



**Synchrotron Radiation Techniques
for Catalysts and Functional Materials**

ABSTRACTS

**November 11 - 14, 2024,
Tomsk**

Federal Research Center Boreskov Institute of Catalysis
Synchrotron Radiation Facility SKIF
Budker Institute of Nuclear Physics of SB RAS
Novosibirsk State University
National Research Tomsk Polytechnic University

**III International Conference
Synchrotron Radiation Techniques
for Catalysts and Functional Materials**

November 11-14, 2024
Tomsk, Russia

УДК 544.47 +621.384.6
ББК 24.54 + 22.383
S 98

S 98 «Synchrotron Radiation Techniques for Catalysts and Functional Materials»

III International Conference, Abstracts
(November 11-14, 2024, Novosibirsk, Russia)
[Electronic resource] / eds.: Prof. V.I. Bukhtiyarov, Prof. O.N. Martyanov,
Prof. Ya.V. Zubavichus, Dr. A.S. Gogolev
– Novosibirsk : Boreskov institute of Catalysis SB RAS, 2024.
– ISBN 978-5-906376-58-9
– URL: <https://srtcfm-2024.tilda.ws/>

В надзаг.:

Federal Research Center Boreskov Institute of Catalysis
Synchrotron Radiation Facility SKIF
Budker Institute of Nuclear Physics of SB RAS
Novosibirsk State University
National Research Tomsk Polytechnic University

Сборник включает тезисы пленарных, устных и стендовых докладов.

Основные темы научной программы конференции:

The collection includes abstracts of plenary lectures, oral and poster presentations.

The main topics of the Conference scientific program are:

- Theoretical and Applied Aspects of Experimental Techniques Utilizing Synchrotron Radiation
- Structure-Driven Design of Catalysts and Functional Materials Based on Synchrotron Diagnostics
- Synchrotron Radiation for Structural Biology
- Development of Instrumentation for Synchrotron Beamlines
- New Data Processing Algorithms, Artificial Intelligence and Machine Learning in Bulk Data Analysis

УДК 544.47 +621.384.6
ББК 24.54 + 22.383

ISBN 978-5-906376-58-9

© Boreskov Institute of Catalysis, 2024

CONFERENCE ORGANIZERS

- Federal Research Center Boreskov Institute of Catalysis
- Synchrotron Radiation Facility SKIF
- Budker Institute of Nuclear Physics of SB RAS
- Novosibirsk State University
- National Research Tomsk Polytechnic University



**BORESKOV INSTITUTE
OF CATALYSIS**



**Budker Institute of
Nuclear Physics of SB RAS**



UNDER THE AUSPICES OF

Ministry of Science and Higher Education of the Russian Federation



SPONSORS



Conference Chairs

Valerii BUKHTIYAROV Borekov Institute of Catalysis, Novosibirsk, Russia
Aleksey GOGOLEV Tomsk Polytechnic University, Tomsk, Russia

SCIENTIFIC COMMITTEE

Chair of the Scientific Committee

Oleg MARTYANOV Borekov Institute of Catalysis, Novosibirsk, Russia

Deputy Chair of the Scientific Committee

Yan ZUBAVICHUS SRF SKIF, Borekov Institute of Catalysis, Novosibirsk, Russia

Scientific Committee

Danil DYBTSEV Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia
Dmitry ZHARKOV Institute of Chemical Biology and Fundamental Medicine,
Novosibirsk, Russia
Vasily KAICHEV Borekov Institute of Catalysis, Novosibirsk, Russia
Sergey TSYBULYA Borekov Institute of Catalysis, Novosibirsk, Russia
Andrey LIDER Tomsk Polytechnic University, Tomsk, Russia
Dmitry IVANOV Lomonosov Moscow State University, Moscow, Russia
Sirius University of Science and Technology, Sirius Federal Territory

ORGANIZING COMMITTEE

Andrey BUKHTIYAROV SRF SKIF, Borekov Institute of Catalysis, Novosibirsk, Russia
Andrey SARAEV SRF SKIF, Borekov Institute of Catalysis, Novosibirsk, Russia
Maxim SYRTANOV Tomsk Polytechnic University, Tomsk, Russia
Kristina SHEFER SRF SKIF, Borekov Institute of Catalysis, Novosibirsk, Russia
Marina SHABANOVA Borekov Institute of Catalysis, Novosibirsk, Russia
Marina SUVOROVA Borekov Institute of Catalysis, Novosibirsk, Russia
Svetlana LOGUNOVA Borekov Institute of Catalysis, Novosibirsk, Russia
Alexandra MALYGINA Borekov Institute of Catalysis, Novosibirsk, Russia
Tatiana PAK Tomsk Polytechnic University, Tomsk, Russia
Azaliia AKHKIAMOVA Lomonosov Moscow State University, Moscow, Russia FRC
PCP MC RAS, Chernogolovka
Alina MARYASEVSKAYA Lomonosov Moscow State University, Moscow, Russia
FRC PCP MC RAS, Chernogolovka

Content

Plenary Lectures	5
PL-1 Gogolev A. Key activities of the Tomsk Polytechnic University related to synchrotron and neutron instrumentation development and research	7
PL-2 Dybtsev D.N. Synchrotron X-ray radiation for porous metal-organic frameworks. Gas adsorption and separation applications	8
PL-3 <u>Tereshchenko O.E.</u> , Golyashov V.A., Nikolenko A.D., Bukhtiyarov A.V., Zubavichus Ya.V. SR in the study of electronic and spin structure of functional materials: capabilities of the ARPES station at the SKIF synchrotron	9
PL-4 <u>Ivanov D.A.</u> , Umarov A.Z., Maryasevskaya A.V., Konyakhina A.Ju., Subcheva E.N., Melnikov A.P., Anokhin D.V. Advanced In-Situ methods based on microfocus synchrotron X-Ray scattering for the study of functional materials	11
PL-5 Saraev A.A. X-ray absorption spectroscopy: state-of-the-art and perspective	12
PL-6 Ramazanov K.N. In situ study of high-temperature ceramic coatings	13
PL-7 Zharkov D.O. Structural biology of DNA repair	14
PL-8 Pakharukova V.P. Application of X-ray atomic pair distribution function analysis to structural studies of catalytic materials	15
Oral Presentations	17
OP-01 <u>Turishchev S.Yu.</u> , Chuvenkova O.A., Ryabtsev S.V., Kurganskii S.I., Manyakin M.D., Parinova E.V., Boykov N.I., Pisliaruk A.K., Fateev K.A., Chumakov R.G., Lebedev A.M., Makarova A., Smirnov D., Ovsyannikov R., Sivakov V. Synchrotron studies of tin oxide nanolayers atomic and electronic structure	19

OP-02

Sizykh N.A., Dmitrieva A.V., Zenkevich A.V.

Application of hard X-ray photoelectron spectroscopy in near total reflection regime for the study of nanoelectronic devices 20

OP-03

Titova S.G., Sterkhov E.V., Pryanichnikov S.V., Likhacheva A.Yu., Sidorov V.A.

Synchrotron study of metal-insulator phase transition in ordered manganites $R\text{BaMn}_2\text{O}_6$ ($R = \text{Sm}, \text{Nd}, \text{Pr}$) under high pressure 22

OP-04

Knyazev Yu.V., Kirillov V.L., Semenov S.V., Dubrovskiy A.A., Balaev D.A., Martyanov O.N.

Nuclear forward scattering in ultrafine $\epsilon\text{-Fe}_2\text{O}_3$ nanoparticles 24

OP-05

Ishteev A., Konstantinova K., Morozov A., Saranin D.

Development and Characterization of a Monocrystalline MAPbBr_3 Perovskite X-ray detector for ionizing radiation sensing 25

OP-06

Eremeev S.V.

Complementarity in synchrotron and DFT research methods for studies of the electronic structure and spin texture of materials 26

OP-07

Syrtanov M.S., Sidelev D.V., Kudiiarov V.N., Kashkarov E.B.

Study of phase transformations in structural and functional materials using the VEPP-3 synchrotron radiation source 27

OP-08

Filimonov A.V., Vakhrushev S.B., Vakulenko A.F.

XPCS study of relaxors aging 28

OP-09

Koroteev Y.M., Ortega J.E., Vasseur G., Schiller F., Piquero-Zulaica I., Weber A.P., Rault J., Valbuena M.A., Schirone S., Matencio S., Sviatkin L.A., Terenteva D.V., Chulkov E.V., Mugarza A., Lobo-Checa J.

Helicoidal states on atomically precise vicinal surfaces: ARPES and DFT study 29

OP-10

Kudiiarov V.N., Kurdyumov N.E., Elman R.R., Syrtanov M.S.

Application of synchrotron radiation for *In Situ* XRD investigation of hydrogen desorption from magnesium hydride and nanosized catalysts composites 31

OP-11

Khalemenchuk V.P., Ten K.A., Rubtsov I.A., Pruel E.R., Kashkarov A.O., Asylkaev A.M., Tumanik A.S., Shekhtman L.I., Glushak A.A., Tolochko B.P., Smirnov E.B., Stolbikov M.Y.

Registration of the dust flow under shock loading of a plate with a given geometry of the free surface 32

OP-12

Kharchenko N.A., Pakharukova V.P., Gorlova A.M., Stonkus O.A., Chesalov Y.A., Rogozhnikov V.N., Potemkin D.I.

Effect of Zr content on the structure and properties of $Ce_{1-x}Zr_xO_2$ mixed oxides and related Ru/ $Ce_{1-x}Zr_xO_2$ catalysts for CO₂ methanation..... 34

OP-13

Trigub A.L., Senchikhin I.N., Zhavoronok E.S.

Structure of Ag⁺ complexes with amino groups in an oligooxypropylenediamine solution by EXAFS and XANES..... 36

OP-14

Kuznetsova T.V., Tereshchenko O.E., Golyashov V.A., Kuznetsov M.V., Bukhtiyarov A.V., Zubavichus Ya.V.

Concept and key experimental methods of the URAL beamline in the soft X-ray range for materials science research in resonance and operando mode 37

OP-15

Shefer K.I.

PDF analysis of alumina-based catalytic materials 38

OP-16

Khametova E.F., Bakieva O.R., Nemtsova O.M., Kriventsov V.V.

Analysis of EXAFS spectra containing superposition of L3-edge signals of Au and Pt 39

OP-17

Larichev Yu.V.

SAXS study of the Pt precursor transformation during the preparation of the supported catalysts 40

OP-18

Chernikova A.G., Konashuk A.S., Lev L.L., Khakimov R.R., Chumakov R.G., Lebedev A.M., Kozodaev M.G., Zarubin S.S., Filatova E.O., Markeev A.M., Zenkevich A.V.

Structural versus functional properties of Y and La doped $Hf_{0.5}Zr_{0.5}O_2$ thin films: current status of understanding..... 41

OP-19

Petrov I.Yu., Pakharukova V.P., Tsybulya S.V.

Method for quantitative XRD phase analysis of mixtures of low-temperature alumina forms..... 43

OP-20

Gaydamaka A.A., Boldyreva E.V., Bogdanov N.E., Zakharov B.A., Rashchenko S.V., Smirnova E.S., Ivanova A.G.

A comparative study of the effect of high-pressure and low temperature on the crystal structure of the salts of purine nucleobases 45

OP-21

Sharaya S.S., Zakharov B.A., Bogdanov N.E.

The structures of L- and D-phenylglycine: topological analysis for understanding the mechanical properties..... 47

OP-22

Akhkiamova A.F., Abukaev A.F., Anokhin D.V., Piryazev A.A., Ivanov D.A.

Real-time combination of synchrotron X-Ray scattering and ultrafast chip calorimetry to study thermal properties of polymers 49

OP-23

Kuznetsov S.V., Sedov V.S., Martyanov A.K., Tiazhelov I.A., Tarala L.V.,

Makarov S.N., Zavyalov P.S., Kuper K.E.

Composite for synchrotron radiation visualization based on a diamond with embedded YAG:Ce particles 50

OP-24

Tarasov A.

Synchrotron X-ray sources for the study of hybrid functional materials 52

OP-25

Anokhin D.V.

Development of combined methods for analyzing the structure and properties of “smart” functional materials 53

OP-26

Morozova S.M.

Synchrotron radiation methods for determining the fractal dimension of clusters in clusters in nanocolloidal gels and nanostructuring parameters in polymer films 54

Poster Presentations 55

PP-01

Akimov A.I.S., Petrenko T.V., Akimov A.S.

XPS study of molybdenum isopolycompounds 57

PP-02

Aleksandrova N.S.

Experimental investigations and density functional theory simulation of phase stability in Ti(Fe, Al)₃ alloy with L1₂ crystal structure 58

PP-03

Asylkaev A.M., Ten K.A., Prueel E.R., Kashkarov A.O., Rubtsov I.A., Khalemenchuk V.P.,

Studennikov A.A.

The technique of synchrotron studies of explosive processes 60

PP-04

Aydakov E.E., Saraev A.A., Yashnik S.A., Kaichev V.V.

In situ/ operando study of MoO_x/TiO₂ catalysts for selective oxidation of alcohols 61

PP-05

Beliaev D.V., Radzivonchik D.I., Golyashov V.A., Kokh K.A., Tereshchenko O.E.,

Chumakov R.G., Kuznetsova T.V.

Synthesis and study of Bi₂Se₃ derivatives using photoelectron spectroscopy 62

PP-06

Bogdanov N., Rashchenko S., Gavryushkin P., Thomas V.

Incommensurately modulated structure of synthetic nyerereite under high-pressure 63

PP-07

Bukhtiyarov A.V., Nikolenko A.D., Prosvirin I.P., Kvon R.I., Panafidin M.A., Chetyrin I.A., Tereshchenko O.E., Golyashov V.A., Zubavichus Y.V., Bukhtiyarov V.I.

Current status of “Electronic Structure” Beamline 1-6 at the SRF SKIF 65

PP-08

Darin F.A., Sorokoletov D.S., Rakshun Ya.V.

Development of the confocal X-ray microscope module for studying the elemental composition with high spatial resolution 66

PP-09

Fateev K.A., Chuvenkova O.A., Ryabtsev S.V., Turishchev S.Yu.

Synchrotron XANES and XPS studies of the SnO₂ wire-like crystals 67

PP-10

Gaikovich M.V.

Synchrotron methods for studying thermoplastic polyurethanes: evolution of methods and development prospects 68

PP-11

Gaydamaka A.A., Sukhov B.G., Bogdanov N.E., Boldyreva E.V.

Novel complexes of Nd(III) and Gd(III) with 2-ethyl-4-oxo-4H-pyran-3-olate ligands: preparation and study of the crystal structures 69

PP-12

Golomolzin A.V., Khainovskii M.A., Boldyreva E.V.

Study of shear instability of piroxicam-succinic acid cocrystal: quantum chemical approach 70

PP-13

Gorkusha A.S., Cherepanova S.V., Tsybulya S.V.

The effect of planar defects on the diffraction patterns of tetragonal Ruddlesden-Popper structures of the A_{n+1}B_nO_{3n+1} series 72

PP-14

Grebennikov V.I., Ponomareva E.A., Chumakov R.G., Gerasimov E.G., Mushnikov N.V., Kuznetsova T.V.

X-ray absorption and resonance photoemission studies of rare earth magnetic alloys 74

PP-15

Gutorova S.V., Trigub A.L., Novichkov D.A., Matveev P.I.

Disclosing the mechanism of uranium(VI) solvent extraction by polydentate ligands in a polar solvent: the role of ion pairs 76

PP-16

Ivanov Yu.F., Akhmadeev Yu.Kh., Koval N.N., Prokopenko N.A., Krysina O.V., Petrikova E.A., Shugurov V.V., Shmakov A.N.

Investigations of coating growth from gas discharge plasma in real time by X-ray phase analysis using synchrotron radiation 77

PP-17

Ivlev A.A., Kolybalov D.S., Arkhipov S.G., Dyan O.T.

Preparation and diffraction studies of solid phases of tecovirimat 79

PP-18Kalinina P.P., Zakharov B.A.**Effect of temperature, hydrostatic pressure and irradiation on photosensitive complexes of $[\text{Co}(\text{NH}_3)_5\text{NO}_2]\text{XY}$ 81****PP-19**Kantur I.E., Yarmoshenko Yu.M., Dolgikh V.E., Tereshchenko O.E., Kuznetsova T.V.**The system for detecting X-ray spectra using a detector based on microchannel plates 83****PP-20**Kantur I.E., Yarmoshenko Y.M., Bebenin N.G., Grebennikov V.I., Milyaev M.A., Kuznetsova T.V.**Electronic structure of $\text{La}_{0.5}\text{Pr}_{0.2}\text{Ca}_{0.3}\text{MnO}_3$ single crystal manganite using high resolution synchrotron radiation resonant photoemission spectroscopy 84****PP-21**Kersnovskiy E.S., Barkov K.A., Polshin I.V., Terekhov V.A., Ivkov S.A., Chukavin A.I., Buylov N.S., Sitnikov A.V.**Investigation of the effect of copper content on the atomic and electronic structure of Cu-Si ion beam films by USXES and XPS methods..... 85****PP-22**Kharitonov N.A.**Comparison of elastic properties of polymorphic glycine modifications by DFT calculations 87****OP-23**Kolybalov D.S., Kadtsyn E.D., Bogdanov N.E., Zubavichus Ya.V.**Computation, synthesis, and crystal structure investigation of new tecovirimat analogies..... 88****PP-24**Konovalova A.Yu., Zubavichus Y.V.**Development of the first-priority beamlines and associated engineering infrastructure of the synchrotron radiation facility 'SKIF': experience of cooperation network formation and efficient coordination 90****PP-25**Korneev S.P.**Synchrotron In situ investigations of multilayer Cr/Ta and Cr/Mo coatings on Zr-1Nb alloy, subjected to LOCA conditions 91****PP-26**Plakhova T.V., Kuzenkova A.S., Romanchuk A.Yu., Kalmykov S.N.**Synthesis and structural elucidation of Pu, Ce, and Th double phosphates using synchrotron radiation..... 93****PP-27**Larionov V.I., Klinov D.V., Ivanov D.A.**Development of extrusion parameters of fasteners based on polylactides 95****PP-28**Lavrukhina S.A., Zaguzina A.A., Fedorenko A.D., Sysoev V.I., Bulusheva L.G., Okotrub A.V.**The influence of N- and Ni-doping on the sensory properties of MoS_2 97**

PP-29

Losev E.A., Zheltikova D.Ya., Kolybalov D.S., Arkhipov S.G., Mineev A.M.,
Ogienko A.G., Boldyreva E.V., Boldyrev V.V.

**A new approach to polymer-assisted mechanochemistry: 3D printed polymer inserts
for control of mechanochemical processes** 98

PP-30

Maksimovich M.S., Vashurkin D.V., Piryazev A.A.

**Synthesis and investigation of properties of linear block copolymers based on styrene
and n- and tert-butyl acrylate** 99

PP-31

Maryasevskaya A.V., Anokhin D.V., Ivanov D.A.

**Thermoresponsive supramolecular nanocontainers from ionic complexes of amphiphilic
wedge-shaped mesogens and polybases**..... 101

PP-32

Maslova S.A., Ponomareva E.A., Yarmoshenko Yu.M., Korkh Yu.V., Angervaks A.E., Ryskin A.I.,
Sarychev M.N., Ivanov V.Yu., Kuznetsova T.V.

**Investigation of irradiated and additively coloured CaF₂ single crystals by XPS and Raman
spectroscopy** 102

PP-33

Merentsov A.I., Shkvarin A.S., Chumakov R.G., Lebedev A.M., Gregoratti L.,
Amati M., Titov A.N.

**Effect of Cu intercalation on the morphology and electronic structure of the Zr_xTi_{1-x}Se₂
mixed crystals** 103

PP-34

Mikaeva A.S., Golyashov V.A., Kaveev A.K., Tereshchenko O.E.

**Band structure features of the (111) Pb_{1-x}Sn_xTe:In/BaF₂ films surface studied by
angle-resolved photoemission spectroscopy** 105

PP-35

Novichkov D., Poliakova T., Nevolin Iu., Smirnova A.D. Matveev P., Kalmykov S.

Experimental and theoretical XANES study of UO_x and Np oxide systems at the L₃ edge 107

PP-36

Parkhomenko E.R., Anokhin D.V., Gorbunova M.A., Ivanov D.A.

**Investigation of crystal structure and morphology of thermoplastic polyurethanes with
shape memory effect under thermomechanical treatment** 108

PP-37

Platunov M.S.

**High-coercivity ferrimagnet Co₂FeO₂BO₃: XMCD insights into charge-ordering and cation
distribution** 110

PP-38

Plieva D.S., Nikitin E.A., Anokhin D.V., Maryasevskaya A.V.

**Synthesis and research of wedge-shaped molecules based on gallic acid for the production
of self-organizing complexes** 111

PP-39

Ponomareva E.A., Chumakov R.G., Maslova S.A., Grebennikov V.I.,
Gerasimov E.G., Mushnikov N.V., Kuznetsova T.V.

Determination of 3d-4f electronic states contribution to the valence band of GdCo₂Ni_{0.1} rare earth intermetallic compound by resonant photoemission 112

PP-40

Postnikov M.S., Shkvarina E.G., Shkvarin A.S., Onishchenko A.O., Titov A.N.

Thermal stability of CuCrSe₂..... 114

PP-41

Radzivonchik D.I., Grebennikov V.I., Belyaev D.V., Yakushev M.V., Tereshchenko O.E.,
Kokh K.A., Chumakov R.G., Kuznetsova T.V.

XPS-based restoration of partial densities of valence states of chalcogenides using Bayesian inference..... 115

PP-42

Rubtsov I.A., Bukhtiyarov A.V., Zubavichus Y.V., Kazantsev S.R., Kashkarov A.O., Kuper K.E.,
Pruuel E.R., Studennikov A.A., Ten K.A., Tolochko B.P., Halemenchuk V.P², Shekhtman L.I.

Beamline for studying fast-flowing processes at the synchrotron radiation facility SKIF 117

PP-43

Semushkina G.I., Zaguzina A.A., Fedorenko A.D., Kriventsov V.V., Okotrub A.V., Bulusheva L.G.

X-ray absorption and X-ray emission spectroscopy study of a molybdenum disulfide and Ni-doped molybdenum disulfide 118

PP-44

Serebrennikova P.S., Kudryavtsev A.L., Panchenko A.V., Gromilov S.A.

Development a techniques complex of single crystals unit cell parameters precision determination at synchrotron radiation stations..... 119

PP-45

Shchugoreva I.A., Artyushenko P.V., Moryachkov R.V., Zabluda V.N., Tomilin F.N., Kichkailo A.S.

Application of molecular modelling and SAXS data to reveal structural features of DNA-aptamers 121

PP-46

Sheptun I.G., Grapenko O.Yu., Ter-Oganessian N.V.

Temperature camera TK-1200 intended for high energy synchrotron X-ray diffraction 122

PP-47

Sarychev D.A., Sivokon D.N., Khristich S.V., Sheptun I.G.

Mössbauer absorption spectroscopy using synchrotron radiation 124

PP-48

Shkvarin A.S., Merentsov A.I., Postnikov M.S., Dyachkov E.G., Dudin P., Avila J., Gregoratti L.,
Amati M., Titov A.N.

Experimental investigation of band structure of nano-inclusions in Fe_xNi_yTiSe₂..... 126

PP-49

Siaglova E.D., Piryazev A.A., Ivanov D.A.

Exploring crystallization and melting of Polyether Ether Ketone (PEEK) with Fast Scanning Calorimetry (FSC) 128

PP-50Sineva L.O., Vashurkin D.V., Ivanov D.A.**Brush polymers based on acrylates and the study of their self-assembly processes 130****PP-51**Solovova N.Yu., Golyashov V.A., Usachov D.Yu., Ereemeev S.V., Tereshenko O.E.**Electronic and crystalline structure of Bi/InAs(111)A-(2x2) interface 131****PP-52**Titova S.S., Osminkina L.A., Kakuliia I.S., Parinova E.V., Chuvenkova O.A., Chumakov R.G., Lebedev A.M., Kudryavtsev A.A., Beltiukov A.N., Chukavin A.I., Turishchev S.Yu.**Mouse fibroblast cells – porous silicon nanoparticles hybrid structures by synchrotron studies . 133****PP-53**Chuvenkova O.A., Boykov N.I., Titova S.S., Tonkikh A.A., Parinova E.V., Kurganskii S.I., Manyakin M.D., Chumakov R.G., Lebedev A.M., Makarova A., Smirnov D., Ovsyannikov R., Turishchev S.Yu.**Epitaxial Sn-Si ultrathin nanolayers structure by synchrotron study 134****PP-54**Tomilin F.N., Shchugoreva I.A., Rogova, A.V., Zablude V.N., Kichkailo A.S.**Determining the atomic structure of biological molecules using SAXS 136****PP-55**Tsareva A.D., Shtol V.S., Arsentiev K.A., Klinov D.V., Musienko P.E., Ivanov D.A.**Investigation of the impact of surface morphology of electrospun polymer matrices on cell adhesion and proliferation 137****PP-56**Umarov A.Z., Ivanov D.A.**New class of biomimetic materials: Structural studies with synchrotron radiation 139****PP-57**Vakhrushev A.A., Matveev A.V., Nartova A.V.**Segmentation of photoelectron spectra using convolutional neural network 140****PP-58**Valeev R.G., Petkov A.A., Kriventsov V.V.**Local atomic structure of FeO coatings obtained by thermal annealing magnetron deposited iron films 142****PP-59**Varygin A.D., Popov A.A., Sharafutdinov M.R., Shubin Yu.V.**In situ investigation of the formation of porous Co-Pd alloys in the process of reductive thermolysis 144****PP-60**Vedkal A.V., Kadtsyn E.D.**Do crystallization media influence to macromolecule-ligand complex structure? Molecular dynamics study 146**

PP-61

Vinokurov Z.S., Zubavichus Y.V., Shmakov A.N., Mishchenko D.D., Selyutin A.G.,
 Syrtanov M.S., Gogolev A.S., Denisov V.V., Teresov A.D., Panchenko Y.N., Kovalsky S.S.,
 Beskonchin K.V., Kiselev V.N., Evdokimov A.A., Andreev M.V.

**Development Status of the 1-2 Beamline “Structural Diagnostics”
 at the SRF SKIF 147**

PP-62

Zaloga A.N., Yakimov I.S., Dubinin P.S., Bezrukova O.E., Khlystov D.V.,
 Noskov M.V., Dushkin M.A.

**Program for automated X-ray phase analysis of SR diffraction patterns
 in *in situ* experiments 148**

PP-63

Zheltikova D.Ya., Losev E.A., Drebuschak V.A., Boldyreva E.V.

Study of the effect of aliphatic monocarboxylic acids on carbamazepine polymorphism 150

PP-64

Kurenkova A.Yu., Kharina S.N., Saraev A.A., Kozlova E.A.

A novel approach for synthesis of Pt/g-C₃N₄ photocatalysts for solar energy conversion 151

PP-65

Ramazanov K.N., Nikolaev A.A., Nazarov A.Yu., Maslov A.A.

Study of the structure of ceramic coating of the Y-Al-O system..... 153

List of participants 154

Content..... 160

Scientific edition

«Synchrotron Radiation Techniques for Catalysts and Functional Materials»

III International Conference

November 11-14, 2024, Tomsk, Russia

Abstracts

Editors: Prof. V.I. Bukhtiyarov, Prof. O.N. Martyanov,
Prof. Ya.V. Zubavichus, Dr. A.S. Gogolev

Научное издание

**Использование синхротронного излучения для исследования катализаторов и функциональных материалов
III международная конференция**

11-14 ноября 2024 года, Томск, Россия

Сборник тезисов докладов

Под общей редакцией: академика В.И. Бухтиярова, д.х.н. О.Н. Мартянова,
д.ф.-м.н. Я.В. Зубавичуса, к.ф.-м.н. А.С. Гоголева

Составители: М.С. Суворова, С.С. Логунова
Компьютерная обработка: Ю.В. Климова, Т.О. Барсуков
Обложка: Е.К. Казакова

Издатель:

Федеральное государственное бюджетное учреждение науки
«Федеральный исследовательский центр «Институт катализа им. Г.К. Борескова
Сибирского отделения Российской академии наук»

630090, Новосибирск, пр-т Академика Лаврентьева, 5, ИК СО РАН

<http://catalysis.ru>

E-mail: bic@catalysis.ru Тел.: +7 383 330 67 71

Электронная версия:

Издательский отдел Института катализа СО РАН

E-mail: pub@catalysis.ru Тел.: +7 383 326 97 15

Объём: 13 МБ. Подписано к размещению: 08.11.2024.

Адрес размещения:

<https://catalysis.ru/resources/institute/Publishing/Report/2024/Synchrotron-2024.pdf>

Системные требования: i486; Adobe® Reader® (чтение формата PDF)

ISBN 978-5-906376-58-9