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

Gabicce Mare, Adriatic Riviera, Italy, September 4-8, 2017

Boreskov Institute of Catalysis of the Siberian Branch
of the Russian Academy of Sciences, Novosibirsk, Russia

http://conf.nsc.ru/CRS4

The CRS-4 conference is a satellite event of the
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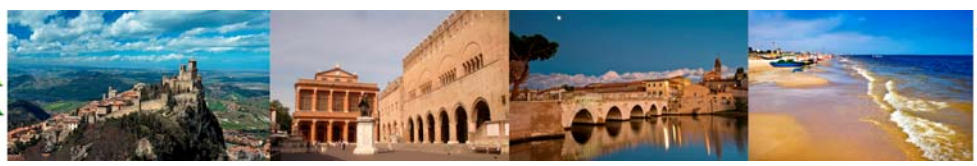

INTERNATIONAL SCIENTIFIC COMMITTEE

Chair: Valentin Parmon, *Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

Donato Aranda, *Federal University of Rio de Janeiro, Brazil*
Francesco Frusteri, *Institute CNR-ITAE "Nicola Giordano", Messina, Italy*
Erik Heeres, *University of Groningen, The Netherlands*
Sascha Kersten, *University of Twente, Enschede, The Netherlands*
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Guy Marin, *Ghent University, Belgium*
Simoni Plentz Meneghetti, *Federal University of Alagoas, Brazil*
Claude Mirodatos, *Institute of Research on Catalysis and Environment in Lyon, France*
Dmitry Murzin, *Åbo Akademi University, Turku, Finland*
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Mark Tsodikov, *A.V. Topchiev Institute of Petrochemical Synthesis RAS, Russia*
Sergei Varfolomeev, *N.M. Emanuel Institute of Biochemical Physics RAS, Moscow, Russia*

Vadim Yakovlev, Chairman of the Organizing Committee,
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

SCIENTIFIC PROGRAM

- ***Section I. Catalysis in dendrochemistry for valuables production***
  Catalytic systems for hemicellulose depolymerization
  Catalytic processing of tall oil and tar, Selective conversion of sugars
  Catalytic transformations of CO_2 to fine chemicals
- ***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. Catalytic processes for biofuels production***
  Catalytic interesterification and hydrocracking of lipids to kerosene and diesel fractions
  Catalytic approaches for the processing of pyrolysis biomass products
  Conversion of carbon rich unconventional fossil resources and biomass feedstock into biofuel
- ***Section IV. Bio-Photo-/Electro-catalytic conversion of renewables***
  Bio-catalysis for chemicals production
  Photo-catalytic for environmental protection
  Electro-catalytic conversion of renewables
- ***Section V. Catalysis for Environment and Sustainability***
  Catalytic processes for energy efficiency and ecology
  Catalytic processing of waste

September 4, Monday

8.45 OPENING

MARE Hall

PLENARY LECTURES

Chairperson – Professor Francesco Frusteri, CNR-ITAE Nicola Giordano, Messina, Italy

9.00

PL-1 Professor Simoni Plentz Meneghetti

Universidade Federal de Alagoas, Maceió, Brazil

EXAMPLES OF CATALYTIC SYSTEMS ABLE TO BE APPLIED IN BIOREFINERIES

10.00

PL-2 Professor Sergei Varfolomeev

N.M. Emanuel Institute of Biochemical Physics RAS, Russia

CHEMISTRY OF BIOMASS: NOVEL CATALYTIC DEPOLYMERIZATION PROCESSES, NOVEL BIOFUELS, NOVEL BIOPLASTICS

11.00 – 11.30 ***Coffee break***

KEYNOTE LECTURES

Chairperson – Professor Boris Kuznetsov, Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia

11.30

KL-1 Professor Dmitry Murzin[1], Simakova I.[2]

[1]*Åbo Akademi University, Turku, Finland*

[2]*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

HETEROGENEOUS CATALYSIS BY BASES FOR TRANSFORMATION OF RENEWABLES

12.00

KL-2 Professor Karen Wilson

Aston University, Birmingham, United Kingdom

DESIGNER CATALYSTS FOR BIOFUELS SYNTHESIS

12.30-14.30 ***Lunch***

September 4, Monday, 14.30 – 16.10
MARE Hall

ORAL PRESENTATIONS

SECTION I. Catalysis in dendrochemistry for valuables production

Chairperson – Professor Oman Zuas, Research Centre for Metrology-Indonesian Institute of Sciences, Banten, Indonesia

14.30

OP-I-1 **Ogo S.**[1], Okuno Y.[1], Sekine H.[1], Manabe S.[1], Onda A.[2], Sekine Y.[1]

DIRECT CATALYTIC CONVERSION OF CELLULOSE TO LIGHT HYDROCARBONS OVER Pt/NH_4-USY ZEOLITE CATALYST AT LOW TEMPERATURE

[1]*Waseda University, Tokyo, Japan*

[2]*Kochi University, Kochi, Japan*

14.50

OP-I-2 **Taran O.P.**[1,2], Sorokina K.N.[1,3], Medvedeva T.B.[1], Samoylova Y.V.[1], Piligaev A.V.[1], Parmon V.N.[1,3]

CELLULOSE BIOREFINERY BASED ON COMBINED CATALYTIC AND BIOTECHNOLOGICAL APPROACH FOR PRODUCTION OF 5-HMF AND ETHANOL

[1]*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

[2]*Novosibirsk State Technical University, Novosibirsk, Russia*

[3]*Novosibirsk State University, Novosibirsk, Russia*

15.10

OP-I-3 **Khlebnikova T.,** Pai Z., Yushchenko D., Mattsat Yu.

ENVIRONMENTALLY BENIGN CATALYTIC OXIDATION FOR FINE CHEMICALS SYNTHESIS

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

Section III. CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION

15.30

OP-III-1 **Albis Arrieta A.R.**, Carrera K., Vargas R., Vanegas M., López A., Piñeres I., Ortiz E.

CATALYTIC EFFECT OF CaO and $Fe_2(SO_4)_3$ ON THE PYROLYSIS OF CASSAVA WASTE

Universidad del Atlántico, Barranquilla, Colombia

15.50

OP-III-2 **Darbha S.,** Janampelli S.

METAL OXIDE PROMOTED Pt/Al_2O_3 CATALYSTS FOR NON-EDIBLE OIL-DERIVED 2nd GENERATION BIOFUELS

National Chemical Laboratory, Pune, India

16.10 ***Coffee break***

September 4, Monday, 16.30 – 18.10
MARE Hall

ORAL PRESENTATIONS

Section III. CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION

Chairperson – Professor Karen Wilson, Aston University, Birmingham, United Kingdom

16.30
OP-III-3 Kondrasheva N.[1], Yeremeyeva A.[1], Nelkembaum K.[2], Kondrashev D.O.[3]
BIODIESEL PRODUCTION METHODS
[1]*Saint-Petersburg Mining University, Saint-Petersburg, Russia*
[2]*Institute of Petroleum Chemistry and Catalysis RAS, Ufa, Russia*
[3]*JSC «Gazprom Neft», Saint-Petersburg, Russia*

16.50
OP-III-4 Sági D., Solymosi P., Holló A., Varga Z., Hancsók J.
PRODUCTION OF DIESEL FUEL BLENDING COMPONENTS FROM WASTE AND CONVENTIONAL SOURCES
University of Pannonia, Veszprém, Hungary

17.10
OP-III-5 Sulman E., Lugovoy Y., Chalov K., Kosivtsov Y.
CATALYTIC APPROACHES FOR THE PROCESSING OF PYROLYSIS BIOMASS PRODUCTS
Tver State Technical University, Tver, Russia

17.30
OP-III-6 Lopes M.[1], Dussan K.[2,3], Leahy J.[1,4]
DEHYDRATION OF CARBOHYDRATES INTO FURANIC PRODUCTS BY PROMOTED SULPHATED METAL OXIDES CATALYSTS
[1]*Carbolea Research Group, Chemical Sciences, University of Limerick, Limerick, Ireland*
[2]*Mechanical Engineering, National University of Ireland Galway, Galway, Ireland*
[3]*Research Centre for Marine and Renewable Energy, Galway, Ireland*
[4]*Bernal Institute University of Limerick, Ireland*

17.50
OP-III-7 Rautiainen S.[1], Di Francesco D.[1], Tungasmita D.N.[2], Samec J.[1]
CATALYTIC FRACTIONATION OF LIGNOCELLULOSE USING NON-NOBLE METAL CATALYSTS
[1]*Stockholm University, Stockholm, Sweden*
[2]*Chulalongkorn University, Bangkok, Thailand*

19.00 Welcome Reception

September 4, Monday, 14.30 – 16.10
SOLE Hall

ORAL PRESENTATIONS

Section II. BIOMASS DERIVATIVES IN PETROCHEMISTRY

Chairperson – Professor Madalina Tudorache, University of Bucharest, Romania

14.30

OP-II-1 **Antonov D.**[1], Fedotov A.[1], Tsodikov M.V.[1], Yaroslavtsev A.[1], Uvarov V.[2]

ROLE OF ALUMINUM IN Ni-Co STRUCTURED CATALYST FOR DRY AND STEAM REFORMING OF METHANE; HYBRID REACTOR FOR SYNGAS AND HYDROGEN CO-PRODUCTION

[1]*A.V. Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*

[2]*Institute of Structural Macrokinetics and Materials Science RAS, Chernogolovka, Russia*

14.50

OP-II-2 **Westerhof R.,** Marathe P., Kersten S.

THE INTERPLAY BETWEEN MASS/HEAT TRANSFER AND CHEMISTRY IN LIGNIN FAST PYROLYSIS

University of Twente, Enschede, The Netherlands

15.10

OP-II-3 **Arinina M.P.,** Malkin A.Ya.

COMPOSITIONAL DEPENDENCE OF VISCOSITY FOR CRUDE OILS

A.V. Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia

15.30

OP-II-4 **Kolb G.,** Pennemann H., Schuerer J.

CONVERSION OF PYROLYSIS OIL TO SYNTHESIS GAS THROUGH AUTOTHERMAL REFORMING OPERATED IN A MINIPLANT IN AN MODULAR CONTAINERISED ENVIRONMENT

Fraunhofer ICT-IMM, Mainz, Germany

15.50

OP-II-5 **Deliy I.**[1,2], Shamanaev I.[1], Antonov I.[1,2], Gerasimov E.[1,2], Pakharukova V.[1,2], Bukhtiyarova G.[1]

DEVELOPMENT OF THE BIFUNCTIONAL Ni-PHOSPHIDE CATALYSTS FOR METHYL PLAMITATE HYDRODEOXYGENATION

[1]*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

[2]*Novosibirsk State University, Novosibirsk, Russia*

16.10 ***Coffee break***

September 4, Monday, 16.30 – 18.10
MARE Hall

ORAL PRESENTATIONS

Section V. CATALYSIS FOR ENVIRONMENT AND SUSTAINABILITY

Chairperson – Professor Dr. Mario Roberto Meneghetti, Federal University of Alagoas, Maceió, Brazil

16.30
OP-V-1 Hu J., Galvita V.V., Poelman H., Marin G.B.
CO_2 UTILIZATION VIA AUTO-THERMAL CATALYST-ASSISTED CHEMICAL LOOPING
Ghent University, Ghent, Belgium

16.50
OP-V-2 Dosa M., Andana T., Bensaid S., Fino D., Piumetti M., Pirone R., Russo N.
EFFECT OF MORPHOLOGY OF NANOSTRUCTURED CERIA-BASED CATALYSTS FOR THE OXIDATION OF CO, SOOT AND NO
Politecnico di Torino, Torino, Italy

17.10
OP-V-3 Belinskaya N.S., Frantsina E.V., Lutsenko A.S., Popova N.V., Ivanchina E.D.
EVALUATION OF CATALYST DEACTIVATION DEGREE IN THE PROCESS OF DIESEL FUEL DEWAXING
National Research Tomsk Polytechnic University, Tomsk, Russia

17.30
OP-V-4 Snytnikov P.[1,2,3], Aghayan M.[4], Rubio-Marcos F.[5], Potemkin D.[1,2], Uskov S.[1,2], Hussainova I.[4,6], Suknev A.[1], Kovalyov E.[1], Paukshtis E.[1,2], Bal'zhinimaev B.[1], Sobyanin V.[1]
THE MESOPOROUS FIBROUS ALUMINA SUPPORTED TRANSITION METAL-BASED MATERIAL: SYNTHESIS, STRUCTURE AND CATALYTIC PROPERTIES IN CARBON DIOXIDE METHANATION, METHANE STEAM REFORMING AND DEEP OXIDATION REACTIONS
[1]*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*
[2]*Novosibirsk State University, Novosibirsk, Russia*
[3]*UNICAT Ltd., Novosibirsk, Russia*
[4]*Tallinn University of Technology, Tallin, Estonia*
[5]*Instituto de Cerámica y Vidrio (ICV-CSIC), Madrid, Spain*
[6]*ITMO University, St. Petersburg, Russia*

17.50
OP-V-5 Galletti C., Deorsola F.A., Pirone R.
MnO_x-TiO_2 CATALYSTS FOR NO_x SCR AT LOW TEMPERATURE
Politecnico di Torino, Torino, Italy

19.00 Welcome Reception

September 5, Tuesday

MARE Hall

PLENARY LECTURES

Chairperson – Professor Donato Aranda, Greentec-Federal University of Rio de Janeiro, Brazil

9.00

PL-3 Professor Erik Herres

University of Groningen, the Netherlands

VALORIZATION OF SOLID BIOMASS RESIDUES (LIGNINS AND HUMINS) USING CATALYTIC APPROACHES

10.00

PL-4 Professor Jose A. Lopez-Sanchez

University of Liverpool, UK

UNCONVENTIONAL CATALYTIC ROUTES FOR THE VALORISATION OF BIOMASS USING LIGHT AND MICROWAVES

11.00 – 11.30 ***Coffee break***

KEYNOTE LECTURES

Chairperson – Professor Simoni Plentz Meneghetti, Federal University of Alagoas, Maceió, Brazil

11.30

KL-3 Professor Mark Tsodikov, Arapova O., Konstantinov G., Chistyakov A.

A.V. Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia

PECULIARITIES OF POISONING DEGRADATION AND PLASMA-CATALYTIC LIGNIN REFORMING UNDER MICROWAVE IRRADIATION

12.00

KL-4 Professor Francesco Frusteri, Cannilla C., Bonura G.

Institute CNR-ITAE "Nicola Giordano", Messina, Italy

DME SYNTHESIS BY CO_2 HYDROGENATION ON HYBRID CATALYTIC SYSTEMS

12.30-14.30 ***Lunch***

September 5, Tuesday, 14.30 – 16.10
MARE Hall

ORAL PRESENTATIONS

Section III. CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION

Chairperson – Professor Alberto Ricardo Albis Arrieta, Universidad del Atlántico, Barranquilla, Colombia

14.30
OP-III-8 Donato A. G. Aranda[1], Gustavo D. Machado[2], João M. A. R. Almeida[1]
RECENT TRENDS IN BRAZILIAN BIODIESEL PRODUCTION
[1]Federal University of Rio de Janeiro, Brazil
[2]Federal University of Technology - Paraná, Brazil

14.50
OP-III-9 Soares R.R., Souza K.M., Fontes M.C.
HYDROTHERMAL STEARIC ACID DECARBOXYLATION OVER (1% wt. Pd)-SUPPORTED (C, SiO_2, Al_2O_3 or Nb_2O_5) CATALYSTS
Federal University of Uberlandia, Uberlandia, Brazil

15.10
OP-III-10 Ail S.S., Benedetti V., Baratieri M.
COMBUSTION SYNTHESIZED COBALT CATALYSTS FOR FISCHER TROPSCH SYNTHESIS
Free University of Bozen-Bolzano, Bolzano, Italy

15.30
OP-III-11 Sulman E., Stepacheva A., Migunova E., **Matveeva V.G.,** Sulman M.
Pd-CONTAINING CATALYSTS IN FATTY ACIDS CONVERSION
Tver State Technical University, Tver, Russia

15.50
OP-III-12 Tomasek S., Varga Z. , Holló A., Hancsók J.
PRODUCTION OF JET FUEL CONTAINING MOLECULES OF HIGH HYDROGEN CONTENT
University of Pannonia, Veszprém, Hungary

16.10 ***Coffee break***

16.30 ***Excursion to Rimini***

September 5, Tuesday, 14.30 – 16.10
SOLE Hall

ORAL PRESENTATIONS
Section II. BIOMASS DERIVATIVES IN PETROCHEMISTRY

Chairperson – Professor Dr. Gunther Kolb, Fraunhofer ICT-IMM, Mainz, Germany

14.30
OP-II-6 **Yabe T.,** Mitarai K., Ogo S., Sekine Y.
LOW-TEMPERATURE CATALYTIC SYNGAS PRODUCTION FROM BIO-METHANE OVER La DOPED Ni/ZrO_2 CATALYST IN AN ELECTRIC FIELD
Waseda University, Tokyo, Japan

14.50
OP-II-7 **Pavlova S.[1],** Arapova M.[1], Sadykov V.[1,2], Larina T.[1], Rogov V.[1,2], Krieger T.[1], Smorygo O.[3]
DESIGN OF STRUCTURED CATALYSTS FOR ETHANOL STEAM REFORMING BASED ON NANOCOMPOSITE ACTIVE COMPONENTS AND OPEN CELL FOAM SUPPORTS
[1]*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*
[2]*Novosibirsk State University, Novosibirsk, Russia*
[3]*Institute of Powder Metallurgy, Minsk, Belarus*

15.10
OP-II-8 Chalov K., Lugovoy Y., Sulman E., Kosivtsov Y., **Shimanskaya E.**
CO-PYROLYSIS OF OIL-SLIMES AND BIOMASS
Tver State Technical University, Tver, Russia

15.30
OP-II-9 **Vlasova E.,** Deliy I. , Aleksandrov P., Bukhtiyarova G.
A DUAL-BED CATALYST SYSTEM FOR ULSD PRODUCTION FROM THE MIXTURE OF RAPESEED OIL AND SRGO
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

15.50
OP-II-10 **Venderbosch R.[1],** Mirodatos C.[2], Schuurman Y.[2], Jordan E.[3], Wellach S.[3], Bykova M.[4], Yuste Pilar R.[5]
CO-FEEDING PYROLYSIS LIQUIDS WITH CRUDE OIL DISTILLATES IN FCC UNIT
[1]*BTG Biomass Technology Group BV, Enschede, The Netherlands*
[2]*Institute of Research on Catalysis and Environment in Lyon, Villeurbanne, France*
[3]*Grace GmbH & Co, Maryland, Germany*
[4]*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*
[5]*Repsol SA, Madrid, Spain*

16.10 ***Coffee break***

16.30 ***Excursion to Rimini***

September 6, Wednesday

MARE Hall

PLENARY LECTURES

Chairperson – Professor Claude Mirodatos, Institute of Research on Catalysis and Environment in Lyon, Villeurbanne, France

9.00

PL-5 Dr. Jean-François Joly

IFP Energies nouvelles, Lyon, France

FUELS AND CHEMICALS PRODUCTION FROM BIOMASS: SOME SCIENTIFIC CHALLENGES FOR ACCELERATING INNOVATION AND PROCESS DEVELOPMENT

10.00

BRIEFING: BIORENEWABLES IN OIL REFINERIES - PROS & CONS

11.00 – 11.30 ***Coffee break***

KEYNOTE LECTURES

Chairperson – Professor Erik Heeres, University of Groningen, The Netherlands

11.30

KL-5 Professor Dr. S.R.A. Kersten

University of Twente Groningen, Enschede, The Netherlands

RESEARCH AND EVALUATION OF BIOMASS PYROLYSIS

12.00

KL-6 Professor Boris Kuznetsov

Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia

DEVELOPMENT OF NEW INTEGRATED CATALYTIC PROCESSES OF LIGNOCELLULOSIC BIOMASS VALORIZATION INTO VALUABLE CHEMICAL PRODUCTS

12.30-14.30 ***Lunch***

September 6, Wednesday, 15.30 – 16.30

MARE Hall

Chairperson – Professor Rodger Beatson, British Columbia Institute of Technology, Burnaby, Canada

PLENARY LECTURE

14.30
PL-6 Professor David Chiaramonti
University of Florence, Italy
INDUSTRIAL-SCALE PYROLYSIS FOR ENERGY AND PRODUCTS: WHICH OPPORTUNITIES TO PRIORITIZE?

ORAL PRESENTATIONS

Section IV. BIO-PHOTO-/ELECTRO-CATALYTIC CONVERSION OF RENEWABLES

15.30
OP-IV-1 Tudorache M., Opris C., Parvulescu V.I.
VALORIZATION OF LIGNIN RESIDUES - BIOCATALYTIC OXY-POLYMERIZATION OF MONO-/OLIGO-LIGNOLS LEADING TO ARTIFICIAL LIGNIN STRUCTURES
University of Bucharest, Bucharest, Romania

15.50
OP-IV-2 El-Alami W.[1], Rodríguez J.[2], El-Azzouzi M.[2]
PHOTOCATALYTIC ACTIVITY, INFLUENCE OF THE STRUCTURE OF TiO_2 AND ITS SURFACE PROPERTIES
[1]*University of Mohamed V Agdal, Laboratory of Chemistry of Materiaux, Nanomateriaux and Environment, Robat, Morocco*
[2]*Laboratory of Environment, Madrid, Spain*

16.10
OP-IV-3 Alenezi K.
ELECTROCATALYTIC PRODUCTION OF HYDROGEN USING IRON SULFUR CLUSTER
University of Hail, Kingdom of Saudi Arabia

16.30 ***Coffee break***

Poster session

September 6, Wednesday, 15.30 – 16.30

SOLE Hall

ORAL PRESENTATIONS

Section II. BIOMASS DERIVATIVES IN PETROCHEMISTRY

Chairperson – Dr. Shuhei Ogo, Waseda University, Tokyo, Japan

15.30

OP-II-11 **Pavliuk M.[1],** Cieślak A.[2], D'Amario L.[1], Abdellah M.[1], Pullen S.[1], Föhlinger J.[1], Budinská A.[1], Fernandes D.[1], Sokołowski K.[2], Rybinska U.[1], Mamedov F.[1], Ott S.[1], Hammarström L.[1], Edvinsson T.[1], Lewiński J.[2,3], Sá J.[1,2]

PHOTOCATALYTIC NANO-HYBRID SYSTEM FOR H_2 PRODUCTION

[1]*Uppsala University - Ångström Laboratory, Uppsala, Sweden*

[2]*Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland*

[3]*Warsaw University of Technology, Warsaw, Poland*

15.50

OP-II-12 **Chapelliere Y.[1]**, Tuel A.[1], Mirodatos C.[1], Schuurman Y.[1], Wellach S.[2], Jordan E.[2]

FCC OF UPGRADED PYROLYSIS LIQUIDS MIXED WITH CRUDE OIL DISTILLATES: COMBINED STRATEGIES FOR IMPROVING BIO-FUELS YIELDS AND QUALITY

[1]*Institute of Research on Catalysis and Environment in Lyon, Villeurbanne, France*

[2]*Grace GmbH & Co, Maryland, Germany*

16.10

OP-II-13 **Mironenko O.O.[1],** Sosnin G.A.[1,2], Yeletsky P.M.[1], Yakovlev V.A.[1,2]

STRUCTURE FEATURES OF Mo-BASED DISPERSED CATALYSTS IN HYDROCRACKING AND STEAM CRACKING OF HEAVY OIL

[1]*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

[2]*Novosibirsk State University, Novosibirsk, Russia*

16.30 ***Coffee break***

Poster session

September 7, Thursday, 09.40 – 11.00
MARE Hall

ORAL PRESENTATIONS

Section III. CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION

Chairperson – Dr. Srinivas Darbha, National Chemical Laboratory, Pune, India

9.40
OP-III-13 **Tóth O.,** Holló A., Hancsók J.
QUALITY IMPROVEMENT OF WASTE POLYOLEFIN ORIGINATED GAS OIL FRACTIONS ON TRANSITION METAL/SUPPORT CATALYST
University of Pannonia, Veszprém, Hungary

10.00
OP-III-14 **Zuas O.,** Budiman H., Mansur D.
GC-TCD FOR THE MEASUREMENT OF COMPONENT BY-PRODUCT OF CATALYTIC HYDRODEOXYGENATION OF BIO-OIL: TOWARD OBTAINING REALIABLE ANALYTICAL DATA
Research Centre for Metrology-Indonesian Institute of Sciences, Banten, Indonesia

10.20
OP-III-15 **Yakovlev V.A.**[1,2], Alekseeva M.V.[1,2], Rekhtina M.A.[1], Smirnov A.A.[1,2], Khromova S.A.[1], Venderbosch R.H.[3]
STABLE CATALYST – THE KEY TO 2nd GENERATION BIOFUELS
[1]*Boreskov Institute of Catalysis, Novosibirsk, Russia*
[2]*Novosibirsk State University, Novosibirsk, Russia*
[3]*Biomass Technology Group B.V., Enschede, The Netherlands*

10.40
OP-III-16 Isa Y., **Jula S.B.**
PREDICTING ZSM-5 PROPERTIES AND ACTIVITY IN CONVERSION OF ALCOHOLS TO FUEL RANGE HYDROCARBONS; AN ARTIFICIAL INTELLIGENCE APPROACH
Durban University of Technology, Durban, South Africa

11.00 ***Coffee break***

September 7, Thursday, 09.40 – 11.00
SOLE Hall

ORAL PRESENTATIONS

Section V. CATALYSIS FOR ENVIRONMENT AND SUSTAINABILITY

Chairperson – Dr. Ail Snehesh Shivananda, Free University of Bozen-Bolzano, Bolzano, Italy

9.40

OP-V-6 Potemkin D.I.[1,2], Filatov E.Y.[1,3], Zadesenets A.V.[1,3], Snytnikov P.V.[1,2], Sobyanin V.A.[2]

CO PROX on Pt-M and Pt-MOx (M = Fe, Ni, Co) MODEL CATALYSTS: THE ORIGIN OF SYNERGETIC EFFECT

[1]Novosibirsk State University, Novosibirsk, Russia

[2]Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

[3]Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia

10.00

OP-V-7 Chen X.[1,2], Xie Z.[2], Zhu Y.[3], Wang H.[1]

GROWTH OF GRAPHITIC CARBON NITRIDE NANOSHEET ON TiO_2 MESOPOROUS SPHERES WITH HIGHLY IMPROVED PHOTOCATALYTIC ACTIVITY UNDER VISIBLE LIGHT IRRADIATION

[1]Monash University, Clayton, Victoria-Melbourne, Australia

[2]CSIRO Manufacturing, Clayton South, Victoria - Melbourne, Australia

[3]Royal Melbourne Institute of Technology, Melbourne, Australia

10.20

OP-V-8 Isaeva V.[1,2], Chernyshev V.[3], Tarasov A.[1,2], Kustov L.[1,3]

CO_2 CONVERSION IN LIQUID HYDROCARBONS OVER Co NANOPARTICLES EMBEDDED IN METAL-ORGANIC MIL-53(Al) MATRIX

[1]National University of Science and Technology "MISiS", Moscow, Russia

[2]N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia

[3]M.V. Lomonosov Moscow State University, Moscow, Russia

10.40

OP-V-9 Deorsola F.A., Galletti C. , Bensaid S., Russo N.

STUDY ON MESOPOROUS-SUPPORTED CATALYSTS FOR SIMULTANEOUS CO_2 and STEAM REFORMING OF BIOGAS

Politecnico di Torino, Torino, Italy

11.00 ***Coffee break***

September 7, Thursday, 11.30 – 12.30
MARE Hall

ORAL PRESENTATIONS

Section IV. BIO-PHOTO-/ELECTRO-CATALYTIC CONVERSION OF RENEWABLES

Chairperson – Professor Vadim Yakovlev, Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

11.30

OP-IV-4 Lakina N., Petrova A., Sulman E., **Sulman A.**, Sulman M.

THE USE OF ENZYMES CULTURES OF FUNGI PENICILLIUM VERRUCULOSUM FOR HYDROLYTIC PROCESSING OF PEAT

Tver State Technical University, Tver, Russia

11.50

OP-IV-5 **Golovko V.[1],** Anderson D.[1], Ovoshchnikov D.[1], Donoeva B.[1], Ruzicka Y.[1], Abu Bakar F.[1], Adnan R.[1], Andersson G.[2], Metha G.[3], Kimoto K.[4], Nakayama T.[4], Marshall A.[5], Steven J.[5], Padayachee D.[5], Hashemizadeh I.[5], Yip A.[5]

CONTROLLED FABRICATION OF CATALYSTS FOR GREEN CHEMICAL PROCESSES

[1]*University of Canterbury, Christchurch, New Zealand*

[2]*Flinders Centre for NanoScale Science and Technology, Flinders University, Adelaide, Australia*

[3]*University of Adelaide, Australia*

[4]*National Institute for Materials Science (NIMS), Tsukuba, Japan*

[5]*CAPE, University of Canterbury, Christchurch, New Zealand*

12.10 ***Closing***

12.30 ***Lunch***

14.30 Excursion to San Marino

POSTER PRESENTATIONS

PP-1 **Aleksandrova T.N.,** Aleksandrov A., Nikolaeva N.
INVESTIGATION OF THE INFLUENCE OF ULTRAVIOLET AND ACOUSTIC EFFECTS ON THE PROPERTIES OF HEAVY OIL
Saint-Petersburg Mining University, Saint-Petersburg, Russia

PP-2 **Babayeva F.A.,** Akhmedova R., Ibragimov H., Abasov S., Rustamov M.
CATALYST FOR OBTAINING MOTOR FUEL FROM METHANOL
Institute of Petrochemical Processes of Azerbaijan NAS, Baku, Azerbaijan

PP-3 **Bachurikhin A.L.**[1], Efendiev M.[2]
ELECTROMAGNETIC INSTALLATION FOR NEUTRALIZATION OF WASTEWATER PRODUCTION OF OLIVE OILS
[1]*Gubkin I.M. Russian State University of Oil and Gas, Moscow, Russia*
[2]*OJSC DagNefteProduct, Makhachkala, Russia*

PP-4 Yemelyanova V.S., Dossumova B.T., Aibassov Y.Z., **Baizhomartov B.B.,** Shakiyev E.M.
DEVELOPMENT OF ZEOLITE-LIKE MAGNETICALLY CONTROLLED CATALYSTS BASED ON ALUMINOSILICATE MICROSPHERES OF FLY ASH FROM THERMAL POWER STATIONS
Research Institute of New Chemical Technologies and Materials, Almaty, Kazakhstan

PP-5 **Boudaoud N.[1],** Miloudi H.[1], Tayeb A.[1], Ureña-Amate M.[2], Bendeddech A.[1]
REMOVAL OF THE INSECTICIDE METHOMYL FROM WATER TO MAGNESIUM-ALUMINUM-CARBONATE LAYERED DOUBLE HYDROXIDES
[1]*University of Algeria, Oran, Algeria*
[2]*University of Almeria, Almeria, Spain*

PP-6 **Damiyine B.,** Abdellah G., Boussen R.
ADSORPTION OF RHODAMINE B DYE ONTO EXPANDED PERLITE FROM AQUEOUS SOLUTION: KINETICS, EQUILIBRIUM AND THERMODYNAMICS
Mohammed University, Rabat, Morocco

PP-7 **Di Francesco D.,** Subbotina E., Rautiainen S., Samec J.
Pd/C-PMHS BINARY SYSTEM AS A NEW APPROACH FOR Bio-OIL VALORIZATION
Stockholm University, Stockholm, Sweden

PP-8 **Djouambi N.,** Messalhi A., Bougheloum C.
PHOTOCATALYTIC DEGRADATION OF THIOPHENE DERIVATIVES ON TiO_2
University BADJI-Mokhtar, Annaba, Algeria

PP-9 **Georgiev V.,** Iliev V., Batakliev T., Karakashkova P., Anachkov M., Rakovsky S.
ENHANCEMENT OF THE ACTIVITY OF TiO_2 – BASED CATALYSTS BY DOPING WITH NOBLE METALS, INVOLVING OZONE IN PHOTOCATALYTIC DEGRADATION OF ADIPIC ACID
Institute of Catalysis, Bulgarian Academy of Science, Sofia, Bulgaria

PP-10 **Glotov A.P.**[1,2], Zolotukhina A.V.[2], Stavitskaya A.V.[1], Ivanov E.V.[1], Vinokurov V.A.[1], Maksimov A.L.[2], Lvov Y.M.[1,3]
CATALYTIC ACTIVITY OF Ru-CONTAINING HALLOYSITE CATALYSTS IN HYDROGENATION OF AROMATIC COMPOUNDS UNDER TWO-PHASE CONDITIONS
[1]*Gubkin Russian State University of Oil and Gas, Moscow, Russia*
[2]*M.V. Lomonosov Moscow State University, Moscow, Russia*
[3]*Louisiana Tech University, Ruston, USA*

PP-11 **Gomez Bernal H.**[1], Funaioli T.[1], Ricciardi A.[1], Bertolucci E.[2], Antonetti C.[1],Raspolli Galletti A.M.[1]
PALLADIUM DOPED MAGNETIC NANOCATALYSTS FOR SUSTAINABLE 5-HYDROXYMETHYLFURFURAL OXIDATION
[1]*Università di Pisa, Pisa, Italy*
[2]*Scuola Normale Superiore di Pisa, Pisa, Italy*

PP-12 **Hadad C.[1],** Echeverry A.[1], Ferraro F.[2], Osorio E.[2]
TETRAMER OF GOLD-PLATINUM AS A CATALYST FOR THE DEHYDROGENATION OF AMMONIA-BORAN
[1]*Universidad de Antioquia, Medellín, Colombia*
[2]*Universidad Católica Luis Amigó, Medellín, Colombia*

PP-13 **Isupova L.,** Yakovleva I., Gerasimov E., Sutormina E.
$La_{1-x}Ca_xCoO_{3-\delta}$ PEROVSKITES FOR DEEP OXIDATION
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-14 **Karakashkova P.A.[1],** Batakliev T.[1], Georgiev V.[1], Serga V.[2], Anachkov M.[1], Rakovsky S.[1]
EFFECT OF THE SUPPORT ON THE PERFORMANCE OF Ni/Pd BASED ON OZONE DECOMPOSITION CATALYSTS
[1]*Institute of Catalysis, Bulgarian Academy of Science, Sofia, Bulgaria*
[2]*Riga Technical University, Institute of Inorganic Chemistry, Latvia*

PP-15 **Kuznetsov B.,** Sudakova S., Garyntseva N., Kuznetsova S., Levdansky V., Levdansky A., Pestunov A.
GREEN CATALYTIC BIOREFINERY OF LARCH-WOOD BIOMASS WITH OBTAINING MICROCRYSTALLINE CELLULOSE AND FINE CHEMICALS
Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia

PP-16 Manaenkov O., Matveeva V.G., Kislitza O., **Sulman E.,** Ratkevich E., Sulman M.
MAGNETICALLY RECOVERABLE CATALYSTS FOR CELLULOSE HYDROGENOLYSIS
Tver State Technical University, Tver, Russia

PP-17 **Massalimova B.[1],** Tungatarova S.[2], Nurlybayeva A.[1], Matniyazova G.[1], Kalmakhanova M.[1]
OXIDATIVE CONVERSION OF LIGHT ALKANES TO NEW COMPOSITE MATERIALS
[1]*M.Kh. Dulaty Taraz State University, Taraz, Kazakhstan*
[2]*D.V. Sokolsky Institute of Fuel, Catalysis and Electrochemistry, Almaty, Kazakhstan*

PP-18 Luis C. F. Oliveira, Werlesson R. C. Trindade, Rusiene M. de Almeida, Janaína H. Bortoluzzi, Simoni M. P. Meneghetti, **Mario R. Meneghetti**
OXIDATION OF GLYCEROL USING GOLD NANOPARTICLES ENCAPSULATED WITH CARBON AS CATALYST
Institute of Chemistry and Biotechnology, University Federal of Alagoas, Maceió, Brazil

PP-19 **Nasullaev Kh.A.[1,2],** Yunusov M.P.[2], Sayidov U.Kh.[3], Mamatkulov Sh.I.[2], Gulomov Sh.T.[2], Kadirova Sh.A[1]

PREPARATION OF NANOCATALYSTS IN A POROUS Al_2O_3 MATRIX

[1]M. Ulugbek National University of Uzbekistan, Tashkent, Uzbekistan
[2]A. Sultanov Uzbek Chemical-Pharmaceutical Research Institute, Tashkent, Uzbekistan
[3]NHC «UZBEKNEFTEGAZ», Tashkent, Uzbekistan

PP-20 **Nivangune N.[1],** Kelkar A.[1], Ranade V.[2]

SYNTHESIS OF DIMETHYL CARBONATE BY TRANSESTERIFICATION OF CYCLIC CARBONATE WITH METHANOL USING SOLID BASE CATALYSTS

[1]Chemical Engineering and Process Development Division, National Chemical Laboratory, Pune
[2]School of Chemistry and Chemical Engineering, Queen's University Belfast, Northern Ireland, United Kingdom

PP-21 **Pai Z.P.,** Selivanova N.V., Berdnikova P.V.

CATALYTIC PROCESSES OF CARBOXYLIC ACIDS PRODUCTIONS FROM THE RENEWABLE RAW MATERIALS

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-22 **Sequeiros A.**[1], Puylaert P.[2], Hinze S.[2], de Vries J.G.[2], Labidi J.[1]

FORMATION OF AROMATIC ACIDS VIA OXIDATIVE CARBONYLATION OF LIGNIN MONOMERS

[1]University of the Basque Country, San Sebastian, Spain
[2]Leibniz Institute for Catalysis, Rostock, Germany

PP-23 **Sfirloaga P.,** Ursu D., Taranu B., Poienar M., Dabici A., Vlazan P.

PHOTOCATALYTIC ACTIVITY OF Pd-doped $LaMnO_3$ SYNTHESIZED AT LOW TEMPERATURE

National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, Romania

PP-24 Shakiyeva T.V., Yemelyanova V.S., **Dossumova B.T.,** Aibassov Y.Z., Baizhomartov B.B.

CATALYTIC PURIFICATION OF WASTE GASES FROM SULFUR IMPURITIES IN THE PRESENCE OF MODIFIED CENOSPHERES OF THERMAL POWER STATIONS

Research Institute of New Chemical Technologies and Materials, Almaty, Kazakhstan

PP-25 **Sohn J.**

THE EFFECT OF ADDITION OF METAL SALTS ON SUPERCRITICAL WATER GASIFICATION WITH GLYCEROL FOR HYDROGEN PRODUCTION

Chonbuk National University, Jeonju, South Korea

PP-26 **Sulman M.,** Sulman E., Grigorev M., Antonov E., Grebenyuk A.

CATALYTIC HYDROGENATION OF D-XYLOSE to D-XYLITOL: TEMPERATURE FACTOR

Tver State Technical University, Tver, Russia

PP-27 **Ushakov A.E.,** Markov A.A., Shmakov A.N., Patrakeev M.V., Leonidov I.A., Kozhevnikov V.L.

EFFECTS OF Ni-M_2O_3 (M: Cr, Mn, Fe) CATALYSTS ON POM PARAMETERS IN MEMBRANE REACTOR

Institute Solid State Chemistry, Yekaterinburg, Russia

PP-28 **Vlazan P.[1],** Rus F.[1], Poienar M.[1], Stoia M.[2], Linul P.[1], Ursu D.[1], Sfirloaga P.[1]
SYNTHESIS OF Zr^{4+} and Bi^{3}+ DOPED $NaNbO_3$ PEROVSKITE MATERIALS AND THE STUDY OF CATALYTIC ACTIVITY
[1]National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, Romania
[2]Politehnica University of Timisoara, Timisoara, Romania

PP-29 **Yemelyanova V.S.,** Shakiyeva T.V., Dossumova B.T., Baizhomartov B.B.
OXIDATION OF PHENOL IN THE PRESENCE OF ENZYME-LIKE CATALYSTS IMMOBILIZED ON MAGNETIC NANOPARTICLES
Research Institute of New Chemical Technologies and Materials, Almaty, Kazakhstan

PP-30 **Zhizhina E.G.**, Gogin L.
ONE-POT PROCESSES OF ALKYL-SUBSTITUTED ANTHRAQUINONES SYNTHESES IN THE PRESENCE OF HETEROPOLY ACID SOLUTIONS AS BIFUNCTIONAL CATALYSTS
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

VIRTUAL PRESENTATIONS

VP-1 Burlutskiy N.P., Jdanov A.A., **Popok E.V.**
STUDY OF CATALYTIC ACTIVITY OF ULTRAFINE IRON POWDERS IN LIQUID HYDROCARBONS SYNTHESIS
National Research Tomsk Polytechnic University, Tomsk, Russia

VP-2 Dossumov K.[1], **Yergaziyeva G.[2]**, Myltykbayeva L.[1], Asanov N.A.[2], Telbayeva M.[2]
CATALYTIC CONVERSION OF BIOGAS TO SYNTHESIS GAS
[1]Al-Farabi Kazakh National University, Centre of Physical and Chemical Methods of Investigation and Analysis, Almaty, Kazakhstan
[2]The Institute of Combustion Problems, Almaty, Kazakhstan

VP-3 Dossumov K.[1], **Yergaziyeva G.[2]**, Churina D.[1], Tayrabekova S.[1], Tulibayev E.[2]
HYDROGEN PRODUCTION BY ETHANOL CONVERSION
[1]Al-Farabi Kazakh National University, Centre of Physical and Chemical Methods of Investigation and Analysis, Almaty, Kazakhstan
[2]The Institute of Combustion Problems, Almaty, Kazakhstan

VP-4 **Kalenchuk A.N.[1],** Bogdan V.I.[2]
PRODUCTION OF CHEMICALLY PURE HYDROGEN BY THE HYDROGENATION-DEHYDROGENATION REACTIONS OF AROMATIC COMPOUNDS
[1]M.V. Lomonosov Moscow State University, Moscow, Russia
[2]N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia

VP-5 **Khramenkova A.V.**, Ariskina D., Bespalova Z.
A STUDY OF THE CATALYTIC PROPERTIES OF COMPOSITE OXIDE MATERIALS OBTAINED BY TRANSIENT ELECTROLYSIS
Platov South-Russian State Polytechnic University, Novochserkask, Russia

VP-6 **Koklin A.E.[1]**, Kazak V.O.[2], Mishanin I.I.[2], Bogdan V.I.[1,2]
CARBON DIOXIDE HYDROGENATION OVER Fe/K/C and Fe-Cu/K/C CATALYSTS UNDER SUPERCRITICAL CONDITIONS
[1]N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia
[2]M.V. Lomonosov Moscow State University, Moscow, Russia

VP-7 **Omarov S.O.**
ISOBUTANE ALKYLATION WITH ISOBUTENE ON SOLID ACID MoO_3/ZrO_2 CATALYSTS
St. Petersburg State Institute of Technology (Technical University), St. Petersburg, Russia

VP-8 Pasa S.[1], Aydemir M.[2], **Rafikova K.S.[3,4]**, Kussainova M.[3], Zhunusbekova M.[3], Yegis T.[3], Alpysbay L.[4]
SYNTHESIS OF NOVEL BORON COMPLEXES BL BASED ON O DONOR ATOM LIGANDS - 2,2'-(1E,1'E)-(ethane-1,2-diylbis(azan-1-yl-1-ylidene))bis(methan-1-yl-1-ylidene)diphenol (L1)
[1]Afyon Kocatepe University, Afyonkarahisar, Turkey
[2]Dicle University, Diyarbakir, Turkey
[3]Kazakh-National Research Technical University named K.I. Satpayev, Almaty, Kazakhstan
[4]Kazakh-British Technical University, Almaty, Kazakhstan

VP-9 **Petrov A.Y. ,** Nefedova N.V., Sinitsin S.A., Vanchurin V.I.
MULTI-PURPOSE CATALYTIC PLATFORM, BASED ON STRUCTURALLY MODIFIED TRANSIENT METAL OXIDES
D. Mendeleyev University of Chemical Technology of Russia, Moscow, Russia