

**THE THIRD INTERNATIONAL FORUM**

**PHYSICS – 2024**

**Samarkand, Uzbekistan**

**April 23-25, 2024**

**PROGRAM**

**FORUM ORGANIZERS:**

**Academy of Sciences of the Republic of Uzbekistan  
Institute of Nuclear Physics of Uzbekistan Academy of Sciences  
Samarkand State University  
Institute of Engineering Physics**

**Samarkand – 2024**

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## FORUM SECRETARIAT

**Samarkand State University, University blv. 15, 140104, Samarkand city**

Khursanov Dunyobek, [dunyobek\\_kh@mail.ru](mailto:dunyobek_kh@mail.ru), [tel:+99893 343 2737](tel:+998933432737)

Oblokulov Dilshod, [irossu1420@gmail.com](mailto:irossu1420@gmail.com); [tel:+99866 2403853](tel:+998662403853), +998 93 355 0278

Safarov Askar, [askarsafarov@gmail.com](mailto:askarsafarov@gmail.com); tel: +998 937200303

**Institute of Nuclear Physics, Ulugbek, 100214, Tashkent**

Fazilova Zekie, [fazilovaz@mail.ru](mailto:fazilovaz@mail.ru), tel.: +99871-2893141 (work); +99893-5576904 (mob.)

Valieva Leyla, [vlleila@mail.ru](mailto:vlleila@mail.ru), tel.: +99871-2893557 (work); +99897-7660747 (mob.)

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# THE THIRD INTERNATIONAL FORUM

## PHYSICS – 2024

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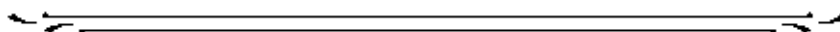
***“RADIOPREPARAT” Enterprise, Tashkent,  
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***The organizers of the forum thank the sponsors of forum and  
authors of reports and all participants for their contribution to  
success of the Forum***



## SCHEDULE OF THE FORUM

**April 21-22, Sunday - Monday**    *Arrival of participants*

**April 22, Monday**            18:00 – 20:00    **Registration** (*Front Hall of Samarkand State University*)

**April 23, Tuesday**

8:00 – 9:00            **Registration** (*Front Hall of Samarkand State University*)

9:00 – 9:20            *Opening of a Forum (Main auditorium of Samarkand State University)*

9:20 – 10:40          **Plenary session-1**

10:40 – 11:20        *Coffee-Break*

11:20 – 13:00        **Plenary session-1**

13:00 – 14:20        *Lunch*

14:20 – 16:00        **Plenary session-2**

16:00 – 16:40        *Coffee-Break*

16:40 – 18:00        **Plenary session-2**

19:00 – 21:00        *Reception on behalf of Organizing Committee*

**April 24, Wednesday**

9:00 – 10:40        **Plenary session -3**

10:40 – 11:20        *Coffee-Break*

11:20 – 13:00        **Plenary session-3**

13:00 – 14:20        *Lunch*

14:20 – 16:00        **Plenary session-4**

16:00 – 16:40        *Coffee-Break*

16:40 – 18:20        **Plenary session-4**

**April 25, Thursday**

9:00 – 11:00        **Plenary session -5**

11:00 – 11:20        *Coffee-Break*

11:20 – 13:20        **Plenary session -5**

13:20                  *Closing of a Forum*

14:00                  *Lunch*

15:00                  *Sightseeing tour of Samarkand*

**Forum venue - Samarkand State University (University blv. 15, Samarkand city)**

THE THIRD INTERNATIONAL FORUM  
**PHYSICS – 2024**

*Samarkand, Uzbekistan, 23-25 April 2024*

**FORUM PROGRAM\***

*23 April, Tuesday*

**9:00 – 13:00**

**PLENARY SESSION I**

**CHAIRMEN: KHOLMURADOV R., YULDASHEV B.**

**9:00 – 9:20**

Opening of the Forum

**Welcome speech:**

**Sharipov K.A.**

Minister of Higher Education, Science and Innovations  
of the Republic of Uzbekistan

**Khalmuradov R.I.**

Rector of Samarkand State University

**Yuldashev B.S.**

Chairman of Organizing Committee, President of Uzbekistan  
Academy of Sciences

**9:20 – 9:40**

**1. Solar Synthesis Technology and Study of Cuprate**

$\text{Bi}_{1.7}\text{Pb}_{0.3}\text{Sr}_2\text{Ca}_{(n-1)}\text{Cu}_n\text{O}_y$  (n=2-30)

**GULAMOVA D.D., Eshonkulov E.B., Bobokulov S.Kh.,**

**Lu V.R., Erkinov D., Gulamova K.T.**

*Institute of Materials Science of the Academy of Sciences, Tashkent,  
Uzbekistan*

**9:40 – 10:00**

**2. Factory of Superheavy Elements: Present and Future**

**ITKIS M.G.**

*Joint Institute for Nuclear Research, Dubna, Russia*

**10:00 – 10:20**

**3. Quantum Technologies in Uzbekistan: Current Directions and  
Future Perspectives**

**ZAKHIDOV A.**

*University of Texas at Dallas, Richardson, United States of America*

*Samarkand Quantum Center, Samarkand State University, Samarkand,  
Uzbekistan*

*Quantum Technology Center, Tashkent, Uzbekistan*

- 10:20 – 10:40**      **4. Role of Modern Electrophysics in Promising Aviation Technologies**  
**KHOMICH V.Yu.**  
*Institute for Electrophysics and Electric Power of Russian Academy of Sciences, St.Peterburg, Russia*
- 10:40 – 11:20**      **COFFEE-BREAK**
- CHAIRMEN: CHURKIN I., BAKHRAMOV S.**
- 11:20 – 11:40**      **5. First Experiments at the Superheavy Elements Factory**  
**VOINOV A. on behalf of JINR-IMP collaboration**  
*Joint Institute for Nuclear Research, Dubna, Russia*
- 11:40 – 12:00**      **6. How the Universe Works: New Cosmological Observational Data and Surprises**  
**AHMEDOV B.**  
*Astronomical Institute, Academy of Sciences, Tashkent, Uzbekistan*
- 12:00 – 12:20**      **7. Prospects of Using Nuclear Energy in Low-Carbon Petrochemical Processes**  
**MUSTAFAYEV I.<sup>1,2</sup>, Guliyeva N.<sup>1</sup>, Chichek F.<sup>1</sup>**  
<sup>1</sup>*Institute of Radiation Problems, Baku, Azerbaijan*  
<sup>2</sup>*Azerbaijan University of Architecture and Construction, Baku, Azerbaijan*
- 12:20 – 12:40**      **8. NICA Megaproject: Accelerator Complex, Experimental Facilities, Tasks (brief overview)**  
**MERKIN M. on behalf of BM@N Collaboration**  
*Institute of Nuclear Physics, Moscow State University, Moscow, Russia*
- 12:40 – 13:00**      **9. The IBR-2 Pulsed Research Reactor for Condensed Matter Investigations**  
**KULIKOV S.**  
*Joint Institute for Nuclear Research, Dubna, Russia*
- 13:00 - 14:20**      **LUNCH**

14:20 – 18:00

## PLENARY SESSION II

CHAIRMEN: INOYATOV A., ABSANOV A.

14:20 - 14:40

10. BM@N Experiment at NICA/Nuclotron: Scientific Program and First Physics Results

**KAPISHIN M.**

*Joint Institute for Nuclear Research, Dubna, Russia*

14:40 - 15:00

11. Overview of Unstable State Studies in Fragmentation of Relativistic Nuclei

**ZAITSEV A.<sup>1</sup>, Zarubin P.<sup>2</sup>**

<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*

<sup>2</sup>*P.N. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russia*

15:00 - 15:20

12. Neutron Activation Analysis of Short-Lived Radionuclides at RRC WWR-K

**BEDELBEKOVA K.A., Lennik S.G., Sokolenko E.K.**

*Institute of Nuclear Physics, Almaty, Kazakhstan*

15:20 - 15:40

13. Hyperfine Anomalies Calculations in Spectra of Atoms

**DEMIDOV Yu.A.<sup>1,2</sup>, Konovalova E.A.<sup>1</sup>, Holmes S.D.<sup>1,3</sup>, Kozlov M.G.<sup>1,2</sup>**

<sup>1</sup>*Petersburg Nuclear Physics Institute of NRC “Kurchatov Institute”, Gatchina, Russia*

<sup>2</sup>*St. Petersburg Electrotechnical University “LETI”, St. Petersburg, Russia*

<sup>3</sup>*St. Petersburg School of Physics, Mathematics and Computer Science, St. Petersburg, Russia*

15:40 – 16:00

14. Processing and Storage of HEP Experimental Data @ JINR  
**VOYTISHIN N.**

*Joint Institute for Nuclear Research, Dubna, Russia*

16:00 – 16:40

COFFEE-BREAK

CHAIRMEN: KHOMICH V., USMANOV P.

16:40 - 17:00

15. Binding Energy of 14A Nuclei Based on the Three-Body Model

**IRGAZIEV B.F., Yovqochev P.N.**

*National University of Uzbekistan, Tashkent, Uzbekistan*

- 17:00 - 17:20**      **16. The Energies of the Lowest Levels of Yrast Bands in Even-Even Transfermium Nuclei**  
**Efimov A.D.<sup>1,2</sup>, IZOSIMOV I.N.<sup>3</sup>, Usmanov P.N.<sup>4</sup>**  
*<sup>1</sup>Admiral Makarov State University of Maritime and Inland Shipping, St.Petersburg, Russia*  
*<sup>2</sup>Ioffe Physical-Technical Institute, Russian Academy of Sciences, St.Petersburg, Russia*  
*<sup>3</sup>Joint Institute for Nuclear Research, Dubna, Russia*  
*<sup>4</sup>Namangan Institute of Engineering and Technology, Namangan, Uzbekistan*
- 17:20 – 17:40**      **17. Spectral Properties of Two-Particle Hamiltonians with Interactions up to Next-Neighboring Sites**  
**LAKAEV S.N.<sup>1</sup>, Motovilov A.K.<sup>2,3</sup>, Akhmadova M.O.<sup>1</sup>**  
*<sup>1</sup>Samarkand State University, Samarkand, Uzbekistan*  
*<sup>2</sup>Joint Institute for Nuclear Research, Dubna, Russia*  
*<sup>3</sup>Dubna State University, Dubna, Russia*
- 17:40 – 18:00**      **18. Nuclear Physical Method for Earthquake Prediction**  
**MUMINOV R.A., Yuldashev B.S., Makhsudov A.U., Rumyanseva E.V.**  
*<sup>1</sup>Academy of Sciences, Tashkent, Uzbekistan*  
*<sup>2</sup>Physical-Technical Institute, Tashkent, Uzbekistan*
- 19:00 - 21:00**      **RECEPTION**  
*on behalf of Organizing Committee*



24 April, Wednesday

9:00 – 13:00

**PLENARY SESSION III**

**CHAIRMEN: KULIKOV S., AHMEDOV B.**

9:00 – 9:20

**19. Solitons in the Physical Systems: Recent Advances**

**ABDULLAEV F.Kh.**

*Physical-Technical Institute, Academy of Sciences, Tashkent, Uzbekistan*

9:20 – 9:40

**20. ILU RF Electron Accelerators for E-beam and X-ray Applications**

**BRYAZGIN A.A.**

*Budker Institute of Nuclear Physics, Novosibirsk, Russia*

9:40 – 10:00

**21. Trace Analysis of Uranium by Laser Spectroscopy and ICP-MS**

**IZOSIMOV I.N.<sup>1</sup>, Saidullaev B.D.<sup>2</sup>, Strashnov I.<sup>3</sup>, Vasidov A.<sup>2</sup>**

<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*

<sup>2</sup>*Institute of Nuclear Physics, Academy of Sciences, Tashkent, Uzbekistan*

<sup>3</sup>*University of Manchester, School of Natural Sciences, United Kingdom*

10:00 – 10:20

**22. The Influence of Fuel Type and Enrichment Distribution on ADSR Performance**

**PARAIPAN M.<sup>1,2</sup>, Belov O.V.<sup>1</sup>, Javadova V.M.<sup>1</sup>,**

**Kostov L.K.<sup>1</sup>, Tran T.N.<sup>1,3</sup>, Tyutyunnikov S.I.<sup>1</sup>**

<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*

<sup>2</sup>*Institute of Space Science, Magurele, Ilfov, Romania*

<sup>3</sup>*Institute of Physics of the Vietnam Academy of Science and Technology, Hanoi, Vietnam*

10:20 -10:40

**23. Nanoscale Structural Processes in Aqueous Solutions of Organic Molecules**

**Bunkin N.<sup>1</sup>, SABIROV L.<sup>2</sup>, Semenov D.<sup>2</sup>**

<sup>1</sup>*Bauman Moscow State Technical University, Moscow, Russia*

<sup>2</sup>*Institute of Engineering Physics, Samarkand State University, Samarkand, Uzbekistan*

10:40 - 11:20

**COFFEE-BREAK**





- 17:40 – 18:00**      **37. Self-Organization of Charged Particles in Lateral Potentials with High Symmetry**  
**NAZMITDINOV R.**  
*Joint Institute for Nuclear Research, Dubna, Russia*
- 18:00 – 18:20**      **38. Towards Understanding Selective Growth of Carbon Nanostructures Using Computational Materials Science**  
**KHALILOV U.<sup>1,2</sup>, Mirzaev S.<sup>1</sup>**  
*<sup>1</sup>Institute of Ion-Plasma and Laser Technologies, Academy of Sciences, Tashkent, Uzbekistan*  
*<sup>2</sup>University of Antwerp, Belgium*

25 April, Thursday

**9:00 – 13:00**

**PLENARY SESSION V**

**CHAIRMEN: AGAEV T., MIRZAEV S.**

- 9:00 – 9:20**      **39.** Perovskite Optoelectronic Devices with Differentiated Ionic Migration  
**ZAKHIDOV A.**  
*University of Texas at Dallas, Richardson, United States of America*
- 9:20 – 9:40**      **40.** What is Primary in the Universe: Central Black Holes, Globular Clusters or Galaxies?  
**NURITDINOV S.N., Turaev S.J.**  
*National University of Uzbekistan, Tashkent, Uzbekistan*
- 9:40 – 10:00**      **41.** Optimized Perturbation Theory in Quantum Mechanics and Statistical Physics  
**RAKHIMOV A.M.**  
*Institute of Nuclear Physics, Academy of Science, Tashkent, Uzbekistan*
- 10:00 – 10:20**      **42.** Multinucleon Transfer Mechanism of Complete Fusion  
**NASIROV A.K.<sup>1,2</sup>, Kayumov B.M.<sup>2,3</sup>, Ganiev O.K.<sup>2,3,4</sup>, Khusanov E.D.<sup>2,4</sup>, Yusupov A.R.<sup>2</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*  
<sup>3</sup>*New Uzbekistan University, Tashkent, Uzbekistan*  
<sup>4</sup>*National University of Uzbekistan, Tashkent, Uzbekistan*
- 10:20 -10:40**      **43.** QCD vacuum and hadron properties  
**MUSAKHANOV M.**  
*National University of Uzbekistan, Tashkent, Uzbekistan*
- 10:40 – 11:00**      **44.** Physics of Dimuons in the CMS Experiment at the LHC  
**LANYOV A.**  
*Joint Institute for Nuclear Research, Dubna, Russia*
- 11:00 - 11:20**      **COFFEE-BREAK**

**CHAIRMEN: BELUSHKIN A., SADIKOV I.**



## POSTER PREZENTATION

*23 April, Tuesday*

**10:40 – 11:20 and 16:00 – 16:40**

1.     **P1-01**   A New Type of Particle Accelerator-Based Simulator of Cosmic Radiation Fields  
**GORDEEV I.S.**  
*Joint Institute for Nuclear Research, Dubna, Russia*
  
2.     **P1-02**   Research of Accelerator Driven Systems at JINR  
**KHUSHVAKTOV J.H.<sup>1,2</sup>, Adam J.<sup>3,5</sup>, Baldin A.A.<sup>1</sup>,  
Baznat M.<sup>1,6</sup>, Berlev A.I.<sup>1</sup>, Chilap V.V.<sup>4</sup>, Furman W.I.<sup>1</sup>,  
Gustov S.A.<sup>1</sup>, Katovsky K.<sup>5</sup>, Kral D.<sup>5</sup>, Paraipan M.<sup>1,7</sup>,  
Solnyshkin A.A.<sup>1</sup>, Stegailov V.I.<sup>1</sup>, Svoboda J.<sup>5</sup>, Tichy P.<sup>3</sup>,  
Tyutyunnikov S.I.<sup>1</sup>, Vespalec R.<sup>3</sup>, Vrzalova J.<sup>5</sup>, Wagner V.<sup>3</sup>,  
Yuldashev B.S.<sup>2</sup>, Yudin I.P.<sup>1</sup>, Zavorka L.<sup>3</sup>, Zeman M.<sup>5</sup>**  
*<sup>1</sup>Joint Institute for Nuclear Research, Dubna, Russia*  
*<sup>2</sup>Institute of Nuclear Physics, Tashkent, Uzbekistan*  
*<sup>3</sup>Nuclear Physics Institute CAS, Czech Republic*  
*<sup>4</sup>Center of Physical and Technical Projects “Atomenergomash”,  
Moscow, Russia*  
*<sup>5</sup>Brno University of Technology, Brno, Czech Republic*  
*<sup>6</sup>Institute of Applied Physics ASM, Moldova*  
*<sup>7</sup>Institute of Space Science, Bucharest-Magurele, Romania*
  
3.     **P1-03**   Reactor Neutrinos for Applied Problems and Fundamental Physics  
**PONOMAREV D.**  
*Joint Institute for Nuclear Research, Dubna, Russia*
  
4.     **P1-04**   Preliminary Results of Observations of the XPM 229-0610636 Star  
in the Stock 1 Area  
**PARMANOVA M.<sup>2</sup>, Burkhanov O.<sup>1,2</sup>, Karimov R.<sup>2</sup>**  
*<sup>1</sup>Samarkand State University, Samarkand, Uzbekistan*  
*<sup>2</sup>Astronomical Institute, Academy of Sciences, Tashkent, Uzbekistan*
  
5.     **P1-05**   Studying the Properties of Rotational Levels Octupole  
Excitations <sup>236,238</sup>U  
**USMANOV P.N.<sup>1</sup>, Vdovin A.I.<sup>2</sup>, Nishonov A.N.<sup>1</sup>**  
*<sup>1</sup>Namangan Institute of Engineering and Technology, Namangan,  
Uzbekistan*  
*<sup>2</sup>Joint Institute for Nuclear Research, Dubna, Russia*

6. **P1-06** Analysis of Energy and Electrical E2-Transitions of Positive Parity States of Isotopes  $^{182,184}\text{W}$   
**Usmanov P.N.<sup>1</sup>, YUSUPOV E.K.<sup>1</sup>, Korjavov M.J.<sup>2</sup>**  
<sup>1</sup>*Namangan Institute of Engineering and Technology, Namangan, Uzbekistan*  
<sup>2</sup>*Karshi Institute of Engineering and Economical, Karshi, Uzbekistan*
7. **P1-07** Comparison of Quasifission Fragments in the  $^{12}\text{C}+^{204}\text{Pb}$  and  $^{48}\text{Ca}+^{168}\text{Er}$  Reactions  
**Nasirov A.K.<sup>1,2</sup>, KHUSANOV E.D.<sup>2,3</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*  
<sup>3</sup>*National University of Uzbekistan, Tashkent, Uzbekistan*
8. **P1-08** Synthesis and Study of the Radioactive Properties of the Lightest Isotopes of Plutonium  
**KUZNETSOVA A.A.<sup>1</sup>, Svirikhin A.I.<sup>1,2</sup>, Yeremin A.V.<sup>1,2</sup>,  
Popeko A.G.<sup>1,2</sup>, Malyshev O.N.<sup>1,2</sup>, Chepigin V.I.<sup>1</sup>, Isaev A.V.<sup>1</sup>,  
Popov Yu.A.<sup>1,2</sup>, Chelnokov M.L.<sup>1</sup>, Tezekbayeva M.S.<sup>1,3</sup>,  
Sailaubekov B.<sup>4</sup>, Sokol E.A.<sup>1</sup>, Izosimov I.N.<sup>1</sup>, Devaraja H.M.<sup>1</sup>,  
Bychkov M.A.<sup>1</sup>, Zamyatin N.I.<sup>1</sup>, Mukhin R.S.<sup>1,2</sup>,  
Rachkov V.A.<sup>1,2</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*State University «Dubna», Dubna, Russia*  
<sup>3</sup>*Institute of Nuclear Physics, Almaty, Kazakhstan*  
<sup>4</sup>*L.N.Gumilyov Eurasian National University, Astana, Kazakhstan*
9. **P1-09** Application of Innovative Digital Observation Methods on Maydanak Observatory Telescopes  
**ASFANDIYAROV I. M., Baltamuratov J.**  
*Astronomical Institute, Academy of Sciences, Tashkent, Uzbekistan*
10. **P2-01** Advanced Nuclear Physics and Nanotechnological Research on the Base of the EG-5 Accelerator at JINR  
**DOROSHKEVICH A.<sup>1</sup>, Mezentseva Zh.<sup>1</sup>, Oksengendler B.<sup>2</sup>,  
Suleymanov S.<sup>2</sup>, Didenko E.<sup>1</sup>, Parpiev O.<sup>2</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Institute of Material Sciences SPA "Physics - Sun", Tashkent, Uzbekistan*
11. **P2-02** Sensors with Super-Para- & Ferro-Magnets  
**KONDRATYEV V.N.**  
*Joint Institute for Nuclear Research, Dubna, Russia*



12. **P2-03** High-Pressure X-Ray Diffraction Techniques Using Laboratory Microfocus X-Ray Source Xeuss 3.0  
**LUKIN E.V., Gorshkova Y.E., Kichanov S.E., Kozlenko D.P., Lis O.N., Rutkauskas A.V.**  
*Joint Institute for Nuclear Research, Dubna, Russia*
13. **P2-04** The Electrical Properties of a Contact of Hydrated Nano-Powders of Different Sizes YSZ for Homogenic Electronics  
**MEZENTSEVA Zh.V.<sup>1</sup>, Doroshkevich A.S.<sup>1</sup>, Oksengendler B.L.<sup>2</sup>, Kirillov A.K.<sup>1</sup>, Didenko E.A.<sup>1</sup>, Nikiforova N.N.<sup>2</sup>, Carmen Mita<sup>3</sup>, Diana Mardare<sup>3</sup>, Nicoleta Cornei<sup>3</sup>, Suleimanov S.H.<sup>2</sup>, Parpiev O.R.<sup>2</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Institute of Material Sciences SPA "Physics-Sun", Tashkent, Uzbekistan*  
<sup>3</sup>*Alexandru Ioan Cuza, University, Iasi, Romania*
14. **P2-05** Passivation of Defects in Perovskite-Based Solar Cells Using L-4-Fluorophenylalanine  
**TAJIBAEV I.I., Zakhidov E.A., Nematov Sh.K., Kuvondikov V.O., Boynazarov I.R.**  
*Institute of Ion-Plasma and Laser Technologies, Academy of Sciences, Tashkent, Uzbekistan*
15. **P2-06** Investigation of the Photosensitivity of CdTe/Al<sub>2</sub>O<sub>3</sub>/Al Nanocomposite System  
**Baklanova U.R.<sup>1</sup>, RAKITIN V.V.<sup>2</sup>, Gapanovich M.V.<sup>1,2</sup>**  
<sup>1</sup>*Moscow State University, Moscow, Russia*  
<sup>2</sup>*Federal Research Center of Problems of Chemical Physics and Medicinal Chemistry, Chernogolovka, Russia*  
 Study of the Luminescence and the Lifetime of Current Carriers in Ag<sub>1-x</sub>Cu<sub>x</sub>GaSe<sub>2</sub> Solid Solutions  
**RAKITIN V.V.<sup>1</sup>, Gapanovich M.V.<sup>1,2</sup>, Rabenok E.V.<sup>1</sup>, Stanchik A.V.<sup>3</sup>, Gremenok V.F.<sup>3</sup>, Kabyliatski A.V.<sup>3</sup>**  
<sup>1</sup>*Federal Research Center of Problems of Chemical Physics and Medicinal Chemistry, Chernogolovka, Russia*  
<sup>2</sup>*Moscow State University, Moscow, Russia*  
<sup>3</sup>*Scientific-Practical Materials Research Centre, National Academy of Sciences of Belarus, Minsk, Belarus*
16. **P2-07** Analysis of Distributions in Condensed Matter Physics  
**ISAYEVA E.A.**  
*Institute of Physics, Baku, Azerbaijan*

17. **P2-08** Spectroscopic Study of Binary Nanooxide Systems in Contact with Water  
**MELIKOVA S.Z., Agayev T.N.**  
*Institute of Radiation Problems, Baku, Azerbaijan,*
18. **P2-09** Optical Properties of TlInSe<sub>2</sub><Au> Single Crystals  
**MAMMADOVA G.N.**  
*Nakhchivan State University, Nakhchivan, Azerbaijan*
19. **P2-10** Thermal Conductivity of a Solid Solution Crystal  
TlInSe<sub>2</sub>-TlIn<sub>1-x</sub>Dy<sub>x</sub>Se<sub>2</sub>  
**Jafarov M.B., VERDIYEVA N.A.**  
<sup>1</sup>*Azerbaijan Technology University, Baku, Azerbaijan*  
<sup>2</sup>*Ganja State University, Ganja, Azerbaijan*
20. **P2-11** Photoluminescence in Layered Gas Crystals Irradiated by  $\gamma$ -Quanta  
**MADATOV R.S.<sup>1</sup>, Alekperov A.S.<sup>3</sup>, Jabarov S.H.<sup>2</sup>, Tagiev T.B.<sup>1</sup>**  
<sup>1</sup>*Institute of Radiation Problems, Baku, Azerbaijan*  
<sup>2</sup>*Institute of Physics, Baku, Azerbaijan*  
<sup>3</sup>*Azerbaijan State Pedagogical University, Baku, Azerbaijan*
21. **P2-12** Effect of Gamma Radiation on Surface Morphology of GaSe Layered Monocrystal  
**Madatov R.S.<sup>1,2</sup>, HAJIYEVA S.A.<sup>1</sup>**  
<sup>1</sup>*Institute of Radiation Problems, Baku, Azerbaijan*
22. **P2-13** Elastic Properties of Gallium Arsenide Crystals  
**AKHMEDZHANOV F.R., Toshpulatov I.Sh.**  
*Institute of Ion-Plasma and Laser Technologies, Tashkent, Uzbekistan*
23. **P2-14** Manifestation of the Effect of Superfluidity in Quantum Gases  
**BAIZAKOV B.B.**  
*Physical-Technical Institute, Academy of Sciences, Tashkent, Uzbekistan*
24. **P2-15** Study of Plasmon Oscillation Dispersion in Si and Ge Crystals  
**ISAKHANOV Z.A., Umirzakov B.E., Khalmatov A.S.**  
*Institute of Ion-Plasma and Laser Technologies, Academy of Sciences, Tashkent, Uzbekistan*
25. **P2-16** New Developments in the Theory of Relativistic Ideal Gases - from Classical to Quantum  
**JUMAEV M.R.**  
*Bukhara Engineering Technological Institute, Bukhara, Uzbekistan*

26. **P2-17** Influence of Electron Irradiation on the Crystal Structure of  $\text{TlIn}_{0.98}\text{Fe}_{0.02}\text{Se}_2$  Single Crystals  
**Khodzhaev U.O., Umarov S.H., KHALLOKOV F.K.**  
*Bukhara State Medical Institute, Bukhara, Uzbekistan*
27. **P2-18** Dielectric Losses in CdO-pCdTe Structure  
**Utamuradova Sh.B., Muzafarova S.A., MAVLYANOV A.Sh., Achilov A.S.**  
*Research Institute of Semiconductor Physics and Microelectronics at the National University, Tashkent, Uzbekistan*
28. **P2-19** Solar Cell with a Mos Structure Based on Large Block p CdTe Films  
**MUZAFAROVA S.A., Mavlyanov A.Sh., Achilov A.S., Faizullaev Q.M.**  
*Research Institute of Semiconductor Physics and Microelectronics at the National University, Tashkent, Uzbekistan*
29. **P2-20** The Effect of Laser Nanostructuring of Surfaces on Improving the Diffusion Welding Process  
**KHOMICH Yu.V.**  
*Institute for Electrophysics and Electric Power Russian Academy of Sciences, St.Petersburg, Russia*
30. **P2-21** Establishment of New Polytypes in Cd(Mn,Mg)-In-Ga-S System by New Electron-Diffraction Methods  
**Kyazumov M.G.<sup>1</sup>, RZAYEVA S.M.<sup>1</sup>, Rustamova L.V.<sup>1</sup>, Avilov A.S.<sup>2</sup>**  
<sup>1</sup>*Institute of Physics, Baku, Azerbaijan*  
<sup>2</sup>*Shubnikov Institute of Crystallography, Federal Scientific Research Centre "Crystallography and Photonics", Moscow, Russia*
31. **P3-01** Metrological Equipment for Calibration Laboratory  
**BERESNEVA Y.A., Guzov V.D., Kozhemyakin V.A., Lazarenko S.V.**  
*Scientific Production Unitary Enterprise «ATOMTEX», Minsk, Belarus*
32. **P3-02** Detector Systems for Gamma Spectroscopy and Biophotonics  
**DUNIN N.<sup>1,2</sup>, Demikhov E. <sup>1</sup>, Fimushkin V.V.<sup>2</sup>**  
<sup>1</sup>*P.N. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russia*  
<sup>2</sup>*Joint Institute for Nuclear Research, Dubna, Russia*
33. **P3-03** Kinetics of Radiation-Heterogeneous Processes of Water in the Presence of n-ZrO<sub>2</sub> and n-TiO<sub>2</sub> Nanoparticles  
**IMANOVA G., Agayev T.**  
*Institute of Radiation Problems, Baku, Azerbaijan*

- 34. P3-04** Exploring Machine Learning Performance Metrics for Predicting Hourly Global Irradiance in Samarqand  
**BOUDJELLA A.<sup>1,2</sup>, Boudjella M.Y.<sup>1</sup>, Galety M.<sup>4</sup>**  
<sup>1</sup>*Samarkand International University, Samarkand, Uzbekistan*  
<sup>2</sup>*Bircham International University, Miami, USA*  
<sup>3</sup>*University of Sciences and Technology USTO, Oran, Algerie*  
 Evaluation of the Effect of Maritime Aerosols and Rural Aerosols on the Direct Normal Irradiance Using GEANT4  
**BOUDJELLA A.**  
*Samarkand International University, Samarkand, Uzbekistan*
- 35. P3-05** Production of Radiopreparations of Alpha-Emitting Radionuclides  
**BAIMUKHANOVA A.E.<sup>1,2</sup>, Kurakina E.S.<sup>1</sup>, Karaivanov D.V.<sup>1,3</sup>, Dadakhanov J.A.<sup>1</sup>, Filosofov D.V.<sup>1</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Institute of Nuclear Physics, Almaty, Kazakhstan*  
<sup>3</sup>*Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences, Sofia, Bulgaria*
- 36. P3-06** AT1117M Radiation Monitor with BDKN-06 Detection Unit and a Set of Spherical Moderators to Reconstruct the Energy Distribution of Neutron Flux Density  
**KOMAR D.I.<sup>1</sup>, Kozhemyakin V.A.<sup>1</sup>, Gurinovich V.I.<sup>1</sup>, Vasilyev A.V.<sup>2</sup>, Ekidin A.A.<sup>2</sup>, Pyshkina M.D.<sup>2</sup>**  
<sup>1</sup>*Scientific Production Unitary Enterprise «ATOMTEX», Minsk, Belarus*  
<sup>2</sup>*Institute of industrial ecology UB RAS, Yekaterinburg, Russia*
- 37. P3-07** Mathematical Modeling of Radiation-Induced Effects in Human and Mammalian Cells  
**DUSHANOV E.B.<sup>1,2</sup>, Batmunkh M.<sup>1</sup>, Lhagvaa B.<sup>1</sup>, Togtokhtur T.<sup>1</sup>, Vasileva M.A.<sup>1</sup>, Glebov A.A.<sup>1</sup>, Kolesnikova E.A.<sup>1</sup>, Aksenova S.V.<sup>1</sup>, Sadykova O.G.<sup>1,2</sup>, Parkhomenko A.Yu.<sup>1</sup>, Batova A.S.<sup>1</sup>, Bugay A.N.<sup>1,2</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Dubna State University, Dubna, Russia*
- 38. P3-08** Radiocarbon Dating of Archaeological and Natural Samples with BINP AMS and MICADAS-28 at AMS Golden Valley, Novosibirsk, Russia  
**PETROZHITSKIY A.V.<sup>1,2,3</sup>, Parkhomchuk V.V.<sup>1</sup>, Konstantinov E.S.<sup>1</sup>, Shakiriva T.M.<sup>1</sup>, Parkhomchuk E.V.<sup>2,3,4</sup>, Kutnyakova L.A.<sup>3</sup>**  
<sup>1</sup>*Budker Institute of Nuclear Physics, Novosibirsk, Russia*  
<sup>2</sup>*Novosibirsk State University, Novosibirsk, Russia*  
<sup>3</sup>*Institute of Archaeology and Ethnography, Novosibirsk, Russia*  
<sup>4</sup>*Boreskov Institute of Catalysis, Novosibirsk, Russia*

- 39. P3-09** Neutron Imaging in Studying Meteorites, Rocks and Archaeological Objects: Collaboration Between JINR and INP AS RUz  
**ABDURAKHIMOV B.A.<sup>1,2</sup>, Tashmetov M.Yu.<sup>2</sup>, Kichanov S.E.<sup>1</sup>, Yuldashev B.S.<sup>2</sup>, Kozlenko D.P.<sup>1</sup>, Zel I.Yu.<sup>1</sup>, Saprykina I.A.<sup>1</sup>**  
*<sup>1</sup>Joint Institute for Nuclear Research, Dubna, Russia*  
*<sup>2</sup>Institute of Nuclear Physics, Academy of Sciences, Tashkent, Uzbekistan*
- 40. P3-10** Methodological Experiments on the Study of the Gas Release from Irradiated Samples of Lithium Ceramics by Thermal Desorption Spectroscopy  
**AITKULOV M.T, Nurgozhayev B.M., Askerbekov S.K., Akhanov A.A., Shaimerdenov A.A.**  
*Institute of Nuclear Physics, Almaty, Kazakhstan*
- 41. P3-11** Ferrocyanide Sorbents for Selective Removal of Cs-137 Radionuclide  
**EGAMEDIEV S.Kh., Khujaev S., Nurbaeva D.A.**  
*Institute of Nuclear Physics, Tashkent, Uzbekistan*

24 April, Wednesday

10:40 – 11:20 and 16:00 – 16:40

1. **P1-10** Theoretical Study of the  $^{11}\text{B}(p, \gamma)^{12}\text{C}$  Direct Capture Reaction at Low Energies within the Potential Model  
**RAKHIMOV B.A.<sup>1</sup>, Tursunov E.M.<sup>2</sup>, Baye D.<sup>3</sup>**  
*<sup>1</sup>Institute of Nuclear Physics, Tashkent, Uzbekistan*  
*<sup>2</sup>Institute of Nuclear Physics, Tashkent, Uzbekistan*  
*<sup>3</sup>Physique Quantique and Physique Nuclaire Thorique et Physique Mathematique, Brussels, Belgium*
2. **P1-11** Spectroscopic Signature of Noncovalent Bonds  
**AMONOV A.<sup>1</sup>, Scheiner S.<sup>2</sup>, Murodov G.<sup>1</sup>, Khushvaktov H.<sup>1</sup>**  
*<sup>1</sup>Institute of Engineering Physics Samarkand State University, Samarkand, Uzbekistan*  
*<sup>2</sup>Utah State University Logan, Utah, USA*
3. **P1-12** Application of the Tsallis Distribution Function in the Description of Heavy-Ion Collisions at High Energies  
**Olimov X.K.<sup>1</sup>, KAKHOROVA A.N.<sup>2</sup>**  
*<sup>1</sup>Physical-Technical Institute, Academy of Science, Tashkent, Uzbekistan*  
*<sup>2</sup>Samarkand State University, Samarkand, Uzbekistan*
4. **P1-13** Interacting Spinor and Electromagnetic Fields in Bianchi Type-I Spacetime  
**SAHA B.**  
*Joint Institute for Nuclear Research, Dubna, Russia*  
*RUDN University, Moscow, Russia*
5. **P1-14** Picosecond Laser-Induced Surface Structure of Titanium  
**TOJINAZAROV F.M.<sup>1,3</sup>, Sobirov B.R.<sup>2</sup>, Ibragimova E.M.<sup>1</sup>, Iskandarov N.<sup>1</sup>, Nazarov Kh.T.<sup>1</sup>**  
*<sup>1</sup>Center for Advanced Technologies, Tashkent, Uzbekistan*  
*<sup>2</sup>Institute of Ion-Plasma and Laser Technologies, Tashkent, Uzbekistan*  
*<sup>3</sup>Ajou University in Tashkent, Tashkent, Uzbekistan*
6. **P1-15** Investigation of the Excitation of Isomeric States in the Reactions  $(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, p)$  and  $(n, 2n)$  in the Energy Range 10-25 MeV  
**POLVONOV S., Eshonkulov G., Tuymuradov A., Ramazonov A., Tuymurodov D., Ashurov S., Akhmedov S.**  
*National University of Uzbekistan, Tashkent, Uzbekistan*

7. **P1-16** Scattering and Transfer Reactions with Heavy Ions and Their Astrophysical Application  
**Ergashev F.Kh.<sup>1</sup>, Artemov S.V.<sup>1</sup>, TOJIBOEV O.R.<sup>1</sup>, Karakhodjaev A.A.<sup>1</sup>, Igamov S.B.<sup>2, 3</sup>, Sakuta S.B.<sup>3</sup>, Burtebayev N.<sup>4</sup>, Nassurlla Maulen<sup>4</sup>, Mauyey B.<sup>4</sup>, Amangeldi N.<sup>5</sup>, Rusek K.<sup>6</sup>, Trzcinska A.<sup>6</sup>, Piasecki E.<sup>6</sup>, Wolinska-Cichocka M.<sup>6</sup>, La Cognata M.<sup>7</sup>**  
<sup>1</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*  
<sup>2</sup>*Branch of National Research Nuclear University MEPhI, Tashkent, Uzbekistan*  
<sup>3</sup>*National Research Center "Kurchatov Institute", Moscow, Russia*  
<sup>4</sup>*Institute of Nuclear Physics, Almaty, Kazakhstan*  
<sup>5</sup>*L.N.Gumilyov Eurasian National University, Nur-Sultan, Kazakhstan*  
<sup>6</sup>*University of Warsaw, Warsaw, Poland*  
<sup>7</sup>*Istituto Nazionale di Fisica Nucleare- Laboratori Nazionali del Sud, Catania, Italy*
8. **P1-17** Photonuclear Reactions on Stable Isotopes of Selenium at Bremsstrahlung End-Point Energies of 10-23 MeV  
**RASULOVA F.A.<sup>1,2</sup>, Aksenov N.V.<sup>1</sup>, Alekseev S.I.<sup>1</sup>, Aliev R.A.<sup>3,4</sup>, Belyshev S.S.<sup>5,6</sup>, Chuprakov I.<sup>1,7</sup>, Fursova N.Yu.<sup>5,6</sup>, Madumarov A.S.<sup>1</sup>, Khushvaktov J.H.<sup>1,2</sup>, Kuznetsov A.A.<sup>5,6</sup>, Yuldashev B.S.<sup>1,2</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*  
<sup>3</sup>*Lomonosov Moscow State University, Moscow, Russia*  
<sup>4</sup>*National Research Center "Kurchatov Institute", Moscow, Russia*  
<sup>5</sup>*Skobeltsyn Institute of Nuclear Physics of Lomonosov Moscow State University, Moscow, Russia*  
<sup>6</sup>*Lomonosov Moscow State University, Moscow, Russia*  
<sup>7</sup>*Institute of Nuclear Physics, Almaty, Kazakhstan*
9. **P1-18** TrES-5b Exoplanet Observed by Maidanak Observatory  
**ERGASHEV S.Sh.<sup>1</sup>, Burxonov O.A.<sup>1,2</sup>, Karimov R.G.<sup>2</sup>**  
<sup>1</sup>*Samarkand State University named after Sh. Rashidov, Samarkand, Uzbekistan*  
<sup>1,2</sup>*Astronomical Institute of the Uzbekistan Academy of Sciences, Tashkent, Uzbekistan*

- 10. P1-19** Impact of Novel Cladding Materials on SMR Neutronics  
**TUYMURADOV A., Tuymurodov D., Ashurov S., Polvonov S.**  
*National University of Uzbekistan, Tashkent, Uzbekistan*
- 11. P1-20** Preliminary Results of Analysis of Eccentric Binary Systems ZTF J200519.89+321314.3  
Investigation of the Eccentric Binary System  
ZTFJ200519.89+321314.3  
**KHAMRAKULOV F.B.<sup>1,2</sup>, Burkhonov O.A.<sup>2,1</sup>, Satovsky B.L.<sup>3</sup>, Lapukhin E.G.<sup>4</sup>**  
<sup>1</sup>*Samarkand State University, Samarkand, Uzbekistan*  
<sup>2</sup>*Astronomical Institute, Academy of Sciences, Tashkent, Uzbekistan*  
<sup>3</sup>*State Space Corporation "Roscosmos", Moscow, Russia*  
<sup>4</sup>*Reshetnev Siberian State University of Science and Technology, Krasnoyarsk, Russia*
- 12. P2-22** Influence of Dispersion on the Light Propagation in Condensed Matter  
**TSOY E.N.<sup>1</sup>, Suyunov L.A.<sup>2</sup>**  
<sup>1</sup>*Physical-Technical Institute, Tashkent, Uzbekistan*  
<sup>2</sup>*Karshi State University, Karshi, Uzbekistan*
- 13. P2-23** Investigation of  $\Delta^0$ -Isobar Formation in Central  $p^{12}\text{C}$ - and  $d^{12}\text{C}$ -Collisions at 4.2 A GeV/c  
**SULTANOV M.<sup>1</sup>, Olimov K.<sup>2</sup>, Bekmirzaev R.<sup>3</sup>, Yuldashev S.<sup>4</sup>**  
<sup>1</sup>*Samarkand State University of Architecture and Construction, Samarkand, Uzbekistan*  
<sup>2</sup>*Physics - Technical Institute, Tashkent, Uzbekistan*  
<sup>3</sup>*Jizzak State Pedagogical University, Jizzak, Uzbekistan*  
<sup>4</sup>*Samarkand State University, Samarkand, Uzbekistan*  
Characteristics of  $\pi^\pm$  Mesons and Protons from  $p\text{C}$ -,  $d\text{C}$ -,  $\alpha\text{C}$ -, and  $\text{CC}$ -Collisions in Relation to the Centrality Definition at 4.2 A GeV/c and their comparative analysis  
**SULTANOV M.<sup>1</sup>, Bekmirzaev R.<sup>2</sup>, Yuldashev S.<sup>3</sup>**  
<sup>1</sup>*Samarkand State University, Samarkand, Uzbekistan*  
<sup>2</sup>*Jizzak State Pedagogical University, Jizzak, Uzbekistan*  
<sup>3</sup>*Samarkand State University, Samarkand, Uzbekistan*
- 14. P2-24** New Photoenergy Materials Based on Gap Binary Compounds in Silicon  
**ZIKRILLAEV N.F.<sup>1</sup>, Ismaylov B.K.<sup>1</sup>, Urakova F.E.<sup>1</sup>, Turekeev H.S.<sup>1</sup>, Kurbonaliev K.K.<sup>2</sup>**  
<sup>1</sup>*Tashkent State Technical University, Tashkent, Uzbekistan*  
<sup>2</sup>*Kokand State Pedagogical Institute, Kokand, Uzbekistan*



15. **P2-25** Magnetic and Optic Properties of Magnetic Nanofluids  
**Kuvandikov O.K., KIRGIZOV S.E.**  
*Institute of Engineering Physics, Samarkand State University, Samarkand, Uzbekistan*
16. **P2-26** Effect of Tellurium Impurity on the Structural Parameters of a Silicon Nanocluster in Si Crystal  
**Sulaymanov N.T., Tashmetov M.Y., Makhkamov Sh.M., Rafikov A.K., EGAMOV S.R., Nazarmamatov Sh.M.**  
*Institute of Nuclear Physics, Tashkent, Uzbekistan*
17. **P2-27** Vibration Spectra and Various Topological Analyzes for Acetophenone and its Solutions. Experimental and DFT Calculations  
**KHUDAYKULOV B., Jumabaev A., Absanov A., Holikulov U., Norkulov A.**  
*Samarkand State University, Samarkand, Uzbekistan*
18. **P2-28** Radiation Changes in the Structure of Crystals of Solid Solutions Based on Barium Hexaferrite  
**SALAKHITDINOVA M.K.<sup>1</sup>, Ibragimova E.M.<sup>2</sup>, Kuvandikov O.K.<sup>1</sup>, Kulmatova G.<sup>1</sup>**  
<sup>1</sup>*Samarkand State University, Samarkand, Uzbekistan*  
<sup>2</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*
19. **P2-29** Features of Formation of Oxygen-Containing Precipitates in Single-Crystal Silicon  
**Makhmudov Sh.A., RAFIKOV A.K., Erdonov M.N., Tashmetov M.Yu., Makhkamov Sh.**  
<sup>1</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*
20. **P2-30** Negativ Charged Metal Oxides Nanoparticles as Disperse Phase for the Functional Hydrosol  
**Mirzaev S.Z., ALLAEV B.A., Egamberdiev K.B., Trunilina O.V., Avvalboev A.A.**  
*Institute of Ion-Plazma and Lazer Technologies, Tashkent, Uzbekistan*
21. **P2-31** Characterization of thin Graphene Films Synthesized by Chemical Vapor Deposition  
**TURSUNKULOV O.M.<sup>1</sup>, Xojiyev Sh.G.<sup>1</sup>, Kim S.<sup>2</sup>**  
<sup>1</sup>*Center for Advanced Technologies, Tashkent, Uzbekistan*  
<sup>2</sup>*Kumoh National Institute of Technology, Gumi, South Korea*
- Micropattern Formation on Titanium Surface Stimulated by Pulsed Laser Irradiation  
**Sultanov D.Sh., TURSUNKULOV O.M., Tojinazarov F.M., Nazarov Kh.T., Xojiyeva G.B.**  
*Center for Advanced Technologies, Tashkent, Uzbekistan*

- 22. P2-32** Monte Carlo Simulation of Directional Extraction System for Low Energy Neutrons Using a Diamond Nanoparticle Powder Reflector  
**TEYMUROV E.<sup>1,2</sup>, Nezvanov A.Yu.<sup>1</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Nuclear Research Department, Innovation and Digital Development Agency, Baku, Azerbaijan*
- 23. P2-33** Magnetic Characteristics of Arrays of Iron-Based Nanowires Investigated by FORC Analysis  
**ELMEKAWY A.<sup>1,5</sup>, Sotnichuk S.<sup>2</sup>, Nopolskii K.<sup>2</sup>, Menzel D.<sup>3</sup>, Mistonov A.<sup>4</sup>**  
<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Lomonosov Moscow State University, Moscow, Russia*  
<sup>3</sup>*Institute for Condensed Matter Physics, Braunschweig, Germany*  
<sup>4</sup>*Institute for Solid state and material physics, Dresden, Germany*  
<sup>5</sup>*Nuclear Research Center, Egyptian Atomic Energy Authority, Egypt*
- 24. P2-34** Properties of the Bi/Pb Cuprate Synthesized by Solar Technology  
**GULAMOVA D.D., Gulamov T.I.**  
*Institute of Materials Science, Academy of Sciences, Parkent, Uzbekistan*
- High-Temperature Superconducting Cuprates Synthesized by Solar Energy  
**GULAMOVA D.D., Eshonkulov E.B., Bobokulov S.Kh., Lu V.R., Erkinov D., Gulamova K.T.**  
*Institute of Materials Science, Academy of Sciences, Parkent, Uzbekistan*
- 25. P2-35** Precise Electronic-Structure Study of Lanthanide-Containing Crystals  
**SHAKHOVA V.M., Maltsev D.A., Lomachuk Yu.V., Mosyagin N.S., Titov A.V.**  
*Petersburg Nuclear Physics Institute of NRC «Kurchatov Institute», Gatchina, Russia*
- 26. P2-36** The Nature of Intermolecular Interactions in Solutions of Fullerene C<sub>70</sub>  
**BAKHRAMOV S.A., Kokhkharov A.M., Makhmanov U.K., Aslonov B.A., Chuliyev T.A.**  
*Institute of Ion-Plasma and Laser Technologies, Tashkent, Uzbekistan*

- 27. P2-37** Influence of Gamma Radiation on Raman Spectra of Ethylene-Tetrafluoroethylene Powder  
**Tashmetov M.Yu.<sup>1</sup>, ISMATOV N.B.<sup>1</sup>, Allayarov S.R.<sup>2</sup>, Saidov R.P.<sup>1</sup>**  
<sup>1</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*  
<sup>2</sup>*Federal Research Center of Problems of Chemical Physics and Medicinal Chemistry, Russian Academy of Sciences, Chernogolovka, Russia*
- 28. P2-38** The Effect of Concentration on the Magnetic Susceptibility of a Two-Dimensional Electronic Gas  
**Baymatov P.J., ABDULAZIZOV B.T., Tokhirjonov M.S., Yunusov O.M., Saydaliyev A.A.**  
*Namangan State University, Namangan, Uzbekistan*
- 29. P3-12** The Study of the Elemental Composition of Irrigated Soils on the Southern Aral Sea Region  
**ZHUMAMURATOV A.<sup>1</sup>, Zhumamuratov M.A.<sup>2</sup>, Sdykov I.M.<sup>3</sup>**  
<sup>1</sup>*Nukus State Pedagogical Institute, Nukus, Uzbekistan*  
<sup>2</sup>*Nukus Innovation Institute, Nukus, Uzbekistan*  
<sup>3</sup>*International Innovation Center of the Aral Sea region, Nukus, Uzbekistan*
- 30. P3-13** Features of Raman Spectra in Powders of Aromatic Compounds Placed in Photon Traps  
**RAKHMATULLAEV I.A.<sup>1</sup>, Bunkin N.F.<sup>2</sup>, Botirov Kh.Z.<sup>3</sup>**  
<sup>1</sup>*Branch of National Research Nuclear University MEPhI in Tashkent, Uzbekistan*  
<sup>2</sup>*Bauman Moscow State Technical University, Moscow, Russia*  
<sup>3</sup>*Karshi State University, Karshi, Uzbekistan*
- 31. P3-14** Zinc Contents in Fruits and Vegetables of Tashkent  
**KULDJANOV B., Osinskaya N.**  
*Institute of Nuclear Physics, Tashkent, Uzbekistan*
- 32. P3-15** Detection of Quark-Gluon Plasma Condensate in a Spirally Curled Hypersonic JET  
**KHASANOV Kh.**  
*Moscow State University, Moscow, Russia*  
*Samarkand State University, Samarkand, Uzbekistan*
- 33. P3-16** Ecological Monitoring and Morbidity Rate in Some Regions of Uzbekistan  
**AKHMEDOV Ya.A., Danilova E.A., Kurbanov B.I., Osinskaya N.S.**  
*Institute of Nuclear Physics, Tashkent, Uzbekistan*

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<sup>1</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*  
<sup>2</sup>*Bukhara State Medical Institute, Bukhara, Uzbekistan*  
<sup>3</sup>*Republican Special Scientific and Practical Medical Center of Neurosurgery, Tashkent, Uzbekistan*
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*Institute of Nuclear Physics, Tashkent, Uzbekistan*
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**KURBANOV B.I.<sup>1</sup>, Akhmedov Ya.A.<sup>1</sup>, Danilova E.A.<sup>1</sup>, Jurakulov A.R.<sup>2</sup>**  
<sup>1</sup>*Institute of Nuclear Physics, Tashkent, Uzbekistan*  
<sup>2</sup>*Navoi State Mining and Technological University, Navoi, Uzbekistan*
- 37. P3-20** The Effect of Radiation and Magnetic Pulse Treatment on the Wear Resistance of Hard Alloy Tools  
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*Institute of Nuclear Physics, Tashkent, Uzbekistan*
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*Samarkand State University, Samarkand, Uzbekistan*
- 39. P3-22** Polarization Facilities at JINR Accelerator Complex  
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<sup>1</sup>*Joint Institute for Nuclear Research, Dubna, Russia*  
<sup>2</sup>*Institute for Nuclear Research of Russian Academy of Sciences, Moscow, Russia*