Scientific Program
XXI International conference on Chemical Reactors
CHEMREACTOR-21
Delft, the Netherlands, September 22-25, 2014

EFCE Event 726

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

TU Delft Process Technology Institute, Delft, the Netherlands

European Federation on Chemical Engineering

Scientific Council on Theoretical Fundamentals of Chemical
Technology RAS Scientific Council on Catalysis RAS

Scientific Council on Catalysis RAS


Conference Proceedings:
CHEMICAL ENGINEERING JOURNAL, ELSEVIER
CHEMREACTOR-21 is devoted to the 100th anniversary of Professor Mikhail Slin'ko – the conference founder and the outstanding specialist in the field of mathematical modeling of chemical processes and reactors.

Professor Mikhail Slin'ko's research has been mainly connected with the studying the theoretical basis of chemical technology, industrial catalysis, and the kinetics of catalytic processes. Expert in the field of catalysis and chemical engineering, he was one of the first to realize the need for a radical mathematization of science, at a time when for many the relevance of such a step was not obvious. Mikhail Slin'ko created the country's first school of mathematical modeling of chemical engineering, and the first university course on modeling of catalytic processes.

Application of mathematical modeling allows moving from the laboratory setups and results to large-scale industrial processes with the high reliability. The basis of the methodology of large-scale transition from laboratory research to industrial conditions is the construction of mathematical models of catalytic processes through a combination of computational and physical experiments, as well as the use of modern high-quality methods of mathematical analysis.

Many results has been obtained by Mikhail Slin'ko for the first time in the world. First of all, it refers to the analysis of nonlinear dynamic processes in catalytic reactors. His fundamental results were constantly in close interaction with industry. With the direct participation of Mikhail Slin'ko and his pupils more than 30 large-capacity industrial units were built using mathematical modeling methods in 1965 – 1998's.

Due to the initiative of Professor Mikhail Slin'ko and, for a long time, with his active participation the Conferences on Chemical
Reactors (CHEMREACTOR), which are of great importance for the development of the theory of catalytic processes and reactors based on mathematical modeling more are being regularly held for more than 40 years.

Professor Mikhail Slin’ko always took up a proactive stance, giving the people his enthusiasm and professionalism, burning and talent as a scientist and organizer of science and industry, teacher, and public figure. Scientific school in the field of mathematical modeling of catalytic reactions and processes created by Mikhail Slin'ko gained worldwide fame and recognition. A lot of his disciples and followers work in many regions of Russia and abroad.
SCIENTIFIC PROGRAM

September 22, Monday, 13.20
Conference opening
Opening Address: Professor Andrzej Stankiewicz,
The Netherlands

SENAATSZAAL Hall

On the centenary of the Professor Mikhail Slin'ko birth

Chairpersons: Professor Andrzej Stankiewicz, The Netherlands,
Professor Alexandr Noskov, Russia

September 22, Monday, 13.30
Valentin Parmon
PROFESSOR MIKHAIL SLIN'KO – INSTITUTE OF CATALYSIS IN NOVOSIBIRSK AND
MATHEMATICAL MODELING OF CHEMICAL PROCESSES AND REACTORS IN RUSSIA
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

September 22, Monday, 14.00
Marina M. Slin'ko
Memories about father
M.G. SLIN'KO – AS A PERSON, SOLDIER AND SCIENTIST
Institute of Chemical Physics RAS, Moscow, Russia

September 22, Monday, 14.30
Jacob A. Moulijn\textsuperscript{1}, Freek Kapteijn\textsuperscript{1}, Javier Pérez-Ramírez\textsuperscript{2}
A Professor Mikhail Slin’ko Honorary Lecture:
MULTI-LEVEL ENGINEERING OF CATALYTIC REACTIONS
\textsuperscript{1}Delft University of Technology, The Netherlands
\textsuperscript{2}Catalysis Engineering, ETH Zurich, Zurich, Switzerland

15.30 Coffee-break

September 22, Monday, 16.00
Dan Luss
A Professor Mikhail Slin’ko Honorary Lecture:
CATALYTIC REACTION ENGINEERING OF THE REDUCTION OF DIESEL AUTOMOBILE EMISSIONS
University of Houston, USA
KEYNOTE LECTURES

Chairperson: Professor Dmitry Murzin, Finland

17.00
KL-1  Zinfer R. Ismagilov\textsuperscript{1,2}, Kerzhentsev M.A.\textsuperscript{1}, Yashnik S.A.\textsuperscript{1}, Khairulin S.R.\textsuperscript{1}, Kuznetsov V.V.\textsuperscript{1}, Parmon V.N.\textsuperscript{1}, Bourane Abdennour\textsuperscript{3}, Koseoglu Omer.R.\textsuperscript{3}

NEW CATALYSTS AND CATALYTIC PROCESSES FOR OXIDATIVE DESULFURIZATION OF DIESEL FUEL
\textsuperscript{1}Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
\textsuperscript{2}Institute of Coal Chemistry and Material Sciences SB RAS, Kemerovo, Russia
\textsuperscript{3}Saudi Aramco, Research and Development Center, Dhahran, Kingdom of Saudi Arabia

17.30
KL-2  Evgeny V. Rebrov

REACTION INTENSIFICATION BY INDUCTION HEATING AND ULTRASONIC CAVITATION
School of Engineering, University of Warwick, Coventry, CV4 7AL, UK

19.00 Welcome Reception
September 23, Tuesday
Morning Session
SENAATSZAAL Hall

PLENARY LECTURES

Chairperson: Dr. Andrey Zagoruiko, Russia

9.00
PL-1  Guy Marin¹, Grigory Yablonsky²
KINETICS OF CHEMICAL REACTIONS: DECODING COMPLEXITY
¹Ghent University, Belgium
²St Louis University, USA

10.00
PL-2  Marc-Olivier Coppens
NATURE-INSPIRED ENGINEERING OF CATALYTIC PROCESSES — AVENUES TO SCALABILITY, EFFICIENCY AND ROBUSTNESS
University College London, Department of Chemical Engineering, and EPSRC “Frontier Engineering” Centre for Nature Inspired Engineering, Great Britain

11.00 Coffee-break

KEYNOTE LECTURES

Chairperson: Professor Andrzej Kolodziej, Poland

11.30
KL-3  Andrey Kuzmin
CONFINED SWIRLED FLOWS FOR PROCESS INTENSIFICATION
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

12.00
KL-4  Anne Galarneau
FLOW-THROUGH CATALYSIS FOR INTENSIFIED PRODUCTION
University of Montpellier, France

12.30 Lunch
Section I.
Advances in Chemical Reactors Fundamentals

Chemical Reactions Kinetics
Energy & Mass Transfer in Chemical Reactors
Fundamentals of Hydrodynamics and Fluid Flow in Chemical Reactors
Specialized Software for Development of Chemical Reactors and Flow-Sheeting of Reactive Processes

Chairperson: Professor Eugeniusz Molga, Poland

14.00
OP-I-1
Arve K., Sifontes V., Murzin D., Salmi T.
KINETIC MODELING OF GALACTOSE HYDROGENATION OVER RUTHENIUM ON ALUMINA CATALYST
Åbo Akademi University, Turku/Abo, Finland

14.20
OP-I-2
Sulman E.¹, Doluda V.¹, Matveeva V.¹, Bykov A.¹, Sidorov A.¹, Lebedeva M.¹, Bronstein L.², Salmi T.³, Murzin D.³
DISACCHARIDES HYDROGENATION KINETICS OVER Ru BASED NANOSTRUCTURED CATALYSTS
¹Tver Technical University, Tver, Russia
²Indiana University, Bloomington, USA
³Åbo Akademi University, Turku, Finland

14.40
OP-I-3
Sinev M.Y., Shapovalova O.V., Arutyunov V.S.
SELECTIVITY OF SYNGAS FORMATION IN VOLUMETRIC MATRIX REFORMERS (RADIANT BURNERS): THERMODYNAMIC, KINETIC AND MACROKINETIC ASPECTS
Semenov Institute of Chemical Physics RAS, Moscow, Russia

15.00
OP-I-4
Pawlaczyk A., Gosiewski K.
COMBUSTION OF LEAN METHANE-AIR MIXTURES IN MONOLITH BED: KINETIC STUDIES IN A LOW AND HIGH TEMPERATURE
Institute of Chemical Engineering PAS, Gliwice, Poland
15.20
OP-I-5
Ovchinnikova E.V., Urzhuntsev G., Chumachenko V.A., Echevsky G.V.
KINETIC STUDY OF N-BUTANE ISOMERIZATION ON Pd-SZ CATALYST
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

15.40
OP-I-6
Xue G.¹,², Thybaut J.W.², Weng H.¹, Marin G.B.²
SINGLE-EVENT MICROKINETIC (SEMK) ASSESSMENT OF THE CATALYTIC CRACKING OF CYCLOPARAFFINS ADMIXED WITH OLEFINS
¹Research Institute of Petroleum Processing, East China University of Science and Technology, Shanghai, China
²Ghent University, Ghent, Belgium

16.00 Coffee break

Afternoon Session
SENAATSZAAL Hall
ORAL PRESENTATIONS

Section I.
Advances in Chemical Reactors Fundamentals
Chemical Reactions Kinetics
Energy & Mass Transfer in Chemical Reactors
Fundamentals of Hydrodynamics and Fluid Flow in Chemical Reactors
Specialized Software for Development of Chemical Reactors and Flow-Sheeting of Reactive Processes

Chairperson: Professor Gunther Kolb, Germany

16.20
OP-I-7
Zagoruiko A.¹,², Noskov A.¹, Belyi A.³, Smolikov M.³
KINETIC MODEL OF NAPHTHA REFORMING PROCESS BASED ON THE USE OF THERMODYNAMIC POTENTIALS
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
²Tomsk Polytechnical University, Tomsk, Russia
³Institute for Hydrocarbon Processing SB RAS, Omsk, Russia

16.40
OP-I-8
Templis C., Papayannakos N.
LIQUID TO PARTICLE MASS TRANSFER IN A STRUCTURED BED THREE PHASE MINI REACTOR
National Technical University of Athens, Zografos – Athens, Greece
17.00

OP-I-9

Haase S., Bauer T., Lange R.

GAS-LIQUID TWO-PHASE FLOWS IN SQUARE MINICHANNELS: DIMENSIONLESS ANALYSIS OF FLOW REGIMES AND TAYLOR FLOW PARAMETERS

TU Dresden, Dresden, Germany

17.20

OP-I-10

Kolodziej A.1,2, Burghardt A.1, Iwaniszyn M.1, Kryca J.1, Jodlowski P.3, Lojewska J.3

STRUCTURED REACTORS OPTIMISATION: ENTROPIC APPROACH

1Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland
2Opole University of Technology, Opole, Poland
3Jagiellonian University, Kraków, Poland

17.40

OP-I-11

Iwaniszyn M.1, Lojewska J.2, Kolodziej A.1,3

FLOW RESISTANCE AND HEAT TRANSFER IN SHORT CHANNELS OF METALLIC MONOLITHS: EXPERIMENTS VERSUS CFD

1Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland
2Jagiellonian University, Faculty of Chemistry, Kraków, Poland
3Opole University of Technology, Faculty of Civil Engineering, Opole, Poland

18.00

OP-I-12

Zarekar S.1, Heidig T.2, Freund H.2

3D SIMULATION OF LAMINAR FLUID FLOW IN OPEN CELLULAR MONOLITHS FOR STRUCTURED CATALYTIC REACTORS

1Otto-von-Guericke University Magdeburg, Magdeburg, Germany
2Friedrich-Alexander-University Erlangen-Nürnberg, Erlangen, Germany

18.30 Guide Excursion around Delft
Section II.
Chemical Reaction Engineering and Reactors Design – Novel Approaches, Modeling, Scale-Up, Optimization

Mathematical Simulation and CFD Studies of Chemical Reactors
New Designs of Chemical Reactors (e.g. Structured Reactors, Membrane Reactors, Micoreactors)
Novel Approaches in Chemical Reaction Processes Engineering (e.g. Microwave/Induction Heated Reactors, Ultrasonic Reactors, Unsteady-State Forcing and Sorption Enhancement in Chemical Reactors, Multifunctional Reactors)

Chairperson: Professor Klaus Möller, South Africa

14.00
OP-II-1
Kapteijn F., Kaskes B., Vervloet D., van Ommen J.R.
BOOSTING THE FISCHER-TROPSCH REACTOR OPERATION BY STRUCTURING.
Delft University of Technology, Delft, The Netherlands

14.20
OP-II-2
Montebelli A.1, Visconti C.1, Groppi G.1, Tronconi E.1, Kohler S.2, Venvik H.3, Myrstad R.4
HIGHLY CONDUCTIVE STRUCTURED CATALYSTS FOR THE METHANOL SYNTHESIS IN COMPACT MULTITUBULAR REACTORS
1Politecnico di Milano, Milano, Italy
2Total Refining & Chemicals, La Défense, France
3Norwegian University of Science and Technology, Trondheim, Norway
4SINTEF Materials and Chemistry, Trondheim, Norway

14.40
OP-II-3
Bianchi E.1, Visconti C.2, Groppi G.2, Schwieger W.1, Tronconi E.2, Freund H.1
ENHANCING THE HEAT TRANSFER WITHIN CATALYTIC REACTORS BY OPTIMIZATION OF NOVEL STRUCTURED SUPPORTS
1Friedrich-Alexander-University Erlangen-Nürnberg, Erlangen, Germany
2Dipartimento di Energia, Politecnico di Milano, Milano, Italy

15.00
OP-II-4
Iordache I.1, Schitea D.1, Iordache M.2, Marinoiu A.1
SONOCHEMICAL REACTORS IN ENVIRONMENTAL APPLICATIONS
1National Research and Development Institute for Cryogenics and Isotopic Technologies - ICIT, National Hydrogen and Fuel Cell Center, Rm. Valcea, Romania
2National Research & Development Institute for Industrial Ecology – ECOIND, Valcea, Romania
15.20  
OP-II-5  
Khakharia P.¹, de Vries T.², Sigurbjörnsson Ó.³, Schuurbiers C.¹  
REACTOR DEVELOPMENT FOR UTILIZATION OF CO₂: CASE STUDY OF PRODUCING CYCLIC CARBONATES  
¹TNO, Delft, The Netherlands  
²FeyeCon D&I, Weesp, The Netherlands  
³Carbon Recycling International, Reykjavík, Iceland

15.40  
OP-II-6  
Härting H., Schubert M.  
HYDROGENATION OF ALPHA-METHYLSTYRENE IN AN INCLINED ROTATING FIXED BED REACTOR  
Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany

16.00 Coffee break

Afternoon Session  
COMMISSIEKAMER Hall  
ORAL PRESENTATIONS  
Section II.  
Chemical Reaction Engineering and Reactors Design – Novel Approaches, Modeling, Scale-Up, Optimization  
Mathematical Simulation and CFD Studies of Chemical Reactors  
New Designs of Chemical Reactors (e.g. Structured Reactors, Membrane Reactors, Microreactors)  
Novel Approaches in Chemical Reaction Processes Engineering (e.g. Microwave/Induction Heated Reactors, Ultrasonic Reactors, Unsteady-State Forcing and Sorption Enhancement in Chemical Reactors, Multifunctional Reactors)

Chairperson: Professor Mikhail Sinev, Russia

16.00  
OP-II-7  
Giorno L.  
BIOCATALYTIC MEMBRANE REACTORS: STRATEGIES TO PRESERVE ENZYME LIFE TIME BY CONTROLLING MEMBRANE FOULING  
Consiglio Nazionale delle Ricerche - Istituto per la Tecnologia delle Membrane, Rende (CS), Italy

16.20  
OP-II-8  
Klenov O.P.¹, Makarshin L.¹, Gribovskiy A.¹,², Andreev D.¹, Parmon V.¹,²  
CFD MODELING OF COMPACT METHANOL REFORMER  
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia  
²Novosibirsk State University, Novosibirsk, Russia
16.40
OP-II-9
Van Cauwenberge D., Schietekat C.M., Van Geem K.M., Marin G.B.
CFD-BASED DESIGN OF 3D PYROLYSIS REACTORS: RANS vs. LES
Ghent University, Ghent, Belgium

17.00
OP-II-10
Constantino D., Pereira C., Ferreira A., Faria R., Loureiro J., Rodrigues A.
FIXED BED ADSORPTIVE REACTOR FOR BUTYL ACRYLATE SYNTHESIS University of Porto, Faculty of Engineering, Porto, Portugal

17.20
OP-II-11
Spallina V., van Sint Annaland M., Gallucci F.
COMPARISON OF ADVANCED PROCESSES BASED ON CHEMICAL LOOPING AND MEMBRANE SEPARATION FULLY INTEGRATED IN AN H₂ PRODUCTION PLANT WITH CO₂ CAPTURE
Eindhoven University of Technology, Eindhoven, The Netherlands

17.40
OP-II-12
Molga E.
SORPTION-ENHANCED STEAM-METHANE REFORMING WITH SIMULTANEOUS SEQUESTRATION OF CO₂ ON FLY ASHES: MODELLING OF REACTORS OF DIFFERENT TYPE
Warsaw University of Technology, Chemical and Process Engineering Department, Warsaw, Poland

18.30 Guide Excursion around Delft
September 24, Wednesday
Morning Session
SENAATSZAAL Hall

PLENARY LECTURES

Chairperson: Professor Dan Luss, USA

9.00
PL-3  J.A.M. Hans Kuipers
RECENT ADVANCES IN THE DIRECT NUMERICAL SIMULATION (DNS) OF MASS,
MOMENTUM AND HEAT TRANSFER IN MULTIPHASE CHEMICAL REACTORS
Department of Chemical Engineering and Chemistry, Eindhoven University of Technology,
The Netherlands

10.00
PL-4  Alírio E. Rodrigues
SORPTION ENHANCEMENT OF CATALYTIC REACTIONS
Department of Chemical Engineering, University of Porto, Portugal

11.00 Coffee-break

KEYNOTE LECTURES

Chairperson: Professor Enrico Tronconi, Italy

11.30
KL-5  Giorgos D. Stefanidis
MICROWAVE-ASSISTED REACTION AND SEPARATION SYSTEMS
Delft University of Technology, Department of Process and Energy, the Netherlands

12.00
KL-6  Asterios Gavriilidis
MICROREACTION TECHNOLOGY FOR CATALYTIC PROCESS DESIGN
Department of Chemical Engineering, University College London, Great Britain

12.30 Lunch
Afternoon Session
SENAATSZAAL Hall

ORAL PRESENTATIONS

Section III.
Chemical Reactors and Technologies for Emerging Applications
Environmental Protection and Utilization of Wastes
Processing of Biomass and Renewable Feedstocks
Production of Novel Nano-Structured Carbon Materials

Chairperson: Professor Ioan Iordache, Romania

14.00
OP-III-1
Kolb G., Tiemann D., Ziogas A., Schuerer J.
STEAM REFORMING OF POLYALCOHOLS AS A HYDROGEN SOURCE FOR FUEL CELLS IN MICROCHANNEL REACTORS OF THE kW SCALE
Fraunhofer ICT-IMM, Mainz, Germany

14.20
OP-III-2
Sturm G., Stankiewicz A., Stefanidis G.
PLASMA GASIFICATION OF SANITATION BIOMASS
Delft University of Technology, Delft, The Netherlands

14.40
OP-III-3
Cannilla C.¹, Bonura G.¹, Frusteri L.², Frusteri F.¹
BATCH REACTOR COUPLED WITH WATER PERMSELECTIVE MEMBRANE: STUDY OF GLYCEROL ETHERIFICATION REACTION WITH BUTANOL
¹CNR-ITAE “Nicola Giordano”, Messina, Italy
²Dipartimento di Ingegneria Elettronica, Chimica ed Ingegneria Industriale, Messina, Italy

15.00
OP-III-4
Ruoppolo G.¹, Brachi P.², Picarelli A.¹, Miccio F.¹,², Chirone R.¹
PRIMARY CATALYSTS FOR FLUIDIZED BED GASIFICATION OF BIOMASS AND WASTES
¹Istituto di Ricerche sulla Combustione_CNR, Napoli, Italy
²Dipartimento di Ingegneria Industriale, University of Salerno, Salerno, Italy
³Istituto di Scienza e Tecnologia dei Materiali Ceramici, Napoli, Italy

15.20
OP-III-5
Hancsók J.¹, Eller Z.¹, Tóth C.¹, Varga Z.¹, Holló A.², Varga G.²
FUELS FROM NATURAL TRIGLYCERIDES
¹University of Pannonia, Veszprem, Hungary
²MOL Hungarian Oil- and Gas Company Plc., Százhalombatta, Hungary
15.40
OP-III-6
Eller Z., Noé l.B., Hancsók J.
BIOJET FUEL FROM KEROSENE/COCONUT OIL MIXTURES.
University of Pannonia, Veszprém, Hungary

16.00 Coffee-break

Afternoon Session
SENAATSZAAL Hall

ORAL PRESENTATIONS

Section III.
Chemical Reactors and Technologies for Emerging Applications
Environmental Protection and Utilization of Wastes
Processing of Biomass and Renewable Feedstocks
Production of Novel Nano-Structured Carbon Materials

Chairperson: Professor Ahmet Kerim Avci, Turkey

16.20
OP-III-7
Sotenko M., Coles S., Hamilton-Jones A., Kirwan K.
OPTIMIZATION OF EXTRACTION AND BACTERIAL DEGRADATION OF BIOMASS IN A STIRRED TANK REACTOR
University of Warwick, Coventry, UK

16.40
OP-III-8
Yildiz G.¹, Ronsse F.¹, van Geem K.¹, van Duren R ², Kersten S.R.³, Prins W.¹
EFFECT OF BIOMASS ORIGINATED ASH IN CATALYTIC FAST PYROLYSIS OF BIOMASS
¹Ghent University, Ghent, Belgium
²Albemarle Catalysts Company BV, Amsterdam, The Netherlands
³University of Twente, Twente, The Netherlands

17.00 Poster Session
Afternoon Session  
COMMISSIEKAMER Hall  
ORAL PRESENTATIONS  

Section I.  
Advances in Chemical Reactors Fundamentals  
Chemical Reactions Kinetics  
Energy & Mass Transfer in Chemical Reactors  
Fundamentals of Hydrodynamics and Fluid Flow in Chemical Reactors  
Specialized Software for Development of Chemical Reactors and Flow-Sheeting of Reactive Processes  

Chairperson: Dr. Anna Pawlaczyk, Poland  

14.00  
OP-I-13  
Medrano J., Voncken R., Roghair I., van Sint Annaland M., Gallucci F.  
EXPERIMENTAL AND NUMERICAL STUDY ON GAS POCKETS SURROUNDING HORIZONTALLY IMMERSED MEMBRANES IN FLUIDIZED BEDS  
Eindhoven University of Technology, Eindhoven, The Netherlands  

Section II.  
Chemical Reaction Engineering and Reactors Design – Novel Approaches, Modeling, Scale-Up, Optimization  
Mathematical Simulation and CFD Studies of Chemical Reactors  
New Designs of Chemical Reactors (e.g. Structured Reactors, Membrane Reactors, Microreactors)  
Novel Approaches in Chemical Reaction Processes Engineering (e.g. Microwave/Induction Heated Reactors, Ultrasonic Reactors, Unsteady-State Forcing and Sorption Enhancement in Chemical Reactors, Multifunctional Reactors)  

14.20  
OP-II-13  
Taran O.P.¹,², Zagoruiko A.N.¹,³, Ayusheev A.B.¹, Yashnik S.A.¹, Prihod'ko R.V.⁴, Goncharuk V.V.⁴, Ismagilov Z.R.¹,⁵, Parmon V.N.¹,⁶  
WET PEROXIDE OXIDATION OVER Cu-ZSM-5 and Fe-ZSM-5 CATALYSTS. KINETICS STUDY IN BATCH AND FLOW REACTORS  
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia  
²Novosibirsk State Technical University, Novosibirsk, Russia  
³Tomsk Polytechnic University, Tomsk, Russia  
⁴Dumansky Institute of Colloid and Water Chemistry NASU, Kiev, Ukraine  
⁵Institute of Coal Chemistry and Material Sciences SB RAS, Kemerovo, Russia  
⁶Novosibirsk State University, Novosibirsk, Russia  

14.40  
OP-II-14  
Chandana L., Manoj Kumar Reddy P., Subrahmanyam C.  
ATMOSPHERIC PLASMA JET FOR METHYLENE BLUE DEGRADATION  
Indian Institute of Technology Hyderabad (IIT Hyderabad), Hyderabad, India
Vernikovskaya N.V.1,2, Dobrynkin N.M.1, Chumachenko V.A.1
MATHEMATICAL MODELING OF THE FILTRATION PROCESS OF CATALYST SUSPENSIONS WITH KNOWN PARTICLE SIZE DISTRIBUTION: ACCOUNTING FOR DYNAMICS OF THE CAKE GROWTH AND FILTER PORE BLOCKAGE
1Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
2Novosibirsk State University, Novosibirsk, Russia

Tezcan F.I, Avci A.K.
PARAMETRIC ANALYSIS OF OXIDATIVE COUPLING OF METHANE IN A MICROCHANNEL REACTOR
Department of Chemical Engineering Bogazici University, Istambul, Turkey

Möller K.1, Mthombeni-Möller B.1, Knottenbelt C.2, Mdeleni M.2
SIMULATION OF THE CONVERSION OF OLEFINS TO DISTILLATES
1University of Cape Town, Cape Town, South Africa
2The Petroleum Oil and Gas Corporation of South Africa (SOC), Ltd., (PetroSA), Cape Town, South Africa

Chairperson: Dr. Hannsjoerg Freund, Germany

Patrascu M., Sheintuch M.
DEMONSTRATION AND DESIGN PRINCIPLES OF AN EFFICIENT SCALED DOWN AUTOTHERMAL OR HEATED MEMBRANE REFORMER FOR PURE HYDROGEN PRODUCTION
Technion – Israel Institute of Technology, Haifa, Israel

Vidal Vázquez F., Simell P., Pennanen J., Koskinen-Soivi M.
REACTOR DESIGN AND TESTING OF CATALYSTS USED FOR HYDROGEN PRODUCTION BY METHANOL STEAM REFORMING FOR POLYMERIC ELECTROLYTE MEMBRANE FUEL CELLS APPLICATIONS
VTT Technical Research Centre of Finland, Helsinki, Finland

15.00 OP-II-15

15.20 OP-II-16

15.40 OP-II-17

15.20 Coffee-break

16.00 Poster Session
September 25, Thursday

Morning Session
SENAATSZAAL Hall

PLENARY LECTURES

Chairperson: Professor Alirio E. Rodrigues, Portugal

9.00
PL-5 Liang-Shih Fan
CHEMICAL LOOPING TECHNOLOGY – METAL OXIDES, REACTORS AND PROCESSES
The Ohio State University, Columbus, Ohio, USA

10.00
PL-6 Tapio Salmi
CHEMICAL REACTION ENGINEERING OF THE LOW-TEMPERATURE TRANSFORMATION OF BIOMASS
Åbo Akademi, Turku, Finland

11.00 Coffee-break

KEYNOTE LECTURES

Chairperson: Professor Francesco Frusteri, Italy

11.30
KL-7 Erik Heeres
CATALYTIC BIOMASS CONVERSIONS
Department of Chemical Engineering, University of Groningen, the Netherlands

12.00
KL-8 Khadzhiev S.N., Kadiev H.M., Kolesnichenko N.V., Anton Maximov
NEW TECHNOLOGIES FOR NATURAL GAS AND HEAVY OIL PROCESSING
A.V. Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia

12.30 Lunch
Afternoon Session
SENAATSZAAL Hall
ORAL PRESENTATIONS

Section III.
Chemical Reactors and Technologies for Emerging Applications
Environmental Protection and Utilization of Wastes
Processing of Biomass and Renewable Feedstocks
Production of Novel Nano-Structured Carbon Materials

Chairperson: Professor Jenő Hancsók, Hungary

14.00
OP-III-9
Kihlman J.¹, Sánchez Sánchez C.², Simell P.¹, Solantausta Y.¹
CATALYTIC STEAM REFORMING OF BIO-OIL AQUEOUS FRACTION WITH LABORATORY SCALE REACTOR
¹VTT Technical Research Centre of Finland, Espoo, Finland
²Aalto University School of Science and Technology, Espoo, Finland

14.20
OP-III-10
Salzano E.¹, Russo V.², Tesser R.², Di Serio M.²
BEST OPERATING CONDITIONS FOR THE EPOXYDATION OF VEGETABLE OIL IN FED-BATCH REACTOR
¹Istituto di Ricerche sulla Combustione – CNR, Napoli, Italy
²Dipartimento di Chimica, Università di Napoli “Federico II”, Napoli, Italy

14.40
OP-III-11
Irabien A.¹, Castaño P.², Albo J.²
ELECTROCATALYSIS FOR CARBON DIOXIDE RECYCLING
¹Universidad de Cantabria, Santander, Spain
²Universidad del País Vasco/Euskal Herriko Uniberstsitatea, Bilbao, Spain

15.00
OP-III-12
Reyero I.¹, Moral A.¹, Arzamendi G.¹, Radosevic J.², Sanz O.², Montes M.², Gandía L.¹
SUPPORTED AND STRUCTURED CATALYSTS BASED ON CALCIUM AND CERIUM FOR THE PRODUCTION OF BIODIESEL
¹Universidad Pública de Navarra, Pamplona, Spain
²Universidad del País Vasco, Departamento de Química Aplicada, San Sebastián, Spain
Section IV
Advanced Processing of Fossil Hydrocarbon Feedstocks
Modern Reactive Technologies for Natural Gas, Oil and Coal Processing
Chemical Processes for intensification of Oil Production
Natural Chemical Reactors for In-Situ Processing of Oil and Coal in Deposits
Chemical Reactors and Processes for Treatment of Heavy Hydrocarbon Feedstock and Shale Oil

Chairperson: Professor Anton Maximov, Russia

15.20
OP-IV-1
Porsin A.¹, Kulikov A.¹, Dalyuk I.², Rogozhnikov V.¹, Kochergin V.²
CATALYTIC REACTOR FOR COMBUSTION OF LIQUID FUEL WITH CATALYST SUPPORTED ON METALLIC GAUZE
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
²Siberian State Transport University, Novosibirsk, Russia

15.40
OP-IV-2
Arutyunov V.S.¹, Savchenko V.I.², Magomedov R.N.², Nikitin A.V.¹, Fokin I.G.²
NEW CONCEPTIONS FOR LOW-SCALE GTL
¹Semenov Institute of Chemical Physics RAS, Moscow, Russia
²Institute of Problems of Chemical Physics RAS, Chernogolovka, Moscow region, Russia

16.00 Coffee-break

16.20
OP-IV-3
Kirgina M., Ivanchina E., Chekantsev N., Sharova E.
COMPLEX MODELING SYSTEM FOR OPTIMIZATION OF REACTION PROCESSES OF TRADE GASOLINE PRODUCTION
Tomsk Polytechnic University, Tomsk, Russia

16.40
OP-IV-4
Hart A.¹, Al-Marshed A.¹, Leeke G.A.¹, Greaves M.A.², Wood J.¹
A COMPARATIVE STUDY OF FIXED-BED AND DISPERSED CATALYTIC UPGRADING OF HEAVY CRUDE OILS USING-CAPRI
¹School of Chemical Engineering, University of Birmingham, Birmingham, UK
²IOR Research Group, Department of Chemical Engineering, University of Bath, Bath, UK

17.00 Conference closing
Afternoon Session
COMMISSIEKAMER Hall
ORAL PRESENTATIONS

Chairperson: Professor Valeriy Shvets, Russia

14.00
Yakimenko O.
BÜCHI PILOT PLANTS AND REACTOR SYSTEMS (Presentation of Büchi AG Company)
Pharmcontract LLC, Moscow, Russia

Section on PHOTOCATALYTIC REACTORS

Chairperson: Professor J. Ruud van Ommen, The Netherlands

14.20
OP-Ph-1
Lammertink R., Visan A., Rafieian D., Ogieglo W.
FAST DEGRADATION IN IMMOBILIZED PHOTOCATALYTIC MICROREACTORS
University of Twente, Enschede, The Netherlands

14.40
OP-Ph-2
Marugán J., Casado C., Timmers R., van Grieken R.
COUPLING RADIATION TRANSPORT WITH CFD MODELLING FOR THE SIMULATION OF PHOTOCATALYTIC REACTORS
Universidad Rey Juan Carlos, Madrid, Spain

15.00
OP-Ph-3
Marugán J.¹, Casado C.¹, Timmers R.¹, Sergejevs A.², Clarke C.T.², Beasley A.²,
Allsopp D.W.E.², Bowen C.R.², van Grieken R.¹
UV LED PROTOTYPE PHOTOREACTOR FOR STANDARDISED PHOTOCATALYTIC ACTIVITY TESTS
¹Universidad Rey Juan Carlos, Madrid, Spain
²University of Bath, Bath, UK

15.20
OP-Ph-4
Valades-Pelayo P.J., Moreira J., Serrano B., de Lasa H.I.
THE PHASE FUNCTION ON THE RADIATION AND ABSORPTION FIELD IN A PHOTO-CREC WATER-II REACTOR
The University of Western Ontario, London, Canada

15.40
OP-Ph-5
Mul G., Schut L., Romao J., Erler X.
EFFECTS OF AGGLOMERATE FORMATION ON PERFORMANCE OF PHOTOCATALYTIC SLURRY REACTORS
University of Twente, Enschede, The Netherlands

16.00 Coffee-break
Chairperson: Professor Freek Kapteijn, The Netherlands

16.20
OP-Ph-6
Leblebici M.¹, Jamali A.¹, Janssens N.², Martens J.A.², Van Gerven T.¹
PHOTOCATALYTIC DEGRADATION OF PHENOL USING LEDs - MODELLING AND CONTINUOUS REACTOR DESIGN
¹Process Engineering for Sustainable Systems, Department of Chemical Engineering, KU Leuven, Leuven, Belgium
²Center for Surface Chemistry and Catalysis, Department of Microbial and Molecular Systems, KU Leuven, Leuven, Belgium

16.40
OP-Ph-7
van Ommen J.R., Motegh M., Appel P.W., Kreutzer M.T.
A SCALE-UP CASE STUDY OF A MULTIPHASE PHOTOCATALYTIC REACTOR - DEGRADATION OF CYANIDE IN WATER OVER TiO₂
Delft University of Technology, Delft, The Netherlands

17.00 Conference closing
<table>
<thead>
<tr>
<th>Poster presentations</th>
</tr>
</thead>
</table>
| **PP-1.** Abas N., Zailan A., Zainab I.  
A TECHNOLOGY: VALUE-ADDED DERIVATIVES OF GLYCEROL FROM BIODIESEL INDUSTRY  
*Malaysian Palm Oil Board, Selangor, Malaysia* |
| **PP-2.** Abd ElHafiz D, Ebiad M.  
HYDROGEN PRODUCTION FROM BIO-RENEWABLE FEEDSTOCK IN FIXED-BED REACTOR OVER Co/Ce-La CATALYST  
*Egyptian Petroleum Research Institute, Cairo, Egypt* |
| **PP-3.** Al-Dughaither A.¹², de Lasa Hugo I.¹  
DI-METHYL ETHER CONVERSION INTO OLEFINS OVER HZSM-5: EFFECT OF SiO₂/Al₂O₃ Ratio ON SURFACE CHEMISTRY AND REACTIVITY PROPERTIES  
¹Western University, London, Ontario, Canada  
²SABIC Technology Center, Riyadh, Saudi Arabia |
| **PP-4.** Alqahtani A.M., Iliyas A.  
QUALITY BY DESIGN APPLICATION IN PETROCHEMICALS TECHNOLOGY DEVELOPMENT  
*Saudi Basic Industries Corporation, Riyadh, Saudi Arabia* |
| **PP-5.** Aman D., Abd El-Hafiz D., Ebiad M.  
RENEWABLE HYDROGEN PRODUCTION FROM BIODIESEL BY-PRODUCT USING LaNiO₃ and LaCoO₃ NANO PEROVSKITE  
*Egyptian Petroleum Research Institute, Cairo, Egypt* |
| **PP-6.** Bouaid A., Vázquez R., Martinez M., Aracil J.  
BIODIESEL PRODUCTION FROM USED FRYING OILS. EFFECT OF FREE FATTY ACIDS CONTENTS ON BIODIESEL YIELD AND PURITY  
*University of Complutense, Madrid, Spain* |
| **PP-7.** Atong D.¹, Nasorn W.², Sornkade P.¹, Sricharoenchaikul V.²  
PRODUCT DISTRIBUTION FROM MICROWAVE INDUCED PYROLYSIS OF DRIED BLACK LIQUOR  
¹National Metal and Materials Technology Center, Pathumthani, Thailand  
²Chulalongkorn University, Bangkok, Thailand |
| **PP-8.** Berchiche M.¹, Rahoui N.², Allal H.², Fellahi M.², Cherif R.², Maachi R.¹  
A NEW CORRELATION FOR MEAN PARTICLE DIAMETER ESTIMATION INSIDE A BUBBLING FLUIDIZED BED REACTOR  
¹Université des Sciences et de la Technologie Houari-boumediene, Algiers, Algeria  
²Ecole Militaire Polytechnique, Algiers, Algeria |
| **PP-9.** Baladincz P., Hancsók J.  
FUEL FROM WASTE ANIMAL FATS  
*University of Pannonia, Veszprem, Hungary* |
| **PP-10.** Barelko V.V., Kiryukhin D.P., Kustsh P.P., Dorokhov V.G., Bykov L.A., Aldoshin S.M.  
TECHNOLOGICAL BASIS AND APPARATUS EQUIPMENT FOR THE MANUFACTURING PROCESS OF NEW GLASS-POLYMER COMPOSITION MATERIALS USING THE TETRAFLUOROETHYLENE OLIGOMERS (TELOMERS) AS A BINDER  
*Institute of Problems of Chemical Physics RAS, Chernogolovka, Moscow region, Russia* |
PP-11. Barelko V.V.\textsuperscript{1}, Safonov O.G.\textsuperscript{2}, \textbf{Bykova N.V.}\textsuperscript{1}, Dorokhov V.G.\textsuperscript{1}, Bykov L.A.\textsuperscript{1}, Yapaskurt V.O.\textsuperscript{2}, Shapovalov Yu.B.\textsuperscript{2}


\textsuperscript{1}\textit{Institute of Problems of Chemical Physics RAS, Chernogolovka, Moscow region, Russia} \\
\textsuperscript{2}\textit{Institute of Experimental Mineralogy RAS, Chernogolovka, Moscow region, Russia}

PP-12. \textbf{Belinskaya N.S.}, Ivanchina E.D., Ivashkina E.N., Silko G.Y., Frantsina E.V., Kiseleva S.V.

\textbf{MATHEMATICAL MODELLING OF THE CATALYTIC HYDRODEWAXING OF DIESEL FUELS}

\textit{Tomsk Polytechnic University, Tomsk, Russia}


\textbf{METHYLTRIOXORHENIUM SUPPORTED ON MESOPOROUS Al\textsubscript{2}O\textsubscript{3} PROMOTED WITH ZnCl\textsubscript{2} AS A GREEN HETEROGENEOUS CATALYST FOR METHYLOLEATE SELF-METATHESIS: REACTION KINETICS}

\textit{Université Laval, Québec-City, Canada}

PP-14. \textbf{Bondareva V.}, Shadrina L., Ovchinnikova E., Sobolev V.

\textbf{ETHANE OXIDATIVE DEHYDROGENATION. REACTION KINETICS}

\textit{Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia}


\textbf{ALUMINA-WASHCOATED STAINLESS STEEL MICROGRIDS: NEW DESIGN OF MICROSTRUCTURED CATALYSTS FOR CATALYTIC APPLICATIONS}

\textit{University of the Basque Country, Faculty of Science and Technology, Bilbao, Spain}

PP-16. \textbf{Bruk L.G.}\textsuperscript{3}, Ustyugov A.V.\textsuperscript{1}, Zubavichus Ya.V.\textsuperscript{2}, Tkachenko O.P.\textsuperscript{3}, Katsman E.A.\textsuperscript{1}, Murzin V.Yu.\textsuperscript{2}, Kustov L.M.\textsuperscript{3}, Temkin O.N.\textsuperscript{1}

\textbf{KINETIC MODEL AND MECHANISM OF LOW-TEMPERATURE CARBON MONOXIDE OXIDATION BY OXYGEN}

\textsuperscript{1}\textit{Lomonosov Moscow University of Fine Chemical Technology, Moscow, Russia} \\
\textsuperscript{2}\textit{National Research Center “Kurchatov Institute”, Moscow, Russia} \\
\textsuperscript{3}\textit{N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia}

PP-17. \textbf{Bártová Š.}, Kunešová K., Kůs P., Kořenková H., Vonková K.

\textbf{REDUCTION OF TOC IN INDUSTRIAL WATERS BY THE MEANS OF UV RADIATION}

\textit{Research Centre Řež, Husinec-Řež, Czech Republic}

PP-18. \textbf{Bártová Š.}\textsuperscript{1}, Kunešová K.\textsuperscript{1}, Kůs P.\textsuperscript{1}, Vonková K.\textsuperscript{1}, Skala M.\textsuperscript{2}, Moucha T.\textsuperscript{2}

\textbf{UTILIZATION OF REVERSE OSMOSIS FOR THE BORIC ACID RECOVERY FROM PRIMARY COOLANT AT NUCLEAR POWER PLANTS}

\textsuperscript{1}\textit{Research Centre Řež, Husinec-Řež, Czech Republic} \\
\textsuperscript{2}\textit{Institute of Chemical Technology Prague, Prague, Czech Republic}

PP-19. \textbf{Bártová Š.}\textsuperscript{1}, Mráček D.\textsuperscript{2}, Koči P.\textsuperscript{2}, Marek M.\textsuperscript{2}, Choi J.\textsuperscript{3}

\textbf{AMMONIA REACTIONS WITH THE STORED OXYGEN IN A COMMERCIAL LEAN NOx TRAP CATALYST}

\textsuperscript{1}\textit{Research Centre Řež, Husinec-Řež, Czech Republic} \\
\textsuperscript{2}\textit{Institute of Chemical Technology Prague, Prague, Czech Republic} \\
\textsuperscript{3}\textit{Oak-Ridge National Laboratory, Knoxville, USA}
**PP-20.** Barelko V.V.¹, Bykov L.A.¹, Kalilin V.V.², Kurbatov M.G.², Chepelenko V.N.²  
STRATEGIC DIRECTION IN THE DEVELOPMENT OF HYDROGEN FUEL COMPLEX IN TRANSPORT, AUTONOMOUS ENERGY AND SYSTEMS OF SPECIAL PURPOSES. TECHNOLOGICAL SOLUTIONS IN THE PRODUCTION OF HYPERFINE HYDROGEN-FILTER FOILS  
¹Institute of Problems of Chemical Physics RAS, Chernogolovka, Moscow region, Russia  
²Moscow Plant of Special Alloys, Moscow, Russia

**PP-21.** Carletti C.A.¹, Grénman H.¹, De Blasio C.², Salmi T.¹, Murzin D.¹, Westerlund T.¹  
A NOVEL REACTOR SETUP FOR STUDYING LIMESTONE DISSOLUTION KINETICS  
¹Åbo Akademi University, Turku, Finland  
²Aalto University School of Science and Technology, Espoo, Finland

**PP-22.** Chalupka K.A.¹,³, Casale S.², Onfroy T.², Grams J.³, Rynkowski J.³, Dzwigaj S.²  
THE NOVEL Ni-CONTAINING ZEOLITE CATALYSTS FOR PARTIAL OXIDATION OF METHANE (POM)  
¹Lodz University of Technology, Lodz, Poland  
²Laboratoire de Reactivite de Surface, CNRS, Paris, France  
³Institute of General and Ecological Chemistry, Lodz, Poland

**PP-23.** Chumakov G.A.²,³, Chumakova N.A.¹,³, Lashina E.A.¹,³  
MODELING THE COMPLEX DYNAMICS OF HETEROGENEOUS CATALYTIC REACTIOINS  
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia  
²Sobolev Institute of Mathematics SB RAS, Novosibirsk, Russia  
³Novosibirsk State University, Novosibirsk, Russia

COMBINED STEAM AND CARBON DIOXIDE REFORMING OF METHANE TO SYNTHESIS GAS OVER POROUS NICKEL BASED CATALYSTS  
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

**PP-25.** Davletbaeva I.M., Gumerov A.M., Davletbaev R.S.  
MATHEMATICAL MODELING OF PROCESS OF NANOSTRUCTURIZATION OF POLYURETHANES  
Kazan National Research Technological University, Kazan, Russia

**PP-26.** Dolganova I.O., Ivashkina E.N., Ivanchina E.D., Belinskaya N.S.  
REACTOR-REGENERATOR SYSTEM JOINT WORK OPTIMIZATION IN BENZENE ALKYLATION WITH HIGHER OLEFINS UNIT  
Tomsk Polytechnic University, Tomsk, Russia

**PP-27.** Dossumov K., Yergaziyeva G., Telbaeva M.  
COPPER BASED CATALYSTS FOR RECEIPT OF ETHYLENE FROM BIOETHANOL  
Institute for Problem of Combustion, Al-Farabi Kazakh National University, Almaty, Kazakhstan

**PP-28.** Dossumov K.D., Suyunbaev U., Mironenko A.V., Yergaziyeva G.  
REFORMING OF METHANE WITH CARBON DIOXIDE  
Al-Farabi Kazakh National University, Centre of Physical and Chemical Methods of Investigation and Analysis, Almaty, Kazakhstan
NUMERICAL SIMULATION OF THE FLUIDIZED BED CHEMICAL REACTOR WITH
STRUCTURAL ELEMENTS OPTIMIZATION
Kazan (Volga region) Federal University, Kazan, Russia

KINETIC MODELLING FOR THE TRANSFORMATION OF 1-BUTENE ON A K MODIFIED
HZSM-5 ZEOLITE CATALYST
University Basque Country, Bilbao, Spain

PRODUCTION OF ACROLEIN FROM GLYCEROL IN LIQUID PHASE ON HETEROGENEOUS
CATALYSTS
University of Cordoba, Cordoba, Spain

PP-32. Ezinkwo G.¹, Tretjakov V.P.¹, Talyshinsky R.M.², Ilolov A.²
STRATEGIC AND FUNDAMENTAL PROCESS FOR THE PRODUCTION OF BUTADIENE
AND ISOPRENE VIA THE CONVERSION OF LOWER ALCOHOLS
¹M.V. Lomonosov Moscow State Academy of Fine Chemical Technology, Moscow,
Russia
²A.V. Topchiev Institute of Petrochemical Processes RAS, Moscow, Moscow, Russia

PP-33. Piumetti M., Russo N., Fino D.
COMPLETE OXIDATION OF VOLATILE ORGANIC COMPOUNDS OVER MANGANESE
OXIDE CATALYSTS
Politecnico di Torino, Torino, Italy

PP-34. Gancarczyk A., Piatek M.
SOLID FOAMS: NOVEL CATALYST SUPPORT IN TRICKLE BED REACTORS
Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland

PP-35. Gartman T.¹, Sovetin F.¹, Proskuro E.¹, Shvets V.¹, Kozlovskiy R.¹, Suchkov Y.¹,
Sapunov V.¹, Loktev A.², Komissarenko D.², Dedov A.²
KINETICS OF CONSECUTIVE-PARALLEL REACTIONS IN A THIN LAYER OF A
HETEROGENEOUS CATALYST
¹D. Mendeleyev University of Chemical Technology of Russia, Moscow, Russia
²Gubkin Russian State University of Oil and Gas, Moscow, Russia

PP-36. Ghaloum N.
COKE AND METAL INVESTIGATION AFTER OXIDATIVE AND NON-OXIDATIVE
REGENERATION METHODS OF SPENT HYDROPROCESSING CATALYSTS
Petroleum Research Centre, Kuwait Institute for Scientific Research, Safat, Kuwait

PP-37. Gomez Garcia M.A.¹, Dobrosz-Gomez I.¹, GilPavas E.², Rynkowski J.³
GIBBS FREE ENERGY MINIMIZATION FOR THE CALCULATION OF EQUILIBRIUM SHIFT
IN MEMBRANE REACTORS
¹National University of Colombia, Manizales, Colombia
²EAFIT University, Medellin, Colombia
³Institute of General and Ecological Chemistry, Lodz, Poland
PP-38. Gomez Garcia M.A.¹, Dobrosz-Gomez I.¹, GilPavas E.², Rynkowski J.³
SIMULATION OF AN INDUSTRIAL ADIABATIC MULTI-BED CATALYTIC REACTOR FOR SULFUR DIOXIDE OXIDATION USING THE HETEROGENEOUS DUSTY GAS MODEL
¹National University of Colombia, Manizales, Colombia
²EAFIT University, Medellin, Colombia
³Institute of General and Ecological Chemistry, Lodz, Poland

PP-39. Gomez-Coma L.¹, Albo J.², Garea A.¹, Irabien A.¹
CO₂ CAPTURE USING POLYSULFONE MEMBRANE CONTACTOR AND [EMIM][AC] IONIC LIQUID
¹Universidad de Cantabria, Santander, Spain
²Universidad del Pais Vasco/Euskal Herrikoko Unibertsitatea, Bilbao, Spain

PP-40. Gumerov A.M.¹, Davletbaev R.S.², Akhmetshina A.I.¹, Davletbaeva I.M.¹
SIMULATION OF SYNTHESIS OF OPTICALLY TRANSPARENT MESOPOROUS POLYMERS
¹Kazan National Research Technical University, Kazan, Russia
²A.N. Tupolev Kazan National Research Technical University, Kazan, Russia

PP-41. Günay M.¹, Odabaşı Ç.², Yildirim R.²
ANALYSIS OF THE PAST PUBLISHED DATA ON WGS REACTION OVER Pt AND Au CATALYSTS BY DECISION TREES
¹Istanbul Bilgi University, Istanbul, Turkey
²Department of Chemical Engineering Bogazici University, Istanbul, Turkey

PP-42. Hartmann V.L.
MODELING OF A DOUBLE-LAYER DESULFURIZATION REACTOR
LLC "NIAP-KATALIZATOR", Novomoskovsk, Russia

PP-43. Hasan S.U., Mahajani S.M., Malik R.K.
SELECTIVITY ENGINEERING WITH MULTI-SIDE DRAW HYBRID REACTIVE DISTILLATION COLUMN INVOLVING AZEOTROPIC SYSTEMS
Indian Institute of Technology, Bombay, Mumbai, India

HYDRODESULPHURIZATION OF SCRAP TIRE PYROLYSIS OIL (STPO) OVER A NiMo/Al₂O₃ CATALYST. EFFECT OF PRESSURE AND TEMPERATURE
University of the Basque Country, Faculty of Science and Technology, Bilbao, Spain

PP-45. Itkulova S., Zakumbaeva G., Akkulov A.
BIMETALLIC CATALYSTS FOR PRODUCTION AND CONVERSION OF SYNGAS
D.V.Sokolsky Institute of Organic Catalysis and Electrochemistry, Almaty, Kazakhstan

PP-46. Ivashkina E.N., Ivanchina E., Romanovskii R., Frantsina E., Platonov V.
CHANGING THE HYDROGEN-RICH GAS CIRCULATION RATIO WITH SAVING THE LIFETIME OF THE C9–C14 ALKANES DEHYDROGENATION CATALYST
Tomsk Polytechnic University, Tomsk, Russia
REACTION RATE IN STRUCTURED REACTORS: ANALYTICAL METHODS FOR DETERMINATION OF CATALYST AMOUNT
1Cracow University of Technology, Kraków, Poland
2Jagiellonian University, Kraków, Poland
3Institute of Chemical Engineering, Gliwice, Poland
4Opole University of Technology, Opole, Poland

PP-48. Kancharla S.K., Mahajani S.M.
GAS PHASE AND SURFACE REACTION KINETICS FOR CCl₄-H₂ SYSTEM IN TUBULAR CHEMICAL VAPOUR DEPOSITION REACTOR
Indian Institute of Technology, Bombay, India

PP-49. Kannan P., Shoaibi A.A., Srinivasakannan C.
TEMPERATURE EFFECTS ON THE YIELD OF GASEOUS OLEFINS FROM WASTE POLYETHYLENE VIA FLASH PYROLYSIS
The Petroleum Institute, Abu Dhabi, United Arab Emirates

PP-50. Kazakov D.A.1, Vol’khnin V.V.1, Asnin L.D.1, Kaczmarski K.2
ENHANCEMENT OF OXYGEN GAS-LIQUID MASS TRANSFER IN THE PRESENCE OF HYDROPHOBIC NONWETTABLE PARTICLES
1Perm National Research Polytechnic University, Perm, Russia
2Rzeszow University of Technology, Rzeszow, Poland

INTENSIFICATION OF REACTANTS MIXING DURING BENZENE ALKYLATION WITH ETHYLENE
Tomsk Polytechnic University, Tomsk, Russia

PP-52. Khodadadian F., Lakerveld R., Stankiewicz A.
MODEL-BASED DESIGN OF A LED-BASED PHOTOCATALYTIC REACTOR
Delft University of Technology, Delft, The Netherlands

PP-53. Kikhtyanin O.1, Vitvarová D.2, Eliášová P.2, Kubička D.1
CATALYTIC PROPERTIES OF BEA AND MWW ZEOLITES IN ALDOL CONDENSATION OF FURFURAL AND ACETONE
1Research Institute of Inorganic Chemistry, RENTECH-UniCRE, Záluží-Litvinov, Czech Republic
2J. Heyrovský Institute of Physical Chemistry, Academy of Sciences of the Czech Republic, Prague, Czech Republic

PP-54. Klenov O.P.1, Chumakova N.A.1,2, Pokrovskaya S.A.1,2, Noskov A.S.1
MODELING OF MASS AND HEAT TRANSFER FOR HONEYCOMB CATALYSTS WITH CHANNELS OF DIFFERENT SHAPE
1Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
2Novosibirsk State University, Novosibirsk, Russia

CARBON MONOXIDE AND HYDROGEN CO-ADSORPTION OVER PLATINUM CATALYST
Institute of General and Ecological Chemistry, Lodz, Poland
PP-56. Kozlovskiy R.¹, Efimkin D.¹, Koshkin S.¹, Kozlovskiy I.¹, Kuznetsov A.¹, Beloded A.¹, Miniukova T.², Parmon V.², Shvets V.¹
BIO-PROPYLENE GLYCOL TECHNOLOGY FROM RENEWABLE SOURCE
¹D. Mendeleev University of Chemical Technology of Russia, Moscow, Russia
²Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-57. Kryca J.¹,², Jodłowski P.³, Jędrzejczyk R.¹, Iwaniszyn M.², Piątek M.², Sitarz M.⁴, Kołodziej A.²,⁵, Łojewska J.¹
CHARACTERIZATION AND KINETIC STUDIES OF DeNOx REACTION OVER Cu-SSZ-13 SYNTHESIZED ON METALLIC FOAMS
¹Jagiellonian University, Cracow, Poland
²Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland
³Cracow University of Technology, Cracow, Poland
⁴AGH University of Science and Technology, Cracow, Poland
⁵Opole University of Technology, Opole, Poland

PP-58. Leba A., Düşova Y., Avci A.K., Yildirim R.
OCM REACTION OVER VARIOUS STRUCTURED FORMS OF Mn/Na₂WO₄/SiO₂ CATALYST
Department of Chemical Engineering Bogazici University, Istanbul, Turkey

SEPARATION OF LINEAR AND BRANCHED PARAFFINS FROM A REAL FEED BY FIXED BED ADSORPTION USING A CARBON MOLECULAR SIEVE
Instituto Mexicano del Petroleo, Mexico City, Mexico

PP-60. Laredo G.C., Castillo J., Lopez-Cisneros C.R.
THERMODYNAMICS AND KINETICS OF ADSORPTION OF NITROGEN COMPOUNDS FROM MODEL MIXTURES AND REAL FEEDS: EXPERIMENTS TOWARDS ULSD
Instituto Mexicano del Petroleo, Mexico City, Mexico

PP-61. Lazaridis P.¹, Karakoulia S.², Triantafyllidis K.¹,²
A Py-GC/MS STUDY ON THE IN SITU UPGRADING OF BIOMASS PYROLYSIS OIL BY VARIOUS ZEOLITE CATALYSTS
¹Aristotle University of Thessaloniki, Thessaloniki, Greece
²Chemical Process & Energy Resources Institute, Centre for Research and Technology-Hellas (CPERI/CERTH), Thessaloniki, Greece

PP-62. Lopatin S.¹, Chub O.¹, Yazykov N.¹, Pisarev D.¹, Simonov A.¹, Yakovlev V.¹, Zagoruiko A.¹,²
STRUCTURED CARTRIDGES WITH REINFORCED FIBER-GLASS CATALYST FOR FUEL COMBUSTION IN THE FLUIDIZED BEDS OF THE INERT HEAT-TRANSFER PARTICLES
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
²Tomsk Polytechnic University, Tomsk, Russia

THERMO-OXIDIZING CRACKING OF HEAVY OIL RESIDUES
D. Mendeleeyev University of Chemical Technology of Russia, Moscow, Russia

PP-64. López Pedrajas S., Estevez R., Luna D., Bautista F.
MODIFIED AIPO₄ FOR DEHYDRATION OF GLYCEROL IN GAS PHASE
University of Cordoba, Cordoba, Spain

STUDY OF METHANOL TO FORMALDEHYDE OXIDATION IN THE MICROCHANNEL LAB-SCALE REACTOR
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia


NOVEL HETEROGENEOUS CATALYSTS FOR TRANSESTERIFICATION PROCESS OF VEGETABLE OIL
Lodz University of Technology, Institute of General and Ecological Chemistry, Lodz, Poland

PP-67. Marroquin de la Rosa J.O., Laredo Sanchez G.C.

STEADY STATE MULTIPLE REACTION-DIFFUSION PROBLEM REDUCTION BY STOICHIOMETRY RELATIONS
Instituto Mexicano del Petroleo, Mexico City, Mexico

PP-68. Mehr A.S.¹, Ghavipour M.², Behbahani R.M.², Yassin M.³

METHANOL-DME to LIGHT OLEFINS OVER SAPO-34: EFFECT OF FEED TYPE ON PRODUCT DISTRIBUTION AND CATALYST PERFORMANCE
¹National Iranian Gas Company-SH. HASHEMINEJAD GAS PROCESSING Co., Mashhad, Iran
²Department of Gas Engineering, Petroleum University of Technology, Ahwaz, Iran
³Ahwaz Technology Training Center, National Iranian South Oilfield Company, Khozestan, Iran


THE EFFECT OF GOLD ON THE COPPER CATALYST DURING STEAM-OXYGEN REFORMING OF METHANOL
Lodz University of Technology, Institute of General and Ecological Chemistry, Lodz, Poland

PP-70. Moosavi E., Karimzadeh R.

NANOPOROUS FELT-LIKE ACTIVATED CARBON FIBER MODIFIED BY CONCENTRATED HNO₃ FOR THE ADSORPTION OF THE DIBENZOTHIOPHENES
Tarbiat Modares University, Tehran, Iran

PP-71. Marinoiu A., Raceanu M., Iordache I., Varlam M.

CARBON MONOXIDE REMOVAL USING HOPCALITE CATALYST AT LOW TEMPERATURE
National RD Institute for Cryogenics and Isotopic Technologies- ICIT, Rm Valcea, Romania


CATALYTIC PARTIAL OXIDATION OF METHANE OVER COBALT CATALYSTS SUPPORTED ON SYNTHESIZED CERIA
Universidad Pública de Navarra, Pamplona, Spain

PP-73. Mrowiec-Białoń J.¹, Berdyś M.², Koreniuk A.¹, Maresz K.¹, Pudło W.², Jarzębski A.¹

SCALE UP AND PERFORMANCE OF MONOLITHIC CON-FLOW SILICA MICROREACTORS
¹Institute of Chemical Engineering Polish Academy of Sciences, Gliwice, Poland
²Department of Chemical Engineering and Process Design, Faculty of Chemistry, Silesian University of Technology, Gliwice, Poland
LOW BACKPRESSURE MONOLITHIC ENZYMATIC MICROREACTOR FOR PROTEIN DIGESTION

Szymańska K.1, Pietrowska M.2, Kocurek J.1, Maresz K.3, Koreniuk A.3, Mrowiec-Białoń J.1,3, Magner E.4, Jarzębski A.1,3

LOW BACKPRESSURE MONOLITHIC ENZYMATIC MICROREACTOR FOR PROTEIN DIGESTION

Silesian University of Technology, Gliwice, Poland, Gliwice, Poland

Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Gliwice, Poland

Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland

University of Limerick, Materials & Surface Science Institute, Limerick, Ireland

VALIDATION OF A TORREFACTION REACTION MODEL FOR A CONTINUOUS SCREW CONVEYOR REACTOR

Nachenius R.W., van de Wardt T., Ronsse F., Prins W.

Ghent University, Ghent, Belgium

STEAM REFORMING OF BIOGAS FOR SYNGAS PRODUCTION

Itkulova S., Nurmakanov Y.Y., Zakumbaeva G., Tashmukhametova Z., Imankulova S.

D.V. Sokolsky Institute of Organic Catalysis and Electrochemistry, Almaty, Kazakhstan

SUPPORT VECTOR MACHINE CLASSIFICATION OF WGS REACTION OVER Pt AND Au CATALYST FOR KNOWLEDGE EXTRACTION FROM LITERATURE

Odabaşi C.1, Günday E.2, Yıldırım R.1

Department of Chemical Engineering Bogazici University, Istanbul, Turkey

Istanbul Bilgi University, Istanbul, Turkey

CRITICAL SUPERFICIAL GAS VELOCITY FOR SUSPENSION OF SOLID PARTICLES IN A SLURRY BUBBLE COLUMN REACTOR FOR HYDROCONVERSION PROCESSES

Paiva M.V., Contreras J., Zacarias L.

PDVSA INTEVEP, Los Teques, Venezuela

SMALL SCALE PRODUCTION ORGANIC COMPOUNDS: TECHNOLOGY PECULIARITIES


Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

CAPE OPEN COMPONENT FOR THE SIMULATION OF A DIESEL HYDROTREATING REACTOR

Peralete C.G., Urbina J.C.

PDVSA Intevep, Los Teques, Venezuela

FLOW RESISTANCE, TRANSPORT AND MORPHOLOGY OF METALLIC FOAMS APPLIED AS CATALYST CARRIER

Piatek M.1, Iwaniszyn M.1, Gancarczyk A.1, Kolaczkowski S.T.2, Kolodziej A.1,3

Institute of Chemical Engineering, Polish Academy of Sciences, Gliwice, Poland

University of Bath, Bath, UK

Opole University of Technology, Opole, Poland

CATALYTIC HYDROGENATION OF LEVULINIC ACID TO ϒ-VALEROLACTONE IN A CONTINUOUS PACKED-BED REACTOR

Piskun A., Rasrendra C., de Haan J., Heeres H.

University of Groningen, Groningen, The Netherlands

CeO2-BASED CATALYSTS WITH ENGINEERED MORPHOLOGIES FOR SOOT OXIDATION

Piumetti M., Bensaid S., Russo N., Fino D.

Politecnico di Torino – DISAT, Torino, Italy
PP-84. Ponomareva E.A., Parastaev A., Egorova E.
KINETICS OF ACETALDEHYDE SYNTHESIS FROM ETHANOL OVER A COPPER ON CARBON FIBERS CATALYST
Moscow State Academy of Fine Chemical Technology, Moscow, Russia

PP-85. Poulopoulos S.1, Amirov A.1, Korologos C.2, Philippopoulos C.2
KINETIC STUDIES OF GASEOUS ETHANOL OXIDATION OVER Pt/Rh AND Pd MONOLITHIC CATALYSTS IN A SPINNING-BASKET FLOW REACTOR
1Kazakh-British Technical University, Almaty, Kazakhstan
2National Technical University of Athens, Athens, Greece

PP-86. Pérez Uriarte P., Ateka A., Epelde E., Gamero M., Bilbao J., Aguayo A.
EFFECT OF TEMPERATURE IN THE PROCESS OF DME CATALYTIC TRANSFORMATION TO PROPYLENE USING A K MODIFIED ZSM-5 ZEOLITE CATALYST
University Basque Country, Bilbao, Spain

PP-87. Rahimi N.1, Karimzadeh R.2
CATALYTIC CRACKING OF PROPANE AND BUTANE OVER La-P/HMFI ZEOLITES TO PRODUCE LIGHT OLEFIN
1National Petrochemical Co. Research & Technology, Tehran, Iran
2University of Tarbiat Modares, Tehran, Iran

PP-88. Reshetnikov S.I., Zirka A.A., Petrov R.V.
TETRACHLOROETHYLENE HYDROFLUORINATION TO PENTAFLUOROETHANE: INFLUENCE OF Cr-Mg CATALYST HEAT TREATMENT CONDITIONS, KINETIC STUDY
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-89. Zhapbasbayev U., Ramazanova G.
MACROSCOPIC MODELING OF TURBULENT FLOW IN A RADIAL FLOW FIXED BED REACTOR
Kazakh-British Nechnical University, Almaty, Kazakhstan

PP-90. Rungrodnimitchai S.
MICROWAVE SYNTHESIS OF ION EXCHANGE RESIN FROM USED TIRE
Faculty of Engineering, Thammasat University, Bangkok, Thailand

PP-91. Rynkowski J.M.1, Kocembia I.L.1, Nadajczyk J.1, Wróbel-Jędrzejewska M.1, Dobrosz-Gómez I.2
PEROVSKITE-TYPE OXIDES AS CATALYSTS OF THE PROX REACTION
1Institute of General and Ecological Chemistry, Łódź, Poland
2Universidad Nacional de Colombia, Manizales, Colombia

PP-92. San Jose M., Alvarez S., Garcia I.
PERFORMANCE OF CONICAL SPOUTED BED CONTACTOR FOR DRYING OF BIOMASS WASTES
University of the Basque Country, Faculty of Science and Technology, Bilbao, Spain

PP-93. Sardella R., Zacarias L., Paiva M.V., Medina H.
BUBBLE COLUMN REACTOR FLUID DYNAMIC EVALUATION AT PILOT PLANT SCALE FOR RESIDUE AND EXTRA – HEAVY CRUDE OIL UPGRADING TECHNOLOGY
PDVSA INTEVEP, Los Teques, Venezuela
Schlereth D., Koschany F., Mietaschk K., Hinrichsen O.
KINETIC AND REACTOR MODELING FOR THE METHANATION OF CO₂
TU München, Lehrstuhl I für Technische Chemie, München, Germany

Semendyaeva N.L., Makeev A.G., Slinko M.M.
THE SYNERGETIC EFFECT AND OSCILLATORY BEHAVIOUR DURING CO OXIDATION
OVER A BIMETALLIC COMPOSITE CATALYSTS
1Lomonosov Moscow State University, Faculty of Computational Mathematics and
Cybernetics, Moscow, Russia
2Semenov Institute of Chemical Physics, Moscow, Russia

Ivanchina E., Sharova E., Yakupova I.
OPTIMISATION OF OPERATING CONDITIONS OF CATALYTIC REFORMING CATALYST IN
INDUSTRIAL REACTORS BY METHOD OF MATHEMATICAL MODELLING
Tomsk Polytechnic University, Tomsk, Russia

Simakova I., Godina L., Demidova Y., Tokarev A., Murzin D.
CORRELATION BETWEEN THE XYLITOL AQUEOUS PHASE REFORMING ACTIVITY AND
NATURE OF VIII GROUP METAL CATALYSTS
1Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
2Åbo Akademi University, Turku, Finland

Simakova I., Gulyaeva Y., Panchenko V., Simonov M.
TRANSFORMATION OF LIGNOCELLULOSE DERIVED C5 ACID INTO GREEN DIESEL FUEL
COMPONENTS OVER Pd SUPPORTED ON METAL OXIDES
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

Hawangchu Y., Atong D., Srircharoenchaikul V.
ADVANCED HYDRO REFORMING OF SPENT PULPING CHEMICALS FOR FUEL
GENERATION
1Chulalongkorn University, Bangkok, Thailand
2National Metal and Materials Technology Center, Pathumthani, Thailand

Stefanidis S., Karakoulia S., Kalogiannis K., Lappas A., Triantafyllidis K.
IN SITU CATALYTIC UPGRADING OF BIOMASS FAST PYROLYSIS VAPORS WITH ACID-
BASE MIXED OXIDES DERIVED FROM LAYERED DOUBLE HYDROXIDES (LDHs)
1Chemical Process & Energy Resources Institute, Centre for Research and Technology-
Hellas (CPERI/CERTH), Thessaloniki, Greece
2University of Western Macedonia, Kozani, Greece
3Aristotle University of Thessaloniki, Thessaloniki, Greece

Strigina V., Doluda V., Sulman M., Sulman E., Skvortsov A., Matveeva V.
CATALYTIC HYDROGENATION OF FURFURAL
Tver Technical University, Tver, Russia

Sulman E., Sulman M., Sulman A., Rubin M., Mikhailova A., Doluda V., Lakina N.
LACTULOSE ISOMERISATION OVER MAGNETIC NANOPARTICLES
Tver Technical University, Tver, Russia

Sulman M., Manaenkov O., Makeeva O., Sidorov A.
CATALYTIC HYDROGENOLYSIS OF BIOMASS
Tver Technical University, Tver, Russia
PP-104. Takht Ravanchi M., Sahebdelfar S., Rahimi Fard M., Fadaee Rayeni S.
DEACTIVATION BEHAVIOUR FOR Pd-Ag/α-Al2O3 CATALYST IN ACETYLENE SELECTIVE HYDROGENATION PROCESS
Petrochemical Research and Technology Co., Tehran, Iran

PP-105. Templis C., Vonortas A., Papayannakos N.
SIMULATION OF AN INDUSTRIAL HYDROTREATER FOR HGO-VEGETABLE OIL CO-HYDROPROCESSING
National Technical University of Athens, Zografos-Athens, Greece

PP-106. Tiamina I., Stepacheva A., Nikoshvili L., Strigina V., Matveeva V., Sulman E.
CATALYTIC SYNTHESIS OF FUEL COMPOUNDS FROM ORGANIC RAW MATERIALS
Tver Technical University, Tver, Russia

PP-107. Trad Z.1,2,3, Vial Ch.1,2,3, Fontaine J-P.1,2,3, Larroche C.1,2,3
HYDRODYNAMIC MODELING EFFECTS ON MIXING IN SUBMERGED MEMBRANE REACTOR
1Clermont Université, Université Blaise Pascal, LABEX IMobS3, Clermont-Ferrand, France
2Clermont Université, Université Blaise Pascal, Institut Pascal, Clermont-Ferrand, France
3CNRS, Aubière, France

PP-108. Triantafyllidis K.1,2, Stefanidis S.2,3, Karakoulia S.2, Kaleogiannis K.2, Iliopoulos E.2, Lappas A.3
CATALYTIC UPGRADING OF BIOMASS FAST PYROLYSIS OIL
1Aristotle University of Thessaloniki, Thessaloniki, Greece
2Chemical Process & Energy Resources Institute, Centre for Research and Technology-Hellas (CPERI/CERTH), Thessaloniki, Greece
3University of Western Macedonia, Kozani, Greece

SELECTIVE PRODUCTION OF SYNTHESIS GAS IN CATALYTIC MICROREACTOR
D.V. Sokolsky Institute of Organic Catalysis and Electrochemistry, Almaty, Kazakhstan

PP-110. Izquierdo U.1, Barrio V.L.1, Cambra J.F.1, Kolb G.2
MICRO REACTOR SYSTEMS FOR HYDROGEN PRODUCTION BY ETHYLENE GLYCOL REFORMING
1School of Engineering (UPV/EHU), c/ Alameda Urquijo s/n, Bilbao, Spain
2Institut für mikrotechnik Mainz GmbH, Germany, Mainz, Germany

PP-111. Lopatin S.1, Mikenin P.1, Pisarev D.1,3, Baranov D.1,4, Zazhigalov S.1, Zagoruiiko A.1,2,3
PRESSURE DROP AND MASS TRANSFER IN THE STRUCTURED CARTRIDGES WITH FIBER-GLASS CATALYST
1Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
2Tomsk Polytechnic University, Tomsk, Russia
3Novosibirsk State University, Novosibirsk, Russia
4Novosibirsk State Technical University, Novosibirsk, Russia

PP-112. Yemelyanova V.S., Dossumova B.T., Shakhiyev E., Shakhiyeva T., Dzhatkanbayeva U.
FERRUM-MOLYBDENUM CATALYSTS WITH USING OF HUMATE SILICATE IN THE QUALITY OF INERTIAL MATRIX FOR METHANOL OXIDATION INTO FORMALDEHYDE
Scientific Research Institute of New Chemical Technologies and Materials, Almaty, Kazakhstan
PP-113. Yemelyanova V.S., Shakiyeva T., Dossumova B.T., Dzhatkanbayeva U., Shakiyev E.  
**MESOPHILIC ANAEROBIC FERMENTATION OF BIOMASS IN THE PRESENCE OF IRON COMPLEXES IMMOBILIZED ON HUMIC ACID**  
*Scientific Research Institute of New Chemical Technologies and Materials, Almaty, Kazakhstan*

PP-114. Yemelyanova V.S., Shakiyeva T., Dossumova B.T., Dzhatkanbayeva U., Shakiyev E.  
**MICROS PHERICAL SORBENTS FROM TECHNOLOGICAL RAW OF THERMAL POWER STATION – CATALYSTS OF SULFUR DIOXIDE OXIDATION BY OXYGEN**  
*Scientific Research Institute of New Chemical Technologies and Materials, Almaty, Kazakhstan*

PP-115. Zainal Abidin S.¹,², Vladisavljevic G.², Saha B.³  
**KINETICS OF FREE FATTY ACID ESTERIFICATION IN USED COOKING OIL USING ION EXCHANGE RESINS AS CATALYST**  
¹Universiti Malaysia Pahang, Gambang, Malaysia  
²Loughborough University, Loughborough, UK  
³London South Bank University, London, UK

PP-116. Zarvin A.E., Madirbaev V.Z., Korobeishchikov N.G.  
**HIGHLY EFFECTIVE ION - CLUSTER MECHANISM OF SELECTIVE EXCITATION OF ARGON LEVELS IN JETS OF MIXTURES**  
Novosibirsk State University, Novosibirsk, Russia

PP-117. Zazhigalov S.V.¹, Mikenin P.¹, Lopatin S.¹, Chumakova N.A.¹, Zagoruiko A.N.¹,²  
**MATHEMATICAL MODELLING AND PILOT TESTS OF THE ADSORPTION-CATALYTIC PROCESS FOR ABATEMENT OF ORGANIC POLLUTANTS IN LEAN WASTE GASES**  
¹Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia  
²Tomsk Polytechnic University, Tomsk, Russia

PP-118. Zhang Y.  
**LIQUID-SOLID REACTION KINETICS OF DIASPORIC BAXITE DISSOLUTION IN BAYER PROCESS**  
Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China

PP-119. Zhizhina E.G., Odyakov V.F.  
**PRODUCTION OF METHYLETHYLKETONE BY OXIDATION OF N-BUTENE. THE KINETICS OF REGENERATION OF THE HOMOGENEOUS CATALYST (Pd + HETEROPOLY ACID) BY OXYGEN, THE KEY STAGE OF THE PROCESS**  
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-120. van Ommen J.R., Goulas A.  
**COATING OF PARTICLES IN A FLUIDIZED BED REACTOR USING ATOMIC LAYER DEPOSITION**  
Delft University of Technology, Delft, The Netherlands

**A CONCEPT OF POLYMER COMPOSITES FILLED WITH CARBON NANOTUBES PRODUCTION: USAGE OF BIOETHYLENE DERIVATIVES**  
Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
Virtual presentations

PP-122. Bachurikhin A.L.¹, Efendiev M.²
ELECTROMAGNETIC CATALYTIC REACTOR OF WATER TREATING FROM OILS AND HYDROCARBONS
¹LLC Ecobiocatalis, Moscow, Russia
²OJSC DagNefteProduct, Makhachkala, Russia

PP-123. Chauhan G., Pant K., Nigam K.
KINETIC STUDIES FOR THE CHELANT ASSISTED EXTRACTION OF HEAVY METALS FROM SPENT CATALYST
Indian Institute of Technology Delhi, New Delhi, India

PP-124. Chistovalov S.M., Chistovalova N.M.
MATHEMATICAL DESCRIPTION OF MOISTURE TRANSFER IN A VIBRATED BOILING LAYER
A.N. Nesmeyanov Institute of organoelement compounds RAS, Moscow, Russia

DIRECT METHANE CONVERSION OVER Mo/ZSM-5 CATALYSTS
Institute of Petroleum Chemistry SB RAS, Tomsk, Russia

PP-126. Kosova N.I.¹, Reshetnikov S.I.², Kurzina I.A.¹,²,³, Vodorezova O.Y.¹, Musich P.G.¹, Kurina L.N.¹
STD-PROCESS OVER MIXED CATALYSTS: KINETIC STUDIES AND MATHEMATICAL MODELING
¹Tomsk State University, Tomsk, Russia
²Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia
³Tomsk Polytechnic University, Tomsk, Russia

PP-127. Krivtcova N.I., Ivanchina E.D., Tataurschikov A.A.
MATHEMATICAL MODELLING OF THE CATALYTIC HYDRODESULFURIZATION OF DIESEL FUELS
Tomsk Polytechnic University, Tomsk, Russia

PP-128. Krivtcova N.I., Zaitceva E.V.
OBTAINING ARTIFICIAL LIQUID FUEL BY THERMOLYSIS OF ANIMAL WASTE
Tomsk Polytechnic University, Tomsk, Russia

PP-129. Massalimova B.
PARTIAL OXIDATION OF PROPANE-BUTANE MIXTURE TO OXYGENATES OVER Mo - CONTAINING MODIFIED CATALYSTS
Arkalyk State Pedagogical Institute after named I. Altynsarin, Arkalyk, Kazakhstan

PP-130. Pant K.K.
GREEN CATALYTIC CONVERSION PROCESSES FOR PRODUCTION OF FUELS FROM RENEWABLE BIOMASS MATERIALS
Indian Institute of Technology, Delhi, India

PP-131. Staroverov D., Varlamova E., Makarov M., Shvets V.
SELECTIVITY OF PALLADIUM-CATALYSED ETHYLENE GLYCOL OXIDATION IN TRICKLE-BED REACTOR
D. Mendeleyev University of Chemical Technology of Russia, Moscow, Russia

36
PP-132. Todorović Z.B.¹, Đokić-Stojanović D.R.², Troter D.¹, Stamenković O.S.¹, Veljković V.B.¹
CaO-CATALYZED ETHANOLYSIS OF SUNFLOWER OIL IN THE PRESENCE OF VARIOUS COSOLVENTS
¹University of Niš, Leskovac, Serbia
²Zdravlje Actavis, Leskovac, Serbia

PP-133. Todorović Z.B.¹, Đokić-Stojanović D.R.², Troter D.¹, Stamenković O.S.¹, Veljković V.B.¹
SUNFLOWER OIL ETHANOLYSIS CATALYZED BY COMMERCIAL CaO IN THE PRESENCE OF CHOLINE CHLORIDE-UREA-BASED DEEP EUTECTIC SOLVENT
¹University of Niš, Leskovac, Serbia
²Zdravlje Actavis, Leskovac, Serbia

PP-134. Vosmerikova L.N.¹, Zaikovskii V.², Vosmerikov A.¹
THE EFFECT OF ZINC CONCENTRATION AND STATE ON ACTIVITY OF CATALYSTS FOR ETHANE AROMATIZATION
¹Institute of Petroleum Chemistry SB RAS, Tomsk, Russia
²Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

PP-135. Dobrosz-Gómez I.¹, Gómez Mendoza N.A.¹, Gómez García M.Á.¹, GilPavas E.², Rynkowski J.M.³
TEMPERATURE-SCANNING METHOD FOR THE KINETIC STUDIES OF CO OXIDATION OVER CERIA-ZIRCONIA SUPPORTED GOLD CATALYSTS
¹Universidad Nacional de Colombia, Manizales, Colombia.
²Universidad EAFIT, Medellín, Colombia
³Institute of General and Ecological Chemistry, Lodz, Poland
<table>
<thead>
<tr>
<th>Time</th>
<th>September 22, Monday</th>
<th>September 23, Tuesday</th>
<th>September 24, Wednesday</th>
<th>September 25, Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.00</td>
<td>PL-1 Marin</td>
<td>PL-3 Kuipers</td>
<td>9.00</td>
<td>PL-5 Fan</td>
</tr>
<tr>
<td>10.00</td>
<td>PL-2 Coppens</td>
<td>PL-4 Rodrigues</td>
<td>10.00</td>
<td>PL-6 Salmi</td>
</tr>
<tr>
<td>11.00</td>
<td>Coffee break</td>
<td>Coffee break</td>
<td>11.00</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11.30</td>
<td>KL-3 Kuzmin</td>
<td>KL-5 Stefanidis</td>
<td>11.30</td>
<td>KL-7 Heeres</td>
</tr>
<tr>
<td>12.00</td>
<td>KL-4 Galarneau</td>
<td>KL-6 Gavrilidis</td>
<td>12.00</td>
<td>KL-8 Maximov</td>
</tr>
<tr>
<td>12.30</td>
<td>Lunch</td>
<td>Lunch</td>
<td>12.30</td>
<td>Lunch</td>
</tr>
<tr>
<td>14.00</td>
<td>OP-I-1 Murzin</td>
<td>OP-II-1 Kolb</td>
<td>14.00</td>
<td>OP-III-9 Kihlman</td>
</tr>
<tr>
<td>14.20</td>
<td>OP-I-2 Sulman E.</td>
<td>OP-II-2 Troncon</td>
<td>14.20</td>
<td>Büchi AG Presentation</td>
</tr>
<tr>
<td>14.40</td>
<td>OP-I-3 Sinev</td>
<td>OP-II-3 Freund</td>
<td>14.40</td>
<td>OP-III-10 Tesser</td>
</tr>
<tr>
<td>15.00</td>
<td>OP-I-4 Pawlaczy</td>
<td>OP-II-4 Jordache</td>
<td>15.00</td>
<td>OP-III-11 Albo</td>
</tr>
<tr>
<td>15.20</td>
<td>OP-I-5 Ovchinnikova</td>
<td>OP-II-5 Schuurbiers</td>
<td>15.20</td>
<td>OP-III-12 Reyero</td>
</tr>
<tr>
<td>15.40</td>
<td>OP-I-6 Thymbaut</td>
<td>OP-II-6 Härting</td>
<td>15.40</td>
<td>OP-IV-1 Arutyunov</td>
</tr>
<tr>
<td>15.30</td>
<td>Coffee break</td>
<td>16.00</td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>16.00</td>
<td>Honorary Lecture Dan Luss</td>
<td>16.20</td>
<td>OP-I-7 Zagorilo</td>
<td></td>
</tr>
<tr>
<td>16.30</td>
<td>KL-1 Ismagilov</td>
<td>16.40</td>
<td>OP-I-9 Haase</td>
<td></td>
</tr>
<tr>
<td>17.30</td>
<td>KL-2 Rebrov</td>
<td>17.00</td>
<td>Poster Session</td>
<td></td>
</tr>
<tr>
<td>19.00</td>
<td>Welcome Reception</td>
<td>17.00</td>
<td>Conference Closing</td>
<td></td>
</tr>
<tr>
<td>19.30</td>
<td>Conference Banquet</td>
<td>18.00</td>
<td>Excursion to The Hague</td>
<td></td>
</tr>
<tr>
<td>20.00</td>
<td>Guide Excursion around Delft</td>
<td>18.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>