



JOINT INSTITUTE FOR NUCLEAR RESEARCH

International Intergovernmental Organization

62-nd Session of the Program Advisory Committee in Particle Physics

23 June 2025, Dubna

V. Kekelidze

**Information on the Resolution of the JINR
Scientific Council**
137th session, 13–14 February 2025
and
**on the decisions of the JINR Committee of
Plenipotentiaries**
25 March 2025, Dubna

Information on the Resolution of the JINR Scientific Council

137th session, 13–14 February 2025, hybrid mode

Co-chaired by **Grigory Trubnikov** and by **Sergei Kilin**



PROGRAMM: 137th Session of the JINR Scientific Council 13–14 February 2025

February 13

- Report by the JINR Director (*G.Trubnikov*)- The most notable scientific results and events of 2025
- PAC recommendations of at the meetings in Jan. 2025: (*I.Tserruya, V.Nesvizhevsky, D.L.Nagy*)
- Election of Director of FLNR & endorsement of appointments of Deputy Directors of LRB
- Announcement of vacancies of positions in the directorates of FLNR
- Visit to the Dzhelepov Laboratory of Nuclear Problems for the festive opening of new base facility, the LINAC-200 accelerator

February 14

- Reports by young scientists as recommended by the PACs
- Jury's recommendations on the award of JINR prizes for best papers in theoretical & experimental research, methodology & technology research, & applied technology research (*S. Dmitriev*)
- Proposal for awarding the title "Honorary Doctor of JINR" (*G.Trubnikov*)
- General discussion. Adoption of the Resolution of the Scientific Council

137th Session of the JINR Scientific Council 13–14 February 2025

G. Trubnikov reported on the implementation of the JINR 7-Year Plan for **2024–2030**, on the progress in the project realizations for **2024**, & on the recent events in JINR's scientific activities & international cooperation.

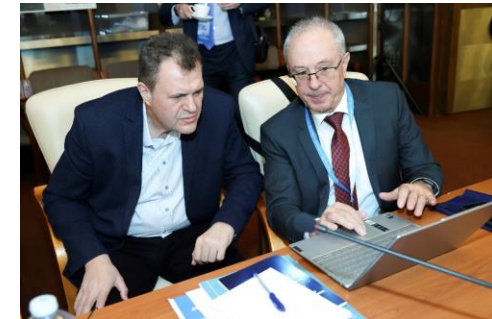
Sergey Kilin (Belarus) was re-elected the **SC Co-Chair** for the next 3 years. **SC** welcomed its new members **Raghunath Sahoo** (India) & **Song Yuntao** (China).

S. Sidorchuk was elected as **FLNR Director** for 2-nd term of 5 years, vacancies for the positions of **FLNR Deputy Directors** were announced

SC endorsed the appointments of **A. Boreyko** & **I. Padrón Díaz** as **Deputy Directors** of the **LRB** until the completion of the term of the **LRB Director**.

SC approved Director's proposal to award the title "**Honorary Doctor of JINR**" to **M. Sakr** for his great contribution to enhancing the role of the **ARE** in JINR's scientific life, strengthening scientific cooperation between the **ARE** & JINR.

Jury's recommendations were presented by S. Dmitriev on awarding the **JINR annual prizes** for best scientific, methodological, technological, & applied research **papers** were approved.





137th Session of the JINR Scientific Council 13–14 February 2025

SC appreciated recent achievements reported by **G. Trubnikov**:

- preparation to launch the **NICA** accelerator complex;
- **MPD solenoid** cooling down to $t = 4.5 \text{ K}$, preparation for the data analysis of the **fixed-target mode** experiment with **MPD**;
- progress in the analysis of **Xe+CsI** interactions at **3.8 AGeV** in **BM@N**.
- progress in the development of the **Baikal-GVD** telescope - the installation of **two clusters**;
- successful participation in advanced neutrino experiments: **JUNO**, **NOvA**, **T2K** & **LEGEND**.
- contribution to the second phase of upgrading the **ATLAS**, **CMS**, & **ALICE**, & obtaining new results in the **CERN-SPS experiments**;
- launch of the new facility **LINAC-800** in commissioning mode with an **e** energy of up to **200 MeV**;
- **SHE** Factory achieved project parameters; preparation for certification of **SHE Factory** experimental halls for the **1-st class** of radiation safety; the synthesis of element **116** were performed using ^{50}Ti beams; experiment with ^{54}Cr in preparation for the synthesis of elements **119** and **120**.
- **New** experimental facilities of the **U-400R** are being designed. The launch of the **DC-140** accelerator complex for applied research with **heavy ion beams** is scheduled for the second half of **this year**.

- The research pulsed reactor **IBR-2** in **FLNP** started again its operation, many reactor's engineering systems were thoroughly modernized.
- **MLIT** continued actively work for **JINR experiments** & continues to develop the **JINR Digital Ecosystem** by updating its **administrative services**.
- **LRB** scientists published papers on **combined proton therapy** with **pharmaceuticals** that promote efficient repair of **double stranded DNA break**.
- **BLTP** scientists achieved significant progress in theoretical, mathematical, nuclear, particle, relativistic heavy ion, & solid-state physics as well as materials science; **11** conferences were organized with the active participation of **BLTP**, including the **Nucleus-2024** & a session of the **Nuclear Physics Section** of the **PD** of the **RAS**.
- Last year, > **900** people participated in the educational programs of **JINR University Centre**.
- **JINR dissertation councils** have successfully worked to improve the qualifications of researchers from the Institute & organizations in the Member States.
- The **first issue** of the new online journal of JINR "**Natural Science Review**" was published.
- A competition of innovative activities at **JINR started**, laboratories collected & discussed requests

SC took note of the recommendations of PACs at Jan. '25 meetings

Particle physics.

The Scientific Council:

- appreciated the **PAC's** support for the signing of a **high-level agreement** between **JINR & Ministry of Science & Technology (China)** on the beginning of joint projects implementations;
- acknowledged the significant progress in the **NICA collider** commissioning;
- noted that the main subsystems of the **Phase-I MPD** are produced;
- appreciated the progress in the implementation of the **BM@N** project;
- noted with satisfaction, that **SPD team** finalized the **TDR** & started detector main system manufacture & preparation of computing infrastructure;
- supported the PAC's recommendation to open a new project "**Study of neutrino properties in accelerator experiments**", comprising JINR's participation in the ongoing **accelerator neutrino experiments NOvA, T2K, FASER, and DsTau**;
- appreciated the contributions of the JINR teams participating in the **LHC experiments** in physics analyses & detector upgrades.





Nuclear physics.

The Scientific Council:

- appreciated the significance of the **Baikal-GVD** project & the leading role of JINR in its implementation & noted an important outcome achieved by the analysis of **2018–2023** data — confirmation of the diffuse astrophysical neutrino flux observed by the **IceCube** experiment with a significance of above **5σ** ;
- noted extensive work underway to start the **LINAC-200** facility at **DLNP**, which is part of the future **LINAC-800** accelerator, indicated that requests from the Laboratories & research teams of JINR participating countries are the primary focus in the user research program, & recommended to concentrate efforts on preparing the **1-st experiments** at **LINAC-200**;
- acknowledged tremendous efforts to prepare for long-term experiments on the spectroscopy of the isotopes of superheavy elements synthesized in the $^{48}\text{Ca} + ^{242}\text{Pu}$ reaction;
- greatly supported the program for studying the **isotopes of superheavy elements**; endorsed the **PAC** recommendations to explore the possibility of **designing a station** to detect the mass & **TKE distributions of the fission fragments**; this would greatly enhance the comprehension of the fission process in an unknown mass region.

Condensed matter physics.

The Scientific Council:

- *appreciated the progress in resuming **IBR-2** operation & highly appreciates the Directorate efforts to resume regular cycles for users & plans to extend the operation with high-performance parameters by **loading new fuel**;*
- *supported **PAC**'s recommendations to strengthen its work with potential users to attract the maximum number of researchers, primarily from the **MS**.*
- *welcomed the permanent attention of the PAC to the **new neutron source** project & the developing new advanced devices & technologies for **cryogenic moderators** of the **new neutron source**.*
- *noted the progress in the **IBR-2 instrumentation** development during the technical shutdown & considered these activities important for the successful realization of the **FLNP** scientific program & the user program at a competitive level.*



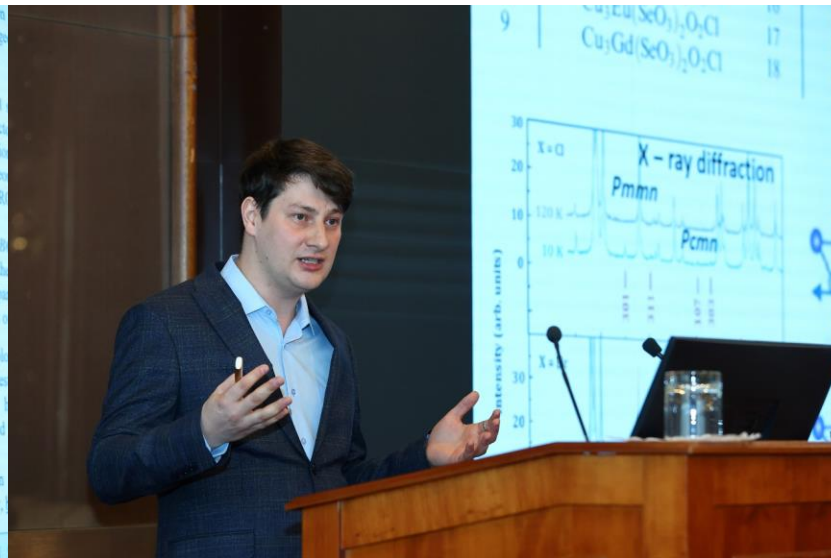
SC appointed **S. Jabarov** (Supreme Attestation Commission under the President of the Republic of Azerbaijan, Baku, Azerbaijan) as a member of the **PAC** for **Condensed Matter Physics** for a term of **3** years.



Reports by young scientists

SC followed with interest the reports by young scientists (selected by PACs) : “Construction of the ISCRA & SIMBO stations for applied research on high-energy ion beams. Radiation hardness testing of microchips by low energy pulsed ion beams at the SOCHI station” by **A. Slivin** (VBLHEP), “Intense metallic ion beams for SHE synthesis” by **D. Pugachev** (DLNP), and “Structural and vibrational properties of the $\text{Cu}_3\text{Bi}(\text{SeO}_3)_2\text{O}_2\text{Cl}$ francisite at high-pressure” by **A. Rutkauskas** (FLNP).

SC thanked the speakers and welcomed such selected reports in the future.



Festive Opening of the JINR New Basic Facility — the LINAC-200 Accelerator

13 Feb. marked the ceremony to launch new base facility of **DLNP - LINAC-200**

On **12 Feb.** **24 MeV e** test beam was successfully launched; it is planned in future to gradually put the accelerator structures into operation at **400 & 800 MeV**.

Before commissioning the accelerator an extensive work in repairs of **building №118** was done. This accelerator, transferred to **JINR** from **NIKHEF** (Netherlands), underwent extensive upgrades.

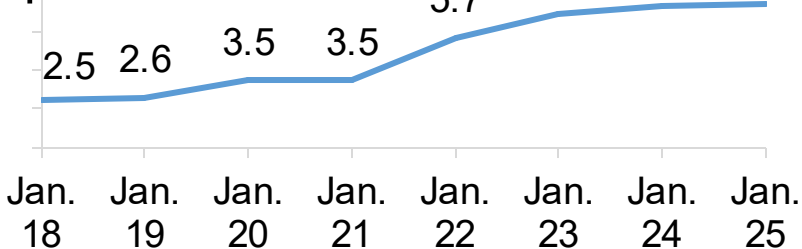


A **user program** at **LINAC-200** is being developed, primarily focused on the requests of Labs & scientific groups from the **JINR MS**. The beams will be used for testing of MPD & SPD detector prototypes, applied work in radiation materials science, radiobiology, & radiochemistry, nuclear physics experiments, & University Centre's internships for students & specialists from the MS. Specialists from **Vietnam** are planning to study **photonuclear** reactions at **133 & 207 MeV** with extracted beams. **DLNP, VBLHEP & FLNP** jointly implemented the project.

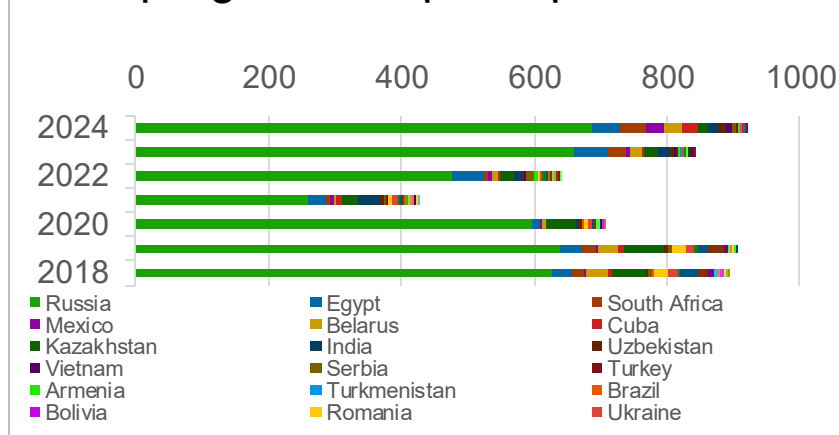


Monitoring Performance Indicators

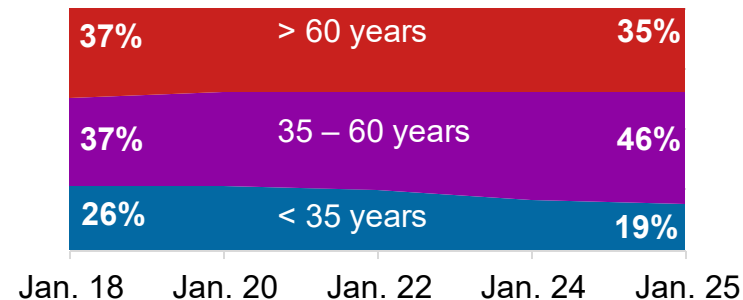
Cost of basic facilities in M ₸ per 1 researcher



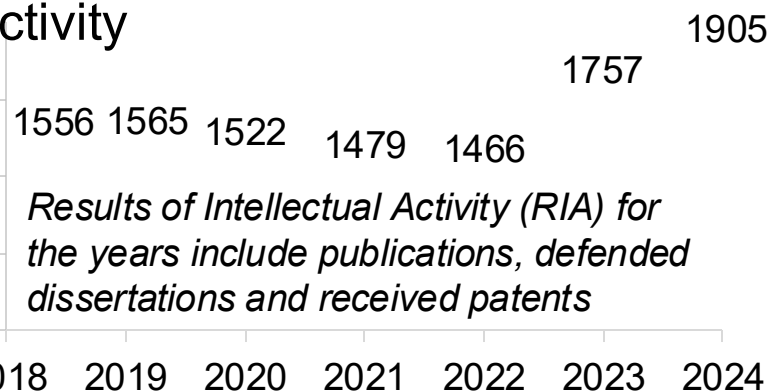
Number of University Centre programmes participants



Age distribution

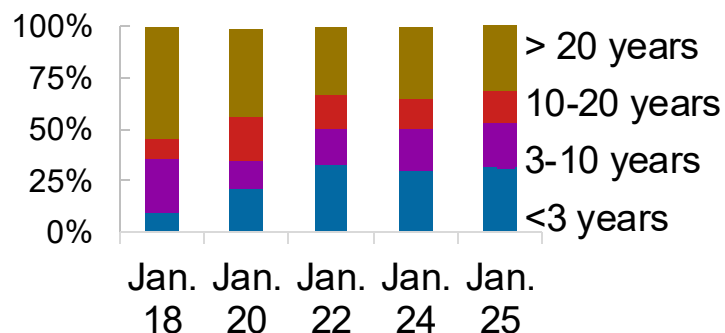


number of Results of Intellectual activity

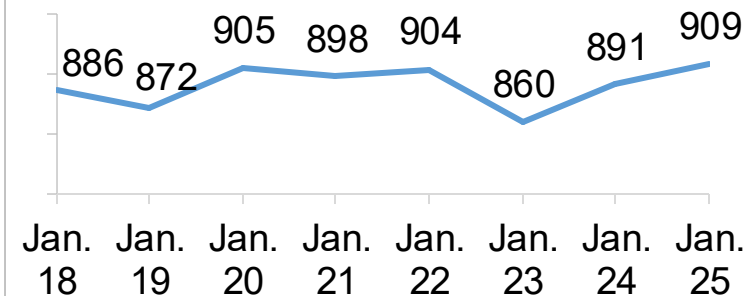


Results of Intellectual Activity (RIA) for the years include publications, defended dissertations and received patents

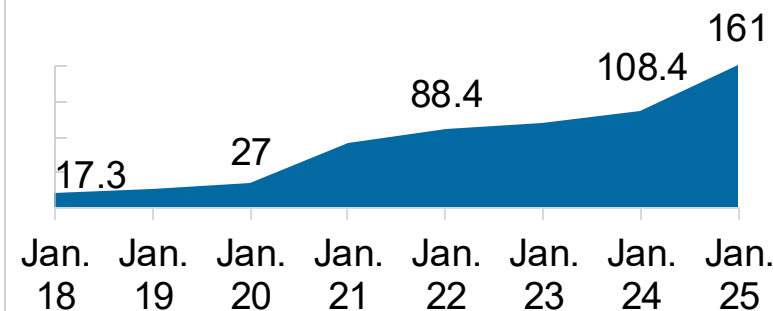
Breakdown of number of basic facilities by age



staff with academic degrees



Total amount of data in the JINR storage system (PB)



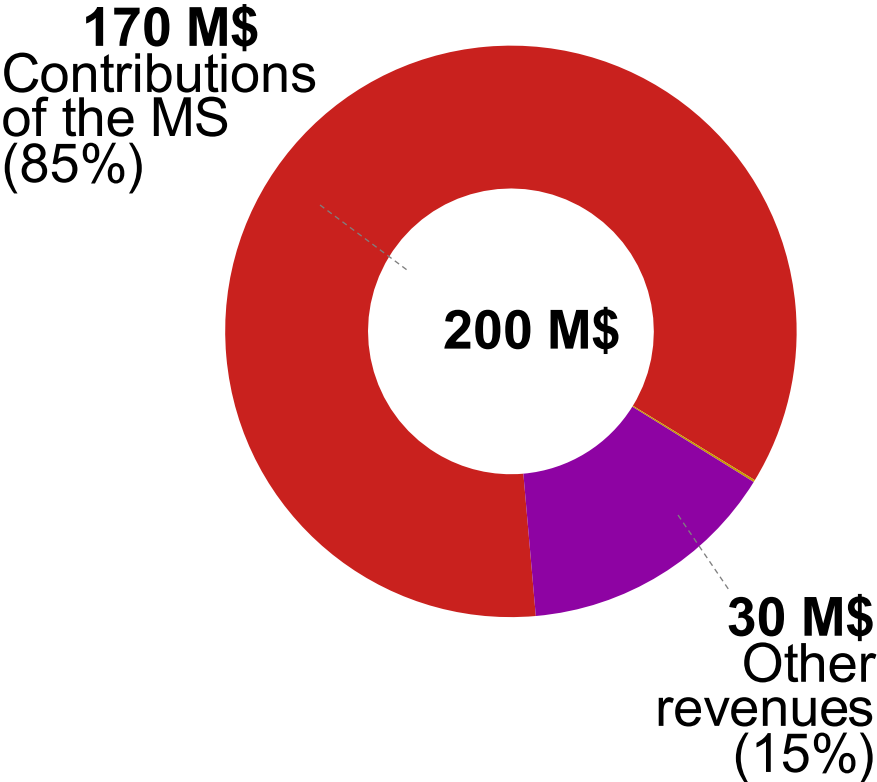
2021 **2022** **2023** **2024**

N publications by Scopus

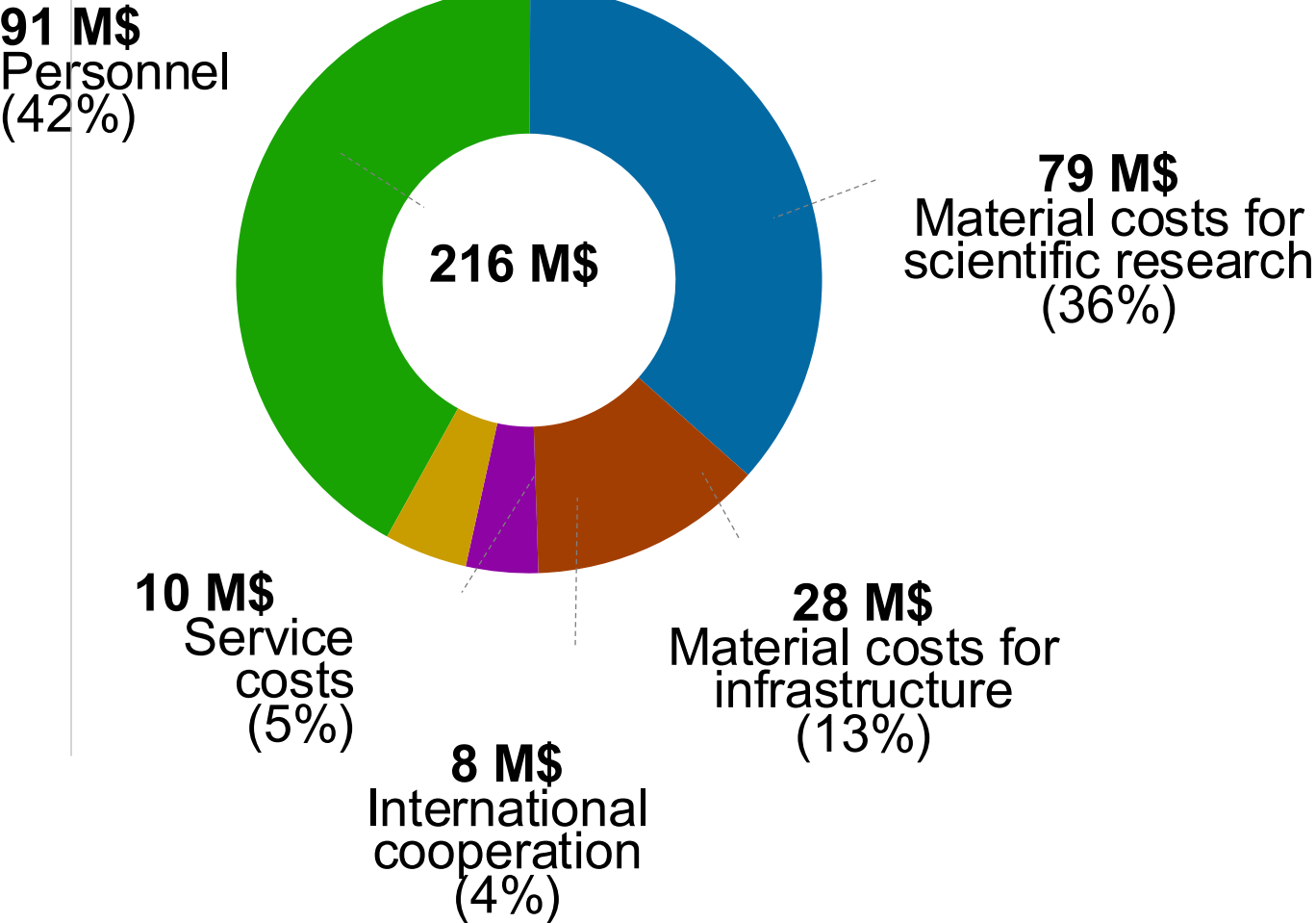
1454 1352 1418 1443

Actual Amounts of Income and Expenditure for 2024

Income



Expenditure (by consolidated items)



On the Resolution of the Session of the JINR Committee of Plenipotentiaries

25 March 2025, Dubna

Chair of the Committee of Plenipotentiaries — representative of Georgia **A. Khvedelidze**



Session of the JINR Committee of Plenipotentiaries, 25 March 2025

AGENDA

1. **G. Trubnikov:** *Report by the JINR Director*
2. **V. Kekelidze:** *On the first run at the NICA Accelerator Complex*
3. **N. Kalinin:** *Execution of the JINR budget for 2024 and draft of the revised budget of JINR for 2025*
4. **A. Omelchuk:** *Results of the meeting of the JINR Finance Committee held on 24 March 2025*
5. **A. Khvedelidze:** *On the call of elections & nomination of candidates for the position of **JINR Director***
6. **V. Matveev:** *Scientific report: “To the 60th anniversary of the hypothesis of colored quarks and the Dubna model of hadrons”*
7. **S. Nedelko:** *On preparing and holding the events dedicated to the 70th anniversary of JINR*



Session of the JINR Committee of Plenipotentiaries, 25 March 2025

The Committee of Plenipotentiaries:

- *approved the progress in implementing the current plan for research and development of the **large scientific infrastructure of JINR**, the successful participation of the Institute in **international collaborations**, & achievements in strengthening **international cooperation**.*
- *noted with satisfaction the publication of the first issue of the **new JINR scientific journal “Natural Science Review”** in December 2024.*
- *noted the high efficiency of the **support program of the Ministry of Education & Science of RF** for organizations collaborating in the framework of research at the **NICA complex**, & to consider it as an example of efficient assistance from a JINR MS in expanding the Institute’s cooperation with **national research organizations** & universities to projects based at JINR.*

- approved the organizational & financial decisions made by the JINR Directorate to minimize the risks of non-implementation of **NICA** project in **2022–2025**, to find ways to reduce costs, & the presented updated cost of the project in the amount of M RUB **34 000**. Commissioned the JINR Directorate to continue this work and to ensure the adoption of decisions & measures for maintaining the project implementation schedule to achieve the main parameters of the complex, as well as to continue active claims work with unfair suppliers.
- approved the **revised budget** of **JINR** for **2025** with the income amounting to kUS\$ **234 017.7** & the expenditure amounting to kUS\$ **315 465.3**, taking into account the positive opening balance amounting to kUS\$ **40 170.2**.
- commissioned the **JINR Directorate & Working Group for JINR Financial Issues** to work out the possibility of **indexation** of the **Incentive Fund** for highly qualified employees, & to analyze the **competitiveness** of the **salary level** of scientific workers.



Session of the JINR Committee of Plenipotentiaries, 25 March 2025

Election of the Institute Director

The election of the Institute **Director**, whose powers expire on **31 Dec. '25**, was the central item on the agenda. The Chairman, **A.Khvedelidze**, announced the **rules** for calling elections & nominating candidates. **The CP members proposed to hold elections at the current meeting.**

Having discussed the report “On the call of elections & nomination of candidates for the position of JINR Director” by **A. Khvedelidze**, taking into account the unanimous decision of the **PP** to nominate **G.Trubnikov** as the only candidate for the position of **Director**, as well as the consent of **G. Trubnikov** to be nominated, based on the **results of open voting**, in accordance with the **JINR Charter & Regulation**, **G.Trubnikov** was **unanimously elected to the position of JINR Director for a term of 5 years taking office on 1 January 2026.**

G.Trubnikov expressed gratitude to the JINR member countries' plenipotentiaries for their trust & appreciation of the work of both the **Directorate & entire staff** of the Institute.



Session of the JINR Committee of Plenipotentiaries, 25 March 2025

The Committee of Plenipotentiaries:

- *thanked Scientific Leader of JINR, **V. Matveev** for his interesting & informative report “To the 60th anniversary of the hypothesis of colored quarks and the Dubna model of hadrons”.*
- *approved **the Plan of events** dedicated to the **70th anniversary** of JINR proposed by the Organizing Committee & reported by **S. Nedelko**, which includes holding **JINR Days** in **MS**, major scientific conferences, exhibitions, cultural & sporting events, as well as the preparation & publication of a book about the **history of JINR**. The Committee decided to hold a ceremonial meeting dedicated to the **70th anniversary** in **March 2026** in **Dubna**.*
- *invited all JINR MS to send their **national delegations** to participate in this event & commissioned the JINR Directorate to organize a meeting of the Working Group under the CP Chair for JINR Financial Issues in **June–July 2025**, in **Armenia**.*



Run #1 at the NICA Accelerator Complex has been Launched

*On 25 March 2025, run #1 at the **NICA** accelerator complex was started. The ceremony took place alongside a **CP** session in the presence of representatives of **20 Member States & Associate Members**, as well as **partners** of the JINR.*



*The event took place in the **MPD hall** in a hybrid format, as the **main control room** is located ~ **0,5 km** from the MPD hall. **VBLHEP** Acting Director **A.Butenko**, **CP** Chair **A.Khvedelidze**, & **Deputy Minister** of SHE RF **A.Omelchuk**, together with **G.Trubnikov**, shared the honor to give the **command to start**. After the dispatcher in the control room confirmed that all systems are ready, the cold gas started to fill the accelerators, & a **Xe** beam of ~ **300 microamperes**, was **injected**.*

International Cooperation

Member States



24–26 Feb. '25 JINR delegation led by Vice-Dir. **L. Kostov** visited the AS RUz, Institute of Nuclear Physics & met with President of the AS **Shavkat Ayupov**. The parties discussed expansion of the cooperation & agreed on the meeting in April 2025.

24–26 Mar. '25 President of the AS RUz **Shavkat Ayupov** paid a visit to JINR, participated in the **FC & CP** meetings, & met with **JINR Director**.



The AS Presidium hosted interactive exhibition dedicated to JINR's activities. The ceremony participants laid flowers on the grave of Acad. **B.Yuldashev**, a long-time AS President, Plenipotentiary Representative of the Government of Uzbekistan at JINR.



On 22-24 Apr. '25 JINR Days in Uzbekistan took place. JINR & AS RUz signed a scientific & technical cooperation agreement. G.Trubnikov was awarded the “**80 years of the AS**” honorary medal. JINR delegation met with First Deputy Minister of Higher Education, Science & Innovation **Shaxrukh Daliyev**



International Cooperation

Member States



7–8 April 2025 Members of the National Assembly of the Republic of Bulgaria, **Yordan Todorov & Angel Yanchev**, visited the JNR & got acquainted the JINR laboratories & main facilities.



27 Mar. '25 Plenipotentiary of Mongolia **Suren Davaa** & Director NRC at the National University of Mongolia **Byambajav Munkhbat** visited JINR.

The delegates met with JINR Directorate & Mongolia national group. It was agreed to hold the 2025 NUMAR-Gobi International School on Nuclear Methods & Applied Research in Ulaanbaatar this summer.

11 Feb. '25 **VINATOM** delegation, headed by President **Tran Thi Thanh**, & representatives of the Rosatom, visited the FLNP at JINR & got introduced to IBR-2M pulsed reactor & facilities using extracted neutron beams. Parties discussed FLNP specialists' participation in research reactor being designed in Vietnam, & agreed to involve Vietnam scientists in the activities at the IBR-2M



10–16 May '25 In Hanoi, representatives of VBLHEP, FLNP, FLNR, MLIT, & the University Centre participated in a number of meetings on education & personnel training with universities & scientific centres of Vietnam.

International Cooperation

Member States



31 Jan. '25 Academician-Secretary of the Physics Department of RAS **Vitaly Kveder** & Director of the Solid State Physics institute **Alexander Levchenko** visited JINR, met with the Directorate & **Yuri Oganessian**, discussed Russian federal program “Fundamental properties of matter”.

International Cooperation

Associated Members

13 Feb. '25 JINR hosted a meeting with Director of the Vinča Institute of Nuclear Sciences (Serbia) **Slavko Dimović**. The parties discussed cooperation prospects and potential new projects.



27 Mar. '25 State Secretaries of the Ministry of Science, Technological Development & Innovation of Serbia, **Miroslav Trajanović**, met with the JINR Directorate. The parties discussed the prospects of JINR–Serbia cooperation & outlined the next steps to implement joint initiatives and projects.

International Cooperation JINR Delegation in Japan

19–21 May '25 JINR delegation led by G.Trubnikov visited Japan & took part in working meetings at major national research centres: **KEK (High Energy Accelerator Research Organization)** & **J-PARC (Japan Proton Accelerator Research Complex)**.



The parties discussed opportunities for cooperation in JINR, KEK, and J-PARC projects, expressed mutual interest & noted were willing to update the current MoU.



JINR scientists are actively involved in the the COMET & T2K experiments at J-PARC , making a significant contribution to detector systems & data analysis. The KEK & J-PARC leadership highly appreciated the achievements of the JINR specialists & noted the potential for their participation in the future Hyper-Kamiokande Project. The parties expressed mutual interest in involving Japanese scientists in experiments at JINR's main facilities, & hlighted the importance of academic mobility for physicists..

International Cooperation Deepening Ties with Latin America

8 May '25 JINR & the Ministry of Science, Technology and Innovation (MCTI) of the Federative Republic of Brazil signed a **MoU** aimed at strengthening cooperation in fundamental & applied research



Parties agreed to create a **JINR–Brazil JCC** at governmental level. The **JCC** is designed to establish a method of selecting & implementing collaborative usage of JINR & Brazil **research infrastructures** for scientific & technological development of **Brazil** & the **JINR MS**



12 May '25 JNR & Federal University of Rio Grande do Sul signed a **MoU** in Porto Alegre, Brazil. JINR & educational organizations of Brazil established a partnership in fundamental & applied research & made a step in developing scientific cooperation.

On 13 May, the delegation from Dubna visited several scientific & educational departments of the **University of Rio Grande do Sul**. The parties discussed areas for joint research & noted the complementarity of the existing scientific infrastructure. Representatives of the UFRGS Institute of Geoscience expressed interest in collaborating with JINR in **climate studies**.

International Cooperation

Scientific Cooperation with South Africa

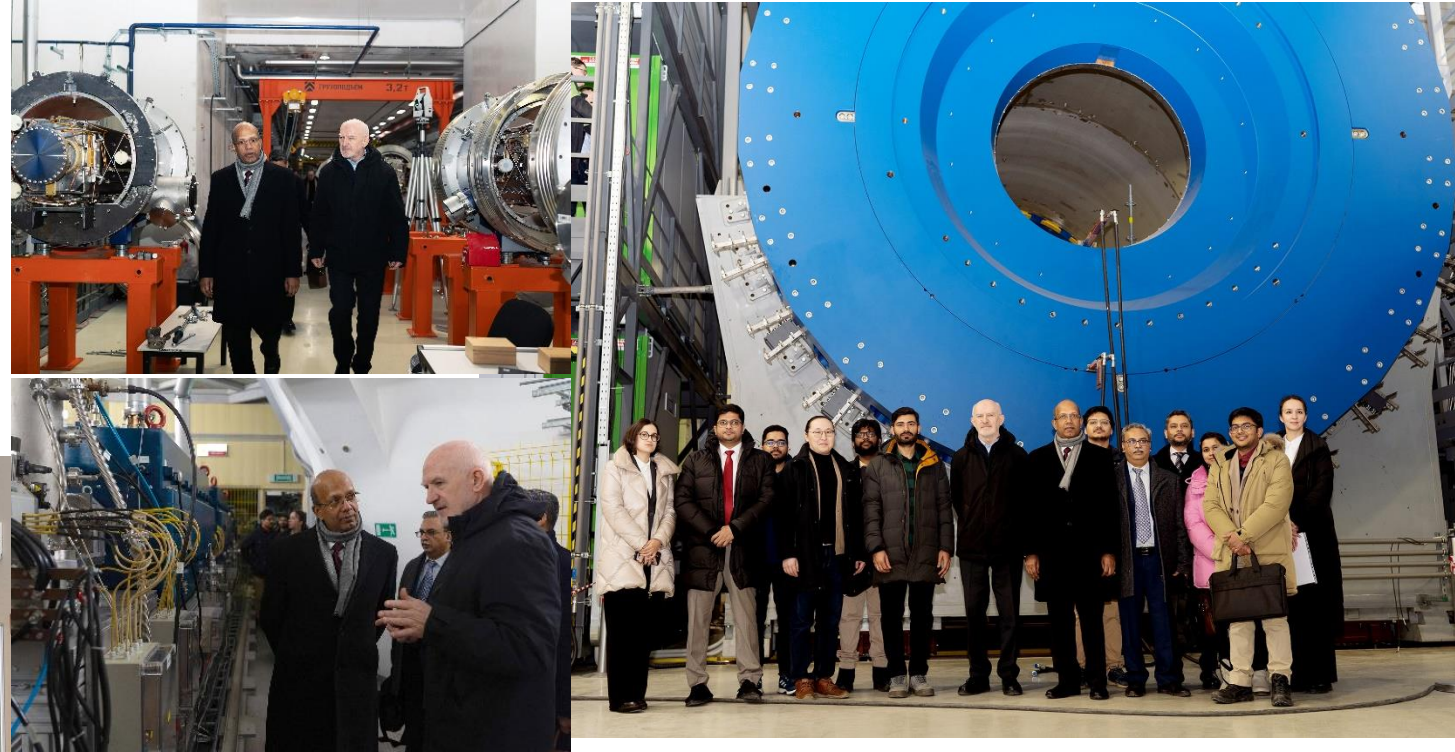
19–20 Mar.' 25 *An international radiobiology meeting organized by the Republic's accelerator centre, NRF: iThemba LABS, & JINR took place in Cape Town, SA. The participants decided to create a consortium that will use infrastructure of SA research centres a& JINR to promote medical radiobiology research.*

The meeting brought together > 50 specialists in radiobiology, medical physics, & radiation therapy from JINR & SA. The event was attended by experts from the SA Nuclear Energy Corporation (NECSA), the Nuclear Medicine Research Infrastructure (NuMeRI), & medical centres specialising in radiation medicine, & representatives of leading universities from four provinces of South Africa.



International Cooperation Strengthening Partnerships

23 Jan. '25 The Ambassador of the Republic of India **Vinay Kumar** visited JINR, met with the group of Indian employees & attended NICA accelerator complex. Plans to further strengthen the JINR–India relations were discussed JINR Directorate.



A.Kamavisdar**, Adviser to the Department of Science and Technology of the Embassy of India, took part in the **JINR CP** session on **25 March



Thank you