

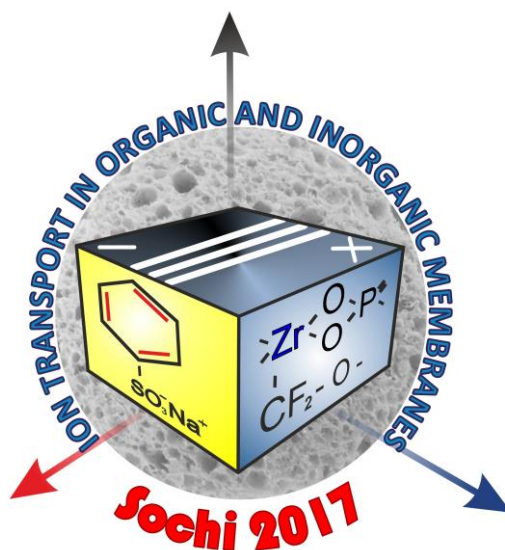
RUSSIAN ACADEMY OF SCIENCES
SECTION "MEMBRANES AND MEMBRANE TECHNOLOGIES" OF
D.I. MENDELEEV RUSSIAN CHEMICAL SOCIETY
RUSSIAN FOUNDATION FOR BASIC RESEARCH
FEDERAL AGENCY FOR SCIENTIFIC ORGANIZATIONS
RAS SCIENTIFIC COUNCIL ON PHYSICAL CHEMISTRY
RUSSIAN MEMBRANE NETWORK
KUBAN STATE UNIVERSITY
KURNAKOV INSTITUTE OF GENERAL AND INORGANIC CHEMISTRY RAS
«MEMBRANE TECHNOLOGY» INNOVATION ENTERPRISE

INTERNATIONAL CONFERENCE

Ion transport in organic and inorganic membranes

PROGRAMME

23 – 28 May 2017



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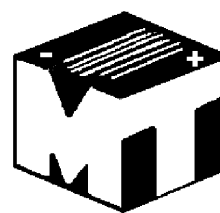
RUSSIAN FOUNDATION
FOR BASIC RESEARCH



FEDERAL AGENCY FOR
SCIENTIFIC ORGANIZATIONS



«MEMBRANE TECHNOLOGY»
INNOVATION ENTERPRISE



Мероприятие проводится при финансовой поддержке Российского фонда
фундаментальных исследований, Проекты № 17-08-20100, №17-38-10089

Tuesday, May 23
Arrival, Registration, Welcome reception
20.00 Welcome party

Wednesday, May 24
10.00-11.00
REGISTRATION

11.00-13.00

OPENING CEREMONY
Chairman: Vladimir Volkov

PLENARY LECTURES

Andrey Yaroslavtsev, Daniil Golubenko, Andrey Ilyin, Irina Stenina, Vladimir Tverskoi (*Kurnakov Institute of General & Inorganic Chemistry RAS; Topchiev Institute of Petrochemical Synthesis RAS; Moscow Technological University, Moscow, Russia*)

**THE RELATIONSHIP BETWEEN PROTONCONTAINING GROUPS
STRUCTURE, MOBILITY AND TRANSPORT PROPERTIES OF ION-
EXCHANGE MEMBRANES**

Victor Zabolotskiy, Nikolay Sheldeshov, Stanislav Melnikov, Stanislav Utin (*Kuban State University, Krasnodar, Russia*)

**REAGENT-FREE ELECTRO-MEMBRANE TECHNOLOGY OF PH-
CORRECTION OF WATER AND WATER-ORGANIC SOLUTIONS**

KEY LECTURES

Lubos Novak, Jana Gauftova (*Mega a.s., Strazh pod Ralskem, Czech Republic*)
COMBINED MEMBRANE PROCESSES

Victor Nikonenko, Aminat Uzdenova, Ksenia Nebavskaya, Marina Andreeva, Lasaad Dammak (*Membrane Institute, Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est - CNRS, Thiais, France*)

**IMPACT OF CURRENT DENSITY, SOLUTION CONCENTRATION AND
SURFACE CHARGE DENSITY ON THE MECHANISM OF
ELECTROCONVECTION IN MEMBRANE SYSTEMS. PERSPECTIVES
IN FIGHTING SCALING**

Sergej Timofeev, Gennadiy Belyakov, Vladimir Gursky (*Plastpolymer OJSC, St. Petersburg, Eldis Firm, Moscow, Aleksandrov Research Institute of Technology, Sosnovyi Bor, Russia*)

**EXPERIENCE OF SOLID-POLYMER WATER ELECTROLYSERS
USING MF-4SK MEMBRANES**

Vladimir Shaposhnik (*Voronezh State University, Russia*)

**SUPRAMOLUCULARE CHEMISTRY OF ION EXCHANGE
MEMBRANES**

PRESENTATION OF THE MONOGRAPHS AND TEXTBOOKS

Wednesday, May 24, 15.00-18.00

**MEMBRANE AND CATALYTIC SYSTEMS
TRANSPORT PHENOMENA**

Chairman: Anatoly Filippov

PLENARY LECTURE

Vjacheslav Roldughin, Larisa Karpenko-Jereb, Tat'yana Kharitonova
(Frumkin Institute of Physical Chemistry & Electrochemistry RAS, Moscow, Russia;
Institute of Electronic Sensor Systems, Graz University of Technology, Graz, Austria)
**ON THE SCHROEDER PARADOX FOR ION-EXCHANGE AND
NONIONIC POLYMERS**

Mikhail Vorotyntsev, Yury Tolmachev, Dmitry Konev, Anatoly Antipov
(Mendeleev Russian University of Chemical Technology; Lomonosov Moscow State
University; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia;
ICMUB-UMR 6302 CNRS, Universite de Bourgogne, Dijon, France)
**BROMATE ANION REDUCTION VIA AUTOCATALYTIC CYCLE AND
ITS IMPLICATIONS FOR ELECTRICAL ENERGY SOURCES**

**Ekaterina Zolotukhina, Konstantin Gor'kov, Ekaterina Sakardina, Sofia
Kleinikova** (Institute of Problems of Chemical Physics RAS, Chernogolovka;
Lomonosov Moscow State University, Russia)
**FUNCTIONAL MATRIX ACTIVITY OF NANOCOMPOSITES SILVER-ION
EXCHANGER IN LOW-TEMPERATURE FORMALDEHYDE OXIDATION**

16-30 – 17-00 Coffee break

ORAL PRESENTATIONS

Tamara Kravchenko (Voronezh State University, Russia)
**CATALYTIC, CHEMICAL, AND ELECTROCHEMICAL ACTIVITY OF
METAL NANOPARTICLES (Ag, Cu) IN THE ION-EXCHANGE MATRIXES**

**Natalia Kononenko, Olga Dyomina, Irina Falina, Svetlana Shkirskaya,
Anatoly Filippov** (Kuban State University, Krasnodar; Gubkin University, Moscow, Russia)
**EXPERIMENTAL AND THEORETICAL INVESTIGATIONS OF
DIFFUSION AND ELECTROSMOTIC PERMEABILITY OF ION-
EXCHANGE MEMBRANES**

Valentina Ponomareva, Irina Bagryantseva, Elena Shutova (Institute of Solid State
Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State University, Russia)
**PHASE COMPOSITION, TRANSPORT AND THERMAL PROPERTIES
OF BARIUM DOPED CESIUM DIHYDROGEN PHOSPHATE SYSTEM**

**Natalia Pismenskaya, Ekaterina Belashova, Olesya Kharchenko, Victor
Nikonenko** (Kuban State University, Krasnodar, Russia)
**ANOMALOUS CURRENT-VOLTAGE AND CHRONOPOTENTIOMETRIC
CURVES OF HOMOGENEOUS ANION-EXCHANGE MEMBRANE IN
MONOSODIUM PHOSPHATE SOLUTION**

Thursday, May 25
10.00-13.00

PROCESS MODELING & MEMBRANE APPLICATIONS

Chairman: Mikhail Vorotyntsev

PLENARY LECTURE

Gerald Pourcelly, Victor Nikonenko (*Institut Européen des Membranes, CNRS - Université Montpellier, France; Kuban State University, Krasnodar, Russia*)

MEMBRANE-BASED PROCESSES FOR DESALINATION & WATER TREATMENT AND SUSTAINABLE POWER GENERATION

KEY LECTURES

Anatoly Filippov (*Gubkin University, Moscow, Russia*)

SYNTHESIS AND PREDICTION OF TRANSPORT PROPERTIES OF HYBRID BILAYER ION-EXCHANGE MEMBRANES ON THE BASE OF MF-4SC, HALLOYSITE AND PLATINUM

Denis Bouyer (*Institut Européen des Membranes, CNRS - Université Montpellier, ENSCM, France*)

POLYMERIC MEMBRANE FORMATION - INTERPLAY BETWEEN PROCESS CONDITIONS AND FINAL MORPHOLOGY. A COUPLING BETWEEN EXPERIMENTAL AND MODELING APPROACHES

Pavel Apel, Irina Blonskaya, Nikolay Lizunov, Oleg Orelovich, Christina Trautmann (*Joint Institute for Nuclear Research, Dubna; Dubna State University, Russia; GSI Helmholtzzentrum für Schwerionenforschung GmbH, Darmstadt, Germany*)

THE ROLE OF OSMOTIC EFFECTS IN ASYMMETRIC TRACK ETCHING

11-10 – 11-30 Coffee break

ORAL PRESENTATIONS

Ilya Ryzhkov, Denis Lebedev, Victoria Bykanova, Vera Solodovnichenko, Alexey Shiverskiy, Mikhail Simunin (*Institute of Computational Modeling SB RAS; Molecular Electronics Department KSC SB RAS, Krasnoyarsk; National Research University of Electronic Technology – MIET, Zelenograd, Moscow, Russia*)

ION TRANSPORT IN CARBON COATED ALUMINA NANOFIBER MEMBRANES: MATHEMATICAL MODELLING AND EXPERIMENT

Anna Ovcharova, Vladimir Vasilevsky, Ilya Borisov, Stepan Bazhenov, Alexey Volkov, Alexandr Bildyukevich, Vladimir Volkov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia; Institute of Physical Organic Chemistry NASB, Minsk, Belarus*)

POLYSULFONE POROUS HOLLOW FIBER MEMBRANES FOR ETHYLENE-ETHANE SEPARATION IN A GAS-LIQUID MEMBRANE CONTACTOR

Thursday, May 25
15.00-17.00

MEMBRANE DEVELOPMENT & APPLICATIONS

Chairman: Ekaterina Zolotukhina

KEY LECTURES

Marc Cretin (*Institut Européen des Membranes, CNRS - Université Montpellier, ENSCM, France*)

NANOMATERIALS FOR ELECTROCHEMICAL APPLICATIONS IN ENERGY CONVERSION AND WASTE WATER TREATMENT

Umit Demirci (*Institut Européen des Membranes, CNRS - Université Montpellier, ENSCM, France*)

BORON HYDRIDES FOR ENERGY: FOCUS ON MEMBRANES, AN UNDERINVESTIGATED FIELD

Larisa Karpenko-Jereb (*Institute of Electronic Sensor Systems, Graz University of Technology, Graz, Austria*)

EFFECT OF POLYMER AND COUNTER-ION NATURE ON THE STRUCTURAL FEATURES OF THE POLYMER ELECTROLYTE MEMBRANES

16-10 – 16-30 Coffee break

ORAL PRESENTATIONS

Nataliia Talagaeva, Ekaterina Zolotukhina, Mikhail Vorotyntsev (*Institute of Problems of Chemical Physics RAS, Chernogolovka; Mendeleev Russian University of Chemical Technology, Moscow, Lomonosov Moscow State University, Russia*)

ELECTROCHEMICAL PROPERTIES OF PRUSSIAN BLUE-POLYPYRROLE COMPOSITE

Denis Lebedev, Alexey Shiverskiy, Mikhail Simunin, Victoria Bykanova, Vera Solodovnichenko, Ilya Ryzhkov (*Institute of Computational Modeling SB RAS, Molecular Electronics Department KSC SB RAS, Krasnoyarsk, Russia*)

ION-SELECTIVE AND ELECTROCHEMICAL PROPERTIES OF CARBON COATED ALUMINA NANOFIBER MEMBRANES

Farhad Heidary, Behrouz Heidari, Siavash Heidary, Elahe Naseri, Maryam Ansari (*Young Researchers and Elite Club, Arak Branch, Islamic Azad University, Arak, Iran*)

PREPARATION OF NANOCOMPOSITE MEMBRANE CONTAINING MAGNETITE NANOPARTICLES FOR REMOVAL OF METAL IONS

17-00 – 18-00 POSTER SESSION

Friday, May 26

10.00-13.00

RUSSIAN-FRENCH SEMINAR

Chairman: Gerald Pourcelly

KEY LECTURE

Patrick Fievet, Anthony Szymczyk, Sebastien Deon (*Institut UTINAM, Besançon; Institut des Sciences Chimiques de Rennes, Rennes, France*)

THEORETICAL AND EXPERIMENTAL TOOLS FOR INVESTIGATING TRANSPORT PROPERTIES THROUGH NF MEMBRANES

ORAL PRESENTATIONS

Anton Kozmai, Mona Cherif, Lasaad Dammak, Myriam Bdiri , Victor Nikonenko, Christian Larchet, Ulia Aniskina (*Membrane Institute, Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est (ICMPE), Thiais, France; Université de Sfax pour le Sud, Sfax, Tunisie*)

STATIONARY AND NON-STATIONARY MODELS OF ION TRANSFER IN NEUTRALIZATION DIALYSIS

Marina Andreeva, Lasaad Dammak, Christian Larchet, Natalia Kononenko (*Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est (ICMPE), Thiais, France*)

IMPACT OF PULSED ELECTRIC FIELD MODES ON SCALING FORMATION DURING ELECTRODIALYSIS

Myriam Bdiri, Lasaad Dammak, Christian Larchet, Lobna Chaabane, Faycal Hellal (*Université Paris-Est, Institut de Chimie et des Matériaux Paris-Est, CNRS – UPEC, France; Université de Carthage, Institut National de Sciences Appliquées et de Technologie, Tunisie*)

CHARACTERIZATION OF ION-EXCHANGE MEMBRANES USED IN FOOD INDUSTRY AND CONTRIBUTION TO THE CLEANING MEMBRANES USING CHEMICAL SOLUTIONS

Daniel Golubenko, Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry RAS; Topchiev Institute of Petrochemical Synthesis RAS; Moscow Technological University, Moscow, Russia*)

POLYMETHYLPENTENE: THE OPTIMUM MATERIAL FOR ION EXCHANGE MEMBRANES FABRICATION BY UV POST-GRAFTING

11-10 – 11-30 Coffee break

YOUNG RESEARCHERS CONTEST

ORAL PRESENTATIONS

Chairman: Nikolay Sheldeshov

Mikhail Porozhnyy, Stefano Deabate, Patrice Huguet, Victor Nikonenko
(Kuban State University, Krasnodar, Russia; Institut Européen des Membranes, CNRS - Université Montpellier, ENSCM, France)

**CONCENTRATION DEPENDENCE OF CONDUCTIVITY AND
DIFFUSION PERMEABILITY OF ION EXCHANGE MEMBRANES
EMBEDDED WITH MINERAL OR ORGANIC NANOPARTICLES.
MODELLING AND EXPERIMENT**

**Aleksandra Lytkina, Natalia Orekhova, Margarita Ermilova, Ilya Petriev,
Mikhail Baryshev, Andrey Yaroslavtsev** *(Topchiev Institute of Petrochemical
Synthesis RAS, Moscow, Kuban State University, Krasnodar, Russia)*

**HYDROGEN PRODUCTION VIA METANOL STEAM REFORMING
WITH THE USE OF MEMBRANE**

Anatoly Antipov, Mikhail Vorotyntsev *(Mendeleev Russian University of
Chemical Technology; Lomonosov Moscow State University; Institute of
Problems of Chemical Physics, RAS, Chernogolovka, Russia; ICMUB-UMR 6302
CNRS, Université de Bourgogne, Dijon, France)*

**BROMATE ANION ELECTROREDUCTION ON ROTATION DISC
ELECTRODE: ASYMPTOTIC BEHAVIOR FOR VERY HIGH
CURRENTS**

**Vladlen Nichka, Semyon Mareev, Andrey Nebavskiy, Dmitrii Butylskii,
Natalia Pismenskaya, Victor Nikonenko** *(Membrane Institute, Kuban State
University, Krasnodar, Russia)*

**THE PHENOMENON OF TWO TRANSITION TIMES IN
CHRONOPOTENTIOMETRY OF SYSTEMS WITH ELECTRICALLY
INHOMOGENEOUS ION EXCHANGE MEMBRANES. EXPERIMENT
AND MODEL**

Friday, May 26
15.00-18.00

YOUNG RESEARCHERS CONTEST (Session 1)

ORAL PRESENTATIONS

Chairman: Victor Nikonenko

MEMBRANE DEVELOPMENT, CHARACTERISATION & APPLICATIONS

Anastasia Alekseenko, Vladimir Guterman, Vadim Volochaev, Angelina Pavlets, Kirill Paperj (*Southern Federal University, Rostov-on-Don, Russia*)

OPTIMIZATION OF COMPOSITION AND MICROSTRUCTURE WITH THE AIM OF INCREASING THE SPECIFIC ELECTROCHEMICAL CHARACTERISTICS OF CATALYSTS WITH A LOW CONTENT OF PLATINUM

Maria Dmitrieva, Zolotukhina Ekaterina, Gerasimova Ekaterina, Terentyev Aleksey, Dobrovolskiy Yuriy (*Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia*)

ELECTROCATALYTIC PROPERTIES OF EXTRACTS OBTAINED FROM E.COLI BB CULTURE AT MEDIATED GLUCOSE OXIDATION

Tatyana Sazanova, Alsu Akhmetshina, Artem Atlaskin, Kseniya Otvagina, Ilya Vorotyntsev (*Nizhny Novgorod State Technical University n.a. R.E. Alekseev, Russia*)

THE CORRELATION OF GAS SEPARATION PROPERTIES OF NONPOROUS POLYMERIC MEMBRANES WITH ITS TOPOGRAPHY

Evgenia Grushevenko, Ilya Borisov, Danila Bahtin, George Shandryuk, Galina Bondarenko, Alexey Volkov (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)

SILICONE RUBBERS WITH ALKYL AND SILICON-CONTAINING SIDE CHAINS SUBSTITUENTS FOR HYDROCARBONS SEPARATION

Evgenia Zhelonkina, Svetlana Shishkina (*Vyatka State University, Kirov, Russia*)

EFFECT OF THE TYPE OF FUNCTIONAL GROUPS ON SCALING DURING ELECTRODIALYSIS

16-10 – 16-30 Coffee break

Dmitrii Butylskii, Semyon Mareev, Christian Larchet, Lasaad Dammak, Natalia Pismenskaya, Victor Nikonenko (*Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est, Thiais, France*)

EXPERIMENTAL AND THEORETICAL INVESTIGATION OF SURFACE GEOMETRICAL HETEROGENEITY OF HOMOGENEOUS ION-EXCHANGE MEMBRANES USING SCANNING ELECTROCHEMICAL MICROSCOPY METHOD

Elena Goleva, Vera Vasil'eva (*Voronezh State University, Russia*)

TRANSPORT OF SODIUM CHLORIDE AND PHENYLALANINE THROUGH ION-EXCHANGE MEMBRANES IN NEUTRALIZATION DIALYSIS

Aminat Uzdenova, Makhamet Urtenov, Anna Kovalenko, Victor Nikonenko (*Aliev Karachaevo-Cherkessky State University; Kuban State University, Krasnodar, Russia*)

TWO-DIMENSIONAL MATHEMATICAL MODEL OF OVERLIMITING TRANSFER IN MEMBRANE SYSTEMS TAKING INTO ACCOUNT ELECTROCONVECTION AND FORCED FLOW FOR THE GALVANOSTATIC MODE

Andrey Nebavskiy, Semyon Mareev, Vladlen Nichka, Ksenia Nebavskaya (*Kuban State University, Krasnodar, Russia*)

COMPARISON OF CHRONOPOTENTIOMETRIC CURVES OF HETEROGENEOUS ION-EXCHANGE MEMBRANES WITH HYDROPHOBIC OR HYDROPHILIC NON-CONDUCTIVE SURFACE AREAS. 2D SIMULATION

Tatyana Denisova, Ekaterina Safronova, Anna Parshina, Olga Bobreshova (*Voronezh State University; Kurnakov Institute of General & Inorganic Chemistry, RAS, Moscow, Russia*)

THE INFLUENCE OF PROTON-ACCEPTOR PROPERTIES AND CONCENTRATION OF DOPANTS INTRODUCED INTO MF-4SC MEMBRANES ON THE CROSS SENSITIVITY OF DP-SENSORS TO IONS IN ALKALINE SOLUTIONS OF GLUTAMIC AND ASPARTIC ACIDS

Polina Yurova, Yulia Karavanova, Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry RAS, Moscow, Russia*)

SYNTHESIS AND DIFFUSION PROPERTIES OF CATION-EXCHANGE MEMBRANES MODIFIED WITH PROTONACTERT AND PROTONDONOR DOPANTS

Friday, May 26
15.00-18.00

YOUNG RESEARCHERS CONTEST (Session 2)

ORAL PRESENTATIONS

Chairman: Marina Kardash

Semyon Mareev, Anton Kozmai, Vladlen Nichka, Victor Nikonenko
(Membrane Institute, Kuban State University, Krasnodar, Russia)

**THREE-DIMENSIONAL MODEL OF IMPEDANCE OF THE ION EXCHANGE
MEMBRANE WITH ELECTRICALLY INHOMOGENEOUS SURFACE**

Tatiana Plisko, Alexandr Bildyukevich, Yana Isaichykava, Anna Ovcharova
(Institute of Physical Organic Chemistry, NAS of Belarus, Minsk, Belarus; Topchiev
Institute of Petrochemical Synthesis RAS; Moscow, Russia)

**PREPARATION OF HIGH FLUX POLYPHENYLSULFONE MEMBRANES
USING UPPER AND LOWER CRITICAL SOLUTION TEMPERATURE
SYSTEMS: EFFECT OF COAGULATION BATH TEMPERATURE**

Violetta Gil, Victor Nikonenko, Natalia Pismenskaya (Institute of Membranes,
Kuban State University, Krasnodar, Russia)

**THE INFLUENCE OF THE CURRENT DENSITY ON THE DIFFUSION
BOUNDARY LAYER STRUCTURE IN SODIUM, CALCIUM AND
MAGNESIUM CHLORIDE SOLUTIONS**

Elizabeth Evdochenko (RWTH Aachen University, Aachen, Germany; Kuban State
University, Krasnodar, Russia)

REJECTION OF SALTS AND SALT MIXTURES BY NF MEMBRANE

**Ksenia Nebavskaya, Natalia Pismenskaya, Konstantin Sabbatovskiy,
Vladimir Sobolev, Victor Nikonenko** (Institute of Membranes, Kuban State
University, Krasnodar; Frumkin Institute of Physical Chemistry and Electrochemistry
RAS, Moscow, Russia)

**ACCOUNTING FOR MEMBRANE CONDUCTIVITY IN
DETERMINATION OF SURFACE CHARGE VIA STREAMING
POTENTIAL MEASUREMENTS**

Elmara Akberova, Elena Goleva, Vladimir Kolganov, Dmitrii Korotkov
(Voronezh State University, Russia)

**SPECTRAL PROPERTIES OF CONCENTRATION FIELD
FLUCTUATIONS IN STRATIFIED ELECTROMEMBRANE SYSTEMS
WITH STRONGLY BASIC ANION-EXCHANGE MEMBRANES AFTER
TEMPERATURE TREATMENT**

**Veronika Sarapulova, Mariya Fomenko, Liudmila Arzaniaeva, Natalia
Pismenskaya** (Membrane Institute, Kuban State University, Krasnodar, Russia)
**EFFECT OF THE AMPHOLYTE NATURE ON TRANSPORT
CHARACTERISTICS OF ION EXCHANGE MEMBRANES**

Alexander Pismenskiy, Mahamet Urtenov, Anna Kovalenko, Ekaterina Belashova (*Kuban State University, Krasnodar, Russia*)

MODELING OF MASS TRANSFER PROCESSES IN ELECTRODIALYSIS OF AMPHOLYTES WITH THE ACCOUNT OF NONISOTHERMAL DEPROTONING-PROTONING REACTIONS

Roman Pichugov, Mikhail Petrov, Dmitry Konev, Anatoly Antipov, Mikhail Vorotyntsev (*Lomonosov Moscow State University; Mendeleev Russian University of Chemical Technology; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia; ICMUB-UMR 6302 CNRS, Universite de Bourgogne, Dijon, France*)

SPECTROPHOTOMETRIC ANALYSIS OF BROMINE SPECIES IN CONCENTRATED AQUEOUS SOLUTIONS AT DIFFERENT pH

Victor Zabolotsky, Stanislav Melnikov, Stanislav Utin (*Kuban State University, Krasnodar, Russia*)

INFLUENCE OF NATURE OF CATION EXCHANGE LAYER ON ELECTROCHEMICAL CHARACTERISTICS OF ASYMMETRIC BIPOLAR MEMBRANES

Ivan Prikhno, Ekaterina Safronova, Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry, RAS, Russia*)

HYBRID MEMBRANES BASED ON NAFION POWDER AND DIFFERENT DOPANTS OBTAINED BY HOT PRESSING

Aslan Achoh, Victor Zabolotsky, Stanislav Melnikov, Konstantin Lebedev (*Kuban State University, Krasnodar, Russia*)

VERIFICATION OF PHENOMENOLOGICAL MODEL OF COMPETITIVE TRANSPORT OF IONS IN SULFATE-NITRATE SOLUTIONS OF ELECTROLYTES

Vjacheslav Roldughin, Vladimir Zhdanov, Andrey Shabatin (*Frumkin Institute of Physical Chemistry & Electrochemistry RAS; National Research Nuclear University "MEPhI", Moscow, Russia*)

NON-EQUILIBRIUM THERMODYNAMICS OF HEAT AND MASS TRANSFER THROUGH THE MEMBRANE SURFACE FOR TWO-COMPONENT MIXTURE

Victor Zabolotsky, Anastasia But, Lubos Novak, Vera Vasil'eva (*Kuban State University, Krasnodar, Russia; Mega a.s., Strazh pod Ralskem, Czech Republic; Voronezh State University, Russia*)

ELECTROCONVECTION IN SYSTEMS WITH HETEROGENEOUS AND HOMOGENOUS ION-EXCHANGE MEMBRANES

Friday, May 26
20.00-22.00

«RUSSIAN YOUNG MEMBRANE» COMPETITION

Session 1

Chairman: Natalia Pismenskaya

ORAL PRESENTATIONS

Artem Atlaskin, Maxim Trubyanov, Pavel Drozdov, Ilya Vorotyntsev, Vladimir Vorotyntsev (*Nizhny Novgorod State Technical University n.a. R.E. Alekseev, Russia*)

MEMBRANE CASCADE TYPE OF “CONTINUOUS MEMBRANE COLUMN”

Diana Aleshkina, Veronika Sarapulova, Natalia Pismenskaya (*Institute of Membranes, Kuban State University, Krasnodar, Russia*)

EFFECT OF ANTHOCYANINS ON THE MORPHOLOGY AND CHEMICAL COMPOSITION OF AMX-Sb MEMBRANE SURFACE

Anna Gaidamaka, Irina Bagryantseva, Valentina Ponomareva (*Novosibirsk State University, Novosibirsk, Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk, Russia*)

PHASE COMPOSITION, THERMAL AND TRANSPORT PROPERTIES OF RUBIDIUM MONO AND DIHYDROGEN PHOSPHATES SYSTEM

Olga Istakova, Dmitry Konev, Mikhail Vorotyntsev (*Institute for Problems of Chemical Physics of RAS, Chernogolovka; Mendeleev University of Chemical Technology of Russia, Moscow; Lomonosov Moscow State University, Russia*)

PREPARATION OF COBALT (II) POLYPORPHINE FILMS BY ELECTROCHEMICAL METHOD AND THEIR CATALYTIC PROPERTIES

Nikita Kovalev, Anna Akimova, Nuriet Hapacheva, Anton Serdiuk, Nikolay Sheldeshov, Victor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)

DISSOCIATION OF ALCOHOLS AND WATER IN ORGANIC SOLUTIONS

Alina Kozlova, Maxim Shalygin, Vladimir Teplaykov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)

THE STUDY OF WATER AND ETHANOL VAPORS DIFFUSION IN POLYMERIC MEMBRANES

Victor Zabolotsky, Oleg Mugtamov, Stanislav Melnikov (*Kuban State University, Krasnodar, Russia*)

STABILIZATION OF COPPER NANOPARTICLES IN ION EXCHANGE MEMBRANE MATRIX TO CREATE COMPOSITE MATERIALS WITH DUAL FUNCTION - ION TRANSPORT AND ELECTROCATALYSIS OF NITRATE ION REDUCTION REACTION

Svetlana Markova, Alexander Kharitonov, Vladimir Teplyakov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow; Institute of Energy Problems of Chemical Physics (Branch) RAS, Chernogolovka, Russia*)

SELECTIVE GAS PERMEABILITY OF POLY(4-METHYL-1-PENTENE) MODIFIED BY GAS PHASE FLUORINATION

Vladislav Menshchikov, Sergey Belenov, Anastasia Alekseenko, Vadim Volochaev (*Southern Federal University, Rostov-on-Don, Russia*)

BIMETALLIC Pt-BASED CATALYSTS: STRUCTURE, ACTIVITY IN THE OXYGEN REDUCTION REACTION AND METHANOL ELECTROOXIDATION

Tatyana Mochalova, Alexander Besspalov, Nikolay Sheldeshov, Victor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)

INFLUENCE OF THE MODIFICATION OF THE ANION-EXCHANGE LAYER OF THE BIPOLAR MEMBRANE ON THE DISSOCIATION RATE OF WATER MOLECULES IN THE BIPOLAR REGION

Ivan Novomlinskiy, Irina Gerasimova, Vladimir Guterman (*Southern Federal University, Rostov-on-Don, Russia*)

COMPOSITE SnO_2/C CARRIER, OBTAINED BY ELECTROCHEMICAL METHOD, AND SUPPORTED PLATINUM CATALYSTS

Kseniya Otvagina, Alla Mochalova, Tatyana Sazanova, Artem Atlaskin, Ilya Vorotyntsev (*Nizhny Novgorod State Technical University n.a. R.E. Alekseev; Lobachevsky State University of Nizhny Novgorod, Russia*)

TRANSPORT PROPERTIES OF ASYMMETRIC AND COMPOSITE MEMBRANES BASED ON CHITOSAN COPOLYMERS WITH VINYL MONOMERS

Valeriia Rostovtseva, Alexandra Pulyalina, Ludmila Vinogradova, Galina Polotskaya (*Saint Petersburg State University, Institute of macromolecule compounds RAS, Saint Petersburg, Russia*)

INFLUENCE OF HYBRID FULLERENE-CONTAINING MODIFIERS ON PHYSICO-CHEMICAL AND TRANSPORT PROPERTIES OF POLYPHENYLENE OXIDE MEMBRANES

Anna Ulyankina, Nina Smirnova (*Platov South-Russian State Polytechnic University (Novocherkassk Polytechnic Institute), Russia*)

ELECTROCHEMICAL SYNTHESIS OF COPPER OXIDES AND THEIR ELECTROCATALYTIC PROPERTIES IN DIRECT ALCOHOL FUEL CELLS

Andrey Yatsev, Vera Vasil'eva, Elmara Akberova (*Voronezh State University, Russia*)
THE CHANGES IN SURFACE AND TRANSPORT PROPERTIES OF ION-EXCHANGE MEMBRANES USED AT ELECTRODIALYSIS TREATMENT OF NATURAL WATERS

«RUSSIAN YOUNG MEMBRAIN» COMPETITION

Session 2

Chairman: Vera Vasil'eva

ORAL PRESENTATIONS

Denis Ainetdinov, Marina Kardash, Tatyana Yakunina, Artem Morozov, Roman Polnyi (*Engels Tehnological Institute of Yuri Gagarin State Technical University of Saratov, Russia*)

INFLUENCE OF MODIFYING ADDITIVES ON STRUCTURE AND PROPERTIES OF MULTIFUNCTIONAL NANOCOMPOSITES "POLIKON K"

Nikita Faddeev, Alexandra Kuriganova, Nina Smirnova (*Platov South-Russian State Polytechnic University (NPI), Novocherkassk, Russia*)

ELECTROCHEMICAL OXIDATION OF ALCOHOLS ON Pd/C CATALYSTS SYNTHESIZED BY PULSE ALTERNATING CURRENT TECHNIQUE

Olesya Kharchenko, Ekaterina Belashova, Natalia Pismenskaya (*Kuban State University, Krasnodar, Russia*)

MASS TRANSFER CHARACTERISTICS OF ANION EXCHANGE MEMBRANES IN NaCl AND NaH₂PO₄ SOLUTIONS

Serezha Kirakosyan, Sergey Belenov, Vladimir Guterman (*Southern Federal University, Rostov-on-Don, Russia*)

SYNTHESIS AND INVESTIGATION OF THE CATALYTIC PROPERTIES OF NOVEL Pt-Co NANOPARTICLES WITH GRADIENT STRUCTURE

Sofia Makulova, Yulia Karavanova, Andrey Yaroslavtsev, Igor Ponomarev (*Kurnakov Institute of General & Inorganic Chemistry RAS, Nesmeyanov Institute of Organoelement Compounds RAS, Moscow, Russia*)

IONIC CONDUCTIVITY OF POLYNAPHTHALENEIMID MEMBRANES MODIFIED WITH SILICA

Vera Solodovnichenko, Alexey Shiverskiy, Mikhail Simunin, Denis Lebedev, Victoria Bykanova, Ilya Ryzhkov (*Institute of Computational Modeling SB RAS, Krasnoyarsk; Krasnoyarsk Scientific Center; National Research University of Electronic Technology – MIET, Zelenograd, Moscow, Russia*)

SYNTHESIS OF ION-SELECTIVE CERAMIC MEMBRANES BASED ON ALUMINA NANOFIBERS

Saturday, May 27

10.00-13.00

MEMBRANE DEVELOPMENT & APPLICATIONS

Chairman: Vjacheslav Roldughin

KEY LECTURES

Vladimir Vorotyntsev (*Alekseev Nizhny Novgorod State Technical University, Russia*)

THE COMPARISON OF PURIFICATION EFFICIENCY AND ENERGY EFFICIENCY OF MEMBRANE, DISTILLATION AND CRYSTALLISATION SEPARATION TECHNIQUES

Yurii Volfkovich, Alexey Rychagov, Alexey Mikhlin, Marina Kardash, Nataliya Kononenko, Denis Ainetdinov, Svetlana Shkirskaya, Valentin Sosenkin (*Frumkin Institute of Physical Chemistry & Electrochemistry RAS, Moscow; Engels Technological Institute of Gagarin State Technical University of Saratov; Kuban State University, Krasnodar, Russia*)

CAPACITIVE DEIONIZATION OF WATER USING MEMBRANE OF MOSAIC STRUCTURE

ORAL PRESENTATIONS

Yuliya Bogdanova, Valentina Dolzhikova (*Lomonosov Moscow State University, Russia*)

THE RELATIONSHIP OF ENERGY CHARACTERISTICS OF SURFACES OF CONTINUOUS POLYMER MEMBRANES AND THEIR TRANSPORT PROPERTIES

Anna Kovalenko, Makhamet Urtenov, Natalia Seidova, Alexander Pismenskiy (*Kuban State University, Krasnodar, Russia*)

INFLUENCE OF DISSOCIATION / RECOMBINATION OF WATER MOLECULES ON THE TRANSPORT OF BINARY SALT IONS IN MEMBRANE SYSTEMS

11-20 – 11-40 Coffee break

Nikolay Sheldeshov, Konstantin Lebedev, Victor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)

IONS' TRANSPORT THROUGH ION EXCHANGE MEMBRANES IN THE SYSTEMS USED TO OBTAINING ORGANIC ACIDS AND BASES BY BIPOLAR ELECTRODIALYSIS

Alexander Vvedenskii, Anastasiya Fedoseeva, Natalya Morozova, Elvira Leschenko, Alexey Dontsov (*Voronezh State University, Russia*)

INFLUENCE OF THE PHASE COMPOSITION ON THE PARAMETERS OF HYDROGEN PERMEABILITY OF Pd₅₃Cu FILM ELECTRODES

Anna Parshina, Ekaterina Safronova, Olga Bobreshova (*Voronezh State University; Kurnakov Institute of General & Inorganic Chemistry, RAS, Moscow, Russia*)

THE INFLUENCE OF MOISTURE CONTENT AND TRANSPORT PROPERTIES OF PERFLUORATED MEMBRANES ON THE DP-SENSORS CHARACTERISTICS DEPENDING ON THE ANALITES NATURE AND SOLUTION pH

Vladimir Sobolev, Inessa Sergeeva (*Frumkin Institute of Physical Chemistry & Electrochemistry RAS, Moscow, Russia*)

THE EFFECT OF SURFACE CHARGE ON THE CATIONIC POLYELEKTROLYTE ADSORPTION

Saturday, May 27

15.00-18.00

Round -table: "MEMBRANE MATERIALS FOR FUEL CELLS"
(Chairman: Andrey Yaroslavtsev)

Round-table: "HYBRID MEMBRANE TECHNOLOGIES"
(Chairman: Alexander Tskhay)

Round-table: "OPTIMIZATION AND INTENSIFICATION OF ELECTROMEMBRANE PROCESSES"
(Chairman: Victor Zabolotsky)

Round-table: "I'M IN THE" MEMBRANES", THE MEMBRANES IN RUSSIA AND THE WORLD"
(Chairman: Gerald Pourcelly)

Discussion

Awards & Closing ceremony

20-00 Dinner party

Sunday, May 28

Departure

POSTER SESSION

Thursday, May 25, 17-00 - 18-00

1. Dmitriy Abonosimov, Sergey Lazarev, Irina Khorokhorina (*Tambov State Technical University, Tambov, Russia*)

STUDY FOR THE HYDRODYNAMIC STRUCTURE OF THE FLOW IN THE MEMBRANE ELEMENT OF TUBULAR TYPE

2. Oleg Abonosimov, Sergey Lazarev, Sergey Kotenev (*Tambov State Technical University, Tambov, Russia*)

INVESTIGATION OF KINETIC CHARACTERISTICS THE REVERSE OSMOSIS DESALINATION-CONCENTRATION OF SOLUTIONS CHEMICAL WATER TREATMENT

3. Evgeny Ageev, Nadezhda Strusovskaya, Natalia Matushkina (*Lomonosov Moscow State University, Russia*)

VISUALIZATION AND REMOVAL OF HYDROPHILIC ADMIXTURES FROM HYDROPHOBIC ISOTACTIC POLYPROPYLENE FILMS

4. Natalia Anisimova, Anna Korovkina, Stanislav Rybtsev, Tolera Badessa, Vladimir Shaposhnik (*Voronezh State University, Russia; Arba Minch University, Ethiopia*)

ELECTRICAL RESISTIVITY OF MULTILAYER MONOPOLAR ION-EXCHANGE MEMBRANES

5. Daniil Bograchev, Yury Volfkovich, Alexey Rychagov, Alexey Mikhlin, Valentin Sosnenkin (*Frumkin Institute of Physical Chemistry & Electrochemistry RAS, Moscow, Russia*)

DEVELOPMENT OF MATHEMATICAL MODEL OF WATER CAPACITIVE DEIONIZATION

6. Ilya Borisov, Anna Ovcharova, Stepan Bazhenov, Rustem Ibragimov, Galina Bondarenko, Alexandr Bildyukevich, Vladimir Volkov (*Topchiev Institute of Petrochemical Synthesis RAS; Kazan National Research Technological University, Russia; Institute of Physical Organic Chemistry, NAS of Belarus, Minsk, Belarus*)

HIGHLY EFFICIENT COMPOSITE PTMSP MEMBRANES ON POLYSULFONE SUPPORTS FOR GAS-LIQUID MEMBRANE CONTACTORS

7. Irina Falina, Olga Dyomina, Victor Zabolotskii (*Kuban State University, Krasnodar, Russia*)

VERIFICATION OF CAPILLARY MODEL OF FREE SOLVENT ELECTROOSMOTIC TRANSFER IN ION-EXCHANGE MEMBRANES

8. Irina Fedorova, Lyubov Safonova (*G. A. Krestov Institute of Solution Chemistry RAS, Ivanovo, Russia*)

STUDY OF THE PROTON TRANSFER PROCESSES IN NON-AQUEOUS SOLUTIONS OF BRØNSTED ACID

9. Anatoly Filippov, Tamara Philippova (*Gubkin Russian State University of Oil and Gas, Moscow, Russia*)

CELL METHOD TO CALCULATION OF ELECTRIC CONDUCTIVITY OF ION-EXCHANGE MEMBRANES

10. **Igor Galushka, Denis Terin, Marina Kardash, Larisa Karpenko-Jereb, Denis Ambarnov, Artem Morozov, Sergey Tsyplyaev** (*Saratov State University, Yuri Gagarin State Technical University of Saratov, Russia; Institute of Electronic Sensor Systems, Graz University of Technology, Graz, Austria*)

EVALUATION OF MODIFICATION OF MATERIALS "POLYKON A" BY POROUS SILICON NANOPARTICLES

11. **Georgy Golubev, Ilya Borisov, Vladimir Vasilevsky, Vladimir Volkov** (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)

THERMOPERVAPORATION PROCESS WITH SEMI-AUTOMATIC ADSORPTION METHOD FOR BIO-BUTANOL RECOVERY FROM FERMENTATION BROTH

12. **Larisa Karpenko-Jereb, Eduard Schatt, Clemens Fink, Peter Urthaler, Alexander Bergmann, Reinhard Tatschl** (*Institute of Electronic Sensor Systems, Graz University of Technology; Advanced Simulation Technologies, AVL List GmbH, Graz, Austria*)

IMPACT OF IONOMER IN CATALYST LAYER ON PERFORMANCE OF A POLYMER ELECTROLYTE FUEL CELL

13. **Natalia Kononenko, Daniel Grande, Victor Nikonenko** (*Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est (ICMPE), Thiais, France*)

INVESTIGATION OF CORRELATION BETWEEN STRUCTURAL AND ELECTROTRANSPORT PROPERTIES OF MODIFIED ION-EXCHANGE MEMBRANES

14. **Margarita Kostyanaya, Inna Petrova, Vladimir Volkov, Andrey Yaroslavtsev** (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)

PREPARATION OF THE BIMETALLIC CATALYSTS ON POLYMERIC SUPPORT FOR THE PROCESS OF NITRATE REMOVAL FROM WATER

15. **Anna Kovalenko, Makhamet Urtenov, Alexander Pismenskiy** (*Kuban State University, Krasnodar, Russia*)

EVALUATION OF THE POSSIBILITY OF THE EMERGENCE OF GRAVITATIONAL CONVECTION DUE TO THE RECOMBINATION OF HYDROGEN AND HYDROXYL IONS

16. **Dina Kritskaya, Emil Abdrashitov, Veslav Bokun, Ardalion Ponomarev, Eugeny Sanginov, Yury Dobrovolsky** (*Branch of Talrose Institute for Energy Problems of Chemical Physics RAS, Chernogolovka; Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia*)

WATER AND WATER SATURATED VAPOR TRANSFER RATE THROUGH PROTON EXCHANGE POLYMER MEMBRANES

17. **Larissa Kushakova, Anna Reznichenko, Nataliya Sizikova, Olesya Brailko** (*The Eastern Mining and Metallurgical Research Institute for Non-ferrous Metals, Ust-Kamenogorsk, Kazakhstan*)

APPLICATION OF SORPTION AND EXTRACTION PROCESSES IN THE FLOWSHEETS OF HYDROMETALLURGICAL PROCESSING OF ORES OF DEPOSITS OF KAZAKHSTAN

18. **Sergey Lazarev, Urii Golovin, Olga Kovaleva, Valerii Polikarpov, Irina Khorokhorina** (*Tambov State Technical University, Russia*)

EVALUATION OF STRUCTURAL CHANGES FOR NANOFILTRATION MEMBRANES BY THE DIFFRACTOMETRY METHOD

19. **Sergey Lazarev, Olga Kovaleva, Roman Popov, Sergey Kovalev** (*Tambov State Technical University, Russia*)
INVESTIGATION OF THE PROCESS OF ULTRAFILTRATION SEPARATION OF TECHNOLOGICAL SOLUTIONS IN THE PRODUCTION OF ALCOHOL FROM MOLASSES
20. **Konstantin Lebedev, Victor Zabolotsky, Nikolay Sheldeshov, Vera Vasil'eva, Michail Kasparov** (*Kuban State University, Krasnodar; Voronezh State University, Russia*)
MATHEMATICAL MODEL OF ION TRANSPORT THROUGH THE INTERFACE: THE ION EXCHANGE MEMBRANE / STRONG ELECTROLYTE
21. **Eduard Novitsky, Ilya Borisov, Georgy Golubev, Dmitry Matveev, Alexey Volkov** (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)
CONCENTRATION OF MINERAL SALTS IN A MEMBRANE DISTILLER WITH THE POROUS CONDENSER
22. **Anna Ovcharova, Ilya Borisov, Stepan Bazhenov, Rustem Ibragimov, Vladimir Vasilevsky, Alexandr Bildyukevich, Vladimir Volkov** (*Topchiev Institute of Petrochemical Synthesis RAS; Kazan National Research Technological University, Russia; Institute of Physical Organic Chemistry, NAS of Belarus, Minsk, Belarus*)
HYDROPHOBIZATION OF POROUS POLYSULFONE HOLLOW FIBER MEMBRANES: LOW TEMPERATURE PLASMA TREATMENT
23. **Tatiana Plisko, Alexandr Bildyukevich, Svetlana Apasonovich, Stepan Bazhenov** (*Institute of Physical Organic Chemistry, NAS of Belarus, Minsk, Belarus; Topchiev Institute of Petrochemical Synthesis RAS; Moscow, Russia;*)
MODIFICATION OF ULTRAFILTRATION MEMBRANES BY ADDITION OF POLYELECTROLYTES TO THE COAGULATION BATH
24. **Valentina Ponomareva, Galina Lavrova, Elena Shutova** (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State University, Russia*)
THE FUNCTIONAL PROPERTIES OF NEW PROTON ELECTROLYTES BASED ON CESIUM DIHYDROGEN PHOSPHATE AND HIGH WATER RETENTION MATRIX
25. **Valentina Ponomareva, Galina Lavrova, Boris Zakharov, Irina Bagryantseva** (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State University, Russia*)
NEW PROTON CONDUCTING ELECTROLYTES IN CESIUM MONO AND DIHYDROGEN PHOSPHATES SYSTEM
26. **Ludmila Ponomarova, Yuliya Dzyazko, Yurii Volfkovich, Valentin Sosenkin** (*Sumi National Agrarian University, Sumy; Vernadskii Institute of General & Inorganic Chemistry of the NAS of Ukraine, Kyiv, Ukraine; Frumkin Institute of Physical Chemistry & Electrochemistry of the RAS, Moscow, Russia*)
ORGANIC-INORGANIC ION-EXCHANGER BASED ON WEAKLY AND STRONGLY ACIDIC RESINS
27. **Vjacheslav Roldughin, Vladimir Zhdanov, Andrey Shabatin** (*Frumkin Institute of Physical Chemistry & Electrochemistry RAS; National Research Nuclear University "MEPhI", Moscow, Russia*)
GENERALIZED DUSTY-GAS MODEL FOR GAS MIXTURE FLOW THROUGH NANOPOROUS BODIES

28. **Konstantin Sabbatovsky, Polina Epifanova, Nadezhda Golovaneva, Vladimir Sobolev, Elena Farnosova, Georgy Kagramanov** (*Frumkin Institute of Physical Chemistry & Electrochemistry RAS; Dmitry Mendeleev University of Chemical Technology of Russia; Moscow, Russia*)

THE EFFECT OF THE CONCENTRATION OF NICKEL CHLORIDE ON THE SURFACE CHARGE AND THE SELECTIVITY OF THE NANOFILTRATION MEMBRANE

29. **Artemiy Samarov, Maria Sokolova, Michael Smirnov, Oleg Medvedev, Alexander Toikka** (*Saint Petersburg State University, St. Petersburg; Institute of Macromolecular Compounds, RAS, St. Petersburg, Russia*)

CHOLINE CHLORIDE BASED DEEP EUTECTIC SOLVENTS AND THEIR INFLUENCE ON THE TRANSPORT PROPERTIES OF CHITOSAN MEMBRANES

30. **Valentin Sedelkin, Dmitry Cherkasov, Olga Lebedeva** (*Engels Technological Institute of Yuri Gagarin State Technical University of Saratov, Engels, Russia*)

INVESTIGATION OF ION BIOCIDAL ACTIVITY OF CHITOSAN MEMBRANES

31. **Valentin Sedelkin, Olga Lebedeva, Dmitry Cherkasov** (*Engels Technological Institute of Yuri Gagarin State Technical University of Saratov, Engels, Russia*)

AMORPHOUS-CRYSTALLINE STRUCTURE OF THE FILTRATION MEMBRANE MADE OF A CHITOSAN IN SALT AND THE BASIC FORM

32. **Olga Sereda, Natalia Sherstneva, Dmitry Konev, Anatoly Antipov, Mikhail Vorotyntsev** (*Mendeleev Russian University of Chemical Technology; Lomonosov Moscow State University; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia; ICMUB-UMR 6302 CNRS, Universite de Bourgogne, Dijon, France*)

STABILITY OF BROMATE ANION IN STRONGLY ACIDIC SOLUTIONS

33. **Denis Terin, Sergey Korchagin** (*Yuri Gagarin State Technical University of Saratov, Russia*)

SYNERGETIC APPROACH IN ANALYSIS OF COMPOSITE MATERIALS FRACTAL MORPHOLOGY

34. **Yury Tolmachev, Oleg Tripachev, Olga Istakova, Dmitry Konev, Anatoly Antipov, Mikhail Vorotyntsev** (*Mendeleev Russian University of Chemical Technology; Lomonosov Moscow State University; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia; ICMUB-UMR 6302 CNRS, Universite de Bourgogne, Dijon, France*)

FLOW BATTERY OF A NOVEL TYPE PROSPECTIVE FOR STATIONARY ENERGY STORAGE, FULLY ELECTRIC VEHICLES AND DIRECT SOLAR-TO-CHEMICAL ENERGY CONVERSION

35. **Makhamet Urtenov, Anna Kovalenko, Alexander Pismenskiy** (*Kuban State University, Krasnodar, Russia*)

2D MODELLING OF THE MAIN COUPLED EFFECTS OF CONCENTRATION POLARIZATION IN ELECTROMEMBRANE SYSTEMS AND THEIR IMPACT ON ION TRANSPORT IN BINARY ELECTROLYTES

36. **Stanislav Utin, Sergey Loza, Victor Zabolotsky, Alexander Bepalov, Victor Dotsenko** (*Kuban State University, Russia*)

INFLUENCE OF DEGREE OF FUNCTIONALIZATION CARBOXYLATED HYPERBRANCHED POLYMERS ON ELECTROCHEMICAL CHARACTERISTICS OF ASYMMETRIC BIPOLAR MEMBRANES

37. **Dmitrii Vakhnin, Valeriya Pridorogina, Lev Polyanskii, Tamara Kravchenko** (*Voronezh State University, Russia*)

NEW REDOX-SORPTION MODEL AS WATER DEOXYGENATION DESCRIPTION METHOD

38. **Vera Vasil'eva, Elmara Akberova, Evgeniya Kozhuhova, Lubos Novak, Victor Zabolotsky, Konstantin Lebedev** (*Voronezh State University, Russia; Mega a.s., Strazh pod Ralskem, Czech Republic; Kuban State University, Krasnodar, Russia*)

THE SURFACE ANALYSIS OF THE CM PES ION EXCHANGE MEMBRANES WITH THE DIFFERENT DEGREE OF ION EXCHANGER DISPERSION BY SEM AND AFM METHODS

39. **Vladimir Vasilevsky, Eduard Novitsky, Evgeniy Trofimenko, Evgenia Grushevenko, Kirill Kutuzov, Alexey Volkov** (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)

THE CONFIGURATION OF THE LABORATORY UNIT FOR REVERSE ELECTRODIALYSIS PROCESS

40. **Alexander Vilensky** (*Shubnikov Institute of Crystallography RAS, Moscow, Russia*)

THE STUDY OF RADIOLYSIS PRODUCTS IN THE TRACKS OF POLYETHYLENE TEREPHTHALATE AND POLYCARBONATE AS THE DISTANCE FROM THE ION TRAJECTORY

41. **Ala Yaskevich, Victor Kasperchik, Aleksandr Bilduykevich** (*Institute of Physical Organic Chemistry NASB, Minsk, Belarus*)

VARIATION OF THE ULTRAFILTRATION POLYACRYLONITILE MEMBRANES PROPERTIES BY THE DIAMINE MODIFICATION

42. **Victor Zabolotsky, Polina Vasilenko, Stanislav Utin, Konstantin Lebedev** (*Kuban State University, Krasnodar, Russia*)

THEORETICAL AND EXPERIMENTAL INVESTIGATION OF THE pH CORRECTION PROCESS OF SOFTENED WATER IN LONG ELECTRODIALYSIS CHANNELS WITH BIPOLAR MEMBRANES

43. **Dmitri Zagorskiy, Sergey Bedin, Sergey Kruglikov, Ilya Doludenko** (*Center of Crystallography and Photonics RAS; Moscow Pedagogical University; Mendeleev University of Chemical Technology, Moscow; National Research University Higher School of Economics, Moscow, Russia*)

GALVANIC DEPOSITION OF MULTICOMPONENT ALLOYS INTO THE NANO-SIZED PORES OF TRACK MEMBRANES

44. **Natalia Zhilyaeva, Elena Mironova, Margarita Ermilova, Natalia Orekhova, Nina Shevlyakova, Margarita Dyakova, Vladimir Tverskoy, Andrey Yaroslavtsev** (*Topchiev Institute of Petrochemical Synthesis RAS; Lomonosov Moscow State University of Fine Chemical Technologies; Kurnakov Institute of General & Inorganic Chemistry, RAS, Moscow, Russia*)

INFLUENCE OF HUMIDITY AND PRESSURE ON SEPARATION OF ETHYLENE/ETHANE MIXTURES WITH SULFOCATIONITE MEMBRANES

POSTER SESSION OF YOUNG RESEARCHERS

Thursday, May 25, 17-00 - 18-00

1. **Elmara Akberova, Elena Goleva, Vera Vasil'eva** (*Voronezh State University, Russia*)
DIFFUSION BOUNDARY LAYERS IN THE SOLUTION ON THE INTERPHASE WITH SULFOCATION EXCHANGE MEMBRANES AFTER TEMPERATURE MODIFICATION
2. **Elmara Akberova, Vera Vasil'eva, Mikhail Malykhin** (*Voronezh State University, Russia*)
EFFECT OF THE CHANGES IN CHEMICAL NATURE OF THE IONOGENIC GROUPS FOR ANION-EXCHANGE MEMBRANES AFTER TEMPERATURE TREATMENT ON THE SIZE OF THE ELECTROCONVECTIVE INSTABILITY REGION IN HIGH-CURRENT MODES
3. **Tatiana Anokhina, Tatiana Pleshivtseva, Alexey Yushkin, Viktoria Ignatenko, Sergey Antonov, Alexey Volkov** (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)
STUDY OF DISSOLUTION OF CELLULOSE IN IONIC LIQUID/DMSO SYSTEM AND PREPARATION OF DENSE MEMBRANES
4. **Anatoly Antipov, Mikhail Vorotyntsev** (*Mendeleev Russian University of Chemical Technology; Lomonosov Moscow State University; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia; CNRS, Universite de Bourgogne, Dijon, France*)
BROMATE ELECTROREDUCTION VIA CATALYTIC REDOX-MEDIATOR (EC') MECHANISM
5. **Anatoly Antipov, Mikhail Vorotyntsev** (*Mendeleev Russian University of Chemical Technology; Lomonosov Moscow State University; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia; CNRS, Universite de Bourgogne, Dijon, France*)
THEORY OF STEADY-STATE CONVECTIVE-DIFFUSION TRANSPORT FOR BROMATE ELECTROREDUCTION AT ROTATING DISC ELECTRODE. EQUAL DIFFUSION COEFFICIENTS APPROXIMATION
6. **Irina Antropova, Olga Koshkina, Eldar Magomedbekov, Tatiyana Dmitrieva, Yuri Birukov, Sergey Lakeev, Aleksei Shepelev, Vyacheslav Minashkin, Aleksandr Smolyanskii** (*Mendeleev University of Chemical Technology of Russia; PLC "Systems for microscopy and analysis"; Branch of JSC "Karpov Institute of Physical Chemistry"; NRC "Kurchatov Institute", Moscow, Russia*)
COMPARATIVE RESEARCH OF REGULARITIES OF PASSING OF HYDROSOLS NANO-/MICROPARTICLES OF SILVER THROUGH NUCLEAR AND AEROSOL FILTERS
7. **Danila Bakhtin, Alexey Volkov, Vladimir Volkov, Valeriy Khotimskiy, Leonid Kulikov, Anton Maksimov, Eduard Karakhanov** (*Topchiev Institute of Petrochemical Synthesis, Moscow; Moscow State University, Russia*)
THIN FILM COMPOSITE PTMSP/PAF MEMBRANES: STUDY OF PHYSICAL AGING
8. **Stepan Bazhenov, Danila Bakhtin, Alexey Volkov** (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)
IONIC LIQUIDS AS CO₂ SOLVENTS FOR HIGH PRESSURE GAS-LIQUID PVTMS-MEMBRANE CONTACTORS

9. Ekaterina Belashova, Sergey Mikhaylin, Victor Nikonenko, Natalia Pismenskaya, Laurent Bazinet (*Membrane Institute, Kuban State University, Krasnodar, Russia; Université Laval, Food sciences department, Quebec, Canada*)

IMPACT OF MEMBRANE SCALING NATURE ON THE WATER SPLITTING AND ELECTROCONVECTION DEVELOPMENT AT THE SURFACE OF THE CATION EXCHANGE MEMBRANE

10. Mikhail Berekchiian, Dmitrii Petukhov, Andrei Eliseev (*Lomonosov Moscow State University, Russia*)

STUDY OF ION DIFFUSION THROUGH ANODIC ALUMINA MEMBRANES

11. Sergey Bessarabov, Vita Borisova, Valeriya Plotnikova (*LLS «Impuls», Platov South-Russian State Polytechnic University, Russia*)

JUSTIFICATION OF THE NANO-FILTRATION MEMBRANES APPLICATION AT SMALL RECREATIONAL FACILITIES UNDER CONDITIONS OF THE KRASNODAR TERRITORY CLIMATE

12. Anastasya Bocharova, Irina Falina, Olga Dyomina (*Kuban State University, Krasnodar, Russia*)

CONDUCTING PROPERTIES OF HETEROGENEOUS ION-EXCHANGE MEMBRANES MK-40 IN A WIDE RANGE OF ALKALI METALS SOLUTIONS CONCENTRATIONS

13. Denis Bondarev, Victor Zabolotsky, Alexander Bespalov, Anastasia But (*Kuban State University, Krasnodar, Russia*)

OPTIMAL CONDITIONS ADJUSTMENT FOR SYNTHESIS OF POLYMERICAL MODIFIERS FOR ANION-EXCHANGE MEMBRANES

14. Ilya Borisov, Evgenia Grushevenko, Georgy Golubev, Danila Bakhtin, Vladimir Volkov (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)

THERMOPERVAPORATION MEMBRANES BASED ON SYNDIOTACTIC POLYBUTADIENE AND POLYMETHYLSILOXANE FOR REMOVAL OF CHLORORGANIC FROM WATER

15. Ilya Borisov, Nikolai Ushakov, Eugenia Grushevenko, Vladimir Volkov, Eugene Finkelshtein (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)

POLYDIMETHYLSILALKYLENE-DIMETHYLSILOXANES - NEW MEMBRANE MATERIALS FOR SEPARATION BUTANOL FROM WATER VIA THERMOPERVAPORATION

16. Anastasya Boyarishcheva, Nikita Kovalev, Nikolay Sheldeshov, Victor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)

WATER SPLITTING IN MB-2 BIPOLAR MEMBRANE, MODIFIED BY CHROMIUM (III) HYDROXIDE

17. Ekaterina Dankovtseva, Svetlana Shkirskay (*Kuban State University, Krasnodar, Russia*)

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