAL FOR SOLID OXIDE FUEL CELLS

*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*

PP-21. Maâti H.<sup>1</sup>, Amadine O.<sup>1</sup>, Essamlali Y.<sup>1</sup>, Hassan El M.<sup>1</sup>, Zahouily M.<sup>1,2</sup>

PdCeZrO<sub>2</sub> SOLID SOLUTION AS GREEN AND LIGAND FREE NANOCATALYST FOR SUZUKI-MIYaura CROSS-COUPING REACTION IN AQUEOUS MEDIA

<sup>1</sup>*Moroccan Foundation for Advanced Science, Innovation and Research, Rabat, Morocco*

<sup>2</sup>*Laboratory of Materials Catalysis and Valorization of Natural Ressources, Mohammedia, Morocco*

PP-22. Maisterra M.<sup>1</sup>, Hablich K.<sup>1</sup>, Moreira R.<sup>2</sup>, Cornejo A.<sup>1</sup>, Bimbela F.<sup>1</sup>, Martínez-Merino V.<sup>1</sup>, Gandía L.M.<sup>1</sup>

CATALYTIC DEPOLYMERIZATION OF POPULUS SALICACEAE SAWDUST AND ISOLATION OF LIGNIN TO LOW MOLECULAR WEIGHT AROMATICS USING  $\text{b}$ -Mo<sub>2</sub>C

<sup>1</sup>*Public University of Navarra, Pamplona, Spain*

<sup>2</sup>*University of Coimbra, Portugal*

PP-23. Manaenkov O., Kisiltsa O., Matveeva V., Ratkevich E., Sulman M., Kosivtsov Y.

WO<sub>3</sub>-ZSM-5 CATALYSTS FOR MONOSACCHARIDES DEHYDRATION

*Tver State Technical University, Tver, Russia*

PP-24. Markova E.B.<sup>1</sup>, Cherednichenko A.<sup>1</sup>, Kravchenko G.<sup>2</sup>, Kuz'micheva G.<sup>2</sup>, Mushtakov A.<sup>1</sup>

CATALYTIC SYSTEMS BASED ON HZSM-5 ZEOLITES WITH VARIOUS SILICATE MODULES

(Si/Al = 12, 25, 40)

<sup>1</sup>*Peoples' Friendship University of Russia, Moscow, Russia*

<sup>2</sup>*Russian Technological University (RTU MIREA), Moscow, Russia*

PP-25. Matveeva V., Grigorev M., Manaenkov O., Sidorov A., Doluda V., Sulman M.

CATALYTIC HYDROGENATION OF d-XYLOSE, d-MANNOSE and D-LACTOSE TO THE

CORRESPONDING POLYOLS

*Tver State Technical University, Tver, Russia*

PP-26. Pashayeva Z.N., Abbasov V.M., Taghiyev D.B., İbragimova M.J., Aliyeva A.V.,

Abdullayeva F.M.

DISSOLUTION OF CELLULOSE IN IONIC LIQUIDS BASED ON ACETIC ACID

*Mamedaliyev Institute of Petrochemical Processes ANAS, Baku, Azerbaijan*

PP-27. Popov M., Chizhik S.A., Nemudry A.P.

THERMODYNAMIC PARAMETERS OF COBALT-CONTAINING CATHODE MATERIALS USED IN SOLID OXIDE FUEL CELLS

*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*

PP-28. Ruban N.<sup>1,3</sup>, Potemkin D.<sup>1,2,3</sup>, Gorlova A.M.<sup>1,3</sup>, Emelyanov V.A.<sup>4</sup>, Snytnikov P.<sup>1</sup>

Ru/Ce<sub>0.75</sub>Zr<sub>0.25</sub>O<sub>2- $\delta$</sub> - $\eta$ -Al<sub>2</sub>O<sub>3</sub>/FeCrAl STRUCTURED CATALYST FOR CO<sub>2</sub> METHANATION

<sup>1</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

<sup>2</sup>*UNICAT Ltd, Novosibirsk, Russia*

<sup>3</sup>*Novosibirsk State University, Novosibirsk, Russia*

<sup>4</sup>*Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*

PP-29. Santos S.P.<sup>1</sup>, Puna J.F.<sup>1,2</sup>, Gomes J.F.<sup>1,2</sup>, Quinta-Ferreira R.M.<sup>3</sup>, Bordado J.C.<sup>1</sup>

TOWARDS THE USE OF HETEROGENEOUS NANOCATALYSTS FOR THE OBTENTION OF BIODIESEL

<sup>1</sup>*Instituto Superior Técnico Lisboa, Lisbon, Portugal*

<sup>2</sup>*Instituto Superior de Engenharia de Lisboa, Lisbon, Portugal*

<sup>3</sup>*Coimbra University, Coimbra, Portugal*

PP-30. Stepacheva A.<sup>1</sup>, Schipanskaya E.<sup>2</sup>, Rud D.<sup>1</sup>, Nikoshvili L.<sup>1</sup>, Kiwi-Minsker L.<sup>2</sup>,

Matveeva V.<sup>1</sup>, Sulman M.<sup>1</sup>

FATTY ACID DEOXYGENATION OVER SCHUNGITE-BASED CATALYSTS

<sup>1</sup>*Tver State Technical University, Tver, Russia*

<sup>2</sup>*Tver State University, Tver, Russia*

PP-31. Torrez-Herrera J., Pedroarena I., Grande L., Korili S., Gil A.

A COMPARATIVE STUDY OF THE CATALYTIC PERFORMANCE OF NICKEL SUPPORTED ON A HIBONITE-TYPE LA-HEXAALUMINATE SYNTHESIZED FROM ALUMINUM SALINE SLAGS IN THE DRY REFORMING OF METHANE

*Public University of Navarra, Pamplona, Spain*

PP-32. Tungatarova S.<sup>1,2</sup>, Baizhumanova T.<sup>1,2</sup>, Xanthopoulou G.<sup>3</sup>, Murzin D.<sup>4</sup>, Vekinis G.<sup>3</sup>, Kotov S.<sup>5</sup>, Manabayeva A.<sup>6</sup>

METHANE AND BIOGAS REFORMING TO H<sub>2</sub>-CONTAINING FUELS OVER Ni-Cr-Al-Mg CATALYST PREPARED BY SOLUTION COMBUSTION SYNTHESIS

<sup>1</sup>*D.V. Sokolsky Institute of Fuel, Catalysis and Electrochemistry, Almaty, Kazakhstan*

<sup>2</sup>*Al-Farabi Kazakh National University, Almaty, Kazakhstan*

<sup>3</sup>*Institute of Nanoscience and Nanotechnology, Athens, Greece*

<sup>4</sup>*Åbo Akademi University, Turku, Finland*

<sup>5</sup>*M.Kh. Dulaty Taraz Regional University, Taraz, Kazakhstan*

<sup>6</sup>*Kazakh-British Technical University, Almaty, Kazakhstan*