

**VI International Conference
"Fundamental Bases of Mechanochemical Technologies"**

FBMT-2022

PROGRAM

Novosibirsk

2022

ORGANIZER BY:



Institute of Solid State Chemistry and
Mechanochemistry SB RAS

www.solid.nsc.ru

CO-ORGANIZERS OF THE CONFERENCE:



Science and Technology Society of Guangdong
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Monday, November 21	
14:00 - 17:00	Registration at the Hotel “Zolotaya Dolina” (“Golden Valley”)
16:00 - 17:00	Excursion to the Siberian Synchrotron and Terahertz Radiation Centre
Tuesday, November 22	
9:00 - 9:30	Registration at the Academpark (Nikolaev str., 11, 13th floor)
9:30 - 9:45	Opening Remarks (Big Conference hall)
9:45 - 11:15	Plenary Session (Big Conference hall)
11:15 - 11:30	Coffee Break. Poster Session I
11:30 - 13:30	Section I (Big Conference hall) Section II (Hall №2)
13:30 - 14:30	Lunch Break
14:30 - 16:00	Section I (Big Conference hall) Section II (Hall №2)
16:00 - 16:30	Coffee Break. Poster Session I
16:30 - 18:30	Section I (Big Conference hall) Section II (Hall №2)
18:45	Welcome Reception at «TEPLITSA» banquet hall (Nikolaev str., 12/2, 3d floor)
Wednesday, November 23	
9:30 - 11:30	Plenary Session (Big Conference hall)
11:30 - 11:45	Coffee Break. Poster Session II
11:45 - 13:00	Section I (Big Conference hall) Section II (Hall №2)
13:00 - 14:30	Lunch Break
14:30 - 16:00	Section I (Big Conference hall) Young Scientists Session (Hall №2)
16:00 - 16:30	Coffee Break. Poster Session II
16:30 - 18:30	Section I (Big Conference hall) Young Scientists Session (Hall №2)
Thursday, November 24	
9:30 - 11:30	Plenary Session (Big Conference hall)
11:30 - 11:45	Coffee Break. Poster Session III
11:45 - 13:15	Section III (Big Conference hall)
13:15 - 14:00	Lunch Break
14:00 - 16:00	Section III (Big Conference hall)
16:00 - 16:30	Coffee Break. Poster Session III
16:30 - 17:30	Section III (Big Conference hall)
17:30 - 18:30	General discussion. End of the Conference. (Big Conference hall)

Section I

- Theoretical aspects of mechanical activation of chemical processes. Kinetics and mechanism of mechanochemical reactions.
- Mechanochemical synthesis. Mechanical alloying.
- Application of the mechanical activation methods for the fabrication and design of new materials, including those for environmentally friendly and resource-saving energy technologies and additive manufacturing.

Section II

- Innovative mechanochemical technologies.
- Mechanochemical synthesis. Mechanical alloying.
- Application of the mechanical activation methods for the fabrication and design of new materials, including those for environmentally friendly and resource-saving energy technologies and additive manufacturing.

Section III

- Mechanochemistry of organic systems and plant materials.
- Innovative mechanochemical technologies.

PROGRAM

Monday, November 21, 2022

- 14:00 – 17:00** Registration at the Hotel “Zolotaya Dolina” (“Golden Valley”).
- 16:00 – 17:00** Excursion to the Siberian Synchrotron and Terahertz Radiation Centre.

Tuesday, November 22, 2022

- 9:00 – 9:30** Registration at the Academpark (Nikolaev str., 11, 13th floor).

Chairman: Prof. Nikolay Z. Lyakhov

9:30 Opening Remarks.

Welcome speech by Gao Hong (*Dalian Jiaotong University, China*).

Plenary session

Big Conference hall

Chairman: Prof. Nikolay Z. Lyakhov

- 9:45** M. Senna (*Faculty of Science and Technology, Keio University, Yokohama, Japan*). **METASTABLE STRUCTURE AND PROPERTIES OF FUNCTIONAL NANOCOMPOSITES PREPARED VIA AN AFFORDABLE MECHANOCHEMICAL ROUTE.**
- 10:10** E.A. Levashov, Yu.S. Pogozev, A.Yu. Potanin, V.V. Kurbatkina, E.I. Patsera, A.A. Zaitsev (*The National University of Science and Technology "MISIS", Moscow, Russia*). **APPLICATION OF MECHANICAL ACTIVATION IN SHS-TECHNOLOGIES OF HIGH-TEMPERATURE CERAMICS.**
- 10:35** P.W. Chen, X. Gao, H. Yin, Q. Zhou (*Beijing Institute of Technology, Beijing, China; China Academy of Engineering Physics, Sichuan, China; China Academy of Ordnance Science, Beijing, China*). **SHOCKWAVE CHEMISTRY AND ITS APPLICATION IN CARBON NANOMATERIALS SYNTHESIS.**
- 10:55** N.V. Kosova (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANICAL ACTIVATION AND MECHANOCHEMICAL REACTIONS IN TECHNOLOGY OF METAL-ION BATTERIES.**

11:15 Coffee Break. Poster Session I

Section I

Big Conference hall

Chairman: Prof. Eugeny A. Levashov

- 11:30 A.S. Rogachev (*Merzhanov Institute of Structural Macrokinetics and Materials Science, Russian Academy of Sciences, Chernogolovka, Russia*). **MECHANICALLY ACTIVATED SHS AND MECHANICAL SYNTHESIS OF HIGH ENTROPY ALLOYS: AN OVERVIEW.**
- 11:50 I.A. Ditenberg (*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia; National Research Tomsk State University, Tomsk, Russia*). **FEATURES OF STRUCTURAL-PHASE TRANSFORMATION OF METAL POWDER MIXTURES UNDER HIGH-ENERGY MECHANICAL ACTIVATION.**
- 12:10 B.P. Tolochko, N.Z. Lyakhov, K.A. Ten, E.R. Pruel, E.B. Smirnov, A.Yu. Garmashev (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia; Russian Federal Nuclear Center, All-Russian Research Institute of Technical Physics, Snezhinsk, Russia*). **SYNCHROTRON RADIATION INVESTIGATION OF THE RAYLEIGH-TAYLOR EFFECT INITIATED BY MECHANOCHEMICAL IMPACT ON A SOLID.**
- 12:30 G.A. Pribytkov, A.V. Baranovskiy (*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*). **MECHANICAL ACTIVATION IN PRODUCTION OF Ti MATRIX COMPOSITES REINFORCED WITH SUBMICRONE CARBIDE PARTICLES.**
- 12:50 I.A. Massalimov, A.U. Shayhmetov, B.I. Massalimov, A.G. Mustafin (*Bashkir State University, Ufa, Russia; P.N. Lebedev Physical Institute, Russian Academy of Sciences, Moscow, Russia*). **GRINDING AND ACCUMULATION OF ENERGY OF MECHANICAL IMPACT IN THE DISINTEGRATOR.**
- 13:10 F.Kh. Urakaev, N.V. Khan, A.I. Niyazbayeva, D.N. Zharlykasimova, M.M. Burkitbayev (*Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia; Al-Farabi Kazakh National University, Almaty, Kazakhstan*). **MECHANOCHEMICAL RECRYSTALLIZATION: FORGOTTEN BASICS AND NEW POSSIBILITIES.**

13:30 Lunch Break

Section II

Hall No. 2

Chairman: Prof. Nikolay F. Uvarov

- 11:30** O.N. Baklanova, A.V. Vasilevich, O.V. Gorbunova, O.A. Knyazheva, N.N. Leont'eva, A.V. Lavrenov (*Center of New Chemical Technologies BIC, Boreskov Institute of Catalysis, Omsk, Russia*). **MECHANICAL ACTIVATION OF CARBON MATERIALS: GRAPHITE, CARBON BLACK, CARBONIZED ASPHALT.**
- 11:45** V.V. Libanov, A.A. Kapustina, N.P. Shapkin, A.E. Tarabanova, A.A. Rumina (*Institute of High Technologies and Advanced Materials, Department of Chemistry and Materials, Far Eastern Federal University, Vladivostok, Russia*). **MECHANOCHEMICAL SYNTHESIS OF TITANOPHENYLSILOXANES.**
- 12:00** A.A. Shutilov, G.A. Zenkovets (*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*). **PHYSICOCHEMICAL AND CATALYTIC PROPERTIES OF THE Pt/TiO₂ CATALYST FOR CO OXIDATION BASED ON DEFECTIVE TiO₂, OBTAINED BY CENTRIFUGAL THERMAL ACTIVATION TECHNOLOGY AND MODIFIED WITH IRON OXIDE.**
- 12:15** S.N. Pavlova, A.S. Gorkusha, Y.A. Ivanova, S.V. Tsybulya, Y.A. Chesalov, A.V. Nartova, E.A. Suprun, L.A. Isupova (*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*). **LAYERED Sr₂TiO₄ PREPARED USING MECHANOCHEMICAL ACTIVATION: GENESIS, STRUCTURAL AND CATALYTIC PROPERTIES.**
- 12:30** A.A. Gusev, I.P. Raevski, N.S. Shevchenko (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Research Institute of Physics, Faculty of Physics, Southern Federal University, Rostov-on-Don, Russia*). **SYNTHESIS OF MONOPHASIC LEAD INDIUM TANTALATE Pbn_{1/2}Ta_{1/2}O₃ WITH PEROVSKITE STRUCTURE.**
- 12:45 on-line** E.P. Shevchuk, V.A. Plotnikov, S.V. Makarov (*S. Amanzholov East Kazakhstan University, Ust-Kamenogorsk, Kazakhstan; Altai State University, Barnaul, Russia*). **INVESTIGATION OF AN EXTENSIVE DIFFUSIVE ZONE FORMED BY BORIDING IN AN INDUCTION FURNACE.**

13:00 Lunch Break

Section I

Big Conference hall

Chairman: Prof. Dina Dudina

14:30 on-line V. Šepelák (*Institute of Nanotechnology, Karlsruhe Institute of Technology, Karlsruhe, Germany*). **THE STRUCTURAL DISORDER–MAGNETISM RELATIONSHIPS IN MECHANOSYNTHESIZED NANOOXIDES.**

14:55 D.O. Moskovskikh, A.S. Sedegov (*National University of Science and Technology “MISIS”, Moscow, Russia*). **SYNTHESIS AND PROPERTIES OF HIGH-ENTROPY CERAMICS.**

15:15 on-line A. Sova (*Ecole Centrale de Lyon, ECL-ENISE, Laboratory LTDS UMR 5513, Saint-Etienne, France*). **POST-TREATMENT OF COLD SPRAY DEPOSITS BY FRICTION STIR PROCESSING.**

15:35 A.Yu. Potanin, E.A. Bashkirov, Yu.S. Pogochev, E.I. Patsera, A.D. Sytchenko, E.A. Levashov (*National University of Science and Technology “MISIS”, Moscow, Russia*). **MECHANISMS OF PHASE AND STRUCTURE FORMATION DURING SHS OF MAB PHASES BASED CERAMICS WITH PRELIMINARY MECHANICAL ACTIVATION.**

15:50 on-line X. Gao, H.T. Ran, P.W. Chen (*Beijing Institute of Technology, Beijing, China; Advanced Technology Research Institute, Beijing Institute of Technology, Shandong, China; Chongqing Hongyu Precision Industry Group Co., Ltd., Chongqing, China*). **SHOCK SYNTHESIS OF BIMETAL OXIDES.**

16:05 Coffee Break. Poster Session I

Chairman: Prof. Oleg I. Lomovskii

16:30 on-line Chunhua He, Shiwei Zhang (*Guangxi Yuchai Machinery Co., Ltd., Yulin, China; Henan Weiye New Materials Co., Ltd., Pingdingshan, China*). **A HIGH-PERFORMANCE AND LOW COST NITROGEN -CONTAINING GRAY CAST IRON.**

16:45 on-line Yu.S. Vergunova, S.G. Vadchenko, A.S. Rogachev (*Merzhanov Institute of Structural Macrokinetics and Materials Science RAS, Chernogolovka, Russia*). **FORMATION OF HIGH-ENTROPY TiVNbMoTa, TiVNbTaW ALLOYS DURING MECHANICAL**

ALLOYING.

- 17:00** V.O. Kharlamov, A.V. Krokhaliev, S.V. Kuz'min, V.I. Lysak
on-line (Volgograd State Technical University, Volgograd, Russia).
OBTAINING OF NON-EQUILIBRIUM HARD ALLOYS BY EXPLOSIVE PRESSING OF POWDERS.
- 17:15** D.V. Dudina (Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia). **RECENT PROGRESS IN METAL MATRIX COMPOSITES OBTAINED BY SPARK PLASMA SINTERING OF POWDER BLENDS AND HIGH-ENERGY BALL-MILLED MIXTURES.**
- 17:35** V.I. Kvashnin, D.V. Dudina, A.I. Gavrilov, M.A. Legan, A.N. Novoselov, A.V. Ukhina, K. Georgarakis, G.Y. Koga, A. Moreira Jorge, Jr. (Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia; Novosibirsk State Technical University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; School of Aerospace, Transport and Manufacturing, Cranfield University, Cranfield, UK; Federal University of São Carlos, São Carlos, Brazil). **EFFECT OF PRELIMINARY MECHANICAL MILLING ON THE MICROSTRUCTURE AND PROPERTIES OF Al-Fe₆₆Cr₁₀Nb₅B₁₉ COMPOSITES OBTAINED BY SPARK PLASMA SINTERING.**
- 17:50** A.M. Jorge Junior (Federal University of São Carlos, São Carlos, Brazil). **Mg, Mg-ALLOYS, AND Mg COMPOSITES PRODUCTION BY HIGH ENERGY BALL MILLING AND SEVERE PLASTIC DEFORMATION AIMING HYDROGEN STORAGE: CHALLENGES AND STRATEGIES.**
- 18:10** B.J.M. Freitas, L.C.M. Rodrigues, C.A.E. Claros, W.J. Botta, G.Y. Koga, C. Bolfarini (Federal University of São Carlos, São Carlos, Brazil). **FERRITIC-INDUCED HIGH-ALLOYED STAINLESS STEEL PRODUCED BY LASER POWDER BED FUSION OF A DUPLEX STAINLESS STEEL.**

Section II

Hall No. 2

Chairman: Dr. Nataliya Bulina

- 14:30** P.A. Loginov, S.K. Mukanov, E.A. Levashov (National University of Science and Technology «MISiS», Moscow, Russia).
MECHANICAL AND TRIBOLOGICAL PROPERTIES OF

CoCrCu_xFeNi HIGH ENTROPY ALLOYS, MANUFACTURED BY MECHANICAL ALLOYING AND HOT PRESSING.

- 14:45** on-line L.I. Kveglis, F.M. Noskov, A.S. Gareeva (*Siberian Federal University, Krasnoyarsk, Russia*). **STRUCTURE FORMATION DURING EXPLOSION WELDING OF COPPER AND MOLYBDENUM.**
- 15:00** L.I. Shevtsova (*Novosibirsk State Technical University, Novosibirsk, Russia*). **INFLUENCE OF MECHANICAL ACTIVATION MODES ON THE FORMATION OF VKNA ALLOY.**
- 15:15** K.A. Skorokhod, A.E. Chesnokov (*Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia*). **STUDY OF THE KINETICS OF AUSTENITE DECAY UNDER ISOTHERMAL CONDITIONS WITH MICROALLOYING WITH TITANIUM.**
- 15:30** A.V. Baranovskiy, G.A. Pribytkov (*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*). **APPLICATION OF FERROTITANIUM FOR TiC-Fe METAL MATRIX COMPOSITES PRODUCTION.**
- 15:45** D.V. Aleksanyan, S.G. Churusova, V.A. Kozlov (*Nesmeyanov Institute of Organoelement Compounds, Russian Academy of Sciences, Moscow, Russia*). **MECHANO-CHEMICAL SYNTHESIS OF Pd(II) Pincer Complexes.**
- 16:00** **Coffee Break. Poster Session I**

Chairman: Prof. Alexander M. Kalinkin

- 16:30** on-line G.A. Buzanov, G.D. Nipan (*Kurnakov Institute of General and Inorganic Chemistry of Russian Academy of Sciences, Moscow, Russia*). **THE PECULIARITIES OF PHASE EQUILIBRIA IN THE Eu-Mn-O SYSTEM WITH MULTIVALENT EUROPIUM IONS.**
- 16:45** on-line A.V. Krokhaliev, V.O. Kharlamov, D.R. Chernikov, O.O. Tuzhikov, S.V. Kuzmin, V.I. Lysak (*Volgograd State Technical University, Volgograd, Russia*). **APPLICATION OF EXPLOSIVE LOADING FOR OBTAINING METASTABLE MATERIALS TiFe+Ti₂Fe WITH INCREASED HYDROGEN CAPACITY.**
- 17:00** T.A. Udalova, T.F. Grigoreva, S.V. Vosmerikov, E.T. Devyatkina, N.Z. Lyakhov (*Institute of Solid State Chemistry and*

Mechanochemistry SB RAS, Novosibirsk, Russia).
MECHANICALLY STIMULATED REDOX REACTIONS IN THE SYNTHESIS OF HIGHLY DISPERSED METALS.

17:15 D.K. Rybin (*Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia*). **DETONATION SPRAYING OF METAL POWDER MIXTURES.**

17:30 A.V. Sobachkin, M.V. Loginova, A.A. Sitnikov, V.I. Yakovlev, A.Yu. Myasnikov, V.Yu. Filimonov (*Polzunov Altai State Technical University, Barnaul, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **THE PHASE STATE OF THE PRODUCTS OBTAINED UNDER CONDITIONS OF SHOCK-WAVE SYNTHESIS OF MECHANOCOMPOSITES OF Ti-Al SYSTEM.**

17:45 G. Figueira, P.K.S. Bomfim, G.Y. Koga, P. Gargarella (*Federal on-line University of São Carlos, São Carlos, Brazil*). **TAILORING BORON-MODIFIED AUSTENITIC STAINLESS STEELS FOR ADDITIVE MANUFACTURING: FROM THERMODYNAMIC MODELING TO CORROSION BEHAVIOR.**

18:45 **Welcome Reception at «TEPLITSA» banquet hall (Nikolaev str., 12/2, 3d floor)**

Wednesday, November 23, 2022

Plenary Session

Big Conference hall

Chairman: Prof. Alexander P. Nemudry

9:30 Hong-bo Yu, Mei-ling Chen, Jun Yang, Hong Gao, Chun-hua He, Chun-feng Wang, Qing-yan Liang (*Dalian Jiaotong University, Dalian, China; Guangxi Yuchai Machinery Co., Ltd., Guangxi, China*). **EFFECTS OF FOREIGN SiCp PARTICLES ON UNDERCOOLING TRANSFORMATION AND HIGH TEMPERATURE PERFORMANCES IN CAST ALLOYS.**

9:50 G.Y. Koga, C. Bolfarini, C.S. Kiminami, A.M. Jorge Jr, W.J. Botta (*Department of Materials Science and Engineering, Federal on-line University of São Carlos, São Carlos, Brazil*). **AN OVERVIEW OF THERMALLY SPRAYED Fe-BASED METALLIC GLASS COATINGS: FROM THE ALLOY DEVELOPMENT TO THE**

COATING'S PERFORMANCE AGAINST CORROSION AND WEAR.

- 10:10 on-line** Rashmi Singla, Rakesh Kumar (*CSIR-National Metallurgical Laboratory, Jamshedpur, India; Indian Institute of Technology (Indian School of Mines), Dhanbad, India*). **A GREEN ALTERNATIVE FOR POTASH EXTRACTION FROM GLAUCONITE USING MECHANICAL ACTIVATION.**
- 10:30** A.M. Kalinkin E.V. Kalinkina, E.A. Kruglyak, A.G. Ivanova, M.V. Chislov, I.A. Zvereva (*Tananaev Institute of Chemistry - Subdivision of the Federal Research Centre «Kola Science Centre of the Russian Academy of Sciences», Apatity, Russia; Saint Petersburg State University, St. Petersburg, Russia*). **GEOPOLYMERS BASED ON MECHANICALLY ACTIVATED FLY ASH BLENDED WITH ALKALINE EARTH METAL CARBONATES.**
- 10:50 on-line** G. Cagnetta (*State Key Joint Laboratory of Environment Simulation and Pollution Control, Beijing Key Laboratory for Emerging Organic Contaminants Control, School of Environment, Tsinghua University, Beijing, China*). **MECHANOCHEMICAL DESTRUCTION OF ORGANIC POLLUTANTS: HOW FAR HAVE WE GONE AND WHERE ARE WE GOING?**
- 11:10** A.G. Knyazeva (*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*). **MODELING OF IRREVERSIBLE PROCESSES IN ACTIVATED MATERIALS.**
- 11:30** **Coffee Break. Poster Session II**

Section I

Big Conference hall

Chairman: Prof. Alexander S. Rogachev

- 11:45** S.F. Tikhov, K.R. Valeev, T.Yu. Kardash, I.V. Yakovlev, O.B. Lapina, A.N. Salanov, T.P. Minyukova, E.V. Dokuchic, O.I. Lomovskii, D.V. Dudina (*Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia*). **IMPACT OF ALLOYING AND HYDROGENATION OF Co-Zr BLENDS WITH DIFFERENT STOICHIOMETRY ON THEIR STRUCTURAL, SPECTRAL AND CATALYTIC PROPERTIES.**
- 12:00** D.A. Osipov, I.V. Smirnov, K.V. Grinyaev, I.A. Ditenberg (*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*). **EFFECT OF PRELIMINARY MECHANICAL ACTIVATION ON**

THE STRUCTURAL-PHASE STATE, THERMAL STABILITY, AND MICROHARDNESS OF Ni₃Al SAMPLES AFTER SPARK PLASMA SINTERING.

- 12:15** T.M. Vidyuk (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Khristianovich Institute of Theoretical and Applied Mechanics SB RAS, Novosibirsk, Russia*). **SYNTHESIS OF METAL MATRIX COMPOSITES BY SPARK PLASMA SINTERING.**
- 12:30** A.R. Bobozhanov, A.S. Rogachev (*Merzhanov Institute of Structural Macrokinetics and Materials Science RAS, Chernogolovka, Russia*). **INFLUENCE OF PLANETARY MILL OPERATING MODE AND GAS ATMOSPHERE ON THE MORPHOLOGY OF METAL POWDERS.**
- 12:45** M.A. Eryomina, S.F. Lomayeva (*Udmurt Federal Research Center UB RAS, Izhevsk, Russia*). **COMPOSITES AND COATINGS BASED ON MECHANICALLY ALLOYED MULTICOMPONENT PHASES.**
- 13:00** **Lunch Break**

Section II

Hall No. 2

Chairman: Prof. Ismail A. Massalimov

- 11:45** P.A. Vityaz, S.A. Kovaliova, V.I. Zhornik, T.F. Grigoreva, N.Z. Lyakhov (*The Joint Institute of Mechanical Engineering, Minsk, Belarus; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANO-CHEMICAL SYNTHESIS OF COMPOSITE INSTRUMENTAL AND TRIBOLOGICAL MATERIALS.**
- 12:00** T.F. Grigoreva, V.I. Kvashnin, S.A. Kovaliova, S.A. Petrova, E.T. Devyatkina, S.V. Vosmerikov, V.I. Zhornik, P.A. Vityaz, N.Z. Lyakhov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia; Joint Institute of Mechanical Engineering, Minsk, Belarus; Institute of Metallurgy UB RAS, Ekaterinburg, Russia*). **METALLIC ANTIFRICTION MATERIALS OF Cu-Sn-Al SYSTEM.**
- 12:15 on-line** Y.V. Auchynnikau, T.F. Grigoreva, A.E. Auchynnikau (*Yanka Kupala State University of Grodno, Grodno, Belarus; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANICALLY ACTIVATED MODIFIERS**

FOR POLYMERIC MATERIALS.

- 12:30** A.A. Nepapushev, V.S. Suvorova, D.O. Moskovskikh, K.V. Kuskov (*Center of Functional Nano-Ceramics, National University of Science and Technology "MISiS", Moscow, Russia*). **MECHANOCHEMICAL SYNTHESIS OF THE HAFNIUM NITRIDE AND CARBONITRIDE POWDERS BY THE DIRECT NITRIDATION OF Hf AND (Hf+C) PARTICLES IN A PLANETARY MILL.**
- 12:45** F.K. Gorbunov, A.A. Fadina, B.P. Tolochko, A.S. Tsyganov, M.A. Mikhailenko (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State Technical University, Novosibirsk, Russia; Budker Institute of Nuclear Physics of SB RAS, Novosibirsk, Russia*). **STUDY OF THE POSSIBILITY OF OBTAINING COMPOSITES AI/MLCN USING MECHANICAL PROCESSING AND ELECTRON BEAMS.**
- 13:00** Lunch Break.

Section I

Big Conference hall

Chairman: Dr. Olga Bragina

- 14:30**
on-line N.V. Gorshkov, M.A. Vikulova, A.R. Tsyganov, D.I. Artyukhov, D.I. Zheleznov (*Yuri Gagarin State Technical University of Saratov, Saratov, Russia*). **THE ELECTROCHEMICAL CAPACITY OF HOLLANDITE $K_{1.6}(Ni_{0.8}Ti_{7.2})O_{16}$ INCREASING BY HIGH-ENERGY GRINDING WITH CARBON BLACK.**
- 14:45**
on-line T.P. Soloboeva, O.N. Dabizha (*Irkutsk State Transport University, Irkutsk, Russia; Institute of Silicate Chemistry, St. Petersburg, Russia*). **INVESTIGATION OF ELECTRICAL CONDUCTIVITY OF MECHANICALLY ACTIVATED CLINOPTILOLITE ROCKS.**
- 15:00**
on-line A.V. Zhmurova, A.P. Tancyrev, G.F. Prozorova, M.V. Zvereva (*A.E. Favorsky Irkutsk Institute of Chemistry, Irkutsk, Russia*). **MECHANOCHEMICAL SYNTHESIS AND DC ELECTRICAL CONDUCTIVITY OF PANI-BASED NANOCOMPOSITES WITH THERMOELECTRIC Te AND Bi₂Te₃ NANOPHASE.**
- 15:15** A.A. Shindrov, N.V. Kosova (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **INCREASED SINTERABILITY AND IONIC CONDUCTIVITY OF $Li_{1.3}Al_{0.3}Ti_{1.7}(PO_4)_3$ AND $Na_3Zr_2Si_2PO_{12}$ SOLID ELECTROLYTES OBTAINED BY HIGH-ENERGY BALL MILLING.**

15:30 D.O. Semykina, M.R. Sharafutdinov, N.V. Kosova (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Synchrotron Radiation Facility SKIF, Boreskov Institute of Catalysis, Kol'tsovo, Russia*). **FAST SOLID-STATE REACTION WITH THE FORMATION OF $\text{Na}_3\text{V}_2^{3+}(\text{PO}_4)_2\text{F}_3$ CATHODE MATERIAL ASSISTED BY THE MECHANICAL ACTIVATION.**

15:45 V.V. Zyryanov, S.A. Petrov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **FREE VOLUME IN MECHANO-CHEMICAL NANOPOWDERS OF COMPLEX OXIDES WITH PEROVSKITE, FLUORITE AND SPINEL STRUCTURES.**

16:00 Coffee Break. Poster Session II

Chairman: Prof. Nina Kosova

16:30 K. Georganakis (*School of Aerospace, Transport and on-line Manufacturing, Cranfield University, Bedford, UK*). **MECHANICAL PROPERTIES OF REFRACTORY HIGH ENTROPY ALLOYS.**

16:50 N.V. Filatova, N.F. Kosenko, A.S. Artyushin (*Ivanovo State on-line University of Chemistry and Technology, Ivanovo, Russia*) **MECHANOACTIVATED SYNTHESIS OF NICKEL-ALUMINATE SPINEL.**

17:05 L.G. Gerasimova, Yu.V. Kuzmich, N.A. Yakovleva, E.S. Shchukina (*Tananaev Institute of Chemistry - Subdivision of the Federal on-line Research Centre "Kola Science Centre of the Russian Academy of Sciences", Apatity, Russia*) **GRINDING THE COMPONENTS OF A MINERAL MIXTURE IN A HIGH-ENERGY PLANETARY BALL MILL.**

17:20 E.V. Bogatyreva, A.G. Ermilov (*National University of Science and on-line Technology "MISIS", Moscow, Russia*). **EFFECT OF SHORT-TERM PRELIMINARY MECHANICAL ACTIVATION OF EUDIALYTE CONCENTRATE ON EXTRACTION LEACHING OF REM.**

17:35 A.N. Gosteva, Yu.V. Kuz'mich, E.Yu. Filatov, Yu.P. Semushina (*I.V. on-line Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials «Kola Science Centre of the RAS», Apatity, Russia; Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*). **MECHANO-CHEMICAL TREATMENT OF A DOUBLE COMPLEX SALT $[\text{Cr}(\text{Ur})_6][\text{Fe}(\text{C}_2\text{O}_4)_3] \cdot 4\text{H}_2\text{O}$.**

Young Scientists Session

Hall No.2

Chairman: Igor O. Lomovskiy

14:30 on-line J. Qiao, X. Gao, L. Zhong, P. Chen (*Beijing Institute of Technology, Beijing, China*). **PREPARATION OF BLACK PHOSPHORUS NANOMATERIALS THROUGH SHOCK-INDUCED PHASE TRANSFORMATION.**

14:45 on-line E.A. Kruglyak, E.V. Kalinkina, A.G. Ivanova, A.M. Kalinkin (*Tananaev Institute of Chemistry, Federal Research Centre "Kola Science Centre of the Russian Academy of Sciences", Apatity, Russia*). **EFFECT OF MECHANICAL ACTIVATION ON BINDING PROPERTIES OF FLY ASH BLENDED WITH CALCIUM CARBONATE AND GYPSUM.**

15:00 on-line O.A. Kuzmenkov, A.M. Kalinkin (*Tananaev Institute of Chemistry - Subdivision of the Federal Research Centre «Kola Science Centre of the Russian Academy of Sciences», Apatity, Russia*). **SYNTHESIS OF NANOCRYSTALLINE $Y_2Zr_2O_7$ USING MECHANICAL ACTIVATION.**

15:15 on-line V.Yu. Vinogradov, A.M. Kalinkin (*Tananaev Institute of Chemistry - Subdivision of the Federal Research Centre «Kola Science Centre of the Russian Academy of Sciences», Apatity, Russia*). **SYNTHESIS OF Ce-CONTAINING SOLID SOLUTIONS BASED ON ZIRCON USING MECHANICAL ACTIVATION.**

15:30 on-line S.S. Adilova, A.B. Drovosekov, A.I. Malkin, N.A. Polyakov (*Frumkin Institute of Physical Chemistry and Electrochemistry RAS, Moscow, Russia*). **SYNTHESIS OF COMPOSITE NICKEL-NANODISPERSED BORON COATINGS.**

15:45 on-line A.M. Murashko, Ya.Yu. Filippov (*Lomonosov Moscow State University, Moscow, Russia*). **MECHANO-CHEMICAL ACTIVATION AS A FABRICATION METHOD OF CALCIUM PHOSPHATES POWDER MIXTURES FOR 3D PRINTING OF BIORESORBABLE CERAMICS.**

16:00 **Coffee Break. Poster Session II**

Chairman: Dr. Daniel V. Maslennikov

16:30 N.S. Shevchenko, A.A. Gusev, I.P. Raevski (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Research Institute of Physics, Southern Federal University, Rostov-on-Don, Russia*). **MECHANO-CHEMICAL SYNTHESIS OF**

Pb₂MgWO₆ PIEZOCERAMICS DOPED WITH Li UNDER VARIOUS FIRING TIME.

- 16:45** P.V. Rudenko, A.A. Popov, Yu.I. Bauman, I.V. Mishakov, E.M. Turlo, Yu.V. Shubin, A.A. Vedyagin (*Novosibirsk State Technical University, Novosibirsk, Russia; Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia; Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*). **MECHANOCHEMICAL SYNTHESIS OF COBALT-COPPER OXIDE CATALYSTS FOR THE DECOMPOSITION OF HYDROCARBONS.**
- 17:00** V.D. Elkin, E.N. Lysenko (*Tomsk Polytechnic University, Tomsk, Russia*). **STUDY OF THE STRUCTURE AND PHASE TRANSITIONS IN α -Fe₂O₃ HEMATITE DURING MECHANICAL PROCESSING IN A BALL MILL.**
- 17:15**
on-line A.P.M. de Araujo, C.S. Kiminami, V. Uhlenwinkel, P. Gargarella (*Federal University of São Carlos, São Carlos, Brazil; Leibniz Institute for Materials Engineering - IWT, Bremen, Germany*). **MICROSTRUCTURE AND MECHANICAL PROPERTIES OF AN ALUMINUM QUASICRYSTAL-FORMING ALLOY PRODUCED BY UNIAXIAL HOT COMPACTION AND ADDITIVE MANUFACTURING.**
- 17:30**
on-line W.C. Batalha, R.L. Batalha, K. Kosiba, C.S. Kiminami, P. Gargarella (*Grenoble Alpes University, France; Federal University of São Carlos, São Carlos, Brazil; Institute for Complex Materials of the Leibniz Institute for Solid State and Materials Research, Dresden, Germany*). **EFFECT OF SCANNING STRATEGY ON MICROSTRUCTURE AND MECHANICAL PROPERTIES OF A BIOCOMPATIBLE Ti-35Nb-7Zr-5Ta ALLOY PROCESSED BY LASER POWER BED FUSION.**
- 17:45**
on-line A.R.C. Nascimento, D.D.S. Silva, G.Y. Koga, G. Zepon, C.S. Kiminami, W.J. Botta, C. Bolfarini (*Federal University of São Carlos, Brazil*). **ALLOY DESIGN FOR MICROSTRUCTURAL-TAILORED BORON-MODIFIED FERRITIC STAINLESS STEEL TO ENSURE CORROSION AND WEAR RESISTANCE.**

Thursday, November 24, 2022

Plenary Session

Big Conference hall

Chairman: Prof. Nikolay Z. Lyakhov

- 9:30** *on-line* Weike Su (*Zhejiang University of Technology, Hangzhou, China*).
NEW ERA OF MECHANO-SYNTHESIS: ALTERNATIVE STRATEGY ACCESS TO DRUG-ACTIVE MOLECULES.
- 9:55** A.V. Dushkin, V.I. Evseenko, E.S. Meteleva, T.G. Tolstikova, M.V. Khvostov, N.E. Polyakov, S.S. Khalikov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; N.N. Vorozhtsov Novosibirsk Institute of Organic Chemistry SB RAS, Novosibirsk, Russia; Institute of Chemical Kinetics and Combustion SB RAS, Novosibirsk, Russia; A.N. Nesmeyanov Institute of Organoelement Compounds of RAS, Moscow, Russia*).
MECHANOCHEMICALLY PREPARED PHARMACEUTICAL SOLID DISPERSIONS FOR SUPRAMOLECULAR DRUG DELIVERY SYSTEMS. PHYSICO-CHEMICAL AND PHARMACOLOGICAL PROPERTIES.
- 10:15** T.A. Akopova, T.S. Demina (*Enikolopov Institute of Synthetic Polymeric Materials RAS, Moscow, Russia*).
MECHANOCHEMICAL TRANSFORMATIONS OF POLYSACCHARIDES: A SYSTEMATIC REVIEW.
- 10:35** O.I. Lomovskii, I.O. Lomovskiy (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*).
OXIDATION AND COMBUSTION OF COMPOSITE "WOOD-COAL" PARTICLES.
- 10:55** *on-line* Xiangli Long, Qingyan Liang, Tao Wang, Tong Yan, Hong Gao (*School of Chemistry and Materials, Nanning Normal University, Nanning, China; Guangxi Yuchai Machinery Co., Ltd., Yulin, China; School of Material Science and Engineering, Dalian Jiaotong University, Dalian, China*).
STUDY ON ANTIBACTERIAL PROPERTIES AND PREPARATION OF HIGH ENERGY ACTIVATED DIOSCOREA NIPPONICA MAKINO STARCH FILM.
- 11:15** T.S. Demina, T.N. Popyrina, T.A. Akopova (*Enikolopov Institute of Synthetic Polymeric Materials, Russian Academy of Sciences, Moscow, Russia; Sechenov First Moscow State Medical University (Sechenov University), Moscow, Russia*).
MECHANOCHEMICALLY MODIFIED POLYSACCHARIDES AS

STABILIZERS FOR EMULSIONS.

11:30 Coffee Break. Poster Session III

Section III

Big Conference hall

Chairman: Prof. Tatyana Akopova

- 11:45 I.O. Lomovskiy, O.I. Lomovskii (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANOCHEMISTRY OF PLANT MATERIALS: OVERVIEW OF THE KEY EFFECTS.**
- 12:00 A.L. Bychkov, A.G. Matveeva, V.A. Bukhtoyarov, E.M. Podgorbunskikh, O.I. Lomovskii (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Scientific Department, Moscow State University of Food Production, Moscow, Russia*). **WAYS OF MECHANICAL ENERGY RELAXATION IN CELLULOSE.**
- 12:15 D.A. Rychkov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*). **HIGHLY ANISOTROPIC MECHANICAL PROPERTIES OF MOLECULAR CRYSTALS – CURRENT MODELS, TECHNIQUES AND PROSPECTS.**
- 12:30 E.M. Podgorbunskikh, T.E. Kuskov, D.A. Rychkov, O.I. Lomovskii, A.L. Bychkov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*). **DETERMINATION OF THE CRYSTALLINITY INDEX OF CHITOSAN WITH DIFFERENT MOLECULAR WEIGHTS DURING MECHANICAL TREATMENT.**
- 12:45 M.D. Yanovskii, I.O. Lomovskiy (*Novosibirsk State University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **STUDY OF THE EFFECT OF ENCAPSULATION ON THE KINETICS OF OXIDATION OF GREEN TEA CATECHINS BY ATMOSPHERIC OXYGEN.**
- 13:00 I.M. Antonov, M.A. Mikhailenko, T.P. Shakhthshneider, S.A. Myz, S.A. Kuznetsova, I.V. Eltsov, A.A. Bryazgin (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia; Novosibirsk State University, Novosibirsk, Russia; Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia*). **RADIATION-THERMAL SYNTHESIS OF COPOLYMERS**

OF CHITOSAN WITH ACRYLAMIDE AND STUDY OF THEIR PROPERTIES.

13:15 Lunch Break.

Section III

Big Conference hall

Chairman: Prof. Tatyana Demina

- 14:00 on-line** S.S. Khalikov, E.A. Khakina, M.S. Khalikov, A.I. Varlamova (A.N. Nesmeyanov Institute of Organoelement Compounds of RAS, Moscow, Russia; Federal State Budget Scientific Institution “Federal Scientific Centre VIEV”, Moscow, Russia). **PREPARATIONS BASED ON FENBENDAZOLE OBTAINED BY METHODS OF MECHANOCHEMISTRY, THEIR STABILITY AND EFFICACY.**
- 14:15 on-line** N.A. Vasilev (G.A. Krestov Institute of Solution Chemistry RAS, Ivanovo, Russia). **OBTAINING PHARMACEUTICAL CO-AMORPHOUS SYSTEMS OF AN ANTHELMINTIC DRUG FLUBENDAZOLE USING MECHANOACTIONATION METHOD.**
- 14:30 on-line** T.N. Popyrina, Yu.M. Evtushenko, Yu.A. Grigor`ev, I.O. Kuchkina, T.S. Demina, T.A. Akopova (Enikolopov Institute of Synthetic Polymeric Materials, Russian Academy of Sciences, Moscow, Russia). **ALKYL DERIVATIVES OF CHITOSAN AS FILLERS IN POLYOLEFINE FILMS.**
- 14:45** M.V. Zelikman, A.V. Dushkin (Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia). **STUDY OF SELF-ASSOCIATES OF ARABINOGALACTAN, GLYCYRRHISIC ACID, AND POLYVINYLPIRROLIDONE MACROMOLECULES WITH SALICYLIC ACID IN AQUEOUS SOLUTIONS BY THE DYNAMIC LIGHT SCATTERING METHOD.**
- 15:00** D.E. Boycov, K.V. Drozd, A.N. Manin, G.L. Perlovich (G.A. Krestov Institute of Solution Chemistry RAS, Ivanovo, Russia). **DESIGN AND SYNTHESIS OF CARBAMAZEPINE TERNARY COCRYSTALS.**
- 15:15 on-line** A.S. Simutina, E.V. Uspenskaya, T.V. Pleteneva, A.V. Syroeshkin (Department of Pharmaceutical and Toxicological Chemistry, Peoples Friendship University of Russia (RUDN University), Moscow, Russia). **EFFECT OF MECHANOCHEMICAL ACTIVATION ON THE PHARMACEUTICAL SUBSTANCE LEVOFLOXACIN PROPERTIES.**

15:30 on-line P. Khaptakhanova, S. Uspenskii, A. Aleksandrov (*Enikolopov Institute of Synthetic Polymeric Materials RAS, Moscow, Russia*).
SYNTHESIS OF POLYLACTIC ACID-E-POLYLYSINE COPOLYMER BY PULSED MECHANO-CHEMICAL ACTIONS.

15:45 T.S. Skripkina, S.S. Shatskaya, A.G. Matveeva, I.O. Lomovskiy, O.I. Lomovskii (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*).
MECHANO-CHEMICAL ACTIVATION OF METAL-BEARING BROWN COAL: OXIDATION OF ORGANIC MATTER AND REDISTRIBUTION OF RARE EARTH ELEMENTS.

16:00 **Coffee Break. Poster Session III**

Chairman: Prof. Farit Kh. Urakaev

16:30 A.A. Politov, D.E. Tryakhov, A.A. Voroshnina, V.V. Aksenov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*).
MECHANO-ENZYMATIC ACCELERATION OF STARCH NANOPARTICLE PRODUCTION.

16:45 V.V. Aksenov, A.A. Politov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*).
MECHANO-ENZYMATIC TECHNOLOGY OF STARCH BIOCONVERSION.

17:00 O.N. Kovalenko, K.A. Khrustova (*Federal Research Center Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*).
HYDRODYNAMIC CAVITATION AS A METHOD FOR INTENSIFYING THE PROCESSES OF LIQUID-PHASE OXIDATION OF ORGANIC AND INORGANIC TOXIC SUBSTANCES.

17:15 O.N. Kovalenko, I.I. Simentsova, M.N. Timofeeva (*Federal Research Center Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*).
TRANSFORMATION OF GLYCEROL IN THE REACTION CYCLOKONDENSATION WITH ACETONE UNDER CONDITIONS OF HYDRODYNAMIC CAVITATION.

Final Session

Big Conference hall

Chairman: Prof. Nikolay Z. Lyakhov

17:30 - 18:30 General discussion.

End of the Conference.

POSTER SESSIONS

Tuesday, November 22, 2022

Poster Session I

1. A.G. Knyazeva, M.A. Anisimova (*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia*). **TWO-LEVEL MODEL OF COMPOSITE SYNTHESIS ON A SUBSTRATE FROM POWDER MIXTURE TiO₂-Al.**
2. E.M. Loos, A.G. Knyazeva (*Institute of Strength Physics and Materials Science SB RAS, Tomsk, Russia; Tomsk State University, Tomsk, Russia*). **INFLUENCE OF HEAT LOSS AND KINETIC FUNCTION TYPE ON COATING SYNTHESIS DYNAMICS UNDER MOBILE SOURCE CONTROL.**
3. S.G. Mamylov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **THE INFLUENCE OF MECHANICAL ACTIVATION ON THE COMPOSITION OF THE LEAD THIOSULFATE DEGRADATION PRODUCTS.**
4. A.A. Ondar, D.V. Dudina, T.F. Grigoreva, E.T. Devyatkina, S.V. Vosmerikov, V.I. Kvashnin, A.V. Ukhina, A.G. Anisimov, N.Z. Lyakhov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia; Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia*). **Cu-Al ALLOYS OBTAINED BY SPARK PLASMA SINTERING OF POWDER BLENDS AND MECHANICALLY ALLOYED MIXTURES.**
5. O.A. Shkoda (*Tomsk Scientific Center SB RAS, Tomsk, Russia*). **EFFECT OF SURFACTANTS ON MECHANICAL ACTIVATION AND SYNTHESIS IN THE TITANIUM - GASEOUS NITROGEN SYSTEM: MORPHOLOGY AND PHASE COMPOSITION.**
6. O.A. Shkoda, A.S. Zelepugin, N.V. Pakhnutova (*Tomsk Scientific Center SB RAS, Tomsk, Russia*). **EVOLUTION OF TITANIUM POWDER MORPHOLOGY DURING MECHANICAL ACTIVATION IN NITROGEN.**
7. V.Yu. Vinogradov, I.V. Bocharova, G.B. Kunshina, A.M. Kalinkin (*Tananaev Institute of Chemistry - Subdivision of the Federal Research Centre «Kola Science Centre of the Russian Academy of Sciences», Apatity, Russia*). **OPTIMIZATION OF LLZ SOLID ELECTROLYTE TRANSITION FROM TETRAGONAL MODIFICATION INTO CUBIC USING MECHANOACTION.**

8. Y.V. Auchynnika, A.P. Vozniakovskii, A.A. Vozniakovskii (*Yanka Kupala State University of Grodno, Grodno, Belarus; Ioffe Institute, St. Petersburg, Russia*). **COMPOSITE MATERIALS MODIFIED WITH CARBON PARTICLES PRODUCED BY SHS TECHNOLOGY.**
9. A.M. Vorobyev, O.A. Logutenko, T.A. Borisenko, A.I. Titkov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANOCHEMICALLY-ASSISTED SYNTHESIS OF Cu-Ag MICROFLAKES.**
10. A.D. Asmedianova, A.I. Titkov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*). **FABRICATION BY INKJET 3D-PRINTING AND INVESTIGATION OF THE MICROSTRUCTURE OF A PLANAR NiO/CGO COMPOSITE ANODE FOR A SOLID OXIDE FUEL CELL.**
11. T.Yu. Kiseleva, T.F. Grigoreva, E.E. Levin, E.T. Devyatkina, I.P. Ivanenko, P.Yu. Tyapkin, S.V. Vosmerikov, N.Z. Lyakhov (*Lomonosov Moscow State University, Moscow, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANICALLY STIMULATED REACTION VELOCITY REGULATION IN HIGHLY THERMITE MIXTURES APPLYING STEP-BY-STEP PRECURSOR FORMATION.**
12. V.I. Mali, M.A. Korchagin, A.G. Anisimov, M.A. Esikov, M.G. Denisov, O.I. Lomovsky, O.V. Zhakova, T.V. Kaisina (*Lavrentyev Institute of Hydrodynamics SB RAS, Novosibirsk, Russia; Novosibirsk State Technical University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; JSC Ural Scientific Research Institute of Composite Materials, Perm, Russia*). **RECYCLING OF WASTE FROM SPARK PLASMA SINTERING OF POWDER MATERIALS BASED ON ZIRCONIUM DIBORIDE.**
13. T.F. Grigoreva, E.T. Devyatkina, T.Yu. Kiseleva, S.V. Vosmerikov, T.A. Udalova, T.L. Talako, N.Z. Lyakhov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Lomonosov Moscow State University, Faculty of Physics, Moscow, Russia; Department of Physical and Technical Sciences of National Academy of Sciences of Belarus, Minsk, Belarus*). **TRANSITION METAL MONOALUMINIDES STRENGTHENED WITH ALUMINUM OXIDE.**
14. N.Yu. Cherkasova, Yu.O. Zobova, M.M. Permeneva (*Novosibirsk State Technical University, Novosibirsk, Russia*). **ALUMINA-ZIRCONIA CERAMICS CONTAINING CERIA AND CALCIA.**
15. A.A. Zhdanok, L.K. Berdnikova, Z.A. Korotaeva, B.P. Tolochko, D.A. Krasnov, V.V. Bulgakov (*Institute of Solid State Chemistry and*

Mechanochemistry SB RAS, Novosibirsk, Russia). **VACUUM-TIGHT WEAKLY CONDUCTIVE CERAMIC MATERIAL.**

16. F.K. Gorbunov, A.A. Fadina, B.P. Tolochko (*Institute of Solid State Chemistry and Mechanochemistry, Novosibirsk, Russia; Novosibirsk State Technical University, Novosibirsk, Russia*). **STUDY OF THE POSSIBILITY OF OBTAINING COMPOSITES AlN/Fe USING MECHANOCHEMICAL IMPACT.**
17. N.D. Nurtazina, V.R. Khusnutdinov, N.F. Uvarov (*Al Farabi Kazakh National University, Almaty, Kazakhstan; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **SYNTHESIS OF BORNITE FROM ELEMENTS USING MECHANICAL ACTIVATION.**
18. G.A. Buzanov, K.Yu. Zhizhin, N.T. Kuznetsov (*Kurnakov Institute of General and Inorganic Chemistry of Russian Academy of Sciences, Moscow, Russia*). **INTERACTIONS IN THE ZnCl₂ AND LiH MIXTURES UNDER BALL MILLING CONDITIONS.**

Wednesday, November 23, 2022

Poster Session II

1. I.A. Borodulina, S.V. Makarova, N.V. Bulina (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANOCHEMICAL SYNTHESIS OF CALCIUM HYDROXYAPATITE WITH SILVER CATIONS.**
2. S.V. Makarova, N.V. Bulina (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **THERMAL STABILITY OF IRON AND SILICON CO-SUBSTITUTED HYDROXYAPATITE OBTAINED BY MECHANOCHEMICAL METHOD.**
3. N.V. Eremina, N.V. Bulina, O.B. Vinokurova, M.V. Chaikina (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANOCHEMICAL SYNTHESIS Cu-SUBSTITUTED HYDROXYAPATITE USING DIFFERENT COPPER SOURCES.**
4. N.V. Bulina, L.A. Avakyan, V.S. Bystrov, S.V. Makarova (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Southern Federal University, Rostov-on-Don, Russia; Institute of Mathematical Problems of Biology, Keldysh Institute of Applied Mathematics, Pushchino, Russia*). **STRUCTURAL FEATURES OF OXYAPATITE.**

5. S.A. Kovaliova, S.V. Vosmerikov, V.I. Zhornik, T.F. Grigoreva, E.T. Devyatkina, P.A. Vityaz, N.Z. Lyakhov (*Joint Institute of Mechanical Engineering of NASB, Minsk, Belarus; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANOCHEMICAL PREPARATION OF BORON-CONTAINING COMPOUNDS WITH HAFNIUM.**
6. L.R. Salyeva, L.Yu. Kovalenko (*Chelyabinsk State University, Chelyabinsk, Russia*). **SYNTHESIS OF HETEROPOLY ACIDS FROM ANTIMONY, MOLYBDENUM, AND VANADIUM OXIDES.**
7. A.O. Novikova, A.E. Silova, F.A. Yaroshenko (*Chelyabinsk State University, Chelyabinsk, Russia*). **MECHANOCHEMICAL SYNTHESIS AND REFINEMENT OF THE STRUCTURAL PARAMETERS OF SILVER FORMS OF POLYANTIMONIC ACID.**
8. O.V. Cherendina, E.V. Shubnikova, O.A. Bragina (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*). **SYNTHESIS AND STUDY OF THE PHASE COMPOSITION OF PEROVSKITE-LIKE OXIDES $\text{La}_{0.5}\text{Sr}_{0.5}\text{Co}_x\text{Fe}_{1-x}\text{O}_{3-\delta}$.**
9. O.V. Cherendina, E.V. Shubnikova, E.S. Tropin, E.Y. Lapushkina, A.I. Titkov, A.P. Nemudry (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State University, Novosibirsk, Russia*). **OPTIMIZATION OF THE METHODOLOGY FOR MAKING SUSPENSIONS FOR THE CATHODIC AND ELECTROLYTE LAYER OF MT SOFCs.**
10. E.V. Shubnikova, O.A. Bragina, A.P. Nemudry (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANOCHEMICAL SYNTHESIS OF $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Co}_{0.8-x}\text{Fe}_{0.2}\text{Mo}_x\text{O}_{3-z}$ PEROVSKITES AND STUDY OF OXYGEN TRANSPORT.**
11. M.O. Khokhlova, O.A. Bragina, E.V. Shubnikova, A.P. Nemudry (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **EFFECT OF TUNGSTEN AND NIOBIUM DOPING ON LANTHANUM STRONTIUM FERRITE PEROVSKITE STRUCTURE.**
12. O.A. Bragina, A.P. Nemudry (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **STUDY OF THE FUNCTIONAL PROPERTIES OF $\text{SrFe}_{1-x}\text{Mo}_x\text{O}_{3-\delta}$ OXIDES PREPARED BY MECHANOCHEMICAL SYNTHESIS.**
13. E.Y. Lapushkina, E.S. Tropin, A.P. Nemudry (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **DEVELOPMENT AND PRODUCTION OF AN ANODE MEMBRANE FOR SOFC.**

14. E.S. Tropin, R.D. Guskov, M.P. Popov, A.P. Nemudry (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **INVESTIGATION OF OXYGEN EXCHANGE KINETICS BETWEEN COBALT-DOPED LANTHANUM NICKELATES AND THE GAS PHASE.**
15. O.A. Podgornova, K.V. Mishchenko, D.O. Semykina, A.A. Shindrov, N.V. Kosova (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANO-CHEMICAL SYNTHESIS OF Nb- AND Ti-CONTAINING DRX OXIDES AS CATHODE MATERIALS FOR LITHIUM-ION BATTERIES.**
16. D.Z. Tsydpylov, N.V. Kosova (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **SYNTHESIS AND ELECTROCHEMICAL PROPERTIES OF COMPOSITE ANODE MATERIALS BASED ON $TiNb_2O_7$.**
17. Y.V. Auchynnikau, N.M. Chekan, A.P. Akula (*Yanka Kupala State University of Grodno, Grodno, Belarus; Physical-Technical Institute of the National Academy of Sciences of Belarus, Minsk, Belarus*). **SUPERHARD VACUUM COATINGS.**
18. I.A. Malbakhova, A.S. Bagishev, A.M. Vorobyev, T.A. Borisenko, O.A. Logutenko, A.I. Titkov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **DEVELOPMENT OF NiO/YSZ SUPPORTING ANODES AND YSZ SUPPORTING ELECTROLYTES FOR SOFC BY HYBRID 3D-PRINTING.**
19. V.R. Khusnutdinov, A.S. Ulihin, N.F. Uvarov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MECHANO-CHEMICAL SYNTHESIS OF Li-ION CONDUCTING MATERIALS WITH GARNET STRUCTURE.**

Thursday, November 24, 2022

Poster Session III

1. A.V. Dushkin, V.I. Evseenko, E.S. Meteleva, T.G. Tolstikova, S.V. An'kov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; N.N. Vorozhtsov Novosibirsk Institute of Organic Chemistry SB RAS, Novosibirsk, Russia*). **DRY PLANT EXTRACTS AS A BASE FOR BIOLOGICALLY ACTIVE NUTRITIONS.**
2. V.I. Evseenko, E.S. Meteleva, A.V. Dushkin, Liping Du, Weike Su, N.E. Polyakov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; National Engineering Research Center for Process Development of Active Pharmaceutical Ingredients,*

Collaborative Innovation Center of Yangtze River Delta Region Green Pharmaceuticals, Zhejiang University of Technology, Hangzhou, China; Institute of Chemical Kinetics and Combustion SB RAS, Novosibirsk, Russia). **PREPARATION AND PHYSICO-CHEMICAL INVESTIGATION OF VALSARTAN SELF-MICELL SOLID DISPERSION WITH DISSODIUM GLICYRRIZIN.**

3. S.S. Khalikov, V.I. Evseenko, A.I. Varlamova, M.S. Khalikov, M.M. Ilyin, E.S. Meteleva, A.V. Dushkin, I.A. Arkhipov (*A.N. Nesmeyanov Institute of Organoelement Compounds of RAS, Moscow, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; All-Russian Scientific Research Institute for Fundamental and Applied Parasitology of Animals and Plant – a branch of the Federal State Budget Scientific Institution “Federal Scientific Centre VIEV”*). **MECHANOCHEMICAL APPROACH TO THE PREPARATION OF COMPLEX ANTIHELMINTHIC DRUGS.**
4. E.S. Meteleva, A.V. Dushkin, S.S. Khalikov (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; A.N. Nesmeyanov Institute of Organoelement Compounds of RAS, Moscow, Russia*). **MECHANOCHEMICAL SYNTHESIS OF SOLID COMPOSITIONS OF ALBENDAZOLE FOR IMPROVEMENT OF THEIR ANTIHELMINTHIC ACTION.**
5. V.A. Bukhtoyarov, A.L. Bychkov, A.G. Matveeva, O.I. Lomovskii (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **CO-PROCESSING OF COAL AND PINE IN ROLLER MILL: COMPOSITE FORMATION.**
6. T.E. Kuskov, E.M. Podgorbunskikh, A.L. Bychkov, V.A. Bukhtoyarov (*Novosibirsk State University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **ISOLATION AND CHARACTERIZATION OF CHITIN FROM HONEYBEE CORPSES AND SQUID PENS.**
7. D.S. Ilinykh, I.O. Lomovskiy (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **DEVELOPMENT THE TECHNOLOGY OF GLYCOSYLATION OF QUERCETIN IN *FILIPENDULA ULMARIA* MAXIM.**
8. L.I. Yudina, T.S. Skripkina, U.E. Nikiforova, I.O. Lomovskiy (*Novosibirsk State University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **PECULIARITIES OF SORPTION OF HEAVY METALS BY MECHANOCHEMICALLY MODIFIED NATURAL POLYPHENOLS.**
9. S.A. Myz, A.A. Politov, S.A. Kuznetsova, T.P. Shakhtshneider (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Institute of Chemistry and Chemical Technology FRC KSC SB*

RAS, Krasnoyarsk, Russia). **MECHANISM STUDY OF BETULIN - CARBOXYLIC ACIDS COCRYSTALS FORMATION BY MECHANOCHEMICAL METHOD.**

10. S.A. Myz, E.S. Skurydina, M.A. Mikhailenko, S.A. Kuznetsova, T.P. Shakhtshneider (*Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Institute of Chemistry and Chemical Technology SB RAS, Krasnoyarsk, Russia*). **EFFECT OF MECHANICAL ACTIVATION IN THE PRESENCE OF SOLVENTS AND CO-FORMERS ON THE STRUCTURE OF BETULIN DIACETATE.**
11. E.S. Skurydina, S.A. Kuznetsova, B.N. Kuznetsov (*Institute of Chemistry and Chemical Technology SB RAS Federal Research Center "Krasnoyarsk Scientific Center SB RAS", Krasnoyarsk, Russia*). **SYNTHESIS OF DIACYLES OF BETULIN FROM ACTIVATED BIRCH BARK.**
12. A.S. Dubok, D.A. Rychkov (*Novosibirsk State University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **BENDING AND BRITTLE ORGANIC CRYSTALS OF PYRAZINAMIDE: A COMPUTATIONAL APPROACH.**
13. I.A. Isupova, D.A. Rychkov (*Novosibirsk State University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia*). **MM AND DFT STUDY OF ELASTIC, BRITTLE AND PLASTIC 4-BROMPHENYL 4-BROMBENZOATE CRYSTALS.**
14. T.Yu. Kiseleva, T.F. Grigoreva, S.A. Kovaliova, M.V. Il'in, E.V. Yakuta, E.T. Devyatkina, I.A. Malyshkina, I.P. Ivanenko, S.V. Vosmerikov, N.Z. Lyakhov (*Lomonosov Moscow State University, Physics Faculty, Moscow, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Joint Institute of Mechanical Engineering, Minsk, Belarus*). **UHMWPE CRYSTALLINITY AND CONCENTRATION INFLUENCE ON THE PROPERTIES OF THE MECHANOSYNTHESIZED UHMWPE/OXIDE COMPOSITES.**
15. T.V.A. Nguyen, B.P. Tolochko, F.K. Gorbunov, A.A. Fadina (*Novosibirsk State University, Novosibirsk, Russia; Institute of Solid State Chemistry and Mechanochemistry SB RAS, Novosibirsk, Russia; Novosibirsk State Technical University, Novosibirsk, Russia*). **THE EFFECT OF THE PARTICLE SIZE OF MgFeGa-LAYERED TRIPLE HYDROXIDES ON THE FIRE-RESISTANT AND MECHANICAL PROPERTIES OF POLYURETHANE.**