

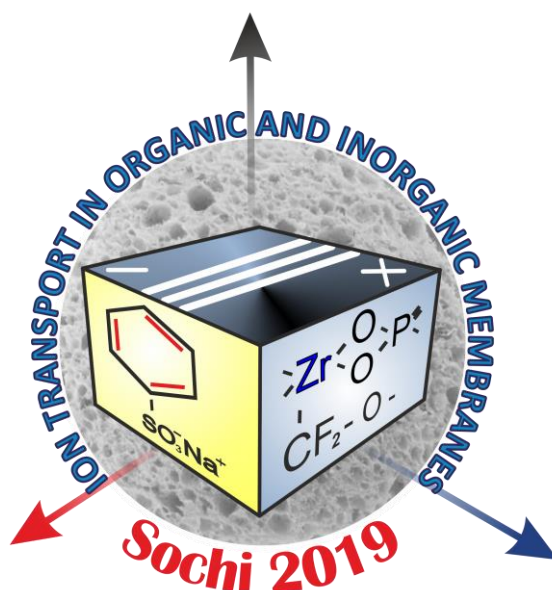
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RUSSIAN MEMBRANE SOCIETY
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FEDERATION
RAS SCIENTIFIC COUNCIL ON PHYSICAL CHEMISTRY
RUSSIAN MEMBRANE NETWORK
KUBAN STATE UNIVERSITY
KURNAKOV INSTITUTE OF GENERAL AND INORGANIC CHEMISTRY RAS
«MEMBRANE TECHNOLOGY» INNOVATION ENTERPRISE

INTERNATIONAL CONFERENCE

Ion transport in organic and inorganic membranes-2019

PROGRAMME

20 – 25 May 2019



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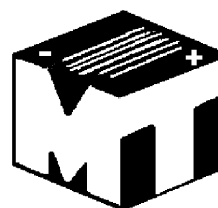
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«MEMBRANE TECHNOLOGY» INNOVATION
ENTERPRISE



Monday, May 20

Arrival, Registration, Welcome reception

19.00 Welcome party

Tuesday, May 21

9:00 – 10:00 REGISTRATION

10:00 OPENING CEREMONY

Chairman: Andrey Yaroslavtsev

**TO THE 100th ANNIVERSARY OF THE HONORED WORKER OF
SCIENCE AND TECHNOLOGY OF RUSSIA
NIKOLAY PETROVICH GNUSIN**

**10:15 – 11:00 Victor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)
FROM ELECTROCHEMISTRY OF ION EXCHANGERS TO
MEMBRANE ELECTROCHEMISTRY**

**11:00 – 11:40 Vladimir Shaposhnik (*Voronezh State University, Russia*)
CONJUGATE TRANSPORT OF MASS AND ENERGY IN ION
EXCHANGE MEMBRANES BY ELECTRODIALYSE**

**11:40 – 12:20 Alexandr Tskhay, Yelena Pryatko, Konstantin Kudelya
(*Membrane Technologies S.A. LLP, Almaty, Republic of Kazakhstan*)
COMBINED ELECTRIC BAROMEMBRANE TECHNOLOGY FOR
DESALINATION OF THE CASPIAN SEA WATER**

12:20 – 13:00 Discussion

Tuesday, May 21

15:00-18:00

**MEMBRANE AND CATALYTIC SYSTEMS
TRANSPORT PHENOMENA& MEMBRANE APPLICATIONS**

Chairman: Vladimir Volkov

PLENARY LECTURE

15:00-15:35 Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry RAS; Institute of Problems of Chemical Physics RAS, Chernogolovka; National Research University Higher School of Economics, Moscow, Russia*)
MEMBRANE MATERIALS IN MODERN ENERGY

KEY LECTURES

15:35-16:00 Mikhail Vorotyntsev, Anatoly Antipov, Dmitry Konev (*Mendeleev University of Chemical Technology of Russia, Moscow; Lomonosov Moscow State University; Institute for Problems of Chemical Physics RAS, Chernogolovka, Russia; ICMUB, UMR 6302 CNRS-Université de Bourgogne-Franche-Comté, Dijon, France*)

**SURPRISING DEPENDENCE OF THE CURRENT DENSITY OF
BROMATE ELECTROREDUCTION ON THE MICROELECTRODE
RADIUS**

16:00–16:30 Coffee break

16:30-16:55 Yury Volfkovich (*Frumkin Institute of Physical Chemistry & Electrochemistry, Moscow, Russia*)

**ACTIVATED CARBONS AS NANOPOROUS ELECTRON-ION
EXCHANGERS WITH HYDROPHILIC - HYDROPHOBIC PROPERTIES**

16:55-17:20 Vitaly Volkov, Alexander Chernyak, Olga Yarmolenko, Vladimir Tverskoy, Daniil Golubenko (*Institute of Problems of Chemical Physics RAS, Chernogolovka; Science Center in Chernogolovka RAS; Educational Institution of Higher Education “MIREA – Russian Technological University”; Lomonosov Institute of Fine Chemical Technology, Moscow; Kurnakov Institute of General & Inorganic Chemistry RAS, Moscow, Russia*)

**HYDRATION AND IONIC TRANSPORT IN ION EXCHANGE
MEMBRANES ON NMR DATA**

ORAL PRESENTATIONS

17:20-17:35 Emil Abdrashitov, Dina Kritskaya, Veslav Bokun, Ardalion Ponomarev, Ksenia Novikova, Evgeny Sanginov, Yury Dobrovolsky (*Chernogolovka Branch of the Semenov Federal Research Center for Chemical Physics RAS; Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia*)

SYNTHESIS AND PROPERTIES OF ION-EXCHANGE MEMBRANES BASED ON ULTRA HIGH-MOLECULAR WEIGHT POLYETHYLENE

17:35-17:50 Vyacheslav Krysanov, Natalia Plotnikova, Anastasia Okushko (*Voronezh State University, Russia*)

ROLE OF ION EXCHANGE MATRIX IN PROCESS OF REDUCING SORPTION OF MOLECULAR OXYGEN BY METALCONTAINING NANOCOMPOSITES

17:50-18:05 Vladimir Berezkin, Sergey Bedin, Alexander Vasiliev, Yuriy Grigoriev, Vladimir Nazmov (*Shubnikov Institute of Crystallography of Federal Research Center "Crystallography and Photonics" RAS, Moscow; Moscow State Education University; Budker Institute of nuclear physics SB RAS, Novosibirsk, Russia*)

REGULAR TRACK MEMBRANES – PRODUCTION AND APPLICATION PROSPECTS

Wednesday, May 22

9.30-13.00

PROCESS MODELING

Chairman: Victor Nikonenko

PLENARY LECTURE

9:30–10:00 Anatoly Filippov, Svetlana Shkirskaya (*Gubkin University, Moscow, Kuban State University, Krasnodar, Russia*)

SIMULTANEOUS VERIFICATION OF THE CELL MODEL FOR ELECTROOSMOTIC PERMEABILITY AND ELECTRICAL CONDUCTIVITY OF CATION-EXCHANGE MEMBRANE

KEY LECTURES

10:00-10:20 Nikolay Sheldeshov, Victor Zabolotskiy, Konstantin Lebedev (*Kuban State University, Krasnodar, Russia*)

TRANSFER PROCESSES IN MEMBRANE SYSTEMS USED FOR PRODUCTION ACIDS AND BASES FROM THEIR SALTS BY BIPOLAR ELECTRODIALYSIS

10:20-10:40 Ilya Ryzhkov, Anton Vyatkin, Anastasia Bortsova, Mikhail Simunin, Sofia Kozlova, Valerij Kucheryavyj (*Institute of Computational Modeling, Federal Research Center KSC SB RAS, Krasnoyarsk; Siberian Federal University, Krasnoyarsk, Russia*)

SWITCHABLE IONIC SELECTIVITY IN CONDUCTIVE NANOPOROUS MEMBRANES: 1D AND 2D MATHEMATICAL MODELS VS EXPERIMENTAL DATA

10:40 – 11:10 Coffee break

ORAL PRESENTATIONS

11:10-11:25 Aminat Uzdenova, Makhamet Urtenov, Victor Nikonenko (*Umar Aliev Karachai-Cherkess State University, Karachaevsk; Kuban State University, Krasnodar, Russia*)

EFFECT OF POTENTIAL OF PULSED ELECTRIC FIELD ON AVERAGE CURRENT DENSITY IN ELECTRODIALYSIS CELL: NUMERICAL EXPERIMENT

11:25-11:40 Semyon Mareev, Svetlana Zyryanova, Christian Larchet, Lasaad Dammak, Victor Nikonenko (*Kuban State University, Krasnodar, Russia; ICMPE – CNRS – Paris Est University, France*)

CHRONOPOTENTIOMETRY OF ION-EXCHANGE MEMBRANES WITH HYDROPHOBIC AREAS ON THE SURFACE: 2D SIMULATION AND EXPERIMENT

11:40-11:55 Anton Kozmai, Svetlana Zyryanova, Victor Nikonenko (*Kuban State University, Krasnodar, Russia*)

MODELLING OF ANION-EXCHANGE MEMBRANE TRANSPORT PROPERTIES WITH TAKING INTO ACCOUNT THE CHANGE IN EXCHANGE CAPACITY AND SWELLING WHEN VARYING BATHING SOLUTION CONCENTRATION AND pH

11:55-12:10 Sergey Bychkov, Elena Shubnikova, Mikhail Popov, Stanislav Chizhik, Alexander Nemudry (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State University, Russia*)

MODELING OF OXYGEN TRANSPORT IN HOLLOW FIBER MEMBRANES

12:10-12:25 Makhamet Urtenov, Viktor Nikonenko, Anna Kovalenko, Elizaveta Evdochenko (*Kuban State University, Krasnodar, Russia*)

ANALYSIS OF THE THEORETICAL CURRENT-VOLTAGE CHARACTERISTICS OF A MEMBRANE CHANNEL

12:25-12:40 Georgy Ganchenko, Natalya Ganchenko, Evgeny Demekhin (*Financial University, Krasnodar; Kuban State University, Krasnodar, Russia*)

ABOUT FEATURES OF ELECTROCONVECTION NEAR NON-PERFECT SELECTIVE ION-EXCHANGE MEMBRANES

12:40-13:00 **Discussion**

Wednesday, May 22

15.00-16.00

POSTER SESSION

16.00-18.00

DISCOVERY OF CAUCASUS NATURE

экскурсия на дачу Сталина

Thursday, May 23

9:30-13:00

ION AND WATER TRANSPORT IN MEMBRANE SYSTEMS

Chairman: Mikhail Vorotyntsev

KEY LECTURES

9:30-9:50 Victor Nikonenko, Anna Kovalenko, Elizaveta Evdochenko, Matthias Wessling, Gerald Pourcelly (*Kuban State University, Russia; RWTH Aachen University, Chemical Process Engineering, Germany; European Membrane Institute, University of Montpellier; France*)

RELATIONSHIPS BETWEEN ELECTROCONVECTION AND WATER SPLITTING IN MEMBRANE SYSTEMS IN INTENSIVE CURRENT REGIMES

9:50-10:10 Tomáš Belloň, Petr Polezhaev, Lucie Vobecká, Zdeněk Slouka (*University of Chemistry and Technology, Prague, Czech Republic*)

MICRO AND MILIFLUIDIC SYSTEMS AS TOOLS FOR STUDYING ELECTROKINETICS AND ION TRANSPORT IN ION-EXCHANGE SYSTEMS

10:10-10:30 Natalia Pismenskaya, Olesya Rybalkina, Kseniia Tsygurina, Ekaterina Melnikova (*Membrane Institute, Kuban State University, Krasnodar, Russia*)

COUPLING BETWEEN MASS TRANSFER AND PROTON GENERATION DURING ELECTRODIALYSIS OF AMPHOLYTE-CONTAINING SOLUTIONS

10:30-10:50 Takoua Ounissi, Lasaad Dammak, Christian Larchet, Jean-François Fauvarque, Emna Selmane Bel Hadj Hmida (*ICMPE-CNRS-Université Paris-Est, France*)

LITHIUM EXTRACTION BY DIFFUSION DIALYSIS USING NOVEL COMPOSITE MEMBRANES

ORAL PRESENTATIONS

10:50-11:05 Petr Polezhaev, Tomáš Belloň, Lucie Vobecká, Zdeněk Slouka (*University of Chemistry and Technology, Prague; University of West Bohemia, New Technologies - Research Centre Univerzitní 8, 301 00 Plzeň, Czech Republic*)

SELECTIVITY OF ION-EXCHANGE RESIN PARTICLES – THE FACTOR OF INTERNAL STRUCTURE

11:05-11:20 Denis Lebedev, Maksim Novomlinsky, Vladimir Kochemirovsky, Tatiana Antropova, Irina Anfimova (*Saint Petersburg State University; Grebenshchikov Institute of Silicate Chemistry RAS, St. Petersburg, Russia*)
STUDY OF MECHANISMS OF THE IONS TRANSPORT IN ACTIVE NANOFILTRATIONAL MEMBRANES CONTAINING GOLD NANOPARTICLES

11:20-11:35 Ladislav Čopák, Anastasia Bocharova (*MemBrain s.r.o., Stráž pod Ralskem, Czech Republic; Kuban State University, Krasnodar, Russia*)
TREATMENT OF ACIDIC WASTEWATER USING MEMBRANE TECHNOLOGIES

11:35 – 11:50 Coffee break

MEMBRANE DEVELOPMENT & APPLICATIONS

Chairman: Anatoly Filippov

ORAL PRESENTATIONS

11:50-12:10 Anatoly Antipov, Mikhail Vorotyntsev (*Mendeleev University of Chemical Technology of Russia, Moscow; Lomonosov Moscow State University; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia; ICMUB, UMR 6302 CNRS-Université de Bourgogne, Dijon, France*)
MULTIELECTRON OXIDIZER REDOX-MEDIATED AUTOCATALYSIS FOR HYDROGEN-BROMATE REDOX FLOW BATTERIES

12:10-12:30 Svetlana Shkirskaya, Viktoria Soloshko (*Kuban State University, Krasnodar, Russia*)
WATER TRANSPORT IN MODIFIED ION EXCHANGE MEMBRANES

12:30-12:45 Olga Kozaderova, Oleg Kozaderov, Kseniya Kim, Sabukhi Niftaliev (*Voronezh State University of Engineering Technologies; Voronezh State University, Russia*)
ELECTRODIALYSIS OF AMMONIA-CONTAINING AQUEOUS SOLUTIONS

12:45-13:00 Ruslan Kayumov, Evgeny Sanginov, Alexander Karelin, Yury Dobrovolsky (*Institute of Problems of Chemical Physics RAS, Chernogolovka; Competence Center of National Technology Initiative in IPCP RAS, Chernogolovka, Russia*)
PHYSICO-CHEMICAL PROPERTIES OF PROTONATED AND SALT FORMS OF THE NAFION MEMBRANES PLASTICIZED WITH APROTIC SOLVENTS

Thursday, May 23

15.00-18.00

**MEMBRANE DEVELOPMENT & APPLICATIONS
YOUNG RESEARCHERS CONTEST**

ORAL PRESENTATIONS

Chairman: Ekaterina Zolotukhina

15:00–15:15 Daniel Golubenko, Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry, RAS, Moscow; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia*)

DEVELOPMENT OF ANION-EXCHANGE MEMBRANE BASED ON GRAFTED COPYLIMER OF POLYSTYRENE AND UV-IRRADIATED POLYMETHYLPENTENE

15:15–15:30 Dmitrii Butylskii, Semyon Mareev, Christian Larchet, Lasaad Dammak, Victor Nikonenko (*Membrane Institute, Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est, Thiais, France*)

EXPERIMENTAL STUDY OF SURFACE MORPHOLOGY OF ION-EXCHANGE MEMBRANES AND ITS IMPACT ON THE MEMBRANE ELECTROCHEMICAL CHARACTERISTICS

15:30-15:45 Ksenia Novikova, Nina Smirnova, Yury Dobrovolsky (*Institute of Problems of Chemical Physics RAS, Chernogolovka; Platov South-Russian State Polytechnic University, Novocherkassk, Russia*)

INFLUENCE OF CARBON SUPPORT ON CATALYTIC LAYER PERFORMANCE OF FUEL CELLS

15:45-16:00 Elizaveta Moguchikh, Anastasia Alekseenko, Kirill Paperzh, Angelina Pavlets, Vladimir Guterman (*Southern Federal University, Rostov-on-Don, Russia*)

THE EFFECT OF POST-PROCESSING ON THE STABILITY OF PLATINUM COPPER ELECTROCATALYSTS

16:00-16:15 Polina Yurova, Irina Stenina, Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry RAS, Moscow, Russia*)

HOMOGENEOUS CATION EXCHANGE MEMBRANES MODIFIED BY PEDOT: SYNTHESIS AND PROPERTIES

16:15-16:30 Aslan Achoh, Stanislav Melnikov, Konstantin Lebedev, Victor Zabolotsky (*Kuban State University, Krasnodar, Russia*)

ELECTROCHEMICAL CHARACTERISTICS AND SPECIFIC SELECTIVITY OF BILAYER ION-EXCHANGE MEMBRANES IN TERNARY (SULFATE/NITRATE) SOLUTIONS

16:30 – 16:50 Coffee break

16:50-17:00 Kamila Mugtasimova, Alexey Melnikov, Alexey Kashin, Vitaliy Sinitsyn (*IGP RAS, Moscow; InEnergy Group, Moscow, Russia*)

STRUCTURE – PROTON TRANSPORT CORRELATIONS IN PERFLUORINATED SULFOPOLYMER MEMBRANES WITH SHORTER SIDE CHAINS

17:00-17:10 Anastasia But, Viktor Zabolotskiy, Anna Kovalenko, Makhamet Urtenov, Vera Vasil'eva (*Kuban State University, Krasnodar; Voronezh State University, Russia*)

HETEROGENEOUS MEMBRANE WITH DOMINANT ELECTROCONVECTION AT WORK UNDER INTENSIVE CURRENT CONDITIONS

17:10-17:20 Nikita Kovalev, Tatyana Karpenko, Nikolay Sheldeshov, Victor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)

INFLUENCE OF TYPE OF BIPOLAR, CATION-EXCHANGE AND ANION-EXCHANGE MEMBRANES ON THE CHARACTERISTICS OF THE PROCESS OF PRODUCING SULFURIC ACID AND SODIUM HYDROXIDE FROM SODIUM SULFATE

17:20-17:30 Tatyana Kolganova, Anastasia Yelnikova, Ekaterina Lapshina, Anna Parshina, Ekaterina Safronova, Olga Bobreshova (*Voronezh State University; Kurnakov Institute of General and Inorganic Chemistry RAS, Moscow, Russia*)

POTENTIOMETRIC MULTISENSORY SYSTEMS WITH HYBRID MATERIALS BASED ON PERFLUOROSULFONIC CATION-EXCHANGE MEMBRANES FOR DETERMINATION OF DRUGS IN PHARMACEUTICALS

17:30 – 17:40 Ivan Novomlinskiy, Irina Gerasimova, Vadim Volotchaev, Vladimir Guterman (*Southern Federal University, Rostov-on-Don, Russia*)

PLATINUM ELECTROCATALYSTS BASED ON OXIDE AND OXIDE CARBON CARRIERS FOR FUEL CELL

17:40-17:50 Vladislav Menshikov, Sergey Belenov, Leonid Polevoj (*Southern Federal University, Rostov-on-Don, Russia*)

THE ACTIVITY OF TRIMETALLIC CATALYSTS WITH DIFFERENT GOLD CONTENT FOR METHANOL ELECTROOXIDATION

17:50-18:00 Dmitrii Vakhnin, Natalya Zheltoukhova, Alina Tregubova, Tamara Kravchenko (*Voronezh State University, Russia*)

OXYGEN ELECTROREDUX – SORPTION BY METAL ION-EXCHANGE NANOCOMPOSITES. THE CURRENT EFFECT

Thursday, May 23

20:00-22:00

«RUSSIAN YOUNG MEMBRAIN» COMPETITION

Chairman: Natalia Pismenskaya

ORAL PRESENTATIONS

Nail Yanbikov, Kseniia Otvagina, Sazanova Tatyana, Alexandr Logunov, Ilya Vorotyntsev (*Nizhny Novgorod State Technical University n.a. R.E. Alekseev, Russia*)

GAS SEPARATION PROPERTIES OF SILICA-ORGANIC POLYMER MEMBRANES MODIFIED BY PLASMA AND OZONE EXPOSURE

Anton Vyatkin, Anastasia Bortsova, Mikhail Simunin, Maksim Mishnev, Ilya Ryzhkov (*Institute of Computational Modeling, Federal Research Center KSC SB RAS, Krasnoyarsk; Siberian Federal University, Krasnoyarsk, Russia*)

EXPERIMENTAL STUDY OF SWITCHABLE ION TRANSPORT IN CARBON COATED NANOPOROUS ALUMINA MEMBRANES

Daria Voropaeva, Daniil Golubenko, Ardalion Ponomarev, Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry RAS, Moscow; Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia*)

PLASTISIZED POLYMER ELECTROLYTES BASED ON SULFONATED POLYSTYRENE: SOLVATION AND Li^+/Na^+ CONDUCTIVITY

Ekaterina Titskaya, Maria Timchenko, Irina Falina, Anastasia Alekseenko (*Kuban State University, Krasnodar; Southern Federal University, Rostov-on-Don, Russia*)

THE EFFECT OF CATALYST COMPOSITION ON CHARACTERISTICS OF MEMBRANE-ELECTRODE ASSEMBLE OF HYDROGEN-AIR FUEL CELL

Valentina Titorova, Veronika Sarapulova, Natalia Pismenskaya (*Kuban State University, Krasnodar, Russia*)

TRANSPORT CHARACTERISTICS OF ION-EXCHANGE MEMBRANES IN ASYMMETRIC ELECTROLYTE SOLUTIONS

Vera Nesterova, Alexandra Pulyalina, Galina Polotskaya (*Saint-Petersburg State University; Institute of macromolecule compounds, RAS, Saint Petersburg, Russia*)

AROMATIC POLYAMIDE MEMBRANES FOR ORGANOPHILIC PERVAPORATION

Alyona Larkina, Alexandra Pulyalina, Galina Polotskaya, Ludmila Vinogradova (*Saint-Petersburg State University; Institute of macromolecule compounds, RAS, Saint Petersburg, Russia*)

PURIFICATION OF N-BUTANOL FROM AQUEOUS SOLUTIONS USING NOVEL PERVAPORATION MEMBRANES BASED ON POLYMER COMPOSITES

Anastasiia Kuznetsova, Lyudmila Ermakova, Anna Volkova, Tatiana Antropova (*St. Petersburg State University; Grebenshchikov Institute of Silicate Chemistry RAS, St. Petersburg, Russia*)

TRANSPORT CHARACTERISTICS OF POROUS GLASS MEMBRANES IN ELECTROLYTE SOLUTIONS

Sofia Kleinikova, Konstantin Gor'kov, Ekaterina Zolotukhina (*Institute of Problems of Chemical Physics RAS, Chernogolovka; Lomonosov Moscow State University, Russia*)

ACETALDEHYDE ELECTRO-OXIDATION ON SILVER CATALYSTS IN AQUEOUS ETHANOL SOLUTIONS

Natalia Kartashova, Dmitriy Konev, Pavel Loktionov, Anatoly Antipov, Olga Goncharova, Mikhail Vorotyntsev (*Mendeleev University of Chemical Technology of Russia, Moscow; Lomonosov Moscow State University; Institute of Problems of Chemical Physics, RAS, Chernogolovka, Russia; ICMUB, UMR 6302 CNRS-Université de Bourgogne, Dijon, France*)

INVESTIGATION OF THE CHARGE-DISCHARGE CHARACTERISTICS OF A HYDROGEN-BROMATE FLOW-BATTERY IN VARIOUS MODES

Vitaly Gudza, Natalja Chubyr, Anna Kovalenko, Makhmet Urtenov (*Kuban State University; Kuban State Technology University, Krasnodar, Russia*)

MATHEMATICAL MODELING OF THE INFLUENCE OF DISSOCIATION/RECOMBINATION REACTION OF WATER MOLECULES ON THE BINARY SALT IONS TRANSPORT TAKING INTO ACCOUNT THERMAL EFFECTS

Ilia Faykov, Vera Nesterova, Alexandra Pulyalina, Irina Podeshvo, Galina Polotskaya (*Saint-Petersburg State University; Institute of macromolecule compounds, RAS, Saint Petersburg, Russia*)

HERMALLY REARRANGED POLYMER MEMBRANES FOR BIOALCOHOL PURIFICATION

Friday, May 24

9:30-13:00

MEMBRANE DEVELOPMENT & APPLICATIONS

Chairman: Nikolay Sheldeshov

KEY LECTURES

9:30-9:50 Bogdan Voloshin, Mikhail Popov, Sergey Bychkov, Stanislav Chizhik, Alexander Nemudry (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State University, Russia*)
ANALYSIS OF KINETIC AND THERMODYNAMIC PROPERTIES OF NON-STOICHIOMETRIC OXIDES IN REACTION WITH OXYGEN USING THE CONCEPTION OF CONTINUOUS HOMOLOGUOUS SERIES

9:50-10:10 Valentina Ponomareva, Konstantin Kovalenko, Elena Shutova, Anastasia Cheplakova, Danil Dybtsev, Vladimir Fedin (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*)
STUDY OF NEW PROTON-CONDUCTING MATERIALS BASED ON METAL ORGANIC POLYMERS

ORAL PRESENTATIONS

10:10-10:25 Sergey Tsipliaev, Denis Terin, Marina Kardash, Igor Galushka, Larisa Karpenko-Jereb, Timur Turaev (*Yuri Gagarin State Technical University of Saratov; Saratov State University, Russia; Graz University of Technology, Austria*)
THE INVESTIGATIONS OF THE STRUCTURE AND PROPERTIES OF ION-EXCHANGE MATERIALS "POLIKON CA" WITH MOSAIC-LATERAL MORPHOLOGY

10: 25 – 11:00 Coffee break

11:00-11:15 Aleksandra Lytkina, Natalia Zhilyaeva, Natalia Orekhova, Margarita Ermilova, Nina Shevlyakova, Vladimir Tverskoi, Andrey Yaroslavtsev (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow; Kurnakov Institute of General & Inorganic Chemistry RAS, Moscow; Moscow Technological University, Russia*)
C4 HYDROCARBONS SEPARATION THROUGH THE POLYETHYLENE - GRAFT-SULFONATED POLYSTYRENE MEMBRANES

11:15-11:30 Evgenia Grushevenko, Ivan Podtynnikov, Olga Scharova, Alina Knyazeva, Ilya Borisov (*Topchiev Institute of Petrochemical Synthesis, Moscow, Russia*)

POLYDECYLMETHYLSILOXANE-BASED THIN FILM COMPOSITE MEMBRANE WITH ENHANCED ORGANIC SELECTIVITY

11:30-11:45 Stanislav Melnikov, Svetlana Shkirskaya (*Kuban State University, Krasnodar, Russia*)

CURRENT-VOLTAGE CHARACTERISTICS OF BILAYERED ION-EXCHANGE MEMBRANES IN SODIUM CHLORIDE SOLUTION

11:45-13:00 *Round -tables*

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 Zabolotskiy*)

Friday, May 24

15:00-17:00

Discussion

Awards & Closing ceremony

19:00

Dinner party

Saturday, May 25

Departure

POSTER SESSION

Wednesday, May 22, 15:00-16:00

Emil Abdrashitov, Dina Kritskaya, Veslav Bokun, Ardalion Ponomarev, Ksenia Novikova, Evgeny Sanginov, Yury Dobrovolsky (*Chernogolovka Branch of the Semenov Federal Research Center for Chemical Physics, RAS; Institute of Problems of Chemical Physics of RAS, Chernogolovka, Russia*)

SYNTHESIS AND TRANSPORT PROPERTIES OF ION EXCHANGE MEMBRANES BASED ON POROUS POLYTETRAFLUOROETHYLENE FILMS AND SULPHONATED POLYSTYRENE

Elmara Akberova, Vera Vasil'eva, Elena Goleva, Denis Kostylev (*Voronezh State University, Russia*)

SEM-DIAGNOSTICS OF CHANGES IN THE MICROSTRUCTURE OF THE HETEROGENEOUS ANION-EXCHANGE MEMBRANE MA-40 AFTER ELECTRODIALYSIS REVERSAL OF MINERALIZED NATURAL WATER

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

PROTON CONDUCTOR ELECTROLYTES BASED ON CESIUM DIHYDROGEN PHOSPHATE AND THERMALLY STABLE POLYMERS

Victor Bayandin, Nina Shaglaeva (*Irkutsk National Research Technical University, Russia*)
NEW ION-EXCHANGE MATERIALS BASED ON COPOLYMERS OF DIVINYLSULFIDE

Tomáš Belloň, Petr Polezhaev, Zdeněk Slouka (*University of Chemistry & Technology, Prague; University of West Bohemia, New Technologies Research Centre, Czech Republic*)

EXPERIMENTAL OBSERVATION OF PHENOMENA DEVELOPING ON ANION-EXCHANGE MEMBRANE DURING CURRENT-VOLTAGE MEASUREMENT

Tomáš Belloň, Petr Polezhaev, Zdeněk Slouka (*University of Chemistry & Technology, Prague; University of West Bohemia, New Technologies Research Centre, Czech Republic*)

INVESTIGATION OF BEHAVIOR OF A HETEROGENEOUS ANION-EXCHANGE MEMBRANE AND SINGLE ANION-EXCHANGE RESIN PARTICLE IN THE PRESENCE OF SSDNA USING OPTICAL MEASUREMENTS

Tomáš Belloň, Petr Polezhaev, Zdeněk Slouka (*University of Chemistry & Technology, Prague; University of West Bohemia, New Technologies Research Centre, Czech Republic*)

THE INFLUENCE OF SIZE AND CHARGE OF COUNTERIONS ON THE BEHAVIOR OF A CATION-EXCHANGE SYSTEM

Olga Belobrovaya, Victor Galushka, Igor Galushka, Andrei Karagaichev, Anton Mantsurov, Valentina Polyanskaya, Denis Terin (*Saratov State University; Regional Clinical Oncology Center, Saratov; Yuri Gagarin State Technical University of Saratov, Russia*)

THE INFLUENCE IN SITU GAMMA RAYS OF CHEMICAL PROCESSES FABRICATION NANOSCALE POROUS SILICON AND ITS PERSPECTIVES APPLICATIONS

Yuliya Dzyazko, Vladimir Ogenko, Yury Volfkovich, Valentin Sosenkin, Katerina Kudelko, Tatiana Yatsenko (*Vernadskii Institute of General & Inorganic Chemistry of the NAS of Ukraine, Kyiv, Ukraine; Frumkin Institute of Physical Chemistry & Electrochemistry RAS, Moscow, Russia*)

MULTIFUNCTIONAL COMPOSITE ADSORBENT BASED ON HYDRATED ZIRCONIUM DIOXIDE CONTAINING NANOPARTICLES OF OXIDIZED GRAPHENE

Irina Falina, Vera Kolenkevich, Natalia Loza (*Kuban State University, Krasnodar, Russia*)
DIFFUSION PERMEABILITY OF THE MODIFIED ION-EXCHANGE MEMBRANES IN SODIUM, CALCIUM AND MAGNESIUM CHLORIDE SOLUTIONS

Irina Falina, Irina Myakinchenko, Olga Demina (*Kuban State University, Krasnodar, Russia*)
ASYMMETRY EFFECT OF DIFFUSION PERMEABILITY OF BILAYER ION EXCHANGE MEMBRANES, MODIFIED BY POLYANILINE

Anatoly Filippov, Tamara Philippova (*Gubkin University, Moscow, Russia*)
IMPACT OF EXTERNAL ELECTRIC FIELD ON HYDRODYNAMIC PERMEABILITY OF A CHARGED POROUS LAYER

Igor Gainutdinov, Igor Zilberberg, Alexander Nemudry (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*)

THE IONIC MOTION AND STRUCTURE FEATURES OF MODIFIED COBALTITES AT DIFFERENT TEMPERATURES – AB INITIO MOLECULAR DYNAMIC SIMULATION

Georgy Golubev, Ilya Ereemeev, Ilya Borisov, Vladimir Vasilevsky, Alexey Volkov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)
POROUS CONDENSER FOR THERMO-MEMBRANE SEPARATION PROCESSES OF AQUEOUS MEDIA

Georgy Golubev, Ivan Podtynnikov, Stepan Bazhenov, Ilya Borisov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)
REGENERATION OF TRIETHYLENE GLYCOL BY THERMOPERVAPORATION WITH POROUS CONDENSER

Vladimir Gursky, Sergei Timofeev (*Aleksandrov Research Institute of Technology (NITI), Sosnovy Bor; JSC «Plastpolimer», Saint-Petersburg, Russia*)
SELF-OSCILLATION PROCESS DURING THE DIFFUSION OF CO-IONS THROUGH ION-EXCHANGE MEMBRANES

Tatsiana Hliavitskaya, Alexandr Bildukevich, Lyudmila Rozhdestvenska, Yuliya Dzyazko (*Institute of Physical Organic Chemistry NAS of Belarus, Minsk, Belarus; Institute of General & Inorganic Chemistry, Ukrainian NAS, Kyiv, Ukraine*)
EFFECT OF KOLLIDON ON THE STRUCTURE AND PROPERTIES OF PES MEMBRANES

Victor Kasperchik, Ala Yaskevich, Alexandr Bildyukevich (*Institute of Physical Organic Chemistry NAS of Belarus, Minsk, Belarus*)
APPLYING OF HYBRID MEMBRANE-COAGULATION METHODS FOR SURFACE WATER TREATMENT

Daria Khanukaeva, Anatoly Filippov, Pramod Kumar Yadav, Ashish Tiwari (*Gubkin University, Moscow, Russia; Motilal Nehru National Institute of Technology, Allahabad-211004, Uttar-Pradesh, India; Birla Institute of Technology & Science, Pilani-333031, Rajasthan, India*)
HYDRODYNAMIC PERMEABILITY OF A FIBROUS MEMBRANE MODELLED AS A PACKAGE OF COMPOSITE SOLID-POROUS CYLINDRICAL CELLS IN MICROPOLAR FLOW

Evgenia Kirillova, Anna Kovalenko (*RheinMain University of Applied Sciences, Wiesbaden, Germany; Kuban State University, Krasnodar, Russia*)
MATHEMATICAL MODELING, NUMERICAL AND ASYMPTOTIC SOLUTION OF THE BOUNDARY PROBLEMS OF MEMBRANE SYSTEMS TAKING INTO ACCOUNT THE WATER SPLITTING IN INTENSIVE CURRENT MODES

Natalia Kononenko, Anatoly Filippov, Sergey Dolgoplov, Mariya Salaschenko (*Kuban State University, Krasnodar; Gubkin University, Moscow; Frumkin Institute of Physical Chemistry & Electrochemistry RAS, Moscow, Russia*)
ASYMMETRY OF CURRENT-VOLTAGE CHARACTERISTICS OF BI-LAYER HYBRID PERFLUORINATED MEMBRANES IN SODIUM CHLORIDE SOLUTION

Diana Kotova, Svetlana Vasil'eva, Tatiana Krysanova, Anna Sokrutykina (*Voronezh State University, Russia*)
THE ROLE OF SOLVENT DURING ADSORPTION OF α -TOCOPHEROL ON CLINOPTILOLITE

Anna Kovalenko, Makhamet Urtenov (*Kuban State University, Krasnodar, Russia*)
PROBLEMS OF SUSTAINABLE CALCULATION OF THEORETICAL CURRENT-VOLTAGE CHARACTERISTICS, CHRONOPOTENTIOTRACINGS AND CHRONOGALVANOTRACINGS FOR A MEMBRANE CHANNEL WITH FORCED CONVECTION, REACTIONS OF WATER DISSOCIATION/RECOMBINATION AND ELECTROCONVECTION

Anna Kovalenko, Makhamet Urtenov, Alexander Pismenskiy, Natalia Seidova, Konstantin Sobchenko, Natalja Chubyr (*Kuban State University; Kuban State Technology University, Krasnodar, Russia*)
SOFTWARE PACKAGE FOR THE ANALYSIS OF TIME SERIES IN ELECTRO-MEMBRANE SYSTEMS

Tatyana Kovrigina, Tulegen Chalov, Edil Ergozhin (*JSC "Institute of Chemical Sciences n.a. A.B. Bekturov", Almaty, Republic of Kazakhstan*)
SYNTHESIS OF ANION- AND CATION-EXCHANGE MEMBRANES BY CHEMICAL MODIFICATION OF FILMS-MATRIX

Tamara Kravchenko, Lev Polyanskii, Dmitrii Konev, Dmitrii Vakhnin (*Voronezh State University, Russia*)
THEORY AND PRACTICE OF WATER DEOXYGENATION BY METAL-ION EXCHANGE NANOCOMPOSITES

Vitalii Kravtsov, Irina Kulikova, Artem Bessonov, Ivan Evdokimov (*North-Caucasus Federal University, Stavropol, Russia*)
STUDY OF MEMBRANE FOULING DURING ACID WHEY BIPOLAR ELECTRODIALYSIS PRODUCTION OF MINERAL FERTILIZERS

Mukesh Kumar (*Motilal Nehru National Institute of Technology Allahabad, India*)
**FLUID FLOW THROUGH MEMBRANE: AN ANALYTICAL APPROACH FOR
NAVIER-STOKES EQUATION BY LIE SYMMETRY ANALYSIS**

Alexandra Kuriganova, Nikita Faddeev, Igor Leontyev, Nina Smirnova (*Platov South-Russian State Polytechnic University, Novocherkassk; Southern Federal University, Rostov-on-Don, Russia*)

**PULSE ALTERNATING CURRENT SYNTHESIS OF PD/C CATALYSTS AND THEIR
APPLICATION IN PEM FUEL CELLS TECHNOLOGIES**

Sergey Lakeev, Ann Korneychuk, Polina Semina, Nina Kozlova, Alexander Khorokhorin, Alexander Smolyanskii (*Branch of JSC "Karpov Institute of Physical Chemistry", Moscow; Lomonosov Moscow State University; Reshetnev Siberian State University of Science & Technology, Krasnoyarsk; Scientific & Technological Center of Unique Instrumentation RAS, Moscow; Mendelev University of Chemical Technology of Russia, Moscow, Russia*)

**PROPERTIES OF INTERFERENCE PATTERNS IN THE TRANSMISSION SPECTRA
OF NUCLEAR FILTERS PREPARED FROM THE POLYETHYLENTEREPHTHALATE
FILMS IRRADIATED BY XENON IONS**

Sergey Loza, Kristina Dmitrieva, Alexander Korzhov, Nikita Smyshliaev, Romanyuk Nazar, Ilya Bondarenko, Natalia Loza (*Kuban State University, Krasnodar, Russia*)
OBTAINING ELECTRIC ENERGY BY REVERSE ELECTRODIALYSIS

Sergey Loza, Stanislav Utin, Natalia Loza, Victor Dotsenko (*Kuban State University, Krasnodar, Russia*)

**TRANSPORT CHARACTERISTICS OF BILAYERED PROFILED MEMBRANES
MODIFIED BY SUPERBRANCHED POLYMERS**

Aleksandr Lysenko, Olga Astashkina, Nadezhda Diankina (*Saint Petersburg State University of Industrial Technologies & Design, Russia*)
SORPTION ACTIVE CARBON MEMBRANES

Alexander Malakhov, Stepan Bazhenov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)

**GAS SEPARATION IN A MEMBRANE CONTACTOR WITH A REVERSIBLE
REACTION OF A GAS WITH AN ABSORBENT: EXPERIMENT AND MODEL**

Natalia Matushkina, Nadezda Strusovskaya, Eugene Ageev (*Lomonosov Moscow State University, Moscow, Russia*)

**PECULIARITIES OF BEHAVIOR OF PERVAPORATION MEMBRANES FROM
ISOTACTIC POLYPROPYLENE**

Andrey Naumov, Pavel Apel, Sergey Kulik, Ivan Eremchev, Dmitry Zagorskiy (*Institute for Spectroscopy RAS, Troitsk; Joint Institute for Nuclear Researches, FLNR, Dubna; Shubnikov Institute of Crystallography, Moscow, Russia*)

**OPTICAL VISUALIZATION OF FILTRATION PROCESS OF COLLOIDAL
PARTICLES IN TRACK-ETCHED MEMBRANES AT NANO-SCALE**

Ekaterina Nazyrova, Svetlana Shkirskaya, Anastasiya Norenko, Ekaterina Dankovtseva (*Kuban State University, Krasnodar, Russia*)

**SELECTIVITY OF HETEROGENEOUS CATION-EXCHANGE MEMBRANES
MODIFIED BY POLYANILINE**

Eduard Novitsky, Evgenia Grushevenko, Vladimir Vasilevsky, Alexey Volkov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)

THE EFFECT OF ABSORBENT FEEDING CONDITIONS ON THE PARAMETERS OF REVERSE ELECTRODIALYSIS

Maksim Novomlinsky, Denis Lebedev, Alena Fogel, Vladimir Kochemirovsky (*Saint Petersburg State University, Russia*)

SYNTHESIS OF NANOPOROUS MEMBRANES WITH GOLD NANOPARTICLES BY LASER-INDUCED DEPOSITION

Iliya Petriev, Ivan Lucenko, Kirill Voronin, Polina Pushankina, Mikhail Baryshev (*Kuban State University, Krasnodar, Russia*)

GAS TRANSROPTION PARAMETERS OF MEMBRANES MODIFIED BY STAR-LIKE PALLADIUM NANOCRYSTALLITES

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

MATHEMATICAL MODELING OF MASS AND HEAT TRANSFER DURING ELECTRODIALYSIS OF SODIUM DIHYDROPHOSPHATE

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

STUDY OF PHASE COMPOSITION AND ELECTROTRANSPORT PROPERTIES OF SYSTEMS BASED ON MONO AND DISUBSTITUTED PHOSPHATES OF CESIUM AND RUBIDIUM

Alla Reshetnikova, Vladimir Shaposhnik (*Voronezh State University, Russia*)

THE MAIN ROLE OF EQUIPOLAR CONTACTS ION-EXCHANGERS GRANS IN THE ELECTRODEIONIZATION

Libor Šeda, Ladislav Čopák (*MemBrain s.r.o., Stráž pod Ralskem, Czech Republic*)

HEAVY METAL SULPHATE SALTS REMOVAL FROM SULPHURIC ACID SOLUTION VIA DIFFUSION DIALYSIS: PILOT SCALE VALIDATION

Valentin Sedelkin, Larisa Potekhina, Olga Lebedeva, Marina Schneider, Elmira Ulyanova (*Engels Technological Institute (branch) of the Saratov State Technical University n.a. Yuri Gagarin, Engels, Russia*)

RESEARCH OF KINETIC TRANSFORMATIONS OF THE CHEMICAL SUPREMOLECULAR STRUCTURE IN THE SYSTEM: THE ORIGINAL RAW MATERIAL - FORMING SOLUTION - FILTER MEMBRANE

Maxim Shalygin, Alina Kozlova, Alexander Netrusov, Vladimir Teplyakov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow; Moscow State University, Russia*)

VAPOR-PHASE MEMBRANE METHOD FOR RECOVERY AND CONCENTRATION OF BIOALCOHOLS FROM FERMENTATION BROTHS

Vladimir Shelistov, Elizaveta Frants, Georgy Ganchenko (*Financial University; Kuban State University, Krasnodar, Russia*)

ON THE FEATURES OF ELECTROPHORESIS OF CHARGE-SELECTIVE PARTICLES

Ilya Strylets, Denis Terin, Marina Kardash, Tamara Druzhinina (*Yuri Gagarin State Technical University of Saratov; Saratov State University; Moscow State University of Design & Technology Russia*)

INFLUENCE OF THE FIBER FILLER ON THE SORPTION CHARACTERISTICS OF POLYMER COMPOSITES “POLIKON A”

Valery Ugrozov (*Financial University under the Government of the Russian Federation, Moscow, Russia*)

GAS DIFFUSION THROUGH STRUCTURALLY INHOMOGENEOUS BILAYER MEMBRANE

Artem Ulihin, Nikolay Uvarov, Valentina Ponomareva, Konstantin Kovalenko, Vladimir Fedin (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State University; Novosibirsk State Technical University, Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*)

NANOCOMPOSITES BASED ON LITHIUM PERCHLORATE IN THE METAL-ORGANIC FRAMEWORK MATRIX

Vera Vasil'eva, Elmara Akberova (*Voronezh State University, Russia*)

ELECTROCONVECTIVE INSTABILITY IN SYSTEMS WITH HETEROGENEOUS MEMBRANES RALEX WITH DIFFERENT CONTENT OF ION-EXCHANGER

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

A COMPARATIVE ANALYSIS OF THE EFFECT OF PHENYLALANINE ON PHYSICOCHEMICAL, STRUCTURAL AND TRANSPORT CHARACTERISTICS OF PROFILED HETEROGENEOUS ION-EXCHANGE MEMBRANES MK-40 AND MA-40

Lucie Vobecká, Zdeněk Slouka (*University of Chemistry & Technology, Prague, Czech Republic*)

WATER SPLITTING AT ION-EXCHANGE RESIN PARTICLES AND THE HETEROGENEOUS ION-EXCHANGE MEMBRANES

Yury Volfkovich, Alexey Mikhlin, Alexey Rychagov, Valentin Sosenkin, Marina Kardash, Natalya Kononenko, Sergei Tsipliaev Svetlana Shkirskaia (*Frumkin Institute of Physical Chemistry & Electrochemistry, Moscow; Engels State Tehnology University; Kuban State University, Krasnodar, Russia*)

INFLUENCE OF THE MANUFACTURING METHOD OF MOSAIC CATION – ANION - EXCHANGE MEMBRANES ON THE CHARACTERISTICS OF CAPACITIVE DEIONIZATION OF WATER

Pramod Kumar Yadav (*Motilal Nehru National Institute of Technology Allahabad, India*)

MOTION THROUGH NON-HOMOGENEOUS POROUS MEDIUM: HYDRODYNAMIC PERMEABILITY OF MEMBRANE COMPOSED BY CYLINDRICAL PARTICLES

Dmitry Zagorskiy, Sergei Kruglikov, Sergei Bedin, Ilia Doludenko, Alexandr Shatalov, Dmitry Cherkasov, Dmitry Panov (*Shubnikov Institute of Crystallography of Federal Scientific Research Centre "Crystallography and Photonics" RAS, Moscow; Mendeleev University of Chemical Technology of Russia, Moscow; Moscow State Pedagogical University; National Research University Higher School of Economics, Moscow, Russia*)

FEATURES OF GALVANIC DEPOSITION OF MULTICOMPONENT METALLIC NANOWIRES IN POROUS OF TRACK ETCHED MEMBRANES

Vladimir Zhdanov, Alexander Larin (*National Research Nuclear University MEPhI, Moscow Engineering Physics Institute; Frumkin Institute of Physical Chemistry & Electrochemistry, RAS, Moscow, Russia*)

EFFECT OF SURFACE DIFFUSION ON SEPARATION OF GAS MIXTURES IN NANOSIZED POROUS MEMBRANES

Umirzak Zhusipbekov, Gulzipa Nurgalieva, Zamira Bayakhmetova, Aynur Shakirova, Dulat Duysenbay (*JSC "Institute of Chemical Sciences a.n. A.B. Bekturov", Almaty, Kazakhstan*)

SORPTION OF TOXIC COMPOUNDS OF IRON AND COBALT FROM SOLUTIONS OF HUMINE SUBSTANCES

POSTER SESSION OF YOUNG RESEARCHERS

Wednesday, May 22, 15:00-16:00

Rihab Belhadj Ammar, Takoua Ounissi, Lasâad Dammak, Emna Selmane Bel Hadj Hmida (*Faculté des Sciences de Tunis, Campus Universitaire, Tunis El Manar, Tunisie; Institut de Chimie et des Matériaux Paris-Est, UMR 7182 CNRS, Université Paris-Est, Thiais, France*)
NOVEL NITRATE SELECTIVE ANION-EXCHANGE MEMBRANES: SYNTHESIS AND TESTS DIALYSIS

Marina Andreeva, Natalia Kutenko, Natalia Loza (*Kuban State University, Krasnodar, Russia*)
CORRELATION BETWEEN POLYANILINE SYNTHESIS CONDITIONS INTO MK-40 MEMBRANE AND CURRENT-VOLTAGE CURVES OF COMPOSITES

Marina Andreeva, Natalia Loza, Natalia Kononenko, Sergej Timofeev (*Kuban State University, Krasnodar; Plastpolymer OJSC, St. Petersburg, Russia*)
INFLUENCE OF POLYMERIZATION TIME DURING POLYANILINE SYNTHESIS INTO MF-4SK MEMBRANE ON CURRENT-VOLTAGE CURVES OF OBTAINED COMPOSITES

Artem Bagishev, Ivan Kovalev, Mikhail Popov, Alexander Nemudry (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State Technical University, Russia*)
DEVELOPMENT OF MICROTUBULAR SOLID OXIDE FUEL CELLS

Stepan Bazhenov, Margarita Kostyanaya, Vladimir Vasilevsky, Alexey Nikitin, Igor Sedov, Alexey Volkov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow; Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia*)
MEMBRANE ABSORPTION OF ETHYLENE FROM HYDROCARBON GASEOUS MEDIA

Stepan Bazhenov, Maryam Madumarova, Margarita Kostyanaya, Eduard Novitsky (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)
GAS-LIQUID HOLLOW FIBER MEMBRANE CONTACTORS FOR CO₂ DESORPTION FROM MONOETHANOLAMINE SOLUTIONS

Myriam Bdiri, Asma Ben Sghaier, Lobna Chaabane, Christian Larchet, Lasâad Dammak (*Institut de Chimie et des Matériaux Paris-Est, UMR 7182 CNRS, Université Paris-Est, Thiais, France*)
ENZYMATIC CLEANING OF FOULED CATION- EXCHANGE MEMBRANES USED IN ELECTRODIALYSIS OF BEVERAGES IN FOOD INDUSTRY

Denis Bondarev, Alexander Bespalov, Victor Zabolotsky, Svetlana Etereyskova (*Kuban State University, Krasnodar, Russia*)
THE STUDY OF ELECTROCHEMICAL STABILITY OF THE ANION-EXCHANGE MEMBRANES MA-41 MODIFIED BY POLY-N,N-DIALLYLMORPHOLINIUM

Katsiaryna Burts, Tatiana Plisko, Alexandr Bildyukevich, Guoqiang Li, Joanna Kujawa, Wojciech Kujawski (*Institute of Physical Organic Chemistry, NAS of Belarus, Minsk, Belarus; Nicolaus Copernicus University in Toruń, Poland*)

**PREPARATION OF THIN FILM COMPOSITE MEMBRANES FOR
PERVAPORATION VIA INTERFACIAL POLYMERIZATION TECHNIQUE**

Dmitrii Butylskii, Daria Chuprynina, Tongwen Xu, Natalia Pismenskaya (*Kuban State University, Krasnodar, Russia; University of Science & Technology of China, Hefei, China*)

MEMBRANE SPECIFIC PERMSELECTIVITY IN MIXED SOLUTIONS

Ekaterina Dankovtseva, Irina Falina (*Kuban State University, Krasnodar, Russia*)

**DIFFUSION PERMEABILITY OF ION-EXCHANGE MEMBRANES IN SOLUTIONS
OF SULFURIC ACID AND CHROMIUM SULFATE**

Natalya Ganchenko, Maria Repina, Dmitri Oksuz'an (*Kuban State University, Krasnodar; Southern Federal University, Rostov-on-Don; Kuban State Technological University, Krasnodar, Russia*)

**MATHEMATICAL MODELING OF HOW GRAVITATIONAL EFFECTS INFLUENCE
OVERLIMITING CURRENT REGIME**

Violetta Gil, Mikhail Porozhnyy (*Membrane Institute, Kuban State University, Krasnodar, Russia*)

**EFFECT OF WATER SPLITTING RATE ON THE INTENSITY OF
ELECTROCONVECTION AND SPACE CHARGE REGION CHARACTERISTICS**

Andrey Gorobchenko, Semyon Mareev (*Membrane Institute, Kuban State University, Krasnodar, Russia*)

**IMPACT OF CURRENT DENSITY DISTRIBUTION IN ELECTRODIALYSIS SYSTEM
ON TRANSITION TIME OF CHRONOPOTENTIOGRAMS**

Tatyana Karpenko, Anastasya Boyarishcheva, Nikita Kovalev, Alina Shpak, Nikolay Sheldeshov, Victor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)

**INVESTIGATION OF THE TRANSPORT OF IONS AND MOLECULES OF ORGANIC
ACIDS AND BASES THROUGH BIPOLAR MEMBRANES**

Anastasiia Kharina, Tatiana Eliseeva, Alexandra Tikhaya (*Voronezh State University, Russia*)

**THE PECULIARITIES IN ELECTRODIALYSIS OF TRYPTOPHAN - MINERAL SALT
SOLUTION**

Kseniya Kim, Olga Kozaderova, Sabukhi Niftaliev (*Voronezh State University of Engineering Technologies, Russia*)

**DEGRADATION OF ION-EXCHANGE MEMBRANES IN ELECTRODIALYSIS
WASTEWATER**

Anastasia Klevtsova, Yuliya Yakovleva, Natalia Pismenskaya (*Kuban State University, Krasnodar, Russia*)

**THE EFFECT OF THE PH OF THE DESORBING NaCl SOLUTION ON THE
DEGREE OF EXTRACTION OF ANTHOCYANINS FROM CATION- AND ANION
EXCHANGE RESIN**

Denis Kolot, Aslan Achoh (*Kuban State University, Krasnodar, Russia*)

STUDY OF TRANSPORT CHARACTERISTICS OF PERFLUORINATED MF-4SK MEMBRANE IN SULFATE / NITRATE SOLUTIONS

Andrey Kononov, Victor Nikonenko (*Kuban State University, Krasnodar, Russia*)

EVALUATION OF APPLICABILITY OF THE TEORELL-MEYER-SIEVERS MODEL TO DESCRIBE THE SORPTION AND KINETIC PROPERTIES OF ION-EXCHANGE MEMBRANES

Andrey Kononov, Veronika Sarapulova, Semyon Mareev (*Kuban State University, Krasnodar, Russia*)

INFLUENCE OF ION TRANSPORT IN ION-EXCHANGE MEMBRANE BULK ON THE SHAPE OF CHRONOPOTENTIOMETRIC CURVES

Alexander Korzhov, Anastasia But, Viktor Zabolotskiy (*Kuban State University, Krasnodar, Russia*)

STUDY OF THE DECARBONIZATION PROCESS IN AN ELECTRODIALIZER WITH BIPOLAR MEMBRANES

Alexander Korzhov, Sergey Loza, Kristina Dmitrieva, Ilya Bondarenko, Victor Zabolotsky (*Kuban State University, Krasnodar, Russia*)

ELECTROCHEMICAL WASTEWATERS TREATMENT IN METALLURGICAL ENTERPRISES BY THE EXAMPLE ELECTRODIALYSIS OF SULPHATE-VANADIUM SOLUTION

Margarita Kostyanaya, Danila Bakhtin, Viktoria Ignatenko, Stepan Bazhenov, Tatiana Anokhina (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia*)

GAS-LIQUID CONTACTORS BASED ON CELLULOSE FOR DESORPTION OF CO₂ FROM INDUSTRIAL PHYSICAL ABSORBANT

Ivan Kovalev, Mikhail Popov, Marat Sharafutdinov, Alexander Titkov, Sergey Bychkov, Alexander Nemudry (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State Technical University, Russia*)

DIRECT AC/DC HEATING OF HOLLOW FIBER MEMBRANES

Darya Kudashova, Irina Falina, Natalia Kononenko (*Kuban State University, Krasnodar, Russia*)

INFLUENCE OF STABILIZERS ON THE MORPHOLOGY OF PLATINUM DISPERSION DEPOSITED ON THE SURFACE OF PERFLUORINATED MEMBRANE

Anna Lysova, Andrey Yaroslavtsev (*Kurnakov Institute of General & Inorganic Chemistry RAS, Moscow, Russia*)

PROTON-CONDUCTING HYBRID MEMBRANES BASED ON POLYBENZIMIDAZOLES AND SILICA WITH IMIDAZOLINE-FUNCTIONALIZED SURFACE

Mariia Makhonina, Ksenia Otvagina, Nail Yanbikov, Andrey Vorotyntsev, Alla Mochalova, Ilya Vorotyntsev (*Nizhny Novgorod State Technical University n.a. R.E. Alekseev, Nizhny Novgorod, Russia*)

UTILIZATION OF GASSEPARATION MEMBRANES BASED ON POLYELECTROLYTES

Semyon Mareev, Dmitrii Butylskii (*Membrane Institute, Kuban State University, Krasnodar, Russia*)

EFFECT OF SURFACE CHARGE OF ION-EXCHANGE MEMBRANE ON ITS ELECTROCHEMICAL CHARACTERISTICS

Dmitrii Matveev, Tatyana Plisko, Anton Shustikov, Alexander Bildyukevich, Vladimir Volkov (*Topchiev Institute of Petrochemical Synthesis RAS, Moscow, Russia; Institute of Physical Organic Chemistry NASB, Minsk, Belarus*)

FORMATION, STRUCTURE AND PERFORMANCE OF POROUS MEMBRANES BASED ON ACRYLONITRILE COPOLYMERS

Stanislav Melnikov, Elena Nosova, Anastasia But (*Kuban State University, Krasnodar, Russia*)

WASTEWATER TREATMENT FROM ORGANIC COMPOUNDS BY THE EXAMPLE OF ACETIC ACID ELECTRODIALYSIS

Arthur Merkel, Martin Ondrušek (*MemBrain s.r.o.; Mega a.s., Stráž pod Ralskem, Czech Republic*)

AN INTEGRATED PROCESS DEVELOPED FOR WHEY DEMINERALIZATION

Ilya Moroz, Aleksey Rogov, Dmitrii Butylskii, Semyon Mareev, Natalia Pismenskaya (*Kuban State University, Krasnodar, Russia*)

VIZUALIZATION OF ELECTROCONVECTION DURING ELECTRODIALYSIS OF STRONG ELECTROLYTE AND AMPHOLYTE SOLUTIONS

Vladlen Nichka, Michail Porozhnyy, Svetlana Shkirskaya, Natalia Pismenskaya, Victor Nikonenko (*Membrane Institute, Kuban State University, Krasnodar, Russia*)

MODIFIED MICROHETEROGENEOUS MODEL FOR DESCRIBING THE ELECTRICAL CONDUCTIVITY OF MEMBRANES IN DILUTED ELECTROLYTE SOLUTIONS

Natalya Niftalieva, Mikhail Popov, Alexander Nemudry (*Institute of Solid State Chemistry & Mechanochemistry, SB RAS; Novosibirsk, Russia*)

CONVERSION OF HYDROCARBONS USING HOLLOW FIBER OXYGEN-PERMEABLE MEMBRANES

Nazar Romanyuk, Sergey Loza, Natalia Loza (*Kuban State University, Krasnodar, Russia*)

COMPETITIVE TRANSFER OF SODIUM AND CALCIUM IONS THROUGH ION EXCHANGE MEMBRANES MODIFIED BY POLYANILINE

Olesya Rybalkina, Kseniia Tsygurina, Ekaterina Melnikova, Anton Kozmai, Natalia Pismenskaya (*Membrane Institute, Kuban State University, Krasnodar, Russia*)

STUDY OF PROTONATION-DEPROTONATION REACTIONS IN THE SYSTEM ANION-EXCHANGE MEMBRANE/POTASSIUM HYDROHYDROARTHRAATE SOLUTION USING IMPEDANCE SPECTROSCOPY

Inna Shkorkina, Veronika Sarapulova, Olesya Rybalkina (*Kuban State University, Krasnodar, Russia*)

STUDY OF ELECTROCHEMICAL CHARACTERISTICS OF FUJI TYPE – X ANION EXCHANGE MEMBRANES PRODUCED VIA ELECTROSPINNING METHOD

Ekaterina Skolotneva, Daria Mareeva, Semen Mareev, Christian Larchet, Lasaad Dammak, Victor Nikonenko (*Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est, Thiais, France*)

APPLICABILITY OF APPROXIMATE EQUATIONS FOR CALCULATION OF THE CHRONOPOTENTIOMETRIC TRANSITION TIME IN MEMBRANE SYSTEMS WITH A DIFFUSION LAYER OF FINITE LENGTH

Maria Timchenko, Ekaterina Titskaya, Irina Falina, Anastasia Alekseenko (*Kuban State University, Krasnodar; Southern Federal University, Rostov-on-Don, Russia*)

CHARACTERISTICS OF HYDROGEN-AIR FUEL CELL VS THE CATALYST COMPOSITION

Valentina Titorova, Veronika Sarapulova, Natalia Pismenskaya, Victor Nikonenko (*Kuban State University, Krasnodar, Russia*)

DIFFUSION PERMEABILITY OF COMMERCIAL HOMOGENEOUS AND HETEROGENEOUS ION-EXCHANGE MEMBRANES IN SODIUM CHLORIDE, CALCIUM CHLORIDE AND SODIUM SULFATE SOLUTIONS

Kseniia Tsygurina, Olesya Rybalkina, Ekaterina Melnikova, Gerald Pourcelly, Natalia Pismenskaya (*Membrane Institute, Kuban State University, Krasnodar, Russia; European Membrane Institute, University of Montpellier, France*)

INFLUENCE OF THE «FACILITATED» DIFFUSION AMMONIA THROUGH THE ANION-EXCHANGE MEMBRANE ON THE RATE OF WATER SPLITTING IN ELECTRODIALYSIS PROCESS

Bogdan Voloshin, Sergey Bychkov, Stanislav Chizhik, Alexander Nemudry (*Institute of Solid State Chemistry & Mechanochemistry SB RAS, Novosibirsk; Novosibirsk State University, Russia*)

STUDY OF OXYGEN TRANSPORT IN GROSSLY NONSTOICHIOMETRIC OXIDES VIA OXYGEN PARTIAL PRESSURE RELAXATION TECHNIQUE

Yana Yutskevich, Sergey Mikhaylin, Anton Kozmai, Natalia Pismenskaya (*Kuban State University, Krasnodar, Russia; Université Laval, Québec, Canada*)

APPLICATION OF CONTINUOUS-FLOW ELECTROPHORESIS TO SEPARATE B-LACTOGLOBULIN HYDROLISATE

Svetlana Zyryanova, Natalya Terikhova, Lasaad Dammak, Victor Nikonenko (*Membrane Institute, Kuban State University, Krasnodar, Russia; Institut de Chimie et des Matériaux Paris-Est, Thiais, France*)

EFFECT OF SURFACE MORPHOLOGY ON ELECTROCHEMICAL CHARACTERISTICS OF A HOMOGENEOUS ANION-EXCHANGE MEMBRANE