



**Preliminary 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 XIII EUROPEAN CONGRESS  
ON CATALYSIS: "A BRIDGE TO THE FUTURE"  
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**Conference Proceedings:  
Journal «Catalysis for Sustainable Energy» (de Gruyter Open access)**



## PLENARY LECTURES

**September 4, Monday, 9.00**

**PL-1** Professor Erik Herres

*University of Groningen, the Netherlands*

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

**September 4, Monday, 10.00**

**PL-2** Professor Sergei Varfolomeev

*Emanuel Institute of Biochemical Physics RAS, Russia*

**CHEMISTRY OF BIOMASS: NOVEL CATALYTICAL DEPOLYMERIZATION PROCESSES NOVEL BIOFUELS, NOVEL BIOPLASTICS**

**September 5, Tuesday, 9.00**

**PL-3** Professor Simoni Meneghetti

*Universidade Federal de Alagoas, Brazil*

**EXAMPLES OF CATALYTIC SYSTEMS ABLE TO BE APPLIED IN BIOREFINERIES**

**September 5, Tuesday, 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**

**September 6, Wednesday, 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**

**September 6, Wednesday, 14.30**

**PL-6** Professor David Chiaramonti

*University of Florence, Italy*

**INDUSTRIAL-SCALE PYROLYSIS FOR ENERGY AND PRODUCTS: WHICH OPPORTUNITIES TO PRIORITIZE?**

## KEYNOTE LECTURES

**September 4, Monday, 11.30**

**KL-1 Professor Dmitry Murzin**

*Åbo Akademi University, Turku, Finland*

**CATALYSIS BY BASES IN BIOMASS VALORIZATION**

**September 4, Monday, 12.00**

**KL-2 Professor Karen Wilson**

*Aston University, Birmingham, United Kingdom*

**DESIGNER CATALYSTS FOR BIOFUELS SYNTHESIS**

**September 5, Tuesday, 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**

**September 5, Tuesday, 12.00**

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

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

**DME SYNTHESIS BY CO<sub>2</sub> HYDROGENATION ON HYBRID CATALYTIC SYSTEMS**

**September 6, Wednesday, 11.30**

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

*University of Twente Groningen, Enschede, The Netherlands*

**RESEARCH AND EVALUATION OF BIOMASS PYROLYSIS**

**September 6, Wednesday, 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**

## ORAL PRESENTATIONS

### **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<sub>2</sub> 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, 14.30 – 15.30**

**Hall 1**

**Section I. CATALYSIS IN DENDROCHEMISTRY FOR VALUABLES PRODUCTION**

- OP-I-1** Ogo S.<sup>1</sup>, Okuno Y.<sup>1</sup>, Sekine H.<sup>1</sup>, Manabe S.<sup>1</sup>, Onda A.<sup>2</sup>, Sekine Y.<sup>1</sup>  
**DIRECT CATALYTIC CONVERSION OF CELLULOSE TO LIGHT HYDROCARBONS OVER Pt/NH<sub>4</sub>-USY ZEOLITE CATALYST AT LOW TEMPERATURE**  
<sup>1</sup>Waseda University, Tokyo, Japan  
<sup>2</sup>Kochi University, Kochi, Japan
- OP-I-2** Taran O.P.<sup>1,2</sup>, Sorokina K.N.<sup>1,3</sup>, Medvedeva T.B.<sup>1</sup>, Samoylova Y.V.<sup>1</sup>, Piligaev A.V.<sup>1</sup>, Parmon V.N.<sup>1,3</sup>  
**CELLULOSE BIREFINERY BASED ON COMBINED CATALYTIC AND BIOTECHNOLOGICAL APPROACH FOR PRODUCTION OF 5-HMF AND ETHANOL**  
<sup>1</sup>Borshkov Institute of Catalysis SB RAS, Novosibirsk, Russia  
<sup>2</sup>Novosibirsk State Technical University, Novosibirsk, Russia  
<sup>3</sup>Novosibirsk State University, Novosibirsk, Russia
- OP-I-3** Khlebnikova T., Pai Z., Yushchenko D., Mattsat Yu.  
**ENVIRONMENTALLY BENIGN CATALYTIC OXIDATION FOR FINE CHEMICALS SYNTHESIS**  
Borshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

**September 4, Monday, 15.30 – 18.00**

**Hall 1**

**Section III. CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION**

- OP-III-1** Donato A. G. Aranda<sup>1</sup>, Gustavo D. Machado<sup>2</sup>, João M. A. R. Almeida<sup>1</sup>  
**RECENT TRENDS IN BRAZILIAN BIODIESEL PRODUCTION**  
<sup>1</sup>Federal University of Rio de Janeiro, Brazil  
<sup>2</sup>Federal University of Technology - Paraná, Brazil
- OP-III-2** Albis Arrieta A.R., Carrera K., Vargas R., Vanegas M., López A., Piñeres I., Ortiz E.  
**CATALYTIC EFFECT OF CaO and Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> ON THE PYROLYSIS OF CASSAVA WASTE**  
Universidad del Atlántico, Barranquilla, Colombia

**16.10 Coffee break**

- OP-III-3** Darbha S., Janampelli S.  
**METAL OXIDE PROMOTED Pt/Al<sub>2</sub>O<sub>3</sub> CATALYSTS FOR NON-EDIBLE OIL-DERIVED 2nd GENERATION BIOFUELS**  
National Chemical Laboratory, Pune, India
- OP-III-4** Kondrasheva N.<sup>1</sup>, Yeremeyeva A.<sup>1</sup>, Nelkembbaum K.<sup>2</sup>, Kondrashev D.O.<sup>3</sup>  
**BIODIESEL PRODUCTION METHODS**  
<sup>1</sup>Saint-Petersburg Mining University, St.-Petersburg, Russia  
<sup>2</sup>Institute of Petroleum Chemistry and Catalysis RAS, Ufa, Russia  
<sup>3</sup>JSC «Gazprom Neft», St.-Petersburg, Russia

- OP-III-5** 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*
- OP-III-6** Sulman E., Lugovoy Y., Chalov K., Kosivtsov Y.  
**CATALYTIC APPROACHES FOR THE PROCESSING OF PYROLYSIS BIOMASS PRODUCTS**  
*Tver State Technical University, Tver, Russia*
- OP-III-7** Lopes M.<sup>1</sup>, Dussan K.<sup>2,3</sup>, Leahy J.<sup>1,4</sup>  
**DEHYDRATION OF CARBOHYDRATES INTO FURANIC PRODUCTS BY PROMOTED SULPHATED METAL OXIDES CATALYSTS**  
<sup>1</sup>*Carbolea Research Group, Chemical Sciences, University of Limerick, Limerick, Ireland*  
<sup>2</sup>*Mechanical Engineering, National University of Ireland Galway, Galway, Ireland*  
<sup>3</sup>*Research Centre for Marine and Renewable Energy, Galway, Ireland*  
<sup>4</sup>*Bernal Institute University of Limerick, Ireland*
- OP-III-8** Rautiainen S.<sup>1</sup>, Di Francesco D.<sup>1</sup>, Tungasmita D.N.<sup>2</sup>, Samec J.<sup>1</sup>  
**CATALYTIC FRACTIONATION OF LIGNOCELLULOSE USING NON-NOBLE METAL CATALYSTS**  
<sup>1</sup>*Stockholm University, Stockholm, Sweden*  
<sup>2</sup>*Chulalongkorn University, Bangkok, Thailand*
- OP-III-9** Sahani S., Madhu D., Banerjee S.  
**SYNTHESIS OF A HETEROGENEOUS CATALYST DERIVED FROM FISH-WASTES FOR PRODUCTION OF BIODIESEL**  
*Indian Institute of Technology Banaras Hindu University, Varanasi, India*

### **19.00 Welcome Reception**

**September 4, Monday, 14.30 – 16.10**  
**Hall 2**

### **Section II. BIOMASS DERIVATIVES IN PETROCHEMISTRY**

- OP-II-1** Antonov D.<sup>1</sup>, Fedotov A.<sup>1</sup>, Tsodikov M.V.<sup>1</sup>, Yaroslavtsev A.<sup>1</sup>, Uvarov V.<sup>2</sup>  
**ROLE OF ALUMINUM IN Ni-Co STRUCTURED CATALYST FOR DRY AND STEAM REFORMING OF METHANE; HYBRID REACTOR FOR SYNGAS AND HYDROGEN CO-PRODUCTION**  
<sup>1</sup>*A.V. Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*  
<sup>2</sup>*Institute of Structural Macrokineitics and Materials Science RAS, Chernogolovka, Russia*
- 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*
- OP-II-3** Sheshko T.F.<sup>1</sup>, Markova E.B.<sup>1</sup>, Kryuchkova T.A.<sup>1</sup>, Zimina V.D.<sup>1</sup>, Odintsova M.V.<sup>1</sup>, Yafarova L.V.<sup>2</sup>, Zvereva I.A.<sup>2</sup>  
**THE PREPARATION OF LIGHT OLEFINS OVER PEROVSKITE-TYPE SYSTEMS**  
<sup>1</sup>*RUDN University, Moscow, Russia*  
<sup>2</sup>*Saint-Petersburg State University, Saint-Petersburg, Russia*

**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*

**OP-II-5** Deliy I.<sup>1,2</sup>, Shamanaev I.<sup>1</sup>, Antonov I.<sup>1,2</sup>, Gerasimov E.<sup>1,2</sup>, Pakharukova V.<sup>1,2</sup>, Bukhtiyarova G.<sup>1</sup>

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

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

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

### **16.10 Coffee break**

**September 4, Monday, 16.30 – 18.00**

**Hall 2**

### **Section V. CATALYSIS FOR ENVIRONMENT AND SUSTAINABILITY**

**OP-V-1** Hu J., Galvita V.V., Poelman H., Marin G.B.

**CO<sub>2</sub> UTILIZATION VIA AUTO-THERMAL CATALYST-ASSISTED CHEMICAL LOOPING**

*Ghent University, Ghent, Belgium*

**OP-V-2** Cherkasov N.<sup>1,2</sup>, Rebrov E.<sup>1,2,3</sup>

**SELECTIVE HYDROGENATION OF MODEL BIO OIL COMPOUNDS OVER A Pd/SiO<sub>2</sub> CATALYST WALL-COATED IN A TUBE REACTOR**

<sup>1</sup>*University of Warwick, Coventry, United Kingdom*

<sup>2</sup>*Stoli Catalysts Ltd, Coventry, United Kingdom*

<sup>3</sup>*Tver State Technical University, Tver, Russia*

**OP-V-3** 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*

**OP-V-4** 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*

**OP-V-5** Chen Q.<sup>1</sup>, Wang J.<sup>1</sup>, Xu Q.<sup>2</sup>

**Ce-Mn MIXED OXIDES SUPPORTED ON BAUXITE RESIDUE (RED MUD) FOR LOW-TEMPERATURE NO REDUCTION WITH NH<sub>3</sub>**

<sup>1</sup>*Beijing University of Chemical Technology, Beijing, China*

<sup>2</sup>*Yancheng Institute Of Technology, Yancheng, China*

**OP-V-6 Snytnikov P.**<sup>1,2,3</sup>, Aghayan M.<sup>4</sup>, Rubio-Marcos F.<sup>5</sup>, Potemkin D.<sup>1,2</sup>, Uskov S.<sup>1,2</sup>, Hussainova I.<sup>4,6</sup>, Suknev A.<sup>1</sup>, Kovalyov E.<sup>1</sup>, Paukshtis E.<sup>1,2</sup>, Bal'zhinimaev B.<sup>1</sup>, Sobyenin V.<sup>1</sup>

**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**

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

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

<sup>3</sup>*UNICAT Ltd., Novosibirsk, Russia*

<sup>4</sup>*Tallinn University of Technology, Tallin, Estonia*

<sup>5</sup>*Instituto de Cerámica y Vidrio (ICV-CSIC), Madrid, Spain*

<sup>6</sup>*ITMO University, St. Petersburg, Russia*

**OP-V-7 Galletti C.,** Deorsola F.A., Pirone R.

**MnO<sub>x</sub>-TiO<sub>2</sub> CATALYSTS FOR NO<sub>x</sub> SCR AT LOW TEMPERATURE**

*Politecnico di Torino, Torino, Italy*

**19.00 Welcome Reception**



**September 5, Tuesday, 14.30 – 16.10**

**Hall 1**

**Section III. CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION**

- OP-III-10** Silveira A.C.<sup>1,2</sup>, Teles C.A.<sup>1,2</sup>, Rabelo-Neto R.<sup>2</sup>, Borges L.E.<sup>1</sup>, Noronha F.B.<sup>1,2</sup>  
**HYDRODEOXYGENATION OF PHENOL OVER SUPPORTED Ru CATALYSTS**  
<sup>1</sup>National Institute of Technology, Catalysis Division, Rio de Janeiro, Brazil  
<sup>2</sup>National Institute of Technology, Tamil Nadu, India
- OP-III-11** Soares R.R., Souza K.M., Fontes M.C.  
**HYDROTHERMAL STEARIC ACID DECARBOXYLATION OVER (1% wt. Pd)-SUPPORTED (C, SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub> or Nb<sub>2</sub>O<sub>5</sub>) CATALYSTS**  
Federal University of Uberlandia, Uberlandia, Brazil
- OP-III-12** Ail S.S., Benedetti V., Baratieri M.  
**COMBUSTION SYNTHESIZED COBALT CATALYSTS FOR FISCHER TROPSCH SYNTHESIS**  
*Free University of Bozen-Bolzano, Bolzano, Italy*
- OP-III-13** Sulman E., Stepacheva A., Migunova E., Matveeva V.G., Sulman M.  
**Pd-CONTAINING CATALYSTS IN FATTY ACIDS CONVERSION**  
*Tver State Technical University, Tver, Russia*
- OP-III-14** 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**

**Hall 2**

**Section II. BIOMASS DERIVATIVES IN PETROCHEMISTRY**

- OP-II-6** Yabe T., Mitarai K., Ogo S., Sekine Y.  
**LOW-TEMPERATURE CATALYTIC SYNGAS PRODUCTION FROM BIO-METHANE OVER La DOPED Ni/ZrO<sub>2</sub> CATALYST IN AN ELECTRIC FIELD**  
*Waseda University, Tokyo, Japan*
- OP-II-7** Pavlova S.<sup>1</sup>, Arapova M.<sup>1</sup>, Sadykov V.<sup>1,2</sup>, Larina T.<sup>1</sup>, Rogov V.<sup>1,2</sup>, Krieger T.<sup>1</sup>, Smorygo O.<sup>3</sup>  
**DESIGN OF STRUCTURED CATALYSTS FOR ETHANOL STEAM REFORMING BASED ON NANOCOMPOSITE ACTIVE COMPONENTS AND OPEN CELL FOAM SUPPORTS**  
<sup>1</sup>Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia  
<sup>2</sup>Novosibirsk State University, Novosibirsk, Russia  
<sup>3</sup>Institute of Powder Metallurgy, Minsk, Belarus
- 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*

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

**16.10 Coffee break**

**16.30 Excursion to Rimini**

**September 6, Wednesday, 15.30 – 16.10**

**Hall 1**

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

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

**CONTROLLED FABRICATION OF CATALYSTS FOR GREEN CHEMICAL PROCESSES**

<sup>1</sup>*University of Canterbury, Christchurch, New Zealand*

<sup>2</sup>*Flinders Centre for NanoScale Science and Technology, Flinders University, Adelaide, Australia*

<sup>3</sup>*University of Adelaide, Australia*

<sup>4</sup>*National Institute for Materials Science (NIMS), Tsukuba, Japan*

<sup>5</sup>*CAPE, University of Canterbury, Christchurch, New Zealand*

- OP-IV-2 El-Alami W.<sup>1</sup>**, Rodríguez J.<sup>2</sup>, EL-Azzouzi M.<sup>2</sup>

**PHOTOCATALYTIC ACTIVITY, INFLUENCE OF THE STRUCTURE OF TiO<sub>2</sub> AND ITS SURFACE PROPERTIES**

<sup>1</sup>*University of Mohamed V Agdal, Laboratory of Chemistry of Materiaux, Nanomateriaux and Environment, Rabat, Morocco*

<sup>2</sup>*Laboratory of Environment, Madrid, Spain*

- OP-IV-3 Khalaf A.**

**ELECTROCATALYTIC PRODUCTION OF HYDROGEN USING IRON SULFUR CLUSTER**

*University of Hail, Kingdom of Saudi Arabia*

**16.10 Coffee break**

**Poster session**

**September 6, Wednesday, 15.30 – 16.10**

**Hall 2**

**Section II. BIOMASS DERIVATIVES IN PETROCHEMISTRY**

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

**PHOTOCATALYTIC NANO-HYBRID SYSTEM FOR H<sub>2</sub> PRODUCTION**

<sup>1</sup>*Uppsala University - Ångström Laboratory, Uppsala, Sweden*

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

<sup>3</sup>*Warsaw University of Technology, Warsaw, Poland*

- OP-II-12 Chapelliere Y.<sup>1</sup>**, Tuel A.<sup>1</sup>, Mirodatos C.<sup>1</sup>, Schuurman Y.<sup>1</sup>, Wellach S.<sup>2</sup>, Jordan E.<sup>2</sup>

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

<sup>1</sup>*Institute of Research on Catalysis and Environment in Lyon, Villeurbanne, France*

<sup>2</sup>*Grace GmbH & Co, Maryland, Germany*

**OP-II-13 Mironenko O.O.**<sup>1</sup>, Sosnin G.A.<sup>1,2</sup>, Yeletsky P.M.<sup>1</sup>, Yakovlev V.A.<sup>1,2</sup>

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

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

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

**16.10 Coffee break**

**Poster session**

**September 7, Thursday, 09.20 – 11.00**

**Hall 1**

**Section III. CATALYTIC PROCESSES FOR BIOFUELS PRODUCTION**

- OP-III-15** 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*
- OP-III-16** 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*
- OP-III-17** Motevalizadeh S.F., Olya M., MsMaster W., Caruso R.  
**SULFATE FUNCTIONALIZED MESOPOROUS ZIRCONIUM TITANIUM OXIDE NANOSPHERES AS A SUPER-ACID CATALYST FOR EFFICIENT CONVERSION OF FRUCTOSE TO 5-HYDROXYLMETHYLFURFURAL**  
*The University of Melbourne, Melbourne, Australia*
- OP-III-18** Yakovlev V.A.<sup>1,2</sup>, Alekseeva M.V.<sup>1,2</sup>, Rekhtina M.A.<sup>1</sup>, Smirnov A.A.<sup>1,2</sup>, Khromova S.A.<sup>1</sup>, Venderbosch R.H.<sup>3</sup>  
**STABLE CATALYST – THE KEY TO 2<sup>nd</sup> GENERATION BIOFUELS**  
<sup>1</sup>*Boreskov Institute of Catalysis, Novosibirsk, Russia*  
<sup>2</sup>*Novosibirsk State University, Novosibirsk, Russia*  
<sup>3</sup>*Biomass Technology Group B.V., Enschede, The Netherlands*
- OP-III-19** 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, 09.20 – 11.00**

**Hall 2**

**Section V. CATALYSIS FOR ENVIRONMENT AND SUSTAINABILITY**

- OP-V-8** Potemkin D.I.<sup>1,2</sup>, Filatov E.Y.<sup>1,3</sup>, Zadesenets A.V.<sup>1,3</sup>, Snytnikov P.V.<sup>1,2</sup>, Sobyenin V.A.<sup>2</sup>  
**CO PROX on Pt-M and Pt-MO<sub>x</sub> (M = Fe, Ni, Co) MODEL CATALYSTS: THE ORIGIN OF SYNERGETIC EFFECT**  
<sup>1</sup>*Novosibirsk State University, Novosibirsk, Russia*  
<sup>2</sup>*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*  
<sup>3</sup>*Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia*
- OP-V-9** Saeed M., Mumtaz N., Nisar A.  
**SYNTHESIS AND CHARACTERIZATION OF Ag DOPED Co<sub>2</sub>O<sub>3</sub> AND EVALUATION OF ITS CATALYTIC ACTIVITIES FOR DEGRADATION OF RHODAMINE B DYE IN AQUEOUS MEDIUM**  
*Government College University Faisalabad, Faisalabad, Pakistan*

**OP-V-10** Chen X.<sup>1,2</sup>, Xie Z.<sup>2</sup>, Zhu Y.<sup>3</sup>, Wang H.<sup>1</sup>

**GROWTH OF GRAPHITIC CARBON NITRIDE NANOSHEET ON TiO<sub>2</sub> MESOPOROUS SPHERES WITH HIGHLY IMPROVED PHOTOCATALYTIC ACTIVITY UNDER VISIBLE LIGHT IRRADIATION**

<sup>1</sup>Monash University, Clayton, Victoria-Melbourne, Australia

<sup>2</sup>CSIRO Manufacturing, Clayton South, Victoria - Melbourne, Australia

<sup>3</sup>Royal Melbourne Institute of Technology, Melbourne, Australia

**OP-V-11** Isaeva V.<sup>1,2</sup>, Chernyshev V.<sup>3</sup>, Tarasov A.<sup>1,2</sup>, Kustov L.<sup>1,3</sup>

**CO<sub>2</sub> CONVERSION IN LIQUID HYDROCARBONS OVER Co NANOPARTICLES EMBEDDED IN METAL-ORGANIC MIL-53(AI) MATRIX**

<sup>1</sup>National University of Science and Technology "MISiS", Moscow, Russia

<sup>2</sup>N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia

<sup>3</sup>M.V. Lomonosov Moscow State University, Moscow, Russia

**OP-V-12** Deorsola F.A., Galletti C., Bensaid S., Russo N.

**STUDY ON MESOPOROUS-SUPPORTED CATALYSTS FOR SIMULTANEOUS CO<sub>2</sub> and STEAM REFORMING OF BIOGAS**

Politecnico di Torino, Torino, Italy

**11.00 Coffee break**

**September 7, Thursday, 11.20 – 12.40**

**Hall 1**

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

**OP-IV-4** X. Jin Yang, Hanjun Hu

**ZINC-TIN BIMETALLIC CATALYSTS FOR RENEWABLE ENERGY STORAGE BY CO<sub>2</sub> ELECTROREDUCTION PROCESS**

Beijing University of Chemical Technology, Beijing, China

**OP-IV-5** 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

**OP-IV-6** 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

**OP-IV-7** Vitolo M., Rodrigues Ract J., Braga Guebara S.

**ESTERIFICATION OF GLYCEROL WITH CAPRYLIC ACID IN A BATCH REACTOR USING sn-1,3- SPECIFIC LIPASE**

University of São Paulo, São Paulo, Brazil

**12.40 Closing**

**13.00 Lunch**

**14.00 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.**  
**MOTOR FUEL FROM NON-STEPPE RAW MATERIALS**  
*Institute of Petrochemical Processes of Azerbaijan NAS, Baku, Azerbaijan*
- PP-3 Bachurikhin A.L.<sup>1</sup>, Efendiev M.<sup>2</sup>**  
**ELECTROMAGNETIC CATALYTIC REACTOR OF WATER TREATING FROM OILS AND HYDROCARBONS**  
<sup>1</sup>*N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia*  
<sup>2</sup>*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.<sup>1</sup>, Miloudi H.<sup>1</sup>, Tayeb A.<sup>1</sup>, Ureña-Amate M.<sup>2</sup>, Bendeddech A.<sup>1</sup>**  
**REMOVAL OF THE INSECTICIDE METHOMYL FROM WATER TO MAGNESIUM-ALUMINUM-CARBONATE LAYERED DOUBLE HYDROXIDES**  
<sup>1</sup>*University of Algeria, Oran, Algeria*  
<sup>2</sup>*University of Almeria, Almeria, Spain*
- PP-6 Damiyine B., Abdellah G., Boussem 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<sub>2</sub>**  
*University BADJI-Mokhtar, Annaba, Algeria*
- PP-9 Georgiev V., Iliev V., Batakliiev T., Karakashkova P., Anachkov M., Rakovsky S.**  
**ENHANCEMENT OF THE ACTIVITY OF TiO<sub>2</sub> – 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.<sup>1,2</sup>, Zolotukhina A.V.<sup>2</sup>, Stavitskaya A.V.<sup>1</sup>, Ivanov E.V.<sup>1</sup>, Vinokurov V.A.<sup>1</sup>, Maksimov A.L.<sup>2</sup>, Lvov Y.M.<sup>1,3</sup>**  
**CATALYTIC ACTIVITY OF Ru-CONTAINING HALLOYSITE CATALYSTS IN HYDROGENATION OF AROMATIC COMPOUNDS UNDER TWO-PHASE CONDITIONS**  
<sup>1</sup>*Gubkin Russian State University of Oil and Gas, Moscow, Russia*  
<sup>2</sup>*M.V. Lomonosov Moscow State University, Moscow, Russia*  
<sup>3</sup>*Louisiana Tech University, Ruston, USA*

- PP-11 Gomez Bernal H.<sup>1</sup>, Funaioli T.<sup>1</sup>, Ricciardi A.<sup>1</sup>, Bertolucci E.<sup>2</sup>, Antonetti C.<sup>1</sup>, Raspolli Galletti A.M.<sup>1</sup>**  
**PALLADIUM DOPED MAGNETIC NANOCATALYSTS FOR SUSTAINABLE 5-HYDROXYMETHYLFURFURAL OXIDATION**  
<sup>1</sup>*Università di Pisa, Pisa, Italy*  
<sup>2</sup>*Scuola Normale Superiore di Pisa, Pisa, Italy*
- PP-12 Hadad C.<sup>1</sup>, Echeverry A.<sup>1</sup>, Ferraro F.<sup>2</sup>, Osorio E.<sup>2</sup>**  
**TETRAMER OF GOLD-PLATINUM AS A CATALYST FOR THE DEHYDROGENATION OF AMMONIA-BORAN**  
<sup>1</sup>*Universidad de Antioquia, Medellín, Colombia*  
<sup>2</sup>*Universidad Católica Luis Amigó, Medellín, Colombia*
- PP-13 Isupova L., Yakovleva I., Gerasimov E., Sutormina E.**  
**La<sub>1-x</sub>Ca<sub>x</sub>CoO<sub>3-δ</sub> PEROVSKITES FOR DEEP OXIDATION**  
*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*
- PP-14 Karakashkova P.A.<sup>1</sup>, Batakliiev T.<sup>1</sup>, Georgiev V.<sup>1</sup>, Serga V.<sup>2</sup>, Anachkov M.<sup>1</sup>, Rakovsky S.<sup>1</sup>**  
**EFFECT OF THE SUPPORT ON THE PERFORMANCE OF Ni/Pd BASED ON OZONE DECOMPOSITION CATALYSTS**  
<sup>1</sup>*Institute of Catalysis, Bulgarian Academy of Science, Sofia, Bulgaria*  
<sup>2</sup>*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.<sup>1</sup>, Tungatarova S.<sup>2</sup>, Nurlybayeva A.<sup>1</sup>, Matniyazova G.<sup>1</sup>, Kalmakhanova M.<sup>1</sup>**  
**OXIDATIVE CONVERSION OF LIGHT ALKANES TO NEW COMPOSITE MATERIALS**  
<sup>1</sup>*M.Kh. Dulaty Taraz State University, Taraz, Kazakhstan*  
<sup>2</sup>*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 Pai Z.P., Selivanova N.V., Berdnikova P.V.**  
**CATALYTIC PROCESSES OF CARBOXYLIC ACIDS PRODUCTIONS**  
*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*
- PP-20 Razzaq R.<sup>1,2</sup>, Dong K.<sup>1</sup>, Sharif M.<sup>1</sup>, Jackstell R.<sup>1</sup>, Beller M.<sup>1</sup>**  
**HIGHLY SELECTIVE CONVERSION OF CO<sub>2</sub> TO CO ON Cu NANOPARTICLES**  
<sup>1</sup>*Leibniz Institute for Catalysis, Rostock, Germany*  
<sup>2</sup>*University of Engineering and Technology, Lahore, Pakistan*



- PP-21 Sequeiros A.<sup>1</sup>, Puylaert P.<sup>2</sup>, Sandra H.<sup>2</sup>, de Vries J.G.<sup>2</sup>, Labidi J.<sup>1</sup>**  
**FORMATION OF AROMATIC ACIDS VIA OXIDATIVE CARBONYLATION OF LIGNIN MONOMERS**  
<sup>1</sup>*University of the Basque Country, Gipuzkoa Campus, San Sebastian, Spain*  
<sup>2</sup>*Leibniz Institute for Catalysis, Rostock, Germany*
- PP-22 Sfirloaga P., Ursu D., Taranu B., Poienar M., Dabici A., Vlazan P.**  
**PHOTOCATALYTIC ACTIVITY OF Pd-doped LaMnO<sub>3</sub> SYNTHESIZED AT LOW TEMPERATURE**  
*National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, Romania*
- PP-23 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-24 Sohn J.**  
**THE EFFECT OF ADDITION OF ADDITION OF METAL SALTS ON SUPERCRITICAL WATER GASIFICATION WITH GLYCEROL FOR HYDROGEN PRODUCTION**  
*Chonbuk National University, Jeonju, South Korea*
- PP-25 Sulman M., Sulman E., Grigorev M., Antonov E., Grebenyuk A.**  
**CATALYTIC HYDROGENATION OF D-glucose to D-xylitol: TEMPERATURE FACTOR**  
*Tver State Technical University, Tver, Russia*
- PP-26 Tayebee R.<sup>1</sup>, Amimi M.<sup>2</sup>**  
**PREPARATION AND CHARACTERIZATION OF A NOVEL Wells-Dawson HETEROPOLYACID-BASED MAGNETIC INORGANIC-ORGANIC NANOHYBRID CATALYST H<sub>6</sub>P<sub>2</sub>W<sub>18</sub>O<sub>62</sub>/pyridino-Fe<sub>3</sub>O<sub>4</sub> FOR THE EFFICIENT SYNTHESIS OF 1-amidoalkyl-2-NAPHTHOLS UNDER SOLVENT-FREE CONDITIONS**  
<sup>1</sup>*Hakim Sabzevari University, Sabzevar, Iran*  
<sup>2</sup>*Shahid Beheshti University, Tehran, Iran*
- PP-27 Ushakov A.E., Markov A.A., Shmakov A.N., Patrakeev M.V., Leonidov I.A., Kozhevnikov V.L.**  
**EFFECTS OF Ni-M<sub>2</sub>O<sub>3</sub> (M: Cr, Mn, Fe) CATALYSTS ON POM PARAMETERS IN MEMBRANE REACTOR**  
*Institute Solid State Chemistry, Yekaterinburg, Russia*
- PP-28 Vlazan P.<sup>1</sup>, Rus F.<sup>1</sup>, Poienar M.<sup>1</sup>, Stoia M.<sup>2</sup>, Linul P.<sup>1</sup>, Ursu D.<sup>1</sup>, Sfirloaga P.<sup>1</sup>**  
**SYNTHESIS OF Zr<sup>4+</sup> and Bi<sup>3+</sup> DOPED NaNbO<sub>3</sub> PEROVSKITE MATERIALS AND THE STUDY OF CATALYTIC ACTIVITY**  
<sup>1</sup>*National Institute for Research and Development in Electrochemistry and Condensed Matter, Timisoara, Romania*  
<sup>2</sup>*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 SYNTHESSES 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.<sup>1</sup>, **Yergaziyeva G.**<sup>2</sup>, Myltykbayeva L.<sup>1</sup>, Asanov N.A.<sup>2</sup>, Telbayeva M.<sup>2</sup>  
**CATALYTIC CONVERSION OF BIOGAS TO SYNTHESIS GAS**  
<sup>1</sup>*Al-Farabi Kazakh National University, Centre of Physical and Chemical Methods of Investigation and Analysis, Almaty, Kazakhstan*  
<sup>2</sup>*The Institute of Combustion Problems, Almaty, Kazakhstan*
- VP-3** Dossumov K.<sup>1</sup>, **Yergaziyeva G.**<sup>2</sup>, Churina D.<sup>1</sup>, Tayrabekova S.<sup>1</sup>, Tulibayev E.<sup>2</sup>  
**HYDROGEN PRODUCTION BY ETHANOL CONVERSION**  
<sup>1</sup>*Al-Farabi Kazakh National University, Centre of Physical and Chemical Methods of Investigation and Analysis, Almaty, Kazakhstan*  
<sup>2</sup>*The Institute of Combustion Problems, Almaty, Kazakhstan*
- VP-4** **Kalenchuk A.N.**<sup>1</sup>, Bogdan V.I.<sup>2</sup>  
**PRODUCTION OF CHEMICALLY PURE HYDROGEN BY THE HYDROGENATION-DEHYDROGENATION REACTIONS OF AROMATIC COMPOUNDS**  
<sup>1</sup>*M.V. Lomonosov Moscow State University, Moscow, Russia*  
<sup>2</sup>*N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia*
- VP-5** **Khramenkova A.V.**, Ariskina D., Bepalova 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.**<sup>1</sup>, Kazak V.O.<sup>2</sup>, Mishanin I.I.<sup>2</sup>, Bogdan V.I.<sup>1,2</sup>  
**CARBON DIOXIDE HYDROGENATION OVER Fe/K/C and Fe-Cu/K/C CATALYSTS UNDER SUPERCRITICAL CONDITIONS**  
<sup>1</sup>*N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia*  
<sup>2</sup>*M.V. Lomonosov Moscow State University, Moscow, Russia*
- VP-7** **Omarov S.O.**  
**ISOBUTANE ALKYLATION WITH ISOBUTENE ON SOLID ACID MoO<sub>3</sub>/ZrO<sub>2</sub> CATALYSTS**  
*St. Petersburg State Institute of Technology (Technical University), St. Petersburg, Russia*
- VP-8** Pasa S.<sup>1</sup>, Aydemir M.<sup>2</sup>, **Rafikova K.S.**<sup>3,4</sup>, Kussainova M.<sup>3</sup>, Zhunusbekova M.<sup>3</sup>, Yegis T.<sup>3</sup>, Alpysbay L.<sup>4</sup>  
**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)**  
<sup>1</sup>*Afyon Kocatepe University, Afyonkarahisar, Turkey*  
<sup>2</sup>*Dicle University, Diyarbakir, Turkey*  
<sup>3</sup>*Kazakh-National Research Technical University named K.I. Satpayev, Almaty, Kazakhstan*  
<sup>4</sup>*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. Mendeleev University of Chemical Technology of Russia, Moscow, Russia*