

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

**Scientific Program**

Novosibirsk-2024

## ORGANISED BY

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**



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Ministry of Science and Higher Education of the Russian Federation



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Tomsk, Russia

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**SCIENTIFIC PROGRAM**

The Scientific Program of the Conference includes plenary lectures (40 min), oral (20 min) and poster presentations.

**The main topics are:**

- Topic I**      Theoretical and applied aspects of experimental techniques utilizing synchrotron radiation
- Topic II**     Structure-driven design of catalysts and functional materials based on synchrotron diagnostics
- Topic III**    Synchrotron radiation for structural biology
- Topic IV**     Development of instrumentation for synchrotron beamlines
- Topic V**      New data processing algorithms, artificial intelligence and machine learning in bulk data analysis

## **SOCIAL PROGRAM**

### **Group Photo**

November 11, Monday, 18.00 – 18.10

International Culture Center of Tomsk Polytechnic University, 13V  
Usova Street

### **Evening coffee (Welcome reception)**

November 11, Monday, 19.00 – 22.00

Concert hall "Etude", Krasnoarmeyskaya Street, 120, 2 floor

### **Banquet (paid additionally)**

November 14, Thursday, 19.00-22.00

Restaurant «Blizhe» 1A Gertsena Street

## **TRANSFER**

### **NOVOSIBIRSK → TOMSK (11.11.2024)**

**Departure at 07.00 a.m.** Boreskov Institute of Catalysis (Lavrentiev Ave. 5, Novosibirsk) → International Culture Center of Tomsk Polytechnic University (13V Usova Street, Tomsk)

### **TOMSK → NOVOSIBIRSK (15.11.2024)**

**Departure at 10.00 a.m.** International Culture Center of Tomsk Polytechnic University (13V Usova Street, Tomsk) → Boreskov Institute of Catalysis (Lavrentiev Ave. 5, Novosibirsk).

# Scientific Program

**November 11, Monday**

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk

Plenary session

**15.00-16.20     Registration**

**16.20-16.40     OPENING CEREMONY**

***Chair: Professor Yan Zubavichus***

*SRF SKIF, Boreskov Institute of Catalysis, Novosibirsk*

## **PLENARY LECTURES**

**16.40-17.20     PL-1**

Lecturer: Dr. Aleksey Gogolev

**Key activities of the Tomsk Polytechnic University  
related to synchrotron and neutron instrumentation  
development and research**

*Tomsk Polytechnic University, Tomsk, Russia*

**17.20-18.00     PL-2**

Lecturer: Professor Danil Dybtsev

**Synchrotron X-ray radiation for porous metal-organic  
frameworks. Gas adsorption and separation  
applications**

*Nikolaev Institute of Inorganic Chemistry, Novosibirsk,  
Russia*

**18.00-18.10     Group Photo**

***Evening coffee (Welcome reception)***

**19.00-22.00**

Concert hall "Etude",  
Krasnoarmeyskaya Street, 120, 2 floor

## November 12, Tuesday

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk

Plenary session

**Chair: Dr. Andrey Bukhtiyarov**

*SRF SKIF, Boreskov Institute of Catalysis, Novosibirsk*

### PLENARY LECTURES

#### 09.00-09.40 PL-3

Lecturer: Professor Oleg Tereshchenko

Tereshchenko O.E., 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**

*Synchrotron Radiation Facility SKIF, Boreskov Institute  
of Catalysis SB RAS, Koltsovo, Russian Federation*

#### 09.40-10.20 PL-4

Lecturer: Professor Dmitry Ivanov

Ivanov D.A.<sup>1,2,3</sup>, Umarov A.Z.<sup>1</sup>, Maryasevskaya A.V.<sup>1,2</sup>,  
Konyakhina A.Ju.<sup>3</sup>, Subcheva E.N.<sup>3</sup>, Melnikov A.P.<sup>1</sup>,  
Anokhin D.V.<sup>1,2,3</sup>

**Advanced In-Situ methods based on microfocus  
synchrotron X-Ray scattering for the study of  
functional materials**

*1 – Lomonosov Moscow State University, Moscow,  
Russia*

*2 – Federal Research Center of Problems of Chemical  
Physics and Medicinal Chemistry RAS, Chernogolovka,  
Moscow region, Russia*

*3 – Sirius University of Science and Technology, Sochi,  
Krasnodar Krai, Russia*

#### 10.20-11.00 Coffee

## **November 12, Tuesday**

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk  
Morning session

**Chair: Professor Oleg Tereshchenko,**  
*SRF SKIF, Koltsovo*

### **ORAL PRESENTATIONS**

#### **11.00-11.20 OP-01**

Reporter: Professor Sergey Turishchev  
Turishchev S.Yu.<sup>1</sup>, Chuvenkova O.A.<sup>1</sup>, Ryabtsev S.V.<sup>1</sup>,  
Kurganskii S.I.<sup>1</sup>, Manyakin M.D.<sup>1</sup>, Parinova E.V.<sup>1</sup>,  
Boykov N.I.<sup>1</sup>, Pisliaruk A.K.<sup>1</sup>, Fateev K.A.<sup>1</sup>,  
Chumakov R.G.<sup>2</sup>, Lebedev A.M.<sup>2</sup>, Makarova A.<sup>3</sup>,  
Smirnov D.<sup>3</sup>, Ovsyannikov R.<sup>3</sup>, Sivakov V.<sup>4</sup>

#### **Synchrotron studies of tin oxide nanolayers atomic and electronic structure**

*1 – Voronezh State University, Voronezh, Russia*

*2 – National Research Centre “Kurchatov institute”,  
Moscow, Russia*

*3 – Helmholtz Zentrum Berlin, Berlin, Germany*

*4 – Leibniz Institute of Photonic Technologies, Jena,  
Germany*

#### **11.20-11.40 OP-02**

Reporter: Nikita Sizykh  
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**

*Moscow Institute of Physics and Technology,  
Dolgoprudny, Russia*



**11.40-12.00 OP-03**

Reporter: Professor Svetlana Titova

Titova S.G.<sup>1</sup>, Sterkhov E.V.<sup>1</sup>, Pryanichnikov S.V.<sup>1</sup>,  
Likhacheva A.Yu.<sup>2</sup>, Sidorov V.A.<sup>3</sup>

**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**

*1 – Institute of Metallurgy UB RAS, Ekaterinburg, Russia*

*2 – G.I. Budker Institute of Nuclear Physics SB RAS,  
Novosibirsk, Russia*

*3 – L.F. Vereshchagin Institute of High Pressure Physics  
RAS, Troitsk, Moscow, Russia*

**12.00-12.20 OP-04**

Reporter: Dr. Yuriy Knyazev

Knyazev Yu.V.<sup>1</sup>, Kirillov V.L.<sup>2</sup>, Semenov S.V.<sup>1</sup>,  
Dubrovskiy A.A.<sup>1</sup>, Balaev D.A.<sup>1</sup>, Martyanov O.N.<sup>2</sup>

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

*1 – Kirensky Institute of Physics, Krasnoyarsk, Russia*

*2 – Boreskov Institute of Catalysis, Novosibirsk, Russia*

**12.20-12.40 OP-05**

Reporter: Arthur Ishteev

Ishteev A.<sup>1,2</sup>, Konstantinova K.<sup>1,2</sup>, Morozov A.<sup>1,2</sup>,  
Goldenberg B.<sup>3</sup>, Saranin D.<sup>2</sup>

**Development and Characterization of a  
Monocrystalline  $\text{MAPbBr}_3$  Perovskite X-ray Detector  
for Ionizing Radiation Sensing**

*1 – National University of Science and Technology  
MISiS, Moscow, Russia*

*2 – Research and Practical Clinical Center for  
Diagnostics and Telemedicine Technologies of the  
Moscow Health Care Department, Moscow, Russia*

*3 – Budker Institute of Nuclear Physics SB RAS*

**12.40-13.00 OP-06**

Reporter: Professor Sergey Eremeev

Eremeev S.V.

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

*Institute of Strength Physics and Materials Science,  
Tomsk, Russia*

**13.00-14.30 Lunch break**

## November 12, Tuesday

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk  
Afternoon session

**Chair: Professor Sergey Turishchev**  
*Voronezh State University, Voronezh*

### ORAL PRESENTATIONS

#### 14.30-14.50 OP-07

Reporter: Dr. Maxim Syrtanov

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**

*National Research Tomsk Polytechnic University, Tomsk,  
Russia*

#### 14.50-15.10 OP-08 OP-08

Reporter: Professor Alexey Filimonov

Filimonov A.V.<sup>1,2</sup>, Vakhrushev S.B.<sup>1,2</sup>, Vakulenko A.F.<sup>1,2</sup>

**XPCS study of relaxors aging**

*1 – Peter the Great St. Petersburg Polytechnic  
University, St. Petersburg, Russia*

*2 – Ioffe Institute, St. Petersburg, Russia*

**15.10-15.30 OP-09**

Reporter: Professor Yury Koroteev

Koroteev Y.M.<sup>1</sup>, Ortega J.E.<sup>2,3,4</sup>, Vasseur G.<sup>4</sup>, Schiller F.<sup>3</sup>,  
Piquero-Zulaica I.<sup>3</sup>, Weber A.P.<sup>4</sup>, Rault J.<sup>5</sup>,  
Valbuena M.A.<sup>6,7</sup>, Schirone S.<sup>6</sup>, Matencio S.<sup>6</sup>,  
Sviatkin L.A.<sup>8</sup>, Terenteva D.V.<sup>8</sup>, Chulkov E.V.<sup>3,4,9</sup>,  
Mugarza A.<sup>6,10</sup>, Lobo-Checa J.<sup>11</sup>

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

*1 – Institute of Strength Physics and Materials Science of  
SB RAS, Tomsk Russia*

*2 – Universidad del País Vasco, San Sebastian, Spain*

*3 – Centro de Física de Materiales CSIC/UPV-EHU, San  
Sebastian, Spain*

*4 – Donostia International Physics Centre, San  
Sebastian, Spain*

*5 – Synchrotron SOLEIL, L'Orme des Merisiers Saint-  
Aubin, France*

*6 – Catalan Institute of Nanoscience and  
Nanotechnology (ICN2), CSIC and Barcelona Institute of  
Science and Technology, Barcelona, Spain*

*7 – Instituto Madrileño de Estudios Avanzados, IMDEA  
Nanociencia, Madrid, Spain*

*8 – Tomsk Polytechnic University, Tomsk, Russia*

*9 – Saint Petersburg State University, Saint Petersburg,  
Russia*

*10 – Institució Catalana de Recerca i Estudis Avançats,  
Barcelona, Spain*

*11 – Universidad de Zaragoza, Zaragoza, Spain*

**15.30-15.50 OP-10**

Reporter: Dr. Viktor Kudiiarov

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**

*National Research Tomsk Polytechnic University, Tomsk, Russia*

**15.50-16.10 OP-11**

Reporter: Vyacheslav Khalemenchuk

Khalemenchuk V.P.<sup>1</sup>, Ten K.A.<sup>1</sup>, Rubtsov I.A.<sup>1,2</sup>,  
Pruel E.R.<sup>1</sup>, Kashkarov A.O.<sup>1</sup>, Asylkaev A.M.<sup>1</sup>,  
Tumanik A.S.<sup>1</sup>, Shekhtman L.I.<sup>3</sup>, Glushak A.A.<sup>3</sup>,  
Tolochko B.P.<sup>4</sup>, Smirnov E.B.<sup>5</sup>, Stolbikov M.Y.<sup>5</sup>

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

*1 – Lavrentyev Institute of Hydrodynamics, Novosibirsk, Russia*

*2 – Synchrotron Radiation Facility - Siberian Circular Photon Source "SKIF" Boreskov Institute of Catalysis, Novosibirsk, Russia*

*3 – Budker Institute of Nuclear Physics of the Russian Academy of Sciences, Novosibirsk, Russia*

*4 – Institute of Solid State Chemistry and Mechanochemistry, Novosibirsk, Russia*

*5 – Federal State Unitary Enterprise «Russian Federal Nuclear Center — Zababakhin All—Russia Research Institute of technical Physics», Snezhinsk, Russia*

**16.10-16.30 OP-12**

Reporter: Nadezhda Kharchenko

Kharchenko N.A.<sup>1,2</sup>, Pakharukova V.P.<sup>1,2</sup>, Gorlova A.M.<sup>1,2</sup>,  
Stonkus O.A.<sup>1</sup>, Chesalov Y.A.<sup>1</sup>, Rogozhnikov V.N.<sup>1</sup>,  
Potemkin D.I.<sup>1,2</sup>

**Effect of Zr content on the structure and properties of  
Ce<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub> mixed oxides and related Ru/Ce<sub>1-x</sub>Zr<sub>x</sub>O<sub>2</sub>  
catalysts for CO<sub>2</sub> methanation**

*1 – Boreskov Institute of Catalysis, Novosibirsk, Russia*

*2 – Novosibirsk State University, Novosibirsk, Russia*

**16.30-17.00 Coffee**

**17.00-18.00 POSTER SESSION**

## November 13, Wednesday

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk

Plenary session

**Chair: Professor Dmitry Zharkov**

*Institute of Chemical Biology and Fundamental Medicine, Novosibirsk,  
Russia*

### PLENARY LECTURES

**09.00-09.40 PL-5**

Lecturer: Dr. Andrey Saraev<sup>1,2</sup>

**X-ray absorption spectroscopy: state-of-the-art and  
perspective**

*1 – Boreskov Institute of Catalysis, Novosibirsk,  
Russia*

*2 – Synchrotron radiation facility SKIF, Boreskov  
Institute of Catalysis, Kol'tsovo, Russia*

**09.40-10.20 PL-6**

**online**

Lecturer: Dr. Kamil Ramazanov

**In situ study of high-temperature ceramic coatings**

*Ufa University of Science and Technology, Ufa, Russia*

**10.20-11.00 Coffee**

## November 13, Wednesday

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk

Morning session

**Chair: Dr. Andrey Saraev**

*Boreskov Institute of Catalysis, Novosibirsk*

### ORAL PRESENTATIONS

#### 11.00-11.20 OP-13

Reporter: Dr. Alexander Trigub

Trigub A.L.<sup>1</sup>, Senchikhin I.N.<sup>2</sup>, Zhavoronok E.S.<sup>3</sup>

**Structure of Ag<sup>+</sup> complexes with amino groups in an oligooxypropylenediamine solution by EXAFS and XANES**

*1 – National Research Centre "Kurchatov Institute",  
Moscow, Russia*

*2 - A.N. Frumkin Institute of Physical Chemistry and  
Electrochemistry RAS, Moscow, Russia*

*3 – M.V. Lomonosov Institute of Fine Chemical  
Technologies, MIREA—Russian Technological University,  
Moscow, Russia*

#### 11.20-11.40 OP-14

Reporter: Dr. Tatiana Kuznetsova

Kuznetsova T.V.<sup>1,2</sup>, Tereshchenko O.E.<sup>1,3,4</sup>,

Golyashov V.A.<sup>3,4</sup>, Kuznetsov M.V.<sup>5</sup>, Bukhtiyarov A.V.<sup>4</sup>,  
Zubavichus Ya.V.<sup>4</sup>

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

*1 – IMP UB RAS, Yekaterinburg, Russia*

*2 – UrFU, Yekaterinburg, Russia*

*3 – ISP SB RAS, Novosibirsk, Russia*

*4 – SRF SKIF, Novosibirsk region, Russia*

*5 – ISSC UB RAS, Yekaterinburg, Russia*



- 11.40-12.00 OP-15**  
Reporter: Dr. Kristina Shefer  
Shefer K.I.<sup>1,2</sup>  
**PDF analysis of alumina-based catalytic materials**  
*1 – Boreskov Institute of Catalysis, Novosibirsk, Russia*  
*2 – SRF-SKIF, Novosibirsk, Russia*
- 12.00-12.20 OP-16**  
Reporter: Elina Khametova  
Khametova E.F.<sup>1</sup>, Bakieva O.R.<sup>1</sup>, Nemtsova O.M.<sup>1</sup>,  
Kriventsov V.V.<sup>2</sup>  
**Analysis of EXAFS spectra containing superposition of L3-edge signals of Au and Pt**  
*1 – Udmurt Federal Research Center Ural Branch of the RAS, Izhevsk, Russia*  
*2 – SRF SKIF Boreskov Institute of Catalysis, Kol'tsovo, Russia*
- 12.20-12.40 OP-17**  
Reporter: Dr. Yurii Larichev  
Larichev Yu.V.  
**SAXS study of the Pt precursor transformation during the preparation of the supported catalysts**  
*Boreskov Institute of Catalysis, Novosibirsk, Russia*

**12.40-13.00 OP-18**

Reporter: Dr. Leonid Lev

Chernikova A.G.<sup>1</sup>, Konashuk A.S.<sup>2</sup>, Lev L.L.<sup>1,3</sup>,  
Khakimov R.R.<sup>1</sup>, Chumakov R.G.<sup>4</sup>, Lebedev A.M.<sup>4</sup>,  
Kozodaev M.G.<sup>1</sup>, Zarubin S.S.<sup>1</sup>, Filatova E.O.<sup>2</sup>,  
Markeev A.M.<sup>1</sup>, Zenkevich A.V.<sup>1</sup>

**Structural versus functional properties of Y and La  
doped  $\text{Hf}_{0.5}\text{Zr}_{0.5}\text{O}_2$  thin films: current status of  
understanding**

*1 – Moscow Institute of Physics and Technology,  
Dolgoprudny, Moscow oblast, Russia*

*2 – Institute of Physics, St-Petersburg State University,  
Peterhof, St. Petersburg, Russia*

*3 – Lebedev Physical Institute, Russian Academy of  
Sciences, Moscow, Russia*

*4 – Kurchatov Complex for Synchrotron and Neutron  
Investigations, National Research Center “Kurchatov  
Institute”, Moscow, Russia*

**13.00-14.20 Lunch break**

**13 ноября, среда**

Место: Международный культурный центр ТПУ,  
Ул. Усова, д. 13В, Томск

**МОЛОДЕЖНАЯ ШКОЛА-КОНФЕРЕНЦИЯ «АРХИТЕКТУРА И  
СВОЙСТВА ФУНКЦИОНАЛЬНЫХ ПОЛИМЕРОВ 2024»**

**14.20-14.30 Церемония открытия**

**Председатель: д.ф.-м.н. Ян Витаутасович Зубавичус**  
*ЦКП «СКИФ», Институт катализа СО РАН, Новосибирск*

**14.30-15.00 Пл-1**

Лектор: д.х.н. Иванов Дмитрий Анатольевич  
**Создание новой платформы синтетических  
полимеров обладающих биомиметическими  
свойствами**

*МГУ имени М. В. Ломоносова, Москва  
Университет «Сириус», федеральная территория  
«Сириус»*

**15.00-15.30 Пл-2**

Лектор: д.ф.-м.н. Марченко Екатерина Сергеевна  
**Применение синхротронного и нейтронного  
излучения для разработки и исследования  
функциональных наноструктурных материалов для  
медицины**

*Сибирский физико-технический институт  
им. акад. В. Д. Кузнецова, Томск*

**15.30-16.00 Пл-3**

**онлайн**

Lecturer: Professor Apostolos Avgeropoulos  
**Self-Assembly of Block Copolymers Based on  
Architecture**  
*University of Ioannina, Greece*

**16.00-16.30    Кофе-перерыв**

**Председатель: к.ф.-м.н. Денис Валентинович Анохин**  
*ФИЦ проблем химической физики и медицинской химии РАН,  
Черноголовка*

**16.30-17.00    Пл-4**

Лектор: член-корр. РАН Пономаренко Сергей  
Анатольевич

**Органические полупроводники как искусственные  
пигменты сетчатки глаза**

*Институт синтетических полимерных  
материалов им. Н.С. Ениколопова РАН, Москва*

**17.00-17.30    Пл-5**

Лектор: к.х.н. Морозова Софья Михайловна

**Методы синхротронного излучения для  
определения фрактальной размерности кластеров  
в нанокolloидных гелях и параметров  
наноструктурирования в полимерных пленках**

*Московский физико-технический институт,  
Москва*

**17.30-18.00    Пл-6**

**онлайн**

Лектор: д.ф.-м.н., профессор РАН Потемкин Игорь  
Иванович

**Компьютерное моделирование полимерных  
микрогелей в водно-масляных растворах**

*Московский государственный университет имени  
М.В. Ломоносова, Москва*

## November 14, Thursday

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk

Plenary session

**Chair: Professor Vasily Kaichev**

*Boreskov Institute of Catalysis, Novosibirsk*

### PLENARY LECTURES

#### 09.00-09.40 PL-7

Lecturer: Professor Dmitry Zharkov  
Zharkov D.O.<sup>1,2</sup>

##### **Structural biology of DNA repair**

*1 – Novosibirsk State University, Novosibirsk, Russia*

*2 – SB RAS Institute of Chemical Biology and  
Fundamental Medicine, Novosibirsk, Russia*

#### 09.40-10.20 PL-8

Lecturer: Dr. Vera Pakharukova  
Pakharukova V.P.

##### **Application of X-ray atomic pair distribution function analysis to structural studies of catalytic materials**

*Boreskov Institute of Catalysis SB RAS, Novosibirsk,  
Russia*

#### 10.20-11.00 Coffee

## November 14, Thursday

Place: International Culture Center of Tomsk Polytechnic University,  
13V Usova Street, Tomsk

Morning session

**Chair: Dr. Alexander Trigub**

*National Research Centre "Kurchatov Institute", Moscow*

### ORAL PRESENTATIONS

#### 11.00-11.20 OP-19

Reporter: Ivan Petrov

Petrov I.Yu.<sup>1,2</sup>, Pakharukova V.P.<sup>1,2</sup>, Tsybulya S.V.<sup>1,2</sup>

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

*1 – Novosibirsk State University, Novosibirsk, Russia*

*2 – Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

#### 11.20-11.40 OP-20

Reporter: Anna Gaydamaka

Gaydamaka A.A.<sup>1,2</sup>, Boldyreva E.V.<sup>1,3</sup>, Bogdanov N.E.<sup>1,2,3</sup>,  
Zakharov B.A.<sup>1,3,4</sup>, Rashchenko S.V.<sup>1,2</sup>, Smirnova E.S.<sup>5</sup>,  
Ivanova A.G.<sup>5</sup>

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

*1 – Novosibirsk State University, Novosibirsk, Russian Federation*

*2 – Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia*

*3 – Boreskov Institute of Catalysis, SB RAS, Novosibirsk, Russian Federation*

*4 – Synchrotron Radiation Facility SKIF, Boreskov Institute of Catalysis SB RAS, Kol'tsovo, Russian Federation*

*5 – Shubnikov Institute of Crystallography of Kurchatov complex of crystallography and photonics of National Research Centre "Kurchatov Institute", Moscow, Russian Federation*

**11.40-12.00 OP-21**

Reporter: Svetlana Sharaya

Sharaya S.S.<sup>1,2</sup>, Zakharov B.A.<sup>1,2</sup>, Bogdanov N.E.<sup>2,3</sup>

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

*1 – Synchrotron Radiation Facility SKIF, Boreskov*

*Institute of Catalysis SB RAS, Kol'tsovo, Russia*

*2 – Novosibirsk State University, Novosibirsk, Russia*

*3 – Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia*

**12.00-12.20 OP-22**

Reporter: Azaliia Akhkiamova

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**

*Lomonosov Moscow State University, Moscow, Russia*

**12.20-12.40 OP-23**

Reporter: Dr. Sergey Kuznetsov

Kuznetsov S.V.<sup>1</sup>, Sedov V.S.<sup>1</sup>, Martyanov A.K.<sup>1</sup>,

Tiazhelov I.A.<sup>1</sup>, Tarala L.V.<sup>2</sup>, Makarov S.N.<sup>3</sup>,

Zavyalov P.S.<sup>3</sup>, Kuper K.E.<sup>4</sup>

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

*1 – Prokhorov General Physics Institute of the Russian  
Academy of Sciences, Moscow, Russia*

*2 – North Caucasus Federal University, Stavropol, Russia*

*3 – Technological Design Institute of Scientific  
Instrument Engineering SB RAS, Novosibirsk, Russia*

*4 – Synchrotron radiation facility SKIF, Boreskov Institute  
of Catalysis SB RAS, Kol'tsovo, Russia*

**12.40-13.00 OP-24**

Reporter: Dr. Alexey Tarasov

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

*Laboratory of New Materials for Solar Energy, Faculty of  
Materials Sciences, Lomonosov Moscow State  
University, Moscow, Russia*

**13.00-14.30 Lunch break**



**14 ноября, четверг**

Место: Международный культурный центр ТПУ,  
Ул. Усова, д. 13В, Томск

**МОЛОДЕЖНАЯ ШКОЛА-КОНФЕРЕНЦИЯ «АРХИТЕКТУРА И  
СВОЙСТВА ФУНКЦИОНАЛЬНЫХ ПОЛИМЕРОВ 2024»**

***Председатель: д.х.н. Дмитрий Анатольевич Иванов***

*МГУ имени М. В. Ломоносова, Москва*

*Университет «Сириус», федеральная территория «Сириус»*

**14.30-15.00 Пл-7**

Лектор: к.ф.-м.н. Анохин Денис Валентинович  
**Разработка комбинированных методов анализа  
структуры и свойств "умных" функциональных  
материалов**

*ФИЦ проблем химической физики и медицинской  
химии РАН, Черноголовка*

*МГУ имени М. В. Ломоносова, Москва*

**15.00-15.30 Пл-8**

Лектор: к.ф.-м.н. Клинов Дмитрий Владимирович  
**Способы визуализации молекул биополимеров**  
*Федеральный научно-клинический центр физико-  
химической медицины Федерального Медико-  
биологического Агентства, Одинцово*

**15.30-16.00 Пл-9**

Лектор: к.х.н. Тарасов Алексей Борисович  
**Гибридные материалы на основе галогенидов  
свинца, меди и марганца для применения в  
тонкопленочных солнечных элементах и  
детекторах рентгеновского излучения**  
*Московский государственный университет имени  
М.В. Ломоносова, Москва*

**16.00-16.30 Пл-10**

Лектор: д.ф.-м.н. Зубавичус Ян Витаутасович

**Источник синхротронного излучения ЦКП "СКИФ":  
статус реализации проекта и новые возможности  
для проведения междисциплинарных  
исследований**

*ЦКП «СКИФ», Институт катализа СО РАН,  
Новосибирск*

**16.30-17.00**

**CONFERENCE CLOSING**

**Закрытие конференции**

## POSTER PRESENTATIONS

### PP-01

Akimov A.I.<sup>1</sup>, Petrenko T.V.<sup>1</sup>, Akimov A.S.<sup>1,2</sup>

#### **XPS study of molybdenum isopolycompounds**

1 – Institute of Petroleum Chemistry SB RAS, Tomsk, Russia

2 – National Research Tomsk State University, Tomsk, Russia

### PP-02

Aleksandrova N.S.

#### **Experimental investigations and density functional theory simulation of phase stability in Ti(Fe, Al)<sub>3</sub> alloy with L1<sub>2</sub> crystal structure**

Novosibirsk State Technical University, Novosibirsk, Russia

### 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**

Lavrentyev Institute of Hydrodynamics, Novosibirsk, Russia

### PP-04

Aydaikov E.E.<sup>1,2</sup>, Saraev A.A.<sup>1</sup>, Yashnik S.A.<sup>1</sup>, Kaichev V.V.<sup>1</sup>

#### **In situ/ operando study of MoOx/TiO<sub>2</sub> catalysts for selective oxidation of alcohols**

1 – Boreskov Institute of Catalysis, Novosibirsk, Russia

2 – Novosibirsk State University, Novosibirsk, Russia

### PP-05

Beliaev D.V.<sup>1</sup>, Radzivonchik D.I.<sup>1</sup>, Golyashov V.A.<sup>2,3</sup>, Kokh K.A.<sup>4</sup>, Tereshchenko O.E.<sup>1,3</sup>, Chumakov R.G.<sup>5</sup>, Kuznetsova T.V.<sup>1,6</sup>

#### **Synthesis and study of Bi<sub>2</sub>Se<sub>3</sub> derivatives using photoelectron spectroscopy**

1 – IMP UB RAS, Yekaterinburg, Russia

2 – ISP SB RAS, Novosibirsk, Russia

3 – SRF SKIF, Novosibirsk region, Russia

4 – IGM SB RAS, Novosibirsk, Russia

5 – NRS "Kurchatov Institute", Moscow, Russia

6 – UrFU, Yekaterinburg, Russia

**PP-06**

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

**Incommensurately modulated structure of synthetic nyerereite under high-pressure**

*Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia*

**PP-07**

Bukhtiyarov A.V.<sup>1</sup>, Nikolenko A.D.<sup>1</sup>, Prosvirin I.P.<sup>2</sup>, Kvon R.I.<sup>2</sup>, Panafidin M.A.<sup>1</sup>, Chetyrin I.A.<sup>1</sup>, Tereshchenko O.E.<sup>1</sup>, Golyashov V.A.<sup>1</sup>, Zubavichus Y.V.<sup>1</sup>, Bukhtiyarov V.I.<sup>2</sup>

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

*1 – SRF «SKIF» Boreskov Institute of Catalysis, Kol'tsovo, Russia*

*2 – Boreskov Institute of Catalysis, Novosibirsk, Russia*

**PP-08**

Darin F.A.<sup>1,2</sup>, Sorokoletov D.S.<sup>2</sup>, Rakshun Ya.V.<sup>2</sup>

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

*1 – SRF SKIF, Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

*2 – Budker Institute of nuclear physics SB RAS, Novosibirsk, Russia*

**PP-09**

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

**Synchrotron XANES and XPS studies of the SnO<sub>2</sub> wire-like crystals**

*Voronezh State University, Voronezh, Russia*

**PP-10**

Gaikovich M.V.<sup>1,2</sup>

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

*1 – NUST «MISIS», Moscow, Russia*

*2 – Lomonosov Moscow State University, Moscow, Russia*

#### PP-11

Gaydamaka A.A.<sup>1,2,3</sup>, Sukhov B.G.<sup>1</sup>, Bogdanov N.E.<sup>2,3,4</sup>, Boldyreva E.V.<sup>2,4</sup>

#### **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**

*1 – Voevodsky Institute of Chemical Kinetics and Combustion SB RAS, Novosibirsk, Russia*

*2 – Novosibirsk State University, Novosibirsk, Russia*

*3 – Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia*

*4 – Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

#### PP-12

Golomolzin A.V.<sup>1</sup>, Khainovskii M.A.<sup>2</sup>, Boldyreva E.V.<sup>1,2</sup>

#### **Study of shear instability of piroxicam-succinic acid cocystal: quantum chemical approach**

*1 – Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia*

*2 – Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

#### PP-13

Gorkusha A.S.<sup>1,2</sup>, Cherepanova S.V.<sup>2</sup>, Tsybulya S.V.<sup>1,2</sup>

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

*1 – Novosibirsk State University, Novosibirsk, Russia*

*2 – Boreskov Institute of Catalysis, Novosibirsk, Russia*

#### PP-14

Grebennikov V.I.<sup>1</sup>, Ponomareva E.A.<sup>1</sup>, Chumakov R.G.<sup>2</sup>, Gerasimov E.G.<sup>1,3</sup>, Mushnikov N.V.<sup>1,3</sup>, Kuznetsova T.V.<sup>1,3</sup>

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

*1 – M.N. Miheev Institute of Metal Physics, Ekaterinburg, Russia*

*2 – National Research Centre "Kurchatov Institute", Moscow, Russia*

*3 – Ural Federal University named after the first President of Russia B.N. Yeltsin, Ekaterinburg, Russia*

**PP-15**

Gutorova S.V.<sup>1</sup>, Trigub A.L.<sup>1,2</sup>, Novichkov D.A.<sup>1</sup>, Matveev P.I.<sup>1</sup>

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

*1 – Lomonosov Moscow State University, Chemistry Department, Moscow, Russia*

*2 – National Research Centre “Kurchatov institute”, Moscow, Russia*

**PP-16**

Ivanov Yu.F.<sup>1</sup>, Akhmadeev Yu.Kh.<sup>1</sup>, Koval N.N.<sup>1</sup>, Prokopenko N.A.<sup>1</sup>, Krysina O.V.<sup>1</sup>, Petrikova E.A.<sup>1</sup>, Shugurov V.V.<sup>1</sup>, Shmakov A.N.<sup>1,2</sup>

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

*1 – Institute of High Current Electronics SB RAS, Tomsk, Russia*

*2 – Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia*

**PP-17**

Ivlev A.A.<sup>1,2</sup>, Kolybalov D.S.<sup>1,2</sup>, Arkhipov S.G.<sup>1,2</sup>, Dyan O.T.<sup>3</sup>

**Preparation and diffraction studies of solid phases of tecovirimat**

*1 – SRF «SKIF», Koltsovo, Russia*

*2 – Novosibirsk State University, Novosibirsk, Russia*

*3 – Vorozhtsov Institute of Organic Chemistry, Novosibirsk, Russia*

**PP-18**

Kalinina P.P., Zakharov B.A.

**Effect of temperature, hydrostatic pressure and irradiation on photosensitive complexes of  $[\text{Co}(\text{NH}_3)_5\text{NO}_2]\text{XY}$**

*Novosibirsk State University, Novosibirsk, Russia*

#### **PP-19**

Kantur I.E.<sup>1</sup>, Yarmoshenko Yu.M.<sup>1</sup>, Dolgikh V.E.<sup>1</sup>, Tereshchenko O.E.<sup>1,2,3</sup>,  
Kuznetsova T.V.<sup>1,4</sup>

##### **The system for detecting X-ray spectra using a detector based on microchannel plates**

*1 – M.N. Mikheev Institute of Metal Physics Ural Branch Russian Academy of Sciences, Yekaterinburg, Russia*

*2 – Rzhanov Institute of Semiconductor Physics, Siberian Branch, Russian Academy of Sciences, Novosibirsk, Russia*

*3 – Synchrotron Radiation Facility SKIF, Boreskov Institute of Catalysis SB RAS, Kol'tsovo, Russia*

*4 – Eltsin Ural Federal University, Yekaterinburg, Russia*

#### **PP-20**

Kantur I.E.<sup>1</sup>, Yarmoshenko Y.M.<sup>1</sup>, Bebenin N.G.<sup>1</sup>, Grebennikov V.I.<sup>1</sup>,  
Milyaev M.A.<sup>1,2</sup>, Kuznetsova T.V.<sup>1,3</sup>

##### **Electronic structure of La<sub>0.5</sub>Pr<sub>0.2</sub>Ca<sub>0.3</sub>MnO<sub>3</sub> single crystal manganite using high resolution synchrotron radiation resonant photoemission spectroscopy**

*1 – M.N. Mikheev Institute of Metal Physics Ural Branch Russian Academy of Sciences, Yekaterinburg, Russia*

*2 – Eltsin Ural Federal University, Yekaterinburg, Russia*

#### **PP-21**

Kersnovskiy E.S.<sup>1</sup>, Barkov K.A.<sup>1</sup>, Polshin I.V.<sup>1</sup>, Terekhov V.A.<sup>1</sup>,  
Ivkov S.A.<sup>1</sup>, Chukavin A.I.<sup>1,2</sup>, Buylov N.S.<sup>1</sup>, Sitnikov A.V.<sup>3</sup>

##### **Investigation of the effect of copper content on the atomic and electronic structure of Cu-Si ion beam films by USXES and XPS methods**

*1 – Voronezh State University, Voronezh, Russia*

*2 – UdmFRC UrB RAS, Izhevsk, Russia*

*3 – Voronezh State Technical University, Voronezh, Russia*

**PP-22**

Kharitonov N.A.

**Comparison of elastic properties of polymorphic glycine modifications by DFT calculations**

*Novosibirsk State University, Department of Solid-State Chemistry,  
Faculty of Natural Sciences, Novosibirsk, Russia*

**PP-23**

Kolybalov D.S.<sup>1,3</sup>, Kadtsyn E.D.<sup>1,2,3</sup>, Bogdanov N.E.<sup>3,4</sup>, Zubavichus Ya.V.<sup>1,3</sup>

**Computation, synthesis, and crystal structure investigation of new tecovirimat analogies**

*1 – SRF SKIF Boreskov Institute of Catalysis, Koltsovo, Russia*

*2 – Voevodsky Institute of Chemical Kinetics and Combustion,  
Novosibirsk, Russia*

*3 – Novosibirsk State University, Novosibirsk, Russia*

*4 – Sobolev Institute of Geology and Mineralogy, Novosibirsk, Russia*

**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**

*Synchrotron Radiation Facility SKIF, Boreskov Institute of Catalysis,  
Kol’tsovo, Russia*

**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**

*Tomsk Polytechnic University, Tomsk, Russia*

**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**

*Lomonosov Moscow State University, Moscow, Russia*



#### **PP-27**

Larionov V.I.<sup>1</sup>, Klinov D.V.<sup>1,2,3</sup>, Ivanov D.A.<sup>1,3,4</sup>

#### **Development of extrusion parameters of fasteners based on polylactides**

*1 – Sirius University of Science and Technology, Krasnodar region, Russia*

*2 – Federal Research and Clinical Center of Physical-Chemical Medicine of Federal Medical Biological Agency, Moscow, Russia*

*3 – Moscow Institute of Physics and Technology, Dolgoprudny, Moscow Region, Russia*

*4 – Institut de Sciences des Matériaux de Mulhouse-IS2M, CNRS UMR 7361, 15, rue Jean Starcky, F-68057 Mulhouse, France*

#### **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<sub>2</sub>**

*Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia*

#### **PP-29**

Losev E.A.<sup>1,2,3</sup>, Zheltikova D.Ya.<sup>1</sup>, Kolybalov D.S.<sup>1,4</sup>, Arkhipov S.G.<sup>1,4</sup>, Mineev A.M.<sup>1</sup>, Ogienko A.G.<sup>1</sup>, Boldyreva E.V.<sup>1,2</sup>, Boldyrev V.V.<sup>1,3</sup>

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

*1 – Novosibirsk State University, Novosibirsk, Russia*

*2 – Boreskov Institute of Catalysis, Novosibirsk, Russia*

*3 – Voevodsky Institute of Chemical Kinetics and Combustion SB RAS, Novosibirsk, Russia*

*4 – SRF “SKIF”, Koltsovo, Russia*

#### **PP-30**

Maksimovich M.S.<sup>1</sup>, Vashurkin D.V.<sup>2</sup>, Piryazev A.A.<sup>2</sup>

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

*1 – Lomonosov Moscow State University, Faculty of Fundamental Physical and Chemical Engineering, Moscow, Russia*

*2 – FRC Problems of Chemical Physics and Medicinal Chemistry RAS, Chernogolovka, Russia*

### PP-31

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

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

*Lomonosov Moscow State University, Moscow, Russia*

### PP-32

Maslova S.A.<sup>1</sup>, Ponomareva E.A.<sup>1</sup>, Yarmoshenko Yu.M.<sup>1</sup>, Korkh Yu.V.<sup>1</sup>, Angervaks A.E.<sup>3</sup>, Ryskin A.I.<sup>3</sup>, Sarychev M.N.<sup>2</sup>, Ivanov V.Yu.<sup>2</sup>, Kuznetsova T.V.<sup>1,2</sup>

#### **Investigation of irradiated and additively coloured CaF<sub>2</sub> single crystals by XPS and Raman spectroscopy**

1 – IMP UB RAS, Yekaterinburg, Russia

2 – UrFU, Yekaterinburg, Russia

3 – ITMO University, Saint Petersburg, Russia

### PP-33

Merentsov A.I.<sup>1</sup>, Shkvarin A.S.<sup>1</sup>, Chumakov R.G.<sup>2</sup>, Lebedev A.M.<sup>2</sup>, Gregoratti L.<sup>3</sup>, Amati M.<sup>3</sup>, Titov A.N.<sup>1</sup>

#### **Effect of Cu intercalation on the morphology and electronic structure of the Zr<sub>x</sub>Ti<sub>1-x</sub>Se<sub>2</sub> mixed crystals**

1 – M.N. Mikheev Institute of Metal Physics UB RAS, Ekaterinburg, Russia

2 – National Research Center "Kurchatov Institute", Moscow, Russia

3 – Elettra-Sincrotrone Trieste S.C.p.A. di interesse nazionale, Trieste, Italy

### PP-34

Mikaeva A.S.<sup>1,2</sup>, Golyashov V.A.<sup>1,2,3</sup>, Kaveev A.K.<sup>4</sup>, Tereshchenko O.E.<sup>1,2,3</sup>

#### **Band structure features of the (111) Pb<sub>1-x</sub>Sn<sub>x</sub>Te:In/BaF<sub>2</sub> films surface studied by angle-resolved photoemission spectroscopy**

1 – Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia

2 – Novosibirsk State University, Novosibirsk, Russia

3 – SRF "SKIF", Kol'tsovo, Russia

4 – Ioffe Physical-Technical Institute RAS, St. Petersburg, Russia

### PP-35

Novichkov D.<sup>1</sup>, Poliakova T.<sup>1</sup>, Nevolin Iu.<sup>2</sup>, Smirnova A.D.<sup>1</sup> Matveev P.<sup>1</sup>, Kalmykov S.<sup>1</sup>

#### **Experimental and theoretical XANES study of UOx and Np oxide systems at the L<sub>3</sub> edge**

*1 – Department of Chemistry, Lomonosov Moscow State University, Moscow, Russia*

*2 – A.N. Frumkin Institute of Physical Chemistry and Electrochemistry RAS Moscow, Russia*

### PP-36

Parkhomenko E.R.<sup>1</sup>, Anokhin D.V.<sup>1,2,3</sup>, Gorbunova M.A.<sup>2</sup>, Ivanov D.A.<sup>1,2,3</sup>

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

*1 – Sirius University of Science and Technology, Department of Biomaterials, Sirius, Russia*

*2 – Lomonosov Moscow State University, Department of Chemistry, Moscow, Russia*

*3 – The Institute of Problems of Chemical Physics of the Russian Academy of Sciences, Chernogolovka, Russia*

### PP-37

Platunov M.S.<sup>1,2</sup>

#### **High-coercivity ferrimagnet Co<sub>2</sub>FeO<sub>2</sub>BO<sub>3</sub>: XMCD insights into charge-ordering and cation distribution**

*1 – Boreskov Institute of Catalysis SB RAS, Novosibirsk, Russia*

*2 – Synchrotron Radiation Facility SKIF, Boreskov Institute of Catalysis SB RAS, Kol'tsovo, Russia*

### PP-38

Plieva D.S.<sup>1</sup>, Nikitin E.A.<sup>1</sup>, Anokhin D.V.<sup>1,2</sup>, Maryasevskaya A.V.<sup>1,2</sup>

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

*1 – Lomonosov Moscow State University, Moscow, Russia*

*2 – FRC Problems of Chemical Physics and Medical Chemistry of the Russian Academy of Sciences, Chernogolovka, Russia*

### PP-39

Ponomareva E.A.<sup>1</sup>, Chumakov R.G.<sup>2</sup>, Maslova S.A.<sup>1</sup>, Grebennikov V.I.<sup>1</sup>,  
Gerasimov E.G.<sup>1,3</sup>, Mushnikov N.V.<sup>1,3</sup>, Kuznetsova T.V.<sup>1,3</sup>

#### **Determination of 3d-4f electronic states contribution to the valence band of GdCo<sub>2</sub>Ni<sub>0.1</sub> rare earth intermetallic compound by resonant photoemission**

1 – M.N. Mikheev Institute of Metal Physics UB RAS, Ekaterinburg, Russia

2 – National Research Centre "Kurchatov Institute", Moscow, Russia

3 – Ural Federal University, Ekaterinburg, Russia

### PP-40

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

#### **Thermal stability of CuCrSe<sub>2</sub>**

IMP UB RAS, Yekaterinburg, Russia

### PP-41

Radzivonchik D.I.<sup>1</sup>, Grebennikov V.I.<sup>1</sup>, Belyaev D.V.<sup>1</sup>, Yakushev M.V.<sup>1</sup>,  
Tereshchenko O.E.<sup>1,2</sup>, Kokh K.A.<sup>3</sup>, Chumakov R.G.<sup>4</sup>, Kuznetsova T.V.<sup>1,5</sup>

#### **XPS-based restoration of partial densities of valence states of chalcogenides using Bayesian inference**

1 – M.N. Mikheev Institute of Metal Physics of Ural Branch of Russian Academy of Sciences, Ekaterinburg, Russia

2 – Synchrotron Radiation Facility SKIF, Boreskov Institute of Catalysis of SB RAS, Koltsovo, Russia

3 – V.S. Sobolev Institute of Geology and Mineralogy of SB RAS, Novosibirsk, Russia

4 – National Research Center Kurchatov Institute, Moscow, Russia

5 – Ural Federal University, Ekaterinburg, Russia

**PP-42**

Rubtsov I.A.<sup>1</sup>, Bukhtiyarov A.V.<sup>1</sup>, Zubavichus Y.V.<sup>1</sup>, Kazantsev S.R.<sup>1</sup>, Kashkarov A.O.<sup>2</sup>, Kuper K.E.<sup>1</sup>, Prueel E.R.<sup>2</sup>, Studennikov A.A.<sup>2</sup>, Ten K.A.<sup>2</sup>, Tolochko B.P.<sup>3</sup>, Halemenchuk V.P.<sup>2</sup>, Shekhtman L.I.<sup>4</sup>

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

*1 – SRF SKIF, Boreskov Institute of Catalysis, Novosibirsk, Russia*

*2 – Lavrentiev Institute of Hydrodynamics, Novosibirsk, Russia*

*3 – Institute of Solid State Chemistry and Mechanochemistry, Novosibirsk, Russia*

*4 – Budker Institute of Nuclear Physics, Novosibirsk, Russia*

**PP-43**

Semushkina G.I.<sup>1</sup>, Zaguzina A.A.<sup>1</sup>, Fedorenko A.D.<sup>1</sup>, Kriventsov V.V.<sup>2</sup>, Okotrub A.V.<sup>1</sup>, Bulusheva L.G.<sup>1</sup>

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

*1 – Nikolaev Institute of Inorganic Chemistry SB RAS, Novosibirsk, Russia*

*2 – Budker Institute of Nuclear Physics SB RAS, Novosibirsk, Russia*

**PP-44**

Serebrennikova P.S.<sup>1,2</sup>, Kudryavtsev A.L.<sup>1,2</sup>, Panchenko A.V.<sup>1</sup>, Gromilov S.A.<sup>1,2</sup>

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

*1 – Novosibirsk State University, Novosibirsk, Russia*

*2 – Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia*

**PP-45**

Shchugoreva I.A.<sup>1,2</sup>, Artyushenko P.V.<sup>1,2</sup>, Moryachkov R.V.<sup>1,3</sup>,  
Zabluda V.N.<sup>3</sup>, Tomilin F.N.<sup>3,4</sup>, Kichkailo A.S.<sup>1,2</sup>

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

*1 – Federal Research Center “Krasnoyarsk Science Center” of the Siberian Branch of the Russian Academy of Sciences, Krasnoyarsk, Russia*

*2 – Krasnoyarsk State Medical University, Krasnoyarsk, Russia*

*3 – Kirensky Institute of Physics, Krasnoyarsk, Russia*

*4 – Siberian Federal University, Krasnoyarsk, Russia*

**PP-46**

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

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

*«Ivan Electronics» Co Ltd, Novocherkassk, Russia*

**PP-47**

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

**Mössbauer absorption spectroscopy using synchrotron radiation**

*Southern Federal University, Research Institute of Physics, Rostov-on-Don, Russia*

**PP-48**

Shkvarin A.S.<sup>1</sup>, Merentsov A.I.<sup>1</sup>, Postnikov M.S.<sup>1</sup>, Dyachkov E.G.<sup>1</sup>,  
Dudin P.<sup>2</sup>, Avila J.<sup>2</sup>, Gregoratti L.<sup>3</sup>, Amati M.<sup>3</sup>, Titov A.N.<sup>1</sup>

**Experimental investigation of band structure of nano-inclusions in Fe<sub>x</sub>Ni<sub>y</sub>TiSe<sub>2</sub>**

*1 – M.N. Miheev Institute of Metal Physics of Ural Branch of Russian Academy of Sciences, Ekaterinburg, Russia*

*2 – Synchrotron SOLEIL, 91190 Saint-Aubin, France*

*3 – Elettra – Sincrotrone Trieste S.S. 14-km 163.5, 34149 Basovizza, Trieste, Italy*

#### **PP-49**

Siaglova E.D.<sup>1,2,4</sup>, Piryazev A.A.<sup>1,3,4</sup>, Ivanov D.A.<sup>1,3,4</sup>

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

*1 – Sirius University of Science and Technology, Sochi, Russia*

*2 – Moscow Institute of Physics and Technology, National Research University, Dolgoprudny, Russia*

*3 – Lomonosov Moscow State University (MSU), Moscow, Russia*

*4 – FRC PCP MC RAS, Chernogolovka, Russia*

#### **PP-50**

Sineva L.O.<sup>1</sup>, Vashurkin D.V.<sup>2</sup>, Ivanov D.A.<sup>1</sup>

#### **Brush polymers based on acrylates and the study of their self-assembly processes**

*1 – Lomonosov Moscow State University, Moscow, Russia*

*2 – Federal Research Center for Problems of Chemical Physics and Medical Chemistry of the Russian Academy of Sciences, Chernogolovka, Moscow region, Russia*

#### **PP-51**

Solovova N.Yu.<sup>1</sup>, Golyashov V.A.<sup>1,2,3</sup>, Usachov D.Yu.<sup>4</sup>, Eremeev S.V.<sup>5</sup>, Tereshenko O.E.<sup>1,2,3</sup>

#### **Electronic and crystalline structure of Bi/InAs(111)A-(2x2) interface**

*1 – Novosibirsk State University, Novosibirsk, Russia*

*2 – Rzhanov Institute of Semiconductor Physics SB RAS, Novosibirsk, Russia*

*3 – SRF "SKIF", Kol'tsovo, Russia*

*4 – St. Petersburg State University, St. Petersburg, Russia*

*5 - Institute of Strength Physics and Materials Science, Tomsk, Russia*

## **OP-52**

Titova S.S.<sup>1</sup>, Osminkina L.A.<sup>2</sup>, Kakuliia I.S.<sup>1</sup>, Parinova E.V.<sup>1</sup>,  
Chuvenkova O.A.<sup>1</sup>, Chumakov R.G.<sup>3</sup>, Lebedev A.M.<sup>3</sup>, Kudryavtsev A.A.<sup>4</sup>,  
Beltiukov A.N.<sup>5</sup>, Chukavin A.I.<sup>5</sup>, Turishchev S.Yu.<sup>1</sup>

### **Mouse fibroblast cells – porous silicon nanoparticles hybrid structures by synchrotron studies**

1 – Voronezh State UNIVERSITY, Voronezh, Russia

2 – Lomonosov Moscow State University, Moscow, Russia

3 – National Research Center "Kurchatov Institute", Moscow, Russia

4 – Institute of Cell Biophysics of the Russian Academy of Sciences, Pushchino, Russia

5 – Udmurt Federal Research Center of the Ural Branch of the Russian Academy of Sciences, Izhevsk, Russia

## **PP-53**

Chuvenkova O.A.<sup>1</sup>, Boykov N.I.<sup>1</sup>, Titova S.S.<sup>1</sup>, Tonkikh A.A.<sup>2</sup>,  
Parinova E.V.<sup>1</sup>, Kurganskii S.I.<sup>1</sup>, Manyakin M.D.<sup>1</sup>, Chumakov R.G.<sup>3</sup>,  
Lebedev A.M.<sup>3</sup>, Makarova A.<sup>4</sup>, Smirnov D.<sup>4</sup>, Ovsyannikov R.<sup>4</sup>,  
Turishchev S.Yu.<sup>1</sup>

### **Epitaxial Sn-Si ultrathin nanolayers structure by synchrotron study**

1 – Voronezh State University, Voronezh, Russia

2 – Max Planck Institute of Microstructure Physics, Halle, Germany

3 – National Research Centre "Kurchatov institute", Moscow, Russia

4 – Helmholtz Zentrum Berlin, Berlin, Germany

## **PP-54**

Tomilin F.N.<sup>1,2</sup>, Shchugoreva I.A.<sup>2,3</sup>, Rogova, A.V.<sup>2,3</sup>, Zabluda V.N.<sup>2,3</sup>,  
Kichkailo A.S.<sup>2,3</sup>

### **Determining the atomic structure of biological molecules using SAXS**

1 – Kirensky Institute of Physics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

2 – Laboratory for Digital Controlled Drugs and Theranostics, Federal Research Center KSC SB RAS, Krasnoyarsk, Russia

3 – Prof. V.F. Voino-Yasenetsky Krasnoyarsk State Medical University, Krasnoyarsk, Russia



#### **PP-55**

Tsareva A.D.<sup>1</sup>, Shtol V.S.<sup>1</sup>, Arsentiev K.A.<sup>1</sup>, Klinov D.V.<sup>1,2</sup>,  
Musienko P.E.<sup>1,3,4</sup>, Ivanov D.A.<sup>1,5,6</sup>

#### **Investigation of the impact of surface morphology of electrospun polymer matrices on cell adhesion and proliferation**

*1 – Sirius University of Science and Technology, Krasnodar region, Russia*

*2 – Federal Research and Clinical Center of Physical-Chemical Medicine of Federal Medical Biological Agency, Moscow, Russia*

*3 – Institute of Translational Biomedicine, Saint Petersburg State University, St. Petersburg, Russia*

*4 – Life Improvement by Future Technologies Center “LIFT”, Moscow, Russia*

*5 – Moscow Institute of Physics and Technology, Dolgoprudny, Moscow Region, Russia*

*6 – Institut de Sciences des Matériaux de Mulhouse-IS2M, CNRS UMR 7361, 15, rue Jean Starcky, F-68057 Mulhouse, France*

#### **PP-56**

Umarov A.Z., Ivanov D.A.

#### **New class of biomimetic materials: Structural studies with synchrotron radiation**

*Lomonosov Moscow State University, Moscow, Russia*

#### **PP-57**

Vakhrushev A.A.<sup>1,2</sup>, Matveev A.V.<sup>2</sup>, Nartova A.V.<sup>1,2</sup>

#### **Segmentation of photoelectron spectra using convolutional neural network**

*1 – Boreskov Institute of Catalysis, Novosibirsk, Russia*

*2 – Novosibirsk State University, Novosibirsk, Russia*

#### **PP-58**

Valeev R.G.<sup>1</sup>, Petkov A.A.<sup>1,2</sup>, Kriventsov V.V.<sup>3</sup>

#### **Local atomic structure of FeO coatings obtained by thermal annealing magnetron deposited iron films**

*1 – Udmurt Federal Research Center of UB RAS, Izhevsk, Russia*

*2 – Udmurt State University, Izhevsk, Russia*

*3 – CKP “SKIF”, Koltsovo, Russia*

#### **PP-59**

Varygin A.D.<sup>1</sup>, Popov A.A.<sup>1</sup>, Sharafutdinov M.R.<sup>2</sup>, Shubin Yu.V.<sup>1</sup>

#### **In situ investigation of the formation of porous Co-Pd alloys in the process of reductive thermolysis**

*1 – Nikolaev Institute of Inorganic Chemistry, Novosibirsk, Russia*

*2 – Budker Institute of Nuclear Physics, Novosibirsk, Russia*

#### **PP-60**

Vedkal A.V.<sup>1,2</sup>, Kadtsyn E.D.<sup>1,2</sup>

#### **Do crystallization media influence to macromolecule-ligand complex structure? Molecular dynamics study**

*1 – SRF SKIF, Koltsovo, Russia*

*2 – Voevodsky Institute of Chemical Kinetics and Structure, Novosibirsk, Russia*

#### **PP-61**

Vinokurov Z.S.<sup>1</sup>, Zubavichus Y.V.<sup>1</sup>, Shmakov A.N.<sup>1</sup>, Mishchenko D.D.<sup>1</sup>, Selyutin A.G.<sup>1</sup>, Syrtanov M.S.<sup>2</sup>, Gogolev A.S.<sup>2</sup>, Denisov V.V.<sup>3</sup>, Teresov A.D.<sup>3</sup>, Panchenko Y.N.<sup>3</sup>, Kovalsky S.S.<sup>3</sup>, Beskonchin K.V.<sup>3</sup>, Kiselev V.N.<sup>3</sup>, Evdokimov A.A.<sup>3</sup>, Andreev M.V.<sup>3</sup>

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

*1 – SRF “SKIF” BIC SB RAS, Novosibirsk, Russia*

*2 – Tomsk Polytechnic University, Tomsk, Russia*

*3 – Institute of High Current Electronics, Tomsk, Russia*

#### **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**

*Siberian Federal University, Krasnoyarsk, Russia*

#### **PP-63**

Zheltikova D.Ya.<sup>1,2</sup>, Losev E.A.<sup>1,2,3,4</sup>, Drebuschak V.A.<sup>1,2</sup>,  
Boldyreva E.V.<sup>1,2,3</sup>

#### **Study of the effect of aliphatic monocarboxylic acids on carbamazepine polymorphism**

*1 – Novosibirsk State University, Novosibirsk, Russia*

*2 – Sobolev Institute of Geology and Mineralogy SB RAS, Novosibirsk, Russia*

*3 – Borekov Institute of Catalysis SB RAS, Novosibirsk, Russia*

*4 – Voevodsky Institute of Chemical Kinetics and Combustion SB RAS, Novosibirsk, Russia*

#### **PP-64**

Kurenkova A.Yu.<sup>1</sup>, Kharina S.N.<sup>1</sup>, Saraev A.A.<sup>1,2</sup>, Kozlova E.A.<sup>1</sup>

#### **A novel approach for synthesis of Pt/g-C<sub>3</sub>N<sub>4</sub> photocatalysts for solar energy conversion**

*1 – Borekov Institute of Catalysis, Novosibirsk, Russia*

*2 – Synchrotron Radiation Facility SKIF, Borekov Institute of Catalysis, Kol'tsovo, Russia*

#### **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**

*Ufa University Science and Technology, Ufa, Russia*