

Boreskov Institute of Catalysis SB RAS, Russia
Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia

IV Scientific Conference BORESKOV READINGS
dedicated to the 110th anniversary of Academician Georgii K. Boreskov

April 19-21, 2017
Novosibirsk, Russia

SCIENTIFIC PROGRAM



Academician Georgii K. Boreskov

"Catalysis is not a branch of chemistry but a general concept without which one cannot state and understand the regularities of chemical transformations"

April 20, 2017, marks one hundred and ten years since the birth of Prof. Georgii Konstantinovich Boreskov, a prominent Russian scientist in the field of catalysis, physical chemistry, chemical kinetics, and chemical technology. His name is inextricably connected with the development of catalytic science in Russia and is widely known in the international academic world. The research activity of G.K. Boreskov began in 1929 at Odessa Chemical-Radiological Institute in the Laboratory of Catalysis with the catalyst development for the contact production of sulfuric acid. At that period he created a new barium-aluminum-vanadium catalyst (BAV) for the oxidation of SO_2 to SO_3 , which by the end of the 1930s was adopted by all plants of the country that produced sulfuric acid with the contact method. In 1932 Boreskov headed the Laboratory of Catalysis at Odessa Chemical-Radiological Institute and, almost at the same time, the chair of Processes and Reactors at Odessa Chemical-Technologic Institute.

He continued his catalytic research in Moscow, where his laboratory was transferred, first to the Institute of Fertilizers and Insectofungicides (1937-1946) and then to Karpov Physicochemical Institute (1946-1959).

In 1957, a large new Scientific Center was organized in Novosibirsk as the Siberian Branch of the Academy of Sciences of the USSR. The great importance of both fundamental and applied catalytic researches determined the foundation, within the Center, of a specialized institute, the Institute of Catalysis. Prof. Boreskov was the organizer and first director of the Institute. All his further scientific activity was fully connected with the Institute, which creation he considered as the most important accomplishment in his life. In 1992, the Institute of Catalysis was given the name of G.K. Boreskov.

Prof. Boreskov placed a special emphasis on the fundamental research, considering it as the basis for solving the major problem of the catalysis theory, i.e. the prediction of catalytic behavior of substances, which could be used as a guide for selecting the catalysts. A significant part of his works was dedicated to the essence of the catalytic phenomena and general regularities in the field.

Prof. Boreskov was a consistent advocate of the chemical approach to catalysis, which assumes an intermediate chemical interaction of reacting substances with the catalyst. A change in the interaction energy affects both the transformation rate of the initial substance and the selectivity of the process.

Based on the fundamental principle of energy compensation, according to which a part of the energy needed for breaking the old bonds is compensated with the energy of the new emerging bonds, Boreskov suggested a mechanistic classification of catalytic reactions. The main forms of the catalytic action are defined by the character of such compensation, which can occur in two essentially different ways determining a stepwise or concerted mechanism of the reaction. At the same time, as the chemical composition and structure of the catalyst remain

unchanged, the catalytic activity referred to the catalyst surface area is approximately constant. This constancy of a specific catalytic activity (SCA) is known as the Boreskov's Rule.

One of the basic principles formulated by Prof Boreskov within the chemical approach to catalysis is the interrelation and interdependence between the catalyst and the reaction medium. Within this concept, the catalyst is considered as a labile component of the reaction system that, under the influence of the reaction mixture, can change the chemical composition, structure and catalytic properties of the surface. The use of the reaction mixture of a particular composition at particular temperature transforms the catalyst surface into a new certain state, different from its initial state. G.K. Boreskov stressed the necessity of the in-depth study of the "catalyst – reaction" system for creating adequate kinetic models of heterogeneous catalytic reactions.

Prof. Boreskov made a significant contribution to the theory of kinetics of complex reversible reactions. He identified a general relationship between the activation energies of the direct and reversed reactions with regard to molecularity of the process. He also suggested a method for determining the molecularity based on measuring the ratio between the thermodynamic and kinetic isotope effects.

Prof. Boreskov paid great attention to the education activity. This work began along with his research studies and was always a part of his scientific activity. As early as in the 1930s, Boreskov was one of the first scientists in the Soviet Union who gave such lecture courses as "Processes and Reactors in the Chemical Technology" and "Kinetics and Catalysis" at Odessa Chemical-Technological Institute. Later, he created quite a number of new courses like "Theory of Modeling of Technological Processes", "Theory and Technology of Isotope Separation", "Use of Isotopes in Scientific Research and Industry" as well as special courses for post-graduate students, which he used to give at universities and academic institutes of the USSR and abroad. For nearly 11 years he headed the chair of "The Separation and Use of Isotopes" at the Mendeleev Moscow Institute of Chemical Technology, and later the chair of "Catalysis and Adsorption" at Novosibirsk State University. The "Catalysis" course he gave at the university was later published as the individual issue.

The scientific heritage of Prof. Boreskov consists of more than 800 papers and several monographs including "Technology of Sulfuric Acid", "Technology of the Processes of Chemical Isotope Exchange", "Heterogeneous Catalysis".

Professor Boreskov was a man of a fascinating charisma, sharing generously his knowledge, experience and enthusiasm with his colleagues and establishing a creative environment. His integrity, self-discipline, hard work, along with general amiability and interest in people have won him a deep respect of everybody who knew him.

Dear Colleagues,

The IV Scientific Conference BORESKOV READINGS dedicated to the 110th anniversary of Academician Georgii K. Boreskov, welcomes researchers from across the globe to the capital of Siberia, Novosibirsk.

The Conference will be held at Akagemgorodok, on April 19-21, 2017.

The scope of the Conference covers the research aspects on the fundamental and applied directions of heterogeneous oxidative catalysis, the main field of scientific interests of G.K. Boreskov.

We are pleased to welcome you in Akagemgorodok, one of the greatest research centers of Russia, and believe that its creative atmosphere and beautiful location will make our work at the Conference even more successful and productive!

Organizing Committee Chairman

Valerii Bukhtiyarov,

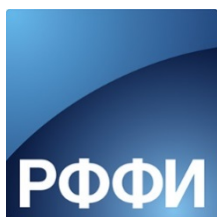
Boreskov Institute of Catalysis



Conference Organizers

	Siberian Branch of Russian Academy of Sciences
	Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
	Novosibirsk State University, Novosibirsk, Russia
	Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia
	Scientific Council on Catalysis RAS, Moscow, Russia
	Lomonosov Moscow State University, Moscow, Russia
	Institute of Hydrocarbons Processing SB RAS, Omsk, Russia
	Russian Mendeleev Chemical Society, Novosibirsk Department

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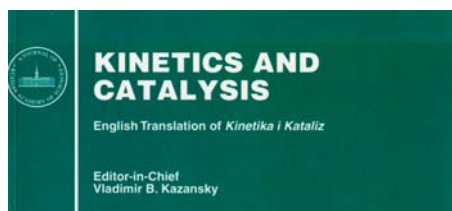


Special Design and Technological
Bureau "Katalizator", JSC

Conference Partner



INFORMATION SUPPORT



Journal "Kinetics and Catalysis"

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ORGANIZING COMMITTEE

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

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M.S. Suvorova

SCIENTIFIC PROGRAM

The program of the Conference consists of 4 plenary and 10 keynote invited lectures, 26 oral presentations, and 110 posters. The oral presentations are scheduled in the following sessions:

1. *Formation of active catalyst state under reaction conditions*
2. *Surface oxygen species: local structure, electronic state, and reactivity*
3. *Structural sensitivity, size effects, and single atom catalysis*
4. *Mechanism of oxidative reactions*
5. *From reaction kinetics to industrial innovation processes*

The Program also includes 2 keynote invited lectures and 10 short oral presentations (10 min) of the School-Symposium of young scientists "***In situ and operando studies of the catalytic reactions***".

CONFERENCE LANGUAGE

The official language of the Conference is English.

*On April 21 the Conference schedules the Roundtable discussion "**Ideas of G.K. Boreskov and Today's World**". The working language of the Roundtable discussion is Russian.*

PRESENTATION

The time of presentation (including some time for questions) is 40 min for a plenary lecture, 30 min for a keynote lecture, 20 and 10 min for an oral presentation. Multi-media (LCD) projector will be available. Organizers recommend the authors to prepare computer presentations in *.ppt format (Microsoft Power Point from the package MS Office).

Space for poster is 75 cm width x 100 cm height. The authors are requested to place their posters in the morning of the corresponding Poster session day: April 19.

CONFERENCE PUBLICATIONS

Book of Abstracts of lectures, oral and poster presentations on a USB key will be available at the registration desk. The electronic version of the Book of Abstracts will be given an International Standard Book Number (ISBN) and State Registration Number. Each registrant will also receive the final scientific program-brochure.

VENUE

Akademgorodok is located in a picturesque place near the Ob' River in 30 km from Novosibirsk, a big industrial, scientific and cultural center in Siberia. Our city has eight professional theaters, including the world-known Novosibirsk State Academic Theater of Opera and Ballet, which is the historical and architectural symbol of Siberia, Novosibirsk Philharmonic Hall, etc.

The Conference will take place at the conference halls of the House of Scientists on April 19 (Morskoi Ave., 23) and Boreskov Institute of Catalysis SB RAS on April 20-21 (Akad. Lavrentiev Ave., 5). During the working days of the Conference, April 20-21, the morning bus transfer "Hotel – Institute of Catalysis" will be provided.

REGISTRATION

Registration will take place at the hotel “Zolotaya Dolina” (“Golden Valley”) on April 18 from 10 a.m. to 3 p.m. and at the Great Hall I Foyer of the House of Scientists on April 19 from 9 a.m. to 1 p.m.

ACCOMMODATION

Rooms have been reserved through the Conference secretariat at the hotel “Zolotaya Dolina” (“Golden Valley”). The hotel is located within 10 min walk of the Conference venue (Il'icha Street, 10; Reception phone: +7 383 330 36 09).

MEALS

Lunches will be arranged at the restaurant of the House of Scientists (the average lunch price is 300 rubles). Morning and afternoon coffee breaks will be provided.

REGISTRATION FEE

The fee covers delegate bag, coffee-breaks, transfer airport-hotel, and Welcome Party. The participation in the conference is free of charge for the registered participants.

SOCIAL PROGRAM

The participants and accompanying persons are invited to the Welcome reception on April 19, 6.30 p.m. (Restaurant of the House of Scientists).

The participants and guests are offered a special sightseeing program on April 18:

- *Excursion to Geological museum, 14.00 (extra fee)*
- *Excursion to Museum of history and culture of people of Siberia and the Far East, 15.30 (extra fee)*
- *Excursion to Museum “Memorial flat of Akademgorodok” 17.00 (extra fee)*

A program of the Novosibirsk Opera and Ballet Theatre for accompanying persons will be also offered (extra fee).

BANK AND EXCHANGE

Cash exchange is available in the banks. Mastercard and Visa credit cards are generally accepted. Please note that personal checks are not accepted.

WEATHER

In mid-April, the air temperature in Novosibirsk is usually +5 – +8 °C; the Organizing Committee advises to bring umbrellas and warm suits.



April 19, Wednesday

The House of Scientists, Great Hall

Morskoi Ave., 23

MORNING SESSION

11.00 Opening session

Chairmen: Prof. Valerii I. Bukhtiyarov
Prof. Alexander Yu. Stakheev

Prof. Valerii I. Bukhtiyarov

ACADEMICIAN GEORGII KONSTANTINOVICH BORESKOV

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PLENARY LECTURES

11.30-12.10

PL-1

Presenting author: **Prof. Valery Sokolovskii**

Sokolovskii V., Murphy V.

HETEROGENEOUS CATALYSIS FOR PRODUCTION OF COMMODITY CHEMICALS FROM RENEWABLE FEEDSTOCKS

Rennovia Inc., Santa Clara, CA, USA

12.10-12.50

PL-3

Presenting author: **Prof. Malgorzata Witko**

M. Witko, R. Tokarz-Sobieraj, R. Grybos, D. Rutkowska-Zbik

OXYGEN ACTIVATION ON METAL-OXIDE SURFACES

Institute of Catalysis and Surface Chemistry-PAS, Krakow, Poland

12.50-13.30

PL-4

Presenting author: **Prof. Wataru Ueda**

Ueda W., Ishikawa S.

SELECTIVE OXIDATION AND REACTION MECHANISM OVER CRYSTALLINE Mo-BASED OXIDE CATALYST

Kanagawa University, Kanagawa, Japan

13.30-15.00 Lunch

(the restaurant of the House of Scientists, 1st floor)

AFTERNOON SESSION

Chairmen: Prof. Malgorzata Witko
Prof. Valentin N. Parmon

KEYNOTE LECTURES

15.00-15.30

KL-1

Presenting author: **Prof. Graham Hutchings**

CATALYSIS USING NEW NANOMATERIAL CATALYSTS

Cardiff Catalysis Institute, Cardiff University, Cardiff, United Kingdom

15.30-16.00

KL-2

Presenting author: **Dr. James Rekoske**

RECENT ADVANCES IN PETROCHEMICAL TECHNOLOGIES FOR OLEFIN AND AROMATICS PRODUCTION

UOP Research and Development, UOP-Honeywell, Des Plaines, USA

16.10-16.40 Coffee-break

(the Small Hall Foyer of the House of Scientists, 2nd floor)

16.40-18.30

POSTER SESSION

(the Small Hall Foyer of the House of Scientists, 2nd floor)

18.45

Welcome Reception

(Restaurant of the House of Scientists, 1st floor)



April 20, Thursday

Boreskov Institute of Catalysis

Lavrentieva Ave., 5

Big hall

MORNING SESSION

Chairmen: Prof. Wataru Ueda

Prof. Vladislav A. Sadykov

KEYNOTE LECTURES

9.00-9.30

KL-3

Presenting author: **Prof. Fabrizio Cavani**

Velasquez O.J.¹, Chieriegato A.¹, Bandinelli C.¹, Vozniuk O.¹, Malmusi A.¹, Recchi C.¹, Mella M.², **Cavani F.**¹

CATALYSTS FOR SYNTHETIC BIO-BUTADIENE: FROM INDUSTRIAL APPLICATION TO REACTION MECHANISM

¹*Bologna University, Bologna, Italy*

²*Università dell'Insubria, Como, Italy*

9.30-10.00

KL-4

Presenting author: **Prof., Dr. Emiel J. M. Hensen**

Kosinov N., Coumans A.G., Uslamin E., **Hensen E.J.**

METHANE DEHYDROAROMATIZATION - NEW INSIGHTS AND OPPORTUNITIES

Eindhoven Technical University, Eindhoven, the Netherlands

10.00-10.30

KL-5

Presenting author: **Prof. José C. Conesa**

Monte M.^{1,2}, Castaneda R.¹, Bolivar C.L.¹, Hyngría A.B.³, Costa D., **Conesa J.C.**¹, Martínez-Arias A.¹

SYNCHROTRON, OPERANDO AND DFT STUDIES OF THE CuO_x/CeO₂ CO-PROX CATALYST: SURFACE STRUCTURE EFFECTS

¹*Institute of Catalysis and Petrochemistry, Madrid, Spain*

²*European Synchrotron Radiation Facility, Grenoble, France*

³*Dept. de Ciencia de Materiales, University of Cádiz, Spain*

⁴*IRC-Paris, Physico-Chimie des Surfaces, Paris, France*

10.30-11.00 Coffee-break

(the Big Hall Foyer of the Boreskov Institute of Catalysis, 3rd floor)

Big hall

ORAL PRESENTATIONS

Chairmen: Prof., Dr. Emiel J. M. Hensen
Dr. Vasily V. Kaichev

11.00-11.20

OP-1

Presenting author: **Dr. Dmitri Bulushev**

Bulushev D.A.^{1,2}, Podyacheva O.Yu.^{1,2}, Zacharska M.³, Jia L.J.³, Lisitsyn A.S.¹, Beloshapkin S.³, Chuvilin A.L.⁴, Kibis L.S.^{1,2}, Boronin A.I.^{1,2}, Bangert U.³, Okotrub A.V.^{2,5}, Bulusheva L.G.^{2,5}

CATALYSTS WITH SINGLE-ATOM SITES OF Pt-GROUP METALS FOR HYDROGEN PRODUCTION FROM DECOMPOSITION OF FORMIC ACID

¹*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

³*University of Limerick, Limerick, Ireland*

⁴*CIC nanoGUNE Consolider, San Sebastian, Spain*

⁵*Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*

11.20-11.40

OP-2

Presenting author: **Prof. Vicente Cortés Corberán**

Pakrieva E.^{1,2}, Kolobova E.¹, Martinez-Gonzalez S.², Pestryakov A.¹, **Cortés Corberán V.**²

EFFECT OF METAL CONTENT IN Au/TiO₂ CATALYSTS FOR OXIDATION OF n-OCTANOL

¹*Tomsk Polytechnical University, Tomsk, Russia*

²*Instituto de Catálisis y Petroleoquímica (CSIC), Madrid, Spain*

11.40-12.00

OP-3

Presenting author: **Prof. Daria Pichugina**

Pichugina D., Nikitina N., Golosnaya M., Kuz'menko N.

THEORETICAL INSIGHT INTO CATALYTIC PROPERTIES OF LIGAND-PROTECTED GOLD CLUSTERS

Department of Chemistry, Moscow State University, Moscow, Russia

12.00-12.20

OP-4

Presenting author: **Dr. Dorota Rutkowska-Zbik**

Kornas A.¹, Sliwa M.¹, Samson K.¹, Grabowski R.¹, Ruggiero M.¹, Gora-Marek K.¹, **Rutkowska-Zbik D.**¹

HYDROGENATION OF CO₂ TO METHANOL: INFLUENCE OF POLYMORPHIC ZrO₂ PHASES AND COPPER ELECTRONIC STATE ON ACTIVITY OF Cu/ZrO₂ CATALYST

¹*Jerzy Haber Institute of Catalysis and Surface Chemistry PAS, Kraków, Poland*

²*Faculty of Chemistry, Jagiellonian University, Krakow, Poland*

12.20-12.40

OP-5

Presenting author: **Dr. Robert Kosydar**

Kołodziej M., Lalik E., Szumęła T., **Kosydar R.**, Gurgul J., Duraczyńska D., Drelinkiewicz A.

A ROLE OF H_xMoO_3 (H_xWO_3) IN THE Pd CATALYSTS IN ACTIVITY/SELECTIVITY CONTROL FOR HYDROGENATION OF UNSATURATED ALDEHYDES

Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland

12.40-13.00

OP-6

Presenting author: **Alexandr K. Khudorozhkov**

Khudorozhkov A.K.^{1,2}, Prosvirin I.P.¹, Bukhtiyarov A.V.^{1,2}, Chetyrin, I.A.^{1,2}, Bukhtiyarov V.I.^{1,2}

PROPANE OXIDATION OVER Pd/Al₂O₃ CATALYSTS - THE EFFECT OF PALLADIUM DISPERSION AND C₃H₈:O₂ RATIO ON CATALYTIC ACTIVITY

¹*Boskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

13.00-14.30 Lunch

(the restaurant of the House of Scientists, 1st floor)

April 20, Thursday

Boreskov Institute of Catalysis

Big hall

AFTERNOON SESSION

Chairmen: Prof. Jose C. Conesa
Prof. Valery Sokolovskii

KEYNOTE LECTURES

14.30-15.00

KL-6

Presenting author: **Prof., Dr. Angelika Brückner**

WHAT YOU SEE IS (NOT) WHAT YOU GET – WHY WE NEED *OPERANDO* SPECTROSCOPY TO UNRAVEL THE STATE OF ACTIVE SITES FORMED FROM PRECURSORS

Leibniz Institute for Catalysis at the University of Rostock, Rostock, Germany

15.00-15.30

KL-7

Presenting author: **Prof. Valentin N. Parmon**

CATALYSIS AND ENERGETICS: EXPERIENCE OF BORESKOV INSTITUTE OF CATALYSIS

Boreskov Institute of Catalysis, Novosibirsk, Russia

Big hall

School-Symposium of young scientists

“In situ and operando studies of the catalytic reactions”

Chairmen: Prof. Dr. Angelika Brückner
Prof. Oleg N. Martyanov

KEYNOTE LECTURES

15.30-16.00

KLs-1

Presenting author: **Prof. Valerii I. Bukhtiyarov**

ACTIVE CENTERS IN HETEROGENEOUS CATALYSTS: FORMATION AND STUDY WITH *IN SITU* METHODS

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

16.00-16.30

KLs-2

Presenting author: **Prof. Miguel A. Bañares**

RAMAN SPECTROSCOPY, A CONVENIENT TOOL FOR *OPERANDO* STUDY OF CATALYSTS AND FOR REAL-TIME MONITORING OF CATALYSTS

Spectroscopy and Industrial Catalysis, Institute of Catalysis, Madrid, Spain

SHORT ORAL PRESENTATIONS

16.30-16.40

OPs-1

Presenting author: **Dr. Anton Gabrienko**

PATHWAYS OF METHANE CONVERSION ON Zn-MODIFIED ZSM-5 ZEOLITE REVEALED WITH *IN SITU* SOLID-STATE NMR SPECTROSCOPY

Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia

16.40-16.50

OPs-2

Presenting author: **Dudari B. Burueva**

Burueva D.B.^{1,2}, Salnikov O.G.^{1,2}, Kovtunov K.V.^{1,2}, Bukhtiyarov V.I.³, Koptyug I.V.^{1,2}

THE NATURE OF HETEROGENEOUS CATALYST ACTIVE SITES RESPONSIBLE FOR THE PAIRWISE H₂ ADDITION: *IN SITU* STUDY BY PHIP TECHNIQUE

¹*International Tomography Center SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

³*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

16.50-17.00

OPs-3

Presenting author: **Dr. Stanislav S. Yakushkin**

Yakushkin S.S.^{1,2}, Nuzhdin A.L.^{1,2}, Bukhtiyarova G.A.¹ and Martyanov O.N.^{1,2}

ESR *IN-SITU* – EFFECTIVE TOOL TO STUDY THE ACTIVE INTERMEDIATES OCCURRING AT THE METAL-OXIDE INTERFACE OF THE Au/Al₂O₃ CATALYST

¹*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, 630090 Russia*

17.00-17.30 Coffee-break

(the Big Hall Foyer of Borekov Institute of Catalysis, 3rd floor)

Big hall

School-Symposium of young scientists “*In situ* and *operando* studies of the catalytic reactions”

SHORT ORAL PRESENTATIONS

Chairmen: Prof. Miguel A. Bañares

Dr. Aleksey A. Vedyagin

17.30-17.40

OPs-4

Presenting author: **Dr. Oleg Y. Lyakin**

Lyakin O.Y.^{1,2}, Zima A.M.^{1,2}, Ottenbacher R.V.^{1,2}, Bryliakov K.P.^{1,2}, Talsi E.P.^{1,2}

MECHANISMS OF BIOMIMETIC IRON-CATALYZED ENANTIOSELECTIVE EPOXIDATIONS

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, 630090 Russia*

17.40-17.50

OPs-5

Presenting author: **Dr. Andrey A. Saraev**

Saraev A.A.¹, Vinokurov Z.S.¹, Shmakov A.N.^{1,2}, Kaichev V.V.¹, Bukhtiyarov V.I.¹

OPERANDO APPROACH TO INVESTIGATIONS OF OSCILLATORY BEHAVIOUR IN CATALYTIC OXIDATION OF LIGHT ALKANES OVER NICKEL

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Budker Institute of Nuclear Physics, Novosibirsk, Russia*

17.50-18.00

OPs-6

Presenting author: **Zakhar S. Vinokurov**

Vinokurov Z.S.^{1,2}, Saraev A.A.^{1,2}, Bespalov Y.R.^{1,2}, Kaichev V.V.^{1,2}, Shmakov A.N.^{1,2,3}

IN SITU XRD STUDY OF SELF-SUSTAINED REACTION-RATE OSCILLATIONS IN THE OXIDATION OF METHANE OVER PALLADIUM

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

³*Budker Institute of Nuclear Physics, Novosibirsk, Russia*

18.00-18.10

OPs-7

Presenting author: **Dr. Dmitry V. Krasnikov**

Krasnikov D.V.^{1,2}, Kuznetsov V.L.^{1,2}, Shmakov A.N.^{1,2}, Prosvirin I.P.¹, Kalinkin A.V.¹, Kazakova M.A.^{1,2}, Andreev A.S.¹, Lapina O.B.¹

IN SITU AND EX SITU STUDIES OF BIMETALLIC CATALYSTS ACTIVATION FOR MULTIWALLED CARBON NANOTUBES GROWTH

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

18.10-18.20

OPs-8

Presenting author: **Dr. Olga A. Bulavchenko**

Bulavchenko O.A.^{1,2}, Vinokurov Z.S.^{1,2}, Afonassenko T.N.³, Tsyriľ'nikov P.G.³, Saraev A.A.^{1,2},
Kaichev V.V.^{1,2}, Tsybulya S.V.^{1,2}

IN SITU XRD AND XPS STUDY OF THE REDUCTION PROCESS OF MIXED Mn-Zr OXIDE CATALYSTS OF CO OXIDATION

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

³*Institute of Hydrocarbon Processing SB RAS, Omsk, Russia*

18.20-18.30

OPs-9

Presenting author: **Arina N. Suboch**

Suboch A.N.¹, Cherepanova S.V.¹, Shmakov A.N.¹, Kibis L.S.¹, Stonkus O.A.¹, Zaikovskii V.I.¹,
Romanenko A.I.², Evtushok V.Yu.¹, Kholdeeva O.A.¹, Ismagilov Z.R.³, Podyacheva O.Yu.¹

CATALYTIC SYNTHESIS AND PROPERTIES OF NITROGEN DOPED CARBON NANOTUBES AND NANOFIBERS

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*

³*Institute of Coal Chemistry and Material Science FRC CCC SB RAS, Kemerovo, Russia*

18.30-18.40

OPs-10

Presenting author: **Elvira I. Karycheva**

Karycheva E.I.^{1,2}, Ishchenko A.V.^{1,2}, Larichev Yu.V.^{1,2}

IN-SITU STUDY OF THE TITANIUM DIOXIDE AGGREGATION PROCESSES IN THE ORGANIC MEDIA

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

April 20, Thursday
Boreskov Institute of Catalysis
Small hall

ORAL PRESENTATIONS

Chairmen: Prof. Mark V. Tsodikov
Prof. Andrei I. Boronin

11.00-11.20

OP-7

Presenting author: **Dr. Ilia V. Mishakov**

Mishakov I.V.^{1,4}, Bauman Yu.I.¹, Shorstkaya Yu.V.³, Vedyagin A.A.^{1,4}, Shubin Yu.V.^{2,3}, Plyusnin P.E.^{2,3}, Buyanov R.A.¹

BOOSTING EFFECT OF Mo ON ACTIVITY AND STABILITY OF Ni-BASED SELF-ORGANIZING CATALYST

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

²*Novosibirsk State University, Novosibirsk, Russia*

³*Nikolaev Institute of Inorganic Chemistry, SB RAS, Novosibirsk, Russia*

⁴*Tomsk Polytechnic University, Tomsk, Russia*

11.20-11.40

OP-8

Presenting author: **Dr. Irina G. Danilova**

Danilova I.G., Slavinskaya E.

FORMATION OF ACTIVE SITES OVER Pd/CeO₂ CATALYSTS FOR WET CO OXIDATION UNDER AMBIENT CONDITIONS

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

11.40-12.00

OP-9

Presenting author: **Ekaterina A. Kozlova**

Kozlova E.^{1,2}, Markovskaya D.V.^{1,2}, Stonkus O.^{1,2}, Sarayev A.^{1,2}, Kolinko P.^{1,2}, Cherepanova S.^{1,2}, Parmon V.^{1,2}

THE TRANSFORMATIONS OF THE COPPER-BASED CO-CATALYSTS OF THE Cd_{0.3}Zn_{0.7}S PHOTOCATALYST AT THE HYDROGEN PHOTOPRODUCTION UNDER VISIBLE LIGHT

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

²*Novosibirsk State University, Novosibirsk, Russia*

12.00-12.20

OP-10

Presenting author: **Dr. Irina L. Simakova**

Demidova Y.^{1,2}, Suslov E.^{2,3}, Simakova O.⁴, **Simakova I.L.**¹, Volcho K.^{2,3}, Salakhutdinov N.^{2,3}, Murzin D.⁴

CHEMOSELECTIVE REDUCTION OF CARVONE TO DIHYDROCARVONE OVER Au CATALYST

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

²*Novosibirsk State University, Novosibirsk, Russia*

³*Novosibirsk, Institute of Organic Chemistry, Novosibirsk, Russia*

⁴*Åbo Akademi University, Turku, Finland*

12.20-12.40

OP-11

Presenting author: **Oleg G. Salnikov**

Salnikov O.G.^{1,2}, Burueva D.B.^{1,2}, Kovtunov K.V.^{1,2}, Koptyug I.V.^{1,2}

MECHANISTIC STUDIES OF REACTIONS ON NANOSIZED CATALYSTS WITH THE USE OF PARAHYDROGEN

¹*International Tomography Center, SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

12.40-13.00

OP-12

Presenting author: **Dr. Nataliya V. Maksimchuk**

Maksimchuk N.V.^{1,2}, Ivanchikova I.D.¹, Skobelev I.Y.^{1,2}, Evtushok V.Yu.^{1,2},

Maksimov G.M.¹, Maksimovskaya R.I.¹, Kholdeeva O.A.^{1,2}

INSIGHTS INTO THE MECHANISM OF H₂O₂-BASED EPOXIDATIONS OVER Nb-CONTAINING CATALYSTS

¹*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

13.00-14.30 Lunch

(the restaurant of the House of Scientists, 1st floor)

Small hall

AFTERNOON SESSION

ORAL PRESENTATIONS

Chairmen: Prof. Marina M. Slinko
Prof. Vicente Cortés Corberán

15.30-15.50

OP-13

Presenting author: **Prof. Vladislav A. Sadykov**

Sadykov V. A.^{1,2}, Simonov M.N.^{1,2}, Rogov V.A.^{1,2}, Eremeev N.F.¹, Sadovskaya E.M.^{1,2}.

SIMPLE AND COMPLEX METAL OXIDE CATALYSTS OF RED-OX REACTIONS: BONDING STRENGTH OF SURFACE OXYGEN SPECIES, THEIR MOBILITY AND REACTIVITY

¹*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

15.50-16.10

OP-14

Presenting author: **Dr. Eugeny V. Starokon**

Starokon E.V., Parfenov M., Kharitonov A.S., Malykhin S.E., Pirutko L.V., Panov G.I.

THE MECHANISM OF THE LOWER ALKENES EPOXIDATION BY α -OXYGEN ON THE FeZSM-5 SURFACE

Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia

16.10-16.30

OP-15

Presenting author: **Dr. Andrey Matveev**

Matveev A.^{1,2}, Sadovskaya E.M.^{1,2}, Bryliakova A.A.¹, Gorodetskii V.V.¹

REACTIVITY AND TRANSFER KINETICS OF SURFACE AND SUBSURFACE OXYGEN SPECIES IN CO OXIDATION ON Pd(110)

¹*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

16.30-16.50

OP-16

Presenting author: **Dr. Svetlana Yashnik**

Yashnik S.A.¹, Vinokurov Z.S.¹, Salnikov A.V.¹, Ishchenko A.V.¹, Kaichev V.V.¹, Ismagilov Z.R.^{1,2}

THERMAL HYSTERESIS IN METHANE OXIDATION PROPERTIES OF Pt,Pd-DOPED Mn-HEXAALUMINATE CATALYST: EFFECT OF CALCINATION TEMPERATURE AND Pt/Pd RATIO

¹*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Institute of Coal Chemistry and Material Science SB RAS, Kemerovo, Russia*

17.10-17.30 Coffee-break

(the Big Hall Foyer of the Borekov Institute of Catalysis, 3rd floor)

Boreskov Institute of Catalysis

Small hall

ORAL PRESENTATIONS

Chairmen: Prof. Bair S. Bal'zhinimaev
Prof. Fabrizio Cavani

17.30-17.50

OP-17

Presenting author: **Dr. Alak Bhattacharyya**

Bhattacharyya A., Serban M., Bussche K.V.

DESIGN AND SYNTHESIS OF NANOCATALYSTS FOR INDUSTRIAL APPLICATIONS

Research and Development, Honeywell UOP, Des PLaines, USA

17.50-18.10

OP-18

Presenting author: **Prof. Boris N. Kuznetsov**

Kuznetsov B.N.^{1,2}, Tarabanko V.E.¹, Garyntseva N.V.¹, Djakovitch L.³, Pinel C.³

OXIDATIVE CATALYSIS PROCESSES IN THE BIOREFINERY OF WOOD BIOMASS

¹*Institute of Chemistry and Chemical Technology of SB RAS, Federal Research Center*

"Krasnoyarsk Science Center SB RAS", Krasnoyarsk, Russia

²*Siberian Federal University, Krasnoyarsk, Russia*

³*IRCELYON, Lyon, France*

18.10-18.30

OP-19

Presenting author: **Dr. Sergey F. Tikhov**

Sadykov V.A.^{1,2}, **Tikhov S.F.**¹, Bulgakov N.N.¹, Gerasev A.P.¹

CATALYTIC OXIDATION OF CO ON CuO_x: SPECIFICITY OF THE REACTION MEDIUM EFFECT ON THE KINETICS DUE TO A PARTIAL FLEXIBILITY OF THE SURFACE STRUCTURE

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

²*Novosibirsk State University, Novosibirsk, Russia*

18.30-18.50

OP-20

Presenting author: **Prof. Tatiana P. Minyukova**

Minyukova T.P., Khassin A., Yurieva T.M.

THE WAY TO CONTROL THE REACTIVITY OF Cu-NANOPARTICLES IN THE OXIDE CATALYSTS OF C1-MOLECULES REACTIONS

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

18.50-19.10

OP-21

Presenting author: **Prof. Aleksandr S. Belyi**^{1,2}

CURRENT STATUS OF RESEARCH AND DEVELOPMENT PROSPECTS OF THE PROCESS AND CATALYSTS OF GASOLINE FRACTIONS REFORMING

¹*Institute of Hydrocarbons Processing of SB RAS, Omsk, Russia*

²*Omsk State Technical University, Omsk, Russia*



April 21, Friday

Borekov Institute of Catalysis

Lavrentieva Ave., 5

Big hall

MORNING SESSION

Chairmen: Prof. Boris N.Kuznetsov
Dr. James Rekoske

KEYNOTE LECTURES

9.00-9.30

KL-8

Presenting author: **Prof. Mark V. Tsodikov**

**PERSPECTIVE CATALYTIC REACTIONS FOR PRODUCTION HYDROCARBONS COMPONENTS
FUELS AND ALCOHOLS C₄-C₈ BASED ON BIO OXYGENATES**

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

9.30-10.00

KL-9

Presenting author: **Prof. Zinifer R. Ismagilov**

Ismagilov Z.R.^{1,2}, Kerzhentsev M.A.¹, Salnikov A.V.¹, Yashnik S.A.¹, Koseoglu O.R.³

**OXIDATIVE DESULFURIZATION OF DIESEL FRACTIONS: FROM MECHANISTIC STUDIES TO
PROSPECTIVE INDUSTRIAL TECHNOLOGY**

¹*Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Institute of Coal Chemistry and Material Science SB RAS, Kemerovo, Russia*

³*Saudi Aramco, Dhahran, Kingdom of Saudi Arabia*

10.00-10.30

KL-10

Presenting author: **Prof. Mikhail B. Rozenkevich**

Rozenkevich M.B., Zavoronkova K.N.

BASED BY G. BORESKOV DEPARTMENT AT MENDELEEV UNIVERSITY SINCE 1949 UP TO NOW

Mendeleev University of Chemical Technology of Russia, Moscow, Russia

10.30-11.00 Coffee-break

(the Big Hall Foyer of Borekov Institute of Catalysis, 3rd floor)

Big hall

SESSION OF THE SCIENTIFIC COUNCIL OF BORESKOV INSTITUTE OF CATALYSIS
dedicated to the 110th anniversary of Academician Georgii K. Boreskov

Chairman: Prof. Valerii Bukhtiyarov

The official language is Russian.

11.00-11.15 д.х.н. Геннадий Иванович Панов
СОВРЕМЕННЫЙ НАУЧНЫЙ ПРОФИЛЬ Г.К. БОРЕСКОВА ПО ДАННЫМ WEB OF SCIENCE
Институт катализа СО РАН, Новосибирск

ANNUAL CONTEST OF BORESKOV INSTITUTE OF CATALYSIS
for Boreskov postgraduate scholarship

ЕЖЕГОДНЫЙ КОНКУРС ИНСТИТУТА КАТАЛИЗА
на соискание аспирантских стипендий имени академика Г.К. Борескова

11.15 - 12.30

1. Федоров Александр Викторович

"Исследование катализаторов глубокого окисления с повышенными прочностными характеристиками для кипящего слоя"

Институт катализа СО РАН, Новосибирск

2. Шаманаев Иван Владимирович

"Исследование закономерностей превращения органических кислородсодержащих соединений в присутствии катализаторов на основе фосфидов переходных металлов"

Институт катализа СО РАН, Новосибирск

3. Усков Сергей Игоревич

"Закономерности протекания низкотемпературной паровой конверсии легких углеводородов на Ni-содержащих катализаторах"

Институт катализа СО РАН, Новосибирск

12.30-14.00 Lunch

(the restaurant of the House of Scientists, 1st floor)

Big hall

AFTERNOON SESSION

ORAL PRESENTATIONS

Chairmen: Dr. Dmitri A. Bulushev
Dr. Ilia V. Mishakov

14.00-14.20

OP-22

Presenting author: **Prof. Marina M. Slinko**

Slinko M.M.¹, Makeev A.G.², Peskov N.V.²

NONLINEAR PHENOMENA IN HETEROGENEOUS CATALYTIC SYSTEMS

¹*Institute of Chemical Physics RAS, Moscow, Russia*

²*Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University, Moscow, Russia*

14.20-14.40

OP-23

Presenting author: **Dr. Elena A. Lashina**

Lashina E.A.^{1,2}, Kaichev V.V.^{1,2}, Saraev A.A.^{1,2}, Chumakova N.A.^{1,2}, Chumakov G.A.^{1,3}, Bukhtiyarov V.I.^{1,2}

SIMPLEST MECHANISM OF SELF-SUSTAINED OSCILLATIONS IN THE PARTIAL OXIDATION OF METHANE OVER Ni

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

²*Novosibirsk State University, Novosibirsk, Russia*

³*Sobolev Institute of Mathematics SB RAS, Novosibirsk, Russia*

14.40-15.00

OP-24

Presenting author: **Prof. Andrei I. Boronin**^{1,2}

BORESKOV CONCEPT ABOUT THE INFLUENCE OF THE REACTION MEDIUM ON THE CATALYST EXAMPLE OF CO OXIDATION REACTION

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

²*Novosibirsk State University, Novosibirsk, Russia*

15.00-15.20

OP-25

Presenting author: **Dr. Dmitriy I. Potemkin**

Potemkin D.I.^{1,2}, Filatov E.Yu.^{2,3}, Zadesenets A.V.^{2,3}, Snytnikov P.V.^{1,2}, Sobyandin V.A.¹

Pt_{0.5}M_{0.5} and Pt-MO_x (M = Fe, Ni, Co) MODEL CATALYSTS IN TOTAL AND PREFERENTIAL CO OXIDATION

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

²*Novosibirsk State University, Novosibirsk, Russia*

³*Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*

15.20-15.40

OP-26

Presenting author: **Dr. Alexander Cholach**

Cholach A.R.¹, Matveev A.V.^{1,2}, Bryliakova A.A.¹

RESONANT ACTIVE SITES IN THE CATALYTIC AMMONIA SYNTHESIS

¹*Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia*

²*Novosibirsk State University, Novosibirsk, Russia*

15.45-16.00 Closing session

16.00-16.30 Coffee-break

(the Big Hall Foyer of the Boreshkov Institute of Catalysis, 3rd floor)

April 21, Friday
Boreskov Institute of Catalysis
Small hall

AFTERNOON SESSION

14.00

*Roundtable discussion “Ideas of G.K. Boreskov and Today’s World”
(The official language is Russian)*

Малый конф.-зал Института катализа СО РАН

Круглый стол «Идеи Г.К. Борескова и современность»

**Председатели: академик РАН Валерий Иванович Бухтияров,
член-корр. РАН Владимир Александрович Лихолобов**

Идеи и принципы Г.К. Борескова о всеобъемлющем охвате проблем катализа - от научных основ предвидения каталитического действия, приготовления катализаторов до расчета контактных аппаратов и промышленной реализации каталитических процессов, в наше время стали международным стандартом.

Рабочий язык Круглого стола – русский.

14.00-15.40 УСТНЫЕ СООБЩЕНИЯ

академик РАН Геннадий Викторович Сакович

Научный руководитель ИПХЭТ СО РАН, Бийск

РОЛЬ АКАДЕМИКА Г.К.БОРЕСКОВА В СТАНОВЛЕНИИ ОСНОВАТЕЛЬНЫХ ТВОРЧЕСКИХ СВЯЗЕЙ СО АН СССР И ФНПЦ "АЛТАЙ"

к.х.н. Наталия Александровна Емашова

Главный эксперт направления по технологии производства новых материалов,
Научно-технический департамент ООО «УК «РОСНАНО», Москва

РОСНАНОтехнологические перспективы

к.х.н. Александр Валентинович Лавренов

Директор ИППУ СО РАН, Омск

РИФОРМИНГ И КРЕКИНГ НЕФТЯНОГО СЫРЬЯ: ОМСКИЙ ОПЫТ ПРОМЫШЛЕННОГО КАТАЛИЗА

Сергей Петрович Кильдяшев

Директор по развитию АО «СКТБ Катализатор», Новосибирск

СКТБ КАТАЛИЗАТОР - ОДНА ИЗ ИДЕЙ Г.К. БОРЕСКОВА И СОВРЕМЕННОСТЬ

Антон Андреевич Копытин

Генеральный директор ЗАО «Самарский завод катализаторов», Самара

ПРОИЗВОДСТВЕННАЯ ДЕЯТЕЛЬНОСТЬ САМАРСКОГО ЗАВОДА КАТАЛИЗАТОРОВ

15.45-16.00 Церемония закрытия (Большой зал)

16.00-16.30 Coffee-break

(the Big Hall Foyer of the Boreskov Institute of Catalysis, 3rd floor)

POSTER PRESENTATIONS

PP-01

Abasov S.I.¹, Tagiyev D.B.², Agayeva S.B.¹, Mamedova M.T.¹

NEW DIRECTION OF REFINING OF GASEOUS ALKANES

¹National Academy of Sciences of Azerbaijan, Mamedaliyev Institute of Petrochemical Processes, Baku, Azerbaijan

²National Academy of Sciences of Azerbaijan, Nagieva Institute of Catalysis and Inorganic Chemistry, Baku, Azerbaijan

PP-02

Vereshchagin S.N.¹, Dudnikov V.A.², Solovyov L.A.¹, Anshits A.G.¹

EFFECT OF A-SITE CATIONS ORDERING ON CATALYTIC PERFORMANCE OF Sr-Gd-Co MIXED OXIDES WITH PEROVSKITE STRUCTURE

¹Institute of Chemistry and Chemical Technology SB RAS, Federal Research Centre "Krasnoyarsk Science Centre SB RAS" Krasnoyarsk, Russia

²Kirensky Institute of Physics SB RAS, Federal Research Centre "Krasnoyarsk Science Centre SB RAS" Krasnoyarsk, Russia

PP-03

Antonov A.A.^{1,2}, Semikolenova N.V.¹, Talsi E.P.^{1,2}, Matsko M.A.¹, Zakharov V.A.^{1,2}, Bryliakov K.P.^{1,2}

FORMATION OF BRANCHED POLYETHYLENE OVER 2-IMINOPYRIDINE NICKEL(II) COMPLEXES UNDER HOMOGENEOUS AND HETEROGENEOUS CONDITIONS

¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

²Novosibirsk State University, Novosibirsk, Russia

PP-04

Aripjanov O.Y., Nurullaev S.P.

NEW METHOD OF UTILIZATION OF SULFUR-CONTAINING EXHAUST GASES OF FACTORIES

Tashkent Chemical-technological Institute, Tashkent, Uzbekistan

PP-05

Arkatova L.A.¹, Kasatsky N.G.², Shmakov A.N.³, Prosvirin I.P.³

DEVELOPMENT OF INTERMETALLIC CATALYSTS FOR CO₂-CH₄ REFORMING

¹SKTB "Katalizator", Novosibirsk, Russia

²Department of Structural Macrokinetics of TSC SB RAS, Tomsk, Russia

³Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-06

Baizhomartov B., Yemelyanova V., Kairbekov Z., Shakiyeva T., **Dossumova B.**, Shakiyev E.

THE FORMATION OF NANOSCALE MAGNETOCONTROLLABLE CATALYSTS OF COAL HYDROGENOLYSIS

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

PP-07

Marco Daturi¹, Guillaume Clet¹, Raquel Portela², Philippe Bazin¹, Søren B. Rasmussen², Pedro Avila², Susanne Mossin³, Anita Godiksen³, M.O. Guerrero-Perez⁴, **Miguel A. Bañares**²

OPERANDO STUDIES ON POWDER AND SHAPED SUPPORTED VANADIA CATALYSTS FOR ENVIRONMENTAL CATALYSIS

¹LCS ENSICAen CNRS University Caen, Caen, France;

²Spectroscopy and Industrial Catalysis, Institute for Catalysis, ICP-CSIC, Madrid, Spain;

³Technical University of Denmark, Lyngby, Denmark;

⁴Escuela de Ingenierías, Universidad de Málaga, Málaga, Spain

PP-08

Bedilo A.F.^{1,2}, Shuvarakova E.I.^{1,2}, Chesnokov V.V.¹

EPR CHARACTERIZATION OF SURFACE ELECTRON-ACCEPTOR SITES IN THE COURSE OF A CATALYTIC REACTION

¹Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

²Novosibirsk Institute of Technology, Kosygin Russian State University, Novosibirsk, Russia

PP-09

Belyaev V., Paukshtis E., Sobyenin V., **Badmaev S.**

FTIR-SPECTROSCOPIC STUDIES OF H₂O ADSORPTION ON THE SURFACE OF γ -Al₂O₃

Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-11

Soshnikov I.E.^{1,2}, Semikolenova N.V.¹, Bryliakov K.P.^{1,2}, Zakharov V.A.^{1,2}, Talsi E.P.^{1,2}

V(III) CATALYZED POLYMERIZATION OF α -OLEFINS: DETAILED NMR SPECTROSCOPIC CHARACTERIZATION OF INTERMEDIATES MODELING ACTIVE SPECIES OF POLYMERIZATION

¹Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

²Novosibirsk State University, Novosibirsk, Russia

PP-12

Bryliakova A.A.¹, **Matveev A.V.**^{1,2}, Tapilin V.M.¹

NO + H₂ REACTION OVER Pd(110): A DETAILED MECHANISM

¹Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

²Novosibirsk State University, Novosibirsk, Russia

PP-13

Demidova Yu.^{1,2}, Simonov M.N.^{1,2}, Panchenko V.N.¹, **Simakova I.L.**¹

SELF-CONDENSATION OF PENTANOL OVER VIII GROUP METALS: ROLE OF ACTIVE SITES

¹Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

²Novosibirsk State University, Russia

PP-14

Demidova Yu.^{1,2}, Simonov M.^{1,2}, Prikhod'ko S.¹, Shabalin A.¹, **Simakova I.L.**¹

TRANSFORMATION OF C₅ ACID CATALYZED BY SUPPORTED Ir IN H₂: SIZE EFFECT

¹Boreshkov Institute of Catalysis SB RAS, Novosibirsk, Russia

²Novosibirsk State University, Russia

PP-15

Derevyannikova E.A.^{1,2}, Kardash T.Yu.^{1,2}, Kibis L.S.^{1,2}, Boronin A.I.^{1,2}

SYNTHESIS, STRUCTURE AND STABILITY OF Rh_xCe_{1-x}O_{2-δ} SOLID SOLUTION - A MODEL CATALYST FOR CO OXIDATION

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

²*Novosibirsk State University, Russia*

PP-16

Dobrynkin N.M., Batygina M., Noskov A.

PREPARATION AND STUDY OF IRON OXIDE/ INORGANIC MATRIX OF OIL-BEARING ROCKS CATALYTIC SYSTEMS FOR ENHANCED OIL RECOVERY

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-17

Dorosheva I.B.^{1,2*}, Valeeva A. A.^{1,2}, Kozlova E. A.³, Vokhmintsev A.S.^{1,2}, Weinstein I.A.^{1,2}, Rempel A. A.^{1,2}

SYNTHESIS AND PHOTOCATALYTIC PROPERTIES OF ANODIZED TITANIA NANOTUBES

¹*Institute of Solid State Chemistry, Ural Branch of the RAS, Ekaterinburg, Russia*

²*Ural Federal University, Ekaterinburg, Russia*

³*Boreskov Institute of Catalysis, Siberian Branch of the RAS, Novosibirsk, Russia*

PP-18

Dossumov K.¹, **Yergaziyeva G.Y.**², Myltykbayeva L.K.², Telbayeva M.M.², Tulebayev E.M.²

THE OXIDATIVE CONVERSION OF METHANE

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EFFECT OF THE ALUMINA PHASE TRANSFORMATION ON STABILITY OF LOW-LOADED Pd-Rh THREE-WAY CATALYSTS

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PP-45**Khasin A.V.****SEPARATE KINETIC STUDIES OF REACTION STEPS FOR THE CATALYTIC OXIDATION OF ETHYLENE OVER SILVER FILMS: INTRINSIC MECHANISM OF THE REACTION***Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia***PP-46****Kibis L.S.^{1,2}, Slavinskaya E.M.^{1,2}, Kardash T.Yu^{1,2}, Derevyannikova E.A.^{1,2}, Stonkus O.A.^{1,2}, Boronin A.I.^{1,2}****THE ACTIVE SPECIES OF Rh/CeO_x CATALYSTS: XPS AND TPR CO STUDY**¹*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*²*Novosibirsk State University, Novosibirsk, Russia***PP-47****Kochurova N.M., Salanov A.N.****OXIDATION AND ETCHING OF POLYCRYSTALLINE PLATINUM IN O₂ AND NH₃-AIR FLOW***Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia***PP-48****Kolinko P.A.^{1,2}, Kozlov D.¹****PHOTOCATALYTIC OXIDATION OF ETHANOL ON TITANIUM DIOXIDE MODIFIED BY NOBLE METALS UNDER VISIBLE LIGHT**¹*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*²*Novosibirsk State University, Novosibirsk, Russia***PP-49****Kolobov N.S.^{1,2}, Selishchev D.S.^{1,2}, Bukhtiyarov A.V.¹, Gubanov A.I.³, Kozlov D.V.^{1,2}****PHOTOCATALYTIC OXIDATION OF CO ON THE Pd/TiO₂ CATALYSTS SYNTHESIZED BY THE DECOMPOSITION OF Pd(acac)₂**¹*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*²*Novosibirsk State University, Novosibirsk, Russia*³*Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia***PP-50****Kolobova E.¹, Pakrieva E.¹, Martinez-Gonzalez S.², Kotolevich Y.³, Bogdanchikova N.³, Pestryakov A.¹, Fernandez-Lafuente R.², Cortés Corberán V.²****COMPARISON OF SUPPORTED Au AND Ag NANOCATALYSTS FOR 1-OCTANOL OXIDATION**¹*Tomsk Polytechnic University, Tomsk, Russia*²*Instituto de Catálisis y Petroleoquímica (CSIC), Madrid, Spain*³*Centro de Nanociencias y Nanotecnología, UNAM, Ensenada, Mexico***PP-51****Koshevoy E.I., Mikenas T.B., Zakharov V.A.****EPR STUDY OF MgCl₂-SUPPORTED Ti(II)-BASED CATALYSTS FOR ETHYLENE POLYMERIZATION***Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia***PP-52****Koskin A.P.¹, Gabova N.E.^{1,2}****DESIGN OF NOVEL SOLID ACID CATALYSTS FOR THE GAS-PHASE AROMATIC NITRATION**¹*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*²*Novosibirsk State Technical University, Novosibirsk, Russia*

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THE STRUCTURAL DETERMINATION OF NANODISPERSED Pd, PdMe CATALYSTS

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IMPACT OF THE Pt INTERPARTICLE DISTANCE IN Pt/Al₂O₃ CATALYSTS PREPARED BY LASER ELECTRODISPERSION ON ACTIVITY IN CO OXIDATION

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KEY INTERMEDIATES IN CATALYTIC SYSTEMS FOR Di-, Oligo- AND POLYMERIZATION OF OLEFINS

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CATALYTIC ETCHING OF PLATINUM CATALYST GAUZES DURING AMMONIA OXIDATION

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INFLUENCE OF NITROGEN-COMPOUNDS ON THE GAS-PHASE OXIDATIVE DESULFURIZATION OF DBT OVER B-Mo-MODIFIED CuZnAlO CATALYST

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PSEUDO IN SITU XPS ANALYSIS OF REAL CATALYSTS

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NEW TECHNOLOGY OF SOYBEAN OIL EPOXIDATION

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SIMULATION OF METHANOL DEHYDROGENATION PROCESS IN MEMBRANE REACTORS

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POLYNUCLEAR MIXED VALENCE STRUCTURES IN CARBON MONOXIDE OXIDATION BY Co-MODIFIED ZEOLITES

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PALLADIUM SPECIES AT STOICHIOMETRIC AND PARTIALLY REDUCED CERIA: A DENSITY FUNCTIONAL STUDY

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STRUCTURAL ARRANGEMENT OF THE HIGH ACTIVE V₂O₅, WO₃/(Ce(Y)-TiO₂) CATALYSTS IN THE REACTION OF SELECTIVE CATALYTIC REDUCTION OF NO WITH AMMONIA

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EPR STUDY OF ELECTRON-ACCEPTOR SITES DURING CATALYTIC DEHYDROCHLORINATION OF 1-CHLOROBUTANE

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SPECIFIC SURFACE AREA OF THE FRAME BULK POROUS MATERIAL WITH THE CONTROLLABLE GEOMETRICAL PARAMETERS OF STRUCTURE AND SURFACE NANOLAYER

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STRUCTURAL FEATURES OF THE GOLD NANOLAYER ON THE GLASS SURFACE MODIFIED BY SURFACE ION EXCHANGE AND CHEMICAL ETCHING

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SUBSURFACE (DISSOLVED) OXYGEN ATOMS IN SUPPORTED Pt PARTICLES AS A POSSIBLE ACTIVE SPECIES IN OXIDATION CATALYSIS

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REACTIVITY OF OXYGEN SPECIES STABILIZED IN Pt/MeOx SYSTEMS PREPARED BY RF-PLASMA

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SINGLE-ATOM Pd-Ag CATALYST FOR ALKYNE HYDROGENATION

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INVESTIGATION OF THE STABILITY OF Mo/HZSM-5 CATALYSTS WITH VARIOUS Mo:Al RATIOS FOR NON-OXIDATIVE CONVERSION OF METHANE

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FIBROUS ALUMINA - A NEW TYPE OF CATALYST SUPPORT

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OXIDATION AND CORROSION OF POLYCRYSTALLINE PALLADIUM DURING CO OXIDATION

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SELECTIVE HYDROGENATION OF CITRAL TO CITRONELLAL OVER NICKEL-CHROMIUM CATALYST IN THE FLOW UNIT BY CONTINUOUS METHOD

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OXIDE Ag₂Cu₂O₄ AS CATALYST FOR CO OXIDATION AT ROOM TEMPERATURE

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EFFECT OF THE Si/Al RATIO ON THE ADSORPTION/DESORPTION PROPERTIES OF ZEOLITES TOWARDS TOLUENE

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KINETIC STUDY OF LOW-TEMPERATURE CATALYTIC STEAM REFORMING OF LIGHT HYDROCARBONS OVER THE Ni-BASED CATALYST

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WEAKLY BOUND OXYGEN IN THE Mn-Ga-O SPINELS: FEATURES OF OXIDE REDUCTION AND CATALYTIC ACTIVITY

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FORMATION OF O- RADICAL ANIONS IN OXIDE MATERIALS AND THEIR REACTIONS

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DEACTIVATION OF Pt-Rh CATALYSTS OF AMMONIA OXIDATION

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XAFS STUDY OF CATALYTIC NANOSIZED SYSTEMS PROMISING FOR ALTERNATIVE ENERGY AND ENVIRONMENTAL CATALYSIS

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DIFFRACTION EFFECTS OF NANOSIZED PARTICLES

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THE COMPOSITION OF THE ADSORBED LAYER OF VARIOUSLY PREPARED TITANIUM DIOXIDE UNDER AMBIENT AIR

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LOW-SPIN AND HIGH-SPIN OXOIRON(V) INTERMEDIATES THAT OXYGENATE STRONG C-H BONDS

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PP-125**ENANTIOSELECTIVE AEROBIC OXIDATIVE COUPLING OF β -NAPHTHOLS CATALYZED BY CHIRAL IRON COMPLEXES**

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PP-126**HIDDEN RADICAL REACTIVITY OF THE $[\text{FeO}]^{2+}$ GROUP IN THE H-ABSTRACTION FROM METHANE BY IRON (HYDRO)OXIDE SPECIES**

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