The 11th Scientific and Engineering Conference with International Participation "Supercritical Fluids: Fundamentals, Technologies, Innovations"

SCIENTIFIC PROGRAM

21-25 June, 2021

Novosibirsk, Russia

The conference in 2021 will be dedicated to the memory of Valery Vasilievich Lunin, an Academician of the Russian Academy of Sciences, an outstanding Russian chemist, educator, and promoter of science who was head of the Faculty of Chemistry at Moscow State University for over twenty-five years and later became its first President. Valery Vasilievich achieved wide recognition by his basic research in the field of heterogeneous catalysis and physical chemistry of surface. For a long time he supervised research in the field of using supercritical fluids for creating new technologies and materials, was the initiator and inspirational leader of this conference that has now, quite rightly, become a well-established scientific discussion platform for like-minded professionals.

Technologies based on supercritical fluids are becoming more and more demanded for the technological development of society as a tool that can potentially solve one of the most urgent problems in the modern world - making industrial processes environmentally clean, safe, efficient, and fully compliant with the green chemistry principles and standards. SCF technologies are used in pharmaceutics and power engineering, food and chemical industries, help to solve problems of waste recovery, environmental protection, and preservation of comfortable conditions of human life.

One of the main purposes of the conference is to become a discussion forum for exchanging knowledge between representatives of various research, educational, and industrial organizations, identifying the challenges, and finding possible solutions. Such cooperation will help make the most of the great scientific and engineering potential of SCF technologies in Russia and in the whole world.

21 June 2021, Monday

Session I

15.00-15.20 Opening ceremony

15.20-16.00 Memorial lecture
Prof. Bukhtiyarov V.I., Prof. Martyanov O.N.
VALERY VASILIEVICH LUNIN - FLUIDS TO COME HEARTS TOGETHER
Federal research center Boreskov Institute of Catalysis, Novosibirsk. Russia

16.00-16.40 PL-1
Prof. Aymonier C.
SUPERCRITICAL FLUIDS FOR ADVANCED FUNCTIONAL MATERIALS
Institut de Chimie de la Matière Condensée de Bordeaux, Université de Bordeaux, France

16.40-17.20 PL-2
A. S. Bräuer
VIBRATIONAL SPECTROSCOPY FOR STUDYING MASS TRANSFER IN SCF
Technische Universität Bergakademie Freiberg, Germany

17.20-18.00 PL-3
Prof. Murzin D.Yu.
HYDROGEN GENERATION BY CATALYTIC AQUEOUS AND SUPERCRITICAL WATER REFORMING
Åbo Akademi University, Turku, Finland

22 June 2021, Tuesday

09.00-11.00 POSTER SESSION

Session II

11.20-11.40 OR-1
Sinev M.Yu[1], Gordienko Yu.A.[1], Vasyutin P.R.[1,2], Lagunova E.A.[1]
WATER FLUIDS: PARAMETERS, PROPERTIES, REACTIVITY
1 – FRC ChPh RAS, Moscow, Russia
2 – MIREA, Moscow, Russia

11.40-12.00 OR-2
Matveeva V.G.[1,2], Stepacheva A.A.[1], Dmitrieva A.A.[2], Scipanskaya E.O.[2], Sulman M.G.[1], Kosivtsov Yu.Yu.[1]
PRODUCTION OF SECOND GENERATION BIOFUEL USING SUPERCRITICAL SOLVENTS
1 – Tver State Technical University, Tver, Russia
2 – Tver State University, Tver, Russia

12.00-12.20 OR-3

Khodov I.A., Kiselev M.G.

AN APPROACH TO THE STUDY OF THE SORPTION AND SWELLING PROCESSES OF A POLYMER MATRIX IN SCCO2 BASED ON TWO-DIMENSIONAL NMR SPECTROSCOPY

G.A. Krestov Institute of Solution Chemistry, Russian Academy of Sciences, Ivanovo, Russia

12.20-12.40 OR-4

O.I. Gromov[1], A. Popova[1], N.V. Minaev[2], E.N. Golubeva[1]

EPR spectroscopy of spin probes in scCO2-polymer systems

[1] CHEMISTRY Department, Lomonosov Moscow State University, Leninskiye Gory 1-3, Moscow, Russia
[2] Institute of Photon Technologies, FSRC "Crystallography and Photonics", RAS, Moscow, Russia

12.40-13.00 OR-5

Minaev N.V. *, Epifanov E.O.

DEVELOPMENT OF NEW METHODS FOR MICRO- AND NANOSTRUCTURING OF MATERIALS AND DIAGNOSTICS OF THE STATE OF MATTER USING SUPERCRITICAL FLUIDS AND LASER TECHNOLOGIES: EQUIPMENT AND CAPABILITIES

Institute of Photon Technologies Federal Research Center "Crystallography and Photonics" RAS, Moscow, Troitsk, Russia

13.00-13.20 OR-6

Dmitry V. Krasnikov[1], Eldar M. Khabushev[1,2], Alisa R. Shaikhulova[1], Vsevolod Ya. Yakovlev[1], Orysia T. Zaremba[1], Anastasia E. Goldt[1], Albert G. Nasibulin[1,2]

FINE TUNING OF SINGLE-LAYER CARBON NANOTUBES DURING THEIR SYNTHESIS BY AEROSOL CVD

1 – Skolkovo Institute of Science and Technology, Moscow, Russia
2 – Aalto University, Espoo, Finland

III Session

14.30-14.50 OR-7
Parenago O.P.
SYNTHESIS PATHWAYS OF CATALYSTS WITH THE USE OF SUPERCRITICAL FLUIDS
Institute of Petrochemical Synthesis of RAS, Moscow, Russia

14.50-15.10 OR-8
Markova M.E.[1], Sulman M.G.[1], Stepacheva A.A.[1], Matveeva V.G.[1,2], Kosivtsov Yu.Yu.[1]
STRUCTURE OF BIFUNCTIONAL CATALYSTS SYNTHESIZED IN SUBCRITICAL WATER
1 – Tver State Technical University, Tver, Russia
2 – Tver State University, Tver, Russia

15.10-15.30 OR-9
N.S. Nesterov[1], A.S. Shalygin[1], A.A. Philippov[1], O.N. Martyanov[1]
SUPERCRITICAL CARBON DIOXIDE-A MEDIUM FOR PRODUCING HETEROGENEOUS CATALYSTS WITH UNIQUE CHARACTERISTICS
1 Boreskov Institute of Catalysis SB RAS, Lavrentiev Ave., Novosibirsk, 630090, Russian Federation

15.30-15.50 OR-10
Simonov M.N.[1,2*], Arapova M.V.[1], Bespalko Yu.N.[1*], Valeev K.R.[1], Smal E.A.[1], Fedorova V.E.[1], Sadykov V.A.[1,2]
CATALYSTS FOR DRY REFORMING OF METHANE: SYNTHESIS IN SUPERCRITICAL ALCOHOLS AND STUDY OF CATALYTIC ACTIVITY
1– BORESKOV INSTITUTE OF CATALYSIS, NOVOSIBIRSK, RUSSIA
2 - Novosibirsk State University, Novosibirsk, Russia

15.50-16.10 OR-11

Philippov A.A.[1], Nesterov N.S.[1], Martyanov O.N.[1]

REDUCTIVE TRANSFORMATIONS OF ANISOLE UNDER SUB- AND SUPERCRITICAL 2-PROH WITH HIGH-LOADED NICKEL CATALYSTS

1 – BORESKOV INSTITUTE OF CATALYSIS, NOVOSIBIRSK, RUSSIA

16.10-16.30 OR-12

A.M. Vorobei[1], A.V. Gavrikov[1], E. V. Belova[1,4], Loktev A.S. [1–3], Mukhin I.E. [3], A.B. Ilukhin[1], N. N. Efimov[1], Dedov A.G.[1–3], O.O. Parenago[1,4]

SAMARIUM COBALTATE CATALYSTS OBTAINED VIA SUPERCRITICAL ANTISOLVENT PRECIPITATION

1 – Kurnakov Institute of General and Inorganic Chemistry of RAS, Moscow, Russia
2 – Topchiev Institute of petrochemical synthesis of RAS, Moscow, Russia
3 - Gubkin Russian State University of Oil and Gas, Moscow, Russia
4 - Lomonosov Moscow State University, Department of Chemistry, Moscow, Russia

IV Session

17.00-17.40 PL-5

Abdenacer Idrissi[a] and Michael Kiselev[b]

SPECTROSCOPY AND MODELLING OF SUPERCRITICAL AMMONIA

[a] *Universiy of Lille, CNRS, UMR 8516- LASIRe, Laboratoire Avancé de Spectroscopie pour les Interactions, la réactivité et l'Environement F-59000 Lille, France*
[b] *Institute of Solution Chemistry of the RAS, Ivanovo, Russia*

17.40-18.20 PL-6

Eldar M. Khabushev[1,2], Ilya V. Novikov[1], Alena A. Alekseeva[1], Polina M. Kalachikova[1], Anastasia E. Goldt[1], Sergey D. Shandakov[2], Dmitry V. Krasnikov[1], Albert G. Nasibulin[1,2]

SINGLE-WALLED CARBON NANOTUBES: FROM SYNTHESIS TO APPLICATIONS

[1] *Skolkovo Institute of Science and Technology, Moscow, Russia*
[2] *Kemerovo State University, 650000, Kemerovo, Russia*
[3] *Aalto University School of Science, Espoo, Finland*

18.20-18.50 KL-1

Zimnyakov D.A.[1,2]

SCF SYNTHESIS OF HIGHLY POROUS POLYMER MATRICES: FUNDAMENTAL FEATURES AND TECHNOLOGICAL ASPECTS OF FORMATION, EXPANSION, AND STABILIZATION OF THE POLYMER FOAMS

1 – Yury Gagarin State Technical University of Sararov, Saratov, Russia
2 – Precision Mechanics and Control Institute of RAS, Saratov, Russia

23 June 2021, Wednesday

V Session

9.00-9.30 KL-2
Abdulagatov I.M.[1,2], Polikhronidi N.G.[3], Batyrova R.G.[3]
THE CRITICAL AND SUPERCRITICAL PHENOMENA IN BINARY CO_2 CONTAINING MIXTURES
[1]Geothermal and Renewal Energy Institute of the Russian Academy of Sciences, High Temperature Joint Institute of the Russian Academy of Sciences, Makhachkala, Dagestan, Russian Federation
[2]Dagestan State University, Russian Federation
[3]Institute of Physics of the Dagestan Scientific Center of the Russian Academy of Sciences, Russian Federation

9.30-10.00 KL-3
Belskaya O.B., Krivonos O.I.
PROCESSING OF ORGANOMINERAL RAW MATERIALS USING OF SUPERCRITICAL FLUIDS
Center of New Chemical Technologies BIC, Boreskov Institute of Catalysis, Omsk, Russia

10.00-10.30 KL-4
Manakov A.Yu.
GAS HYDRATES AND CRITICAL PHENOMENA IN GASES – POINTS OF CONTACT
Nikolaev Institute of inorganic chemistry SB RAS, Novosibirsk, Russia

10.30-10.50 OR-13

E.A. Bazaev, A.R. Bazaev

THERMODYNAMIC PROPERTIES OF TERNARY $H_2O+C_3H_7OH+C_5H_{14}$ IN SUPERCRITICAL STATE

Institute of Geothermal Research and Renewable Energy the branch of JIHT RAS,Makhachkala, Russia

VI Session

11.20-11.40 OR-14

Bilalov T.R.[1,2], Melnikova V.E.[1] Gumerov F.M.[1]

THE EFFECT OF THE MIXING RULES ON THE ACCURACY OF THE SOLUBILITY DESCRIPTION AND THE DETERMINATION OF THE SUBLIMATION PRESSURE OF THE DISSOLVED SUBSTANCES

1 – «Kazan national research technological University», Kazan, Russia.

2 – «Kazan National Research Technical University named after A. N. Tupolev – KAI», Kazan, Russia

11.40-12.00 OR-15

Said-Galiev E.E., Khokhlov A.R.

CRITICAL TECHNOLOGIES IN THE DEVELOPMENT OF EFFECTIVE FUNCTIONAL MATERIALS

A.N. Nesmeyanov Institute of Organoelement Compounds of RAS

12.00-12.20 OR-16

Nikolaev A.Yu.[1], Alentiev A.Yu.[2], Chirkov S.V.[2], Nikiforov R.Yu.[2], Kostina Yu.V[2], Ronova I.A.[1]

MODIFICATION OF GAS SEPARATION PROPERTIES OF POLYMERS UNDER THE ACTION OF SC-CO2

1 - INEOS RAS, Moscow, Russia

2 - TIPS RAS, Moscow, Russia

12.20-12.40 OR-17
Khabriev I.Sh.[1], Khairutdinov V.F.[1], Gumerov F.M.[1], Khuzakhanov R.M.[1], Garipov R.M.[1]
COMPOSITE MATERIALS BASED ON POLYMER BLENDS OBTAINED BY THE SEDS METHOD
1 – Kazan National Research Technological University, Kazan. Russia

12.40-13.00 OR-18
Cherkasova A.V., Glagolev N.N., Shienok A.I., Kopylov A.S., Solovieva A.B.
SC CO_2 MEDIUM IN THE CREATING PROCESS OF POLYMER MATRIX SYSTEMS WITH DELAYED RELEASE OF ACTIVE SUBSTANCES
FRC Chemical Physics named after N.N. Semenov, Moscow, Russia

13.00-13.20 OR-19
Shershnev I.V., Kopylov A.S., Solovieva A.B.
FLUORINATED PORPHYRINS IMMOBILIZED ON PERFLUORINATED COPOLYMER MF-4SK IN SUPERCRITICAL CARBON DIOXIDE AS PHOTOSENSITIZERS OF SINGLET OXYGEN GENERATION IN BIOLOGICALLY ACTIVE SUBSTRATES OXIDATION
Semenov Federal Research Center of Chemical Physics RAS, Moscow, Russia

VII Session

14.30-14.50 OR-20
Кучуров И.В., Харченко А.К., Будкова А.В., Злотин С.Г.
ВОССТАНОВЛЕНИЕ НИТРОСОЕДИНЕНИЙ МУРАВЬИНОЙ КИСЛОТОЙ В СРЕДЕ СВЕРХКРИТИЧЕСКОГО CO_2
Институт органической химии им Н.Д. Зелинского РАН, Москва

14.50-15.10 OR-21
Oparin R.D., Krest'yaninov M.A., Kiselev M.G.
CHEMICAL REACTION BETWEEN CARBON DIOXIDE AND METHANOL IN SCF PROCESSES
G.A. Krestov Institute of Solution Chemistry of the Russian Academy of Sciences

15.10-15.30 OR-22
Ovchinnikov D.V, Kosyakov D.S., Ul'yanovskii N.V., Falev D.I.
IONIZATION FEATURES OF NITROGEN-CONTAINING COMPOUNDS IN SUPERCRITICAL FLUID CHROMATOGRAPHY – MASS SPECTROMETRY
Core Facility Centre "Arktika", Northern (Arctic) Federal University named after M.V. Lomonosov, Arkhangelsk

15.30-15.50 OR-23
Artamonov D.O., Vostrikov A.A., Fedyaeva O.N.
SURFACE AND PLATINUM-INITIATED HOMOGENEOUS COMBUSTION OF PYRIDINE IN THE WATER VAPOR AND ARGON MEDIA AT ELEVATED PRESSURE
Kutateladze Institute of Thermophysics, Novosibirsk, Russia

15.50-16.10 OR-24
Kozhevnikov I.V., Chibiryaev A.M., Martyanov O.N.
SUPERCRITICAL ALCOHOLS ARE A REDUCTIVE REACTION MEDIUM FOR *S*-CONTAINING ORGANIC SUBSTANCES
Institute of Catalysis SB RAS, Novosibirsk, Russia

24 June 2021, Thursday

VIII Session

9.00-9.30 KL-5
A.Yu.Barnyakov[1,2]
AEROGELS IN HIGH ENERGY PHYSICS
1 – Budker Institute of Nuclear Physics, Novosibirsk, Russia
2 – Novosibirsk State Technical University, Novosibirsk, Russia

9.30-10.00 KL-6
Menshutina N.V.
AEROGELS: FROM LABORATORY TO INDUSTRY
D.Mendeleev University of Chemical Technology of Russia, Moscow, Russia

10.00-10.40 PL-7
Kazarian S.G.
IN SITU VIBRATIONAL SPECTROSCOPY AND SPECTROSCOPIC IMAGING FOR SUPERCRITICAL FLUIDS
Imperial College London, London, Great Britain

10.40-11.10 KL-7
Kanaev A.
NOVEL PHOTOCATALYSTS WITH SINGLE NANOPARTICLE RESPONSE
Laboratoire des Sciences des Procedes et des Materiaux, - Institut Galilee, Villetaneuse, France

IX Session

Reports of young scientists

11.30-11.40 ORY-1

Sizov V.E.[1], Zefirov V.V.[1,2], Gallyamov M.O.[1]

POLYMER MEMBRANES MODIFICATION VIA SUPERCRITICAL CO_2

1 – M.V. Lomonosov Moscow State University, Moscow, Russian Federation
2 – A.N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences, Moscow, Russian Federation

11.40-11.50 ORY-2

Пестрикова А.А.[1], Стамер К.С.[2], Пигалёва М.А.[2], Галлямов М.О.[1,2]

ФОРМИРОВАНИЕ ХИТОЗАНОВЫХ ГЕЛЕЙ С МЕТАЛЛИЧЕСКИМИ НАНОЧАСТИЦАМИ В РАСТВОРАХ УГОЛЬНОЙ КИСЛОТЫ ПОД ВЫСОКИМ ДАВЛЕНИЕМ

[1] Институт элементоорганических соединений им. А. Н. Несмеянова РАН, Москва, Россия
[2] МГУ имени М.В. Ломоносова, Москва, Россия

11.50-12.00 ORY-3

Zefirov V.V.[1,2], Sizov V.E.[1], Gallyamov M.O.[1,2]

MODIFICATION OF POLYMER MATRICES IN SUPERCRITICAL CARBON DIOXIDE FOR ELECTROCHEMICAL APPLICATIONS

1 – M. V. Lomonosov Moscow State University, Moscow, Russian Federation
2 – A.N. Nesmeyanov Institute of Organoelement Compounds of Russian Academy of Sciences, Moscow, Russian Federation

12.00-12.10 ORY-4

Kim O.A.[1], Koklin A.E. [2], Bogdan V.I.[2]

CARBON DIOXIDE HYDROGENATION ON SUPPORTED FE AND FECR CATALYSTS

1 - Lomonosov Moscow State University, Department of Chemistry, Moscow, Russia
2 – N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia

12.10-12.20 ORY-5

Bobrova N.A.[1,2], Mishanin I.I.[2], Koklin A.E.[2], Bogdan V.I.[1,2]

TRANSFORMATION OF HYDROLYSIS LIGNIN AND SODIUM LIGNOSULFONATE IN AN AQUEOUS MEDIUM IN SUB- AND SUPERCRITICAL CONDITIONS

[1] Department of Chemistry, M. V. Lomonosov Moscow State University,
1/3 Leninskie Gory, 119991, Moscow, Russian Federation
[2]N. D. Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences,
47 Leninsky prop., 119991, Moscow, Russian Federation

12.20-12.30 ORY-6

Ivanova T.A.[1], Golubeva E.N.[1], Chumakova N.A. [1,2], Kuzin S.V. [3], Timashev P.S. [1,4-6], Spichka A.I. [4], Melnikov M.Ya. [1]

NITROXYL RADICALS RELEASE MECHANISM FROM POLY-D, L-LACTIDE MATRICES IN THE PROCESS OF THEIR DEGRADATION

1 – Lomonosov Moscow State University, Chemistry Department
2 – ICP RAS, Moscow, Russia
3 – ETH Zurich, Laboratory of Physical Chemistry
4 - Institute for Regenerative Medicine, Sechenov University
5 - Institute of Photonic Technologies, Research Center "Crystallography and Photonics", RAS
6 - N.N. Semenov Federal Research Center for Chemical Physics, RAS

12.30-12.40 ORY-7

Smirnov A.V.[1,2], Mashenko N.V.[1], Koklin A.E.[1], Bogdan V.I.[1,2]

SELF-CONDENSATION OF ACETONE ON STRONTIUM AND BARIUM STANNATES UNDER SUPERCRITICAL CONDITIONS

1 - N.D. Zelinsky institute of Organic Chemistry Russian Academy of Sciences

2 - Lomonosov Moscow State University, Faculty of Chemistry, Moscow, Russia

12.40-12.50 ORY-8

Minaeva S.A.[1], Epifanov E.O.[1], Minaev N.V.[1], Popov V.K.[1], Zimnyakov D.A.[2,3]

STUDY OF PLASTICIZATION AND FOAMING OF POLYMER MATERIALS IN SUPERCRITICAL CARBON DIOXIDE

1 – Institute of Photon Technologies of Federal Scientific Research Centre "Crystallography and Photonics", Moscow, Troitsk, Russia

2 – Physics Department, Yury Gagarin State Technical University of Saratov, Saratov, Russia

3 – Precision Mechanics and Control Institute of Russian Academy of Sciences, Saratov, Russia

12.50-13.00 ORY-9

Dunaev A.G., Antonov E.N., Krotova L.I., Popov V.K.

HYDROLYTIC DEGRADATION OF IMPREGNATED ANTIBIOTIC POLYLACTOGLYCOLIDE BY SUPERCRITICAL CARBON DIOXIDE

IPT, Federal Research Centre "Crystallography and Photonics" of the Russian Academy of Sciences, Troitsk, Moscow

13.00-13.10 ORY-10

Panova L.V.[1], Afanasov M.I.[1], Lemenovskiy D.A.[1], Koel M.[2], Krut'ko D.P.[1], Burlutsky R.O.[1]

FERROCENE-CONTAINING ORGANIC AEROGELS BASED ON FORMALDEHYDE AND RESORCINOL DERIVATIVES

1 - Moscow State University, Moscow, Russia

2 - Tallinn University of Technology, Tallinn, Estonia

13.10-13.20 ORY-11

Mariyanac A.O., Antonov E.N., Popov V.K.

RELEASE KINETICS OF LEVOFLOXACIN ENCAPSULATED IN POLYLACTIC-CO-GLYCOLIC SCAFFOLDS USING SUPERCRITICAL FLUIDS.

IPT, Federal Research Centre "Crystallography and Photonics" of the Russian Academy of Sciences, Troitsk, Moscow

13.20-13.30 ORY-12

Иванов Р.Е., Харченко А.К., Кучуров И.В., Злотин С.Г.

КАТАЛИЗИРУЕМОЕ КИСЛОТАМИ БРЕНСТЕДА ЭНАНТИОСЕЛЕКТИВНОЕ ВОССТАНОВЛЕНИЕ ИМИНОВ В СРЕДЕ СУБ- И СВЕРХКРИТИЧЕСКИХ ФЛЮИДОВ

Институт органической химии им Н.Д. Зелинского РАН, Москва

13.30-13.40 ORY-13

P.S. Kazaryan[1], A.A. Pestrikova[2], A.Yu. Nikolaev[2], N.A. Arkharova[3], M.A. Pigaleva[1], M.O. Gallyamov[1,2]

PRINCIPLES OF DISSOLUTION AND MODIFICATION OF ESTRADIOL AND ITS ETHANOL SOLUTIONS IN SUPERCRITICAL CO_2

1 - Lomonosov Moscow State University, Faculty of Physics, Moscow, Russia, Leninskie Gory, 1, 2
2 - Nesmeyanov Institute of Organoelement Compounds, RAS, Moscow, Russia, st. Vavilova, 28
3 - Federal Research Center "Crystallography and Photonics" RAS, Moscow, Leninsky pr., 59

X Session

Reports of young scientists

11.30-11.40 ORY-14

Fauziev R.V., Ivanov R.E., Kuchurov I.V., Zlotin S.G.

CARBON DIOXIDE AS AN EFFECTIVE AND SAFE MEDIUM FOR THE STRECKER REACTION

N.D. Zelinsky Institute of Organic Chemistry, Russian academy of sciences, Moscow, Russian Federation

11.40-11.50 ORY-15

Kostenko M.O. [1], Parenago O.O. [1, 2]

ADSORPTION OF N'-TETRAOCTYL DIGLYCOLAMIDE ON HYPERCROSSLINKED POLYSTYRENE FROM SUPERCRITICAL CARBON DIOXIDE

1 - Institute of General and Inorganic Chemistry RAS, Moscow, Russia
2 - Moscow State University, Department of Chemistry, Moscow, Russia

11.50-12.00 ORY-16

Zuev Ya.I. [1,2], Vorobei A.M. [1], Ustinovich K.B.[1], Parenago O.O. [1,2]

DISPERSION OF CARBON NANOTUBES BY THE RAPID EXPANSION OF SUPERCRITICAL SUSPENSIONS: THE INFLUENCE OF PROCESS PARAMETERS

[1] Laboratory of Supercritical Fluid Technologies, IGIC RAS, Moscow, Russia
[2] Moscow State University M.V. Lomonosov, Faculty of Chemistry, Moscow, Russia

12.00-12.10 ORY-17

Kalikin N.N.[1], Oparin R.D.[1], Budkov Y.A.[1,2], Kolesnikov A.L.[3], Kiselev M.G.[1]

INVESTIGATION OF THE CROSSOVER REGION SHAPE IN SUPERCRITICAL CO_2

1 – G.A. Krestov Institute of Solution Chemistry of the Russian Academy of Sciences, Russia
2 – National Research University Higher School of Economics, Russia
3 – Institut für Nichtklassische Chemie e.V., Germany

12.10-12.20 ORY-18

Sokolov I.E.[1], Efremova E.I.[1], Boeva N.M.[2], Fomichev V.V. [1]

INVESTIGATION OF THE INFLUENCE OF THE SYNTHESIS PARAMETERS ON A PRECURSOR OBTAINED BY THE METHOD OF SUPERCRITICAL ANTISOLVENT CO_2 PRECIPITATION AT THE STAGE OF EUROPIUM IRON GARNET FORMATION

1 – MIREA - Russian Technological University, Moscow, Russia
2 – Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry RAS, Moscow, Russia

12.20-12.30 ORY-19

Solov'ev V.O.[1], Kostenko M.O.[1,2], Solov'eva S.V.[1,3], Parenago O.O.[1,2], Voshkin A.A.[1,3]

SUPERCRITICAL FLUID EXTRACTION OF QUINOLINE AND INDOLE FROM AQUEOUS SOLUTIONS OF POLYVINYLPYRROLIDONE

1 - Kurnakov Institute of General and Inorganic Chemistry RAS, Moscow, Russia
2 - Lomonosov Moscow State University, Chemical Department, Moscow, Russia
3 - MIREA – Russian Technological University, Moscow, Russia

12.30-12.40 ORY-20

Shavrina I.S., Ivakhnov A.D., Kosyakov D.S., Pikovskoi I.I., Ul'yanovskii N.V.

DEPOLYMERIZATION OF TECHNICAL LIGNINS IN SUPERCRITICAL SOLVENTS

Northern (Arctic) Federal University, Core Facility Center "Arktika"

12.40-12.50 ORY-21

Khizrieva S.S.*, Borisenko S.N., Maksimenko E.V., Vetrova E.V., Borisenko N.I.

SYNTHESIS OF PHENANTHRENE ALKALOIDS IN SUBCRITICAL WATER AND STUDY OF THEIR ANTIOXIDANT AND ANTI - ACETYLCHOLINESTERASE ACTIVITY

Research Institute of Physical and Organic Chemistry, Southern Federal University, 344090, Stachki Ave., 194/2, Rostov-on-Don, Russia

12.50-13.00 ORY-22

Novikov I.V.[1,2], Vorobei A.M.[3], Zuev Y.I.[3], Krasnikov D.V.[1], Fedorov F.S.[1], Gusev S.A.[1], Safonov A.A.[1], Konev S.D.[1], Sergeichev I.V.[1], Zhukov S.S.[4], Gorshunov B.P.[4], Parenago O.O.[3], Nasibulin A.G.[1,2]

METHOD RESS FOR FABRICATION OF ELASTIC COMPOSITES BASED ON SINGLE-WALLED CARBON NANOTUBES AND THERMOPLASTIC POLYURETHANE

1 – Skolkovo Institute of Science and Technology, Moscow, Russia
2 – Aalto University, Espoo, Finland
3 – Kurnakov Institute of General and Inorganic Chemistry, Moscow, Russia
4 – Moscow Institute of Physics and Technology

13.00-13.10 ORY-23

Suslova E.N., Lebedev A.E.

DEVELOPMENT OF A TECHNOLOGY FOR PRODUCING AEROGELS BASED ON COMBINING THE PROCESSES OF GELATION, SOLVENT REPLACEMENT AND DRYING IN ONE APPARATUS IN AN ENVIRONMENT OF SUPERCRITICAL CARBON DIOXIDE

MUCTR, Moscow, Russia

13.10-13.20 ORY-24

Smal E.A.[1], Simonov M.N.[1,2], Bespalko Y.N.[1], Valeev K.R.[1], Fedorova V.E.[1], Krieger T.A.[1], Cherepanova S.V.[1], Saraev A.A.[1], Ishchenko A.V.[1,2], Sadykov V.A.[1,2]

INFLUENCE OF THE PREPARATION METHOD AND TI AND NB ADDITION ON THE STRUCTURAL FEATURES OF CATALYSTS BASED ON CE-ZR MIXED OXIDES AND THEIR ACTIVITY IN THE DRM REACTION

1 – Boreskov Institute of Catalysis, Novosibirsk, Russia
2 – Novosibirsk State University, Novosibirsk, Russia

13.20-13.30 ORY-25

Попов М.С., Ивахнов А.Д., Ульяновский Н.В., Косяков Д.С.

СВЕРХКРИТИЧЕСКОЕ ВОДНОЕ ОКИСЛЕНИЕ – МЕТОД ЛИКВИДАЦИИ ПОСЛЕДСТВИЙ ПРОЛИВОВ РАКЕТНОГО ТОПЛИВА НА ПОЧВУ

Северный (Арктический) федеральный университет имени М.В. Ломоносова

13.30-13.40 ORY-26

Захарченко А.В., Базарнова Н.Г.

СОВРЕМЕННЫЕ ПОДХОДЫ К ИЗВЛЕЧЕНИЮ БИОЛОГИЧЕСКИ АКТИВНЫХ ВЕЩЕСТВ ИЗ КОРНЕЙ И КОРНЕВИЩ КЛОПОГОНА ВОНЮЧЕГО

ФГБОУ ВО «Алтайский государственный университет», Барнаул, Россия

13.40-13.50 ORY-27

Dyshin A.A.[1], Kuzmikov M.S.[1,2], Kiselev M.G.[1]

LIDOCAINE MICRONIZATION BY THE RESS METHOD FROM SUB- AND SUPERCRITICAL CARBON DIOXIDE

1 – Institute of Solution Chemistry, Russian Academy of Sciences, Ivanovo, Russia
2– Ivanovo State University of Chemical Technology, Ivanovo, Russia

XI Session

14.50-15.10 OR-25

Elmanovich I .V.[1,2], Zefirov V.V.[1,2], Gallyamov M.O.[1,2]

SYNTHESIS OF METAL OXIDE AEROGELS AND NANOPARTICLES IN SUPERCRITICAL CO_2

1 – Faculty of Physics, Lomonosov Moscow State University, Moscow, Russia
2 – A.N. Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, Russia

15.10-15.30 OR-26

Shalygin A.S.[1], Katcin A.A.[2], Barnyakov A.Yu.[2], Danilyuk A.F.[1], Martyanov O.N.[1]

THE IMPACT OF ZRO_2 ON REFRACTIVE INDEX OF TRANSPARENT ZRO_2-SIO_2 AEROGELS

1 – Boreskov Institute of Catalysis, Novosibirsk, Russia
2 – Budker Institute of Nuclear Physics, Novosibirsk, Russia

15.30-15.50 OR-27

Khudeev I.I., A.E. Lebedev, N.V. Menshutina

INTENSIFICATION OF THE SUPERCRITICAL DRYING PROCESS

Mendeleev University of Chemical Technology of Russia, Moscow, Russia

15.50-16.10 OR-28

Bedilo A.F., Ilyina E.V.

SYNTHESIS AND PROPERTIES OF AL_2O_3 AND CALCIUM ALUMINATE AEROGELS

Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia

XII Session

16.30-16.50 OR-29

Базарнова Н.Г., Микушина И.В., Минаков Д.В., Царёв В.Н., Захарченко А.В., Геньш К.В., Чепрасова М.Ю., Кушнир Е.Ю.

СВЕРХКРИТИЧЕСКИЕ ФЛЮИДНЫЕ ТЕХНОЛОГИИ В ПОЛУЧЕНИИ И АНАЛИЗЕ ФАРМАЦЕВТИЧЕСКИХ СУБСТАНЦИЙ СИНТЕТИЧЕСКОГО И ПРИРОДНОГО ПРОИСХОЖДЕНИЯ

ФГБОУ ВО Алтайский государственный университет, Барнаул, Россия

16.50-17.10 OR-30

Немец Е.А.[1,2], Лажко А.Э.[3], Григорьев А.М.[1], Сургученко В.А.[1], Басок Ю.Б.[1,2], Кириллова А.Д.[1], Севастьянов В.И.[1,2]

ОБРАБОТКА СВЕРХКРИТИЧЕСКИМ ДИОКСИДОМ УГЛЕРОДА КАК МЕТОД ПОВЫШЕНИЯ БИОСОВМЕСТИМЫХ СВОЙСТВ БИОПОЛИМЕРНЫХ И ТКАНЕСПЕЦИФИЧЕСКИХ СКАФФОЛДОВ

[1] ФГБУ «Национальный медицинский исследовательский центр трансплантологии и искусственных органов им. акад. В.И. Шумакова» Минздрава РФ, Москва.
[2] АНО «Институт медико-биологических исследований и технологий», Москва
[3] ФНИЦ «Кристаллография и фотоника» РАН, Москва.

17.10-17.30 OR-31

Царёв В.Н., Чепрасова М.Ю., Кушнир Е.Ю., Микушина И.В., Геньш К.В., Базарнова Н.Г., Захарченко А.В.

АНАЛИТИЧЕСКАЯ МЕТОДИКА РАЗДЕЛЕНИЯ РАЦЕМАТА САЛМЕТЕРОЛА ОСНОВАНИЯ В СВЕРХКРИТИЧЕСКОЙ ФЛЮИДНОЙ СРЕДЕ

Алтайский государственный университет, Барнаул, Россия

25 June 2021, Friday

XIII Session

10.00-10.30 KL-8
Tomilenko A. A., Sobolev N. V., Bul'bak T. A., Logvinova A.M.
FLUIDS IN THE EARTH'S UPPER MANTLE
V.S. Sobolev Institute of Geology and Mineralogy, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

10.30-11.00 KL-9
Vedyagin A.A.[1]
APPLICATION OF SUPERCRITICAL CONDITIONS FOR SYNTHESIS OF NANOSTRUCTURED OXIDE MATERIALS
1 – Boreskov Institute of Catalysis, Novosibirsk, Russia

XIV Session

11.20-11.40 OR-32
Zharkov M.N., Kuchurov I.V., Zlotin S.G.
MICRONIZATION OF CL-20 WITH SUPERCRITICAL AND LIQUEFIED FLUIDS
N.D. Zelinsky Institute of Organic Chemistry Russian Academy of Sciences

11.40-12.00 OR-33
Fedyaeva O.N., Vostrikov A.A.
COMBUSTION OF TOXIC WATERED WASTE FROM THE PULP AND PAPER INDUSTRY IN SUPERCRITICAL WATER USING METHANE AS A CO-FUEL
Kutateladze Institute of Thermophysics SB RAS, Novosibirsk, Russia

12.00-12.20 OR-34
Salikhov I.Z.[1], Khairutdinov V.F.[1,2], Gumerov F.M. [1], Farakhov M.I.[2,1]
OIL WELLHEAD CLEANING FROM ASPHALT-RESIN-PARAFFIN DEPOSITS USING SC PROPANE/BUTANE MIXTURE
1 – Kazan National Research Technological University, Kazan, Russia
2 – LLC "Engineering and Implementation Center" Inzhekhim ", Kazan, Russia

12.20-12.40 OR-35
Manaenkov O.V., Kislitsa O.V., Ratkevich E.A., Kosivtsov Yu.Yu., Matveeva V.G., Sulman M.G.
CATALYTIC CONVERSION OF POLYSACCHARIDES IN SUBCRITICAL WATER
1 – Tver state technical university, Tver, Russia

12.40-13.00 OR-36

Stepacheva A.A.[1], Monzharenko M.A.[1], Yakubenok K.V.[1], Drozdova D.I.[1], Gavrilenko A.V.[1], Matveeva V.G.[1,2], Kosivtsov Yu.Yu.[1], Sulman M.G.[1]

SUPERCRITICAL SOLVENT APPLICATION IN HYDROCONVERSION OF HEAVY OIL MODEL COMPOUNDS

1 – Tver State Technical University, Tver, Russia
2 – Tver State University, Tver, Russia

12.40-13.00 OR-36

Pripakhaylo A.V., Andryushin M.A., Magomedov R.N., Maryutina T.A.

EFFECT OF IRON OXIDE NANOPARTICLES CONCENTRATION ON THE EFFICIENCY OF SUBCRITICAL DEASPHALTING OF HEAVY OIL

Vernadsky Institute of Geochemistry and Analytical Chemistry Russian Academy of Sciences, Kosygin Str. 19, 119991, Moscow, Russia