



## JINR Newsletter #1, 12 January 2023

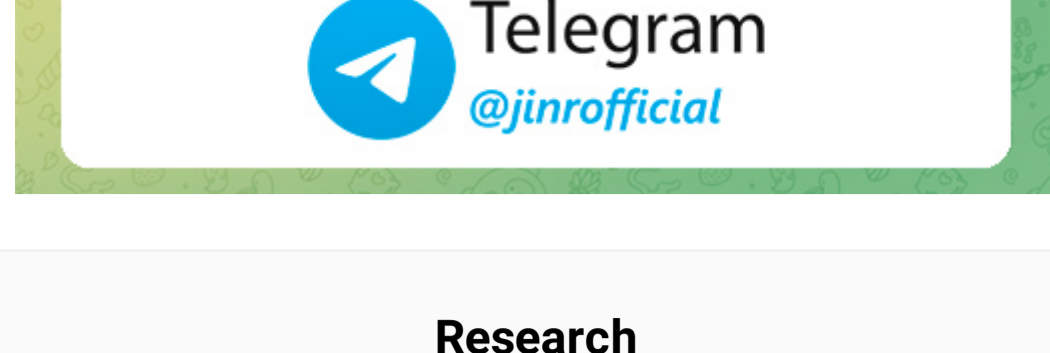
*Dear colleagues and friends,*

The whole Institute has started working with renewed vigour after the long New Year holidays. Let's look back at recent events of the past year. There are a number of JINR scientific achievements among them, as well as successes of JINR scientific youth.

In the new RIA Novosti podcast, you can learn how radiation affects DNA and what DLNP JINR molecular geneticists are doing. Find also book novelties and an interesting selection of cultural events in this issue of JINR Newsletter.

We wish everyone a successful 2023!

JINR Press Office



### Research

#### FLNR JINR scientists pioneered synthesising a new neutron-deficient isotope

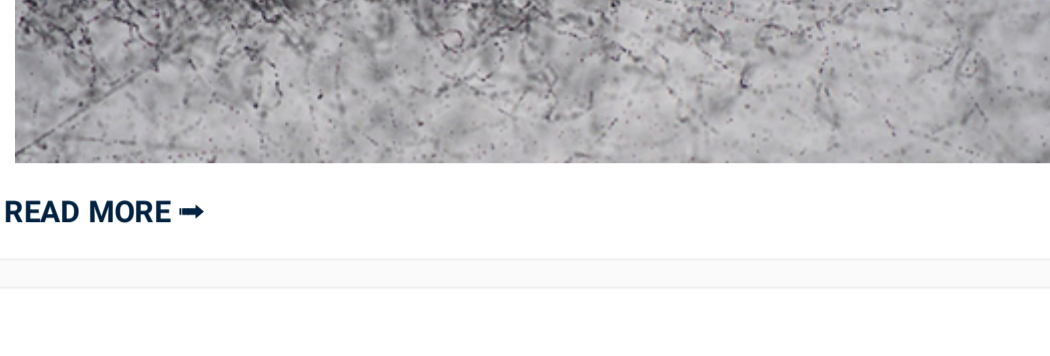
Scientists also discovered a new decay mechanism and isomeric states of the  $^{253}\text{Rf}$  isotope and analysed the  $\alpha$ ,  $\gamma$ -spectra of  $^{256}\text{No}$ ,  $^{257}\text{Rf}$  nuclei. The results were obtained as a part of the study of the radioactive decay properties of neutron-deficient nuclei of nobelium and rutherfordium in 2019 - 2021.



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#### "White" stars reconstructed at JINR by nuclear photoemulsion method

Participants of the BEQUEREL experiment have started analysing interactions of xenon nuclei with the energy of 3 GeV/nucleon in layers of nuclear emulsion irradiated during the ongoing run at the NICA complex. The obtained macrophotographs of events allow scientists to see the way the interactions of the heaviest particles ever accelerated at NICA look like. It also makes it possible to reconstruct them with high accuracy.



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#### JINR in FLAP Collaboration

The Joint Institute actively participates in the young international FLAP collaboration (Fundamental & Applied Linear Accelerator Physics) created around the LINAC-200 Linear Electron Accelerator, a unique JINR facility. Representatives of the collaboration spoke about the formation, work, and important results of FLAP in 2022.

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#### News from T2K experiment

The international T2K experiment, which is carried out with the participation of DLNP JINR staff members, is currently upgrading the Near Detector ND280. In the future, the detector will become a constituent of the new Hyper-Kamiokande Project.

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#### FLNP summed up results of the year

On 29 December, the Laboratory of Neutron Physics held a meeting of the Science and Technology Council, at which the results of work in 2022 were summed up. FLNP Director Valery Shvetsov spoke about the status of the IBR-2 Reactor, the creation of a new neutron source, and the research carried out.

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### Cooperation

#### Joint scientific projects of JINR and Egypt

JINR and the Academy of Scientific Research and Technology of Egypt welcome applications for joint scientific projects! They may be devoted to any research topic of the JINR Labs. Those interested to initiate a project should contact their colleagues from Egypt, choose a theme for works, and fill out an application.

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### JINR Youth

#### JINR scholarships for young scientists

In December, laboratories of the Joint Institute for Nuclear Research announced the winners of the competition for the scholarships in honour of the JINR founding fathers. Among the given scholarships are V. P. Dzhelepov, B. M. Pontekorvo, A. M. Baldin, V. I. Veksler, M. A. Markov, I. M. Frank ones.

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#### Results of competition for JINR Youth Grants-2023

The results of the Grant Competition for JINR Young Scientists and Specialists 2023 were announced. The competition was held by AYSS JINR. 56 scientists, 39 specialists, and 10 highly-qualified workers won grants.



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#### Results of work and further plans of JINR youth

On 29 December, youth of the Joint Institute discussed the results of the outgoing year and plans for the future at a reporting seminar of the Association of Young Scientists and Specialists of JINR.

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#### JINR Scholarships for MPEHI students and postgraduates!

The results of the competition for scholarships of the Joint Institute for students and postgraduates of the National Research Nuclear University MPEHI in the 2022/2023 academic year have been announced.

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### JINR Community

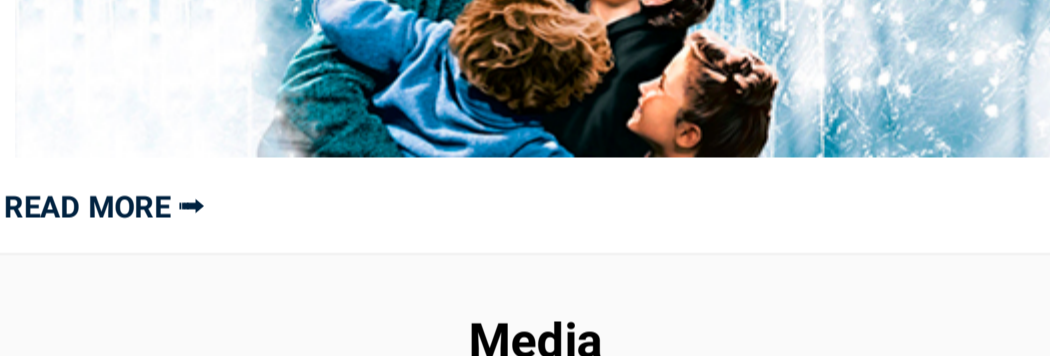
#### Excursion to NICA, "Each of you has a hand in this project..."

On 29 December, an excursion to the NICA Accelerator Complex was held for the JINR Directorate, heads of all the laboratories, and Institute's services at the Laboratory of High Energy Physics JINR. Participants walked through the tunnel of the NICA Collider, saw the MPD Detector Hall and an interactive presentation of the megascience project.

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#### JINR Cinema Club

This Saturday, on 14 January, at 5:00 PM, you can enjoy watching a Christmas classic film "It's a Wonderful Life" (1946) by an American film director Frank Capra. All are kindly invited! Please note that the film will be shown in the JINR Universal Public Library.



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### Media

#### "Science is, first and foremost, people, teams"

In the interview for the Stimul Journal about innovations, JINR Director Grigory Trubnikov spoke about international scientific and technical cooperation in difficult times, the meaning of being a member of the big international JINR family, the membership of scientific personnel at the Institute, its flagship projects and innovative developments.



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#### "Science and Life": Extreme bacteria from neutrino observatory

The January issue (No 01, 2023) of the popular science journal "Nauka i Zhizn" ("Science and Life") published the article by Head of the DLNP Sector of Molecular Genetics of the Cell and Candidate of Biological Sciences Elena Kravchenko. The article is about the discovery of a new type of extremophilic bacteria in the subsurface water of one of the tunnels of the Kansas Neutrino Observatory of INR RAS.

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#### JINR scientists in podcast by RIA Novosti

Staff members of the Sector of Molecular Genetics of Cell of the Laboratory of Nuclear Problems of the Joint Institute for Nuclear Research Mikhail Zarinin and Kirill Tarasov took part in the podcast "We will all die. But we are not sure". They talked about radioresistance of tardigrades, how cellular machinery works, whether genes can be switched on and off, and how they are repaired.

[LISTEN →](#)

#### JINR Weekly Newspaper issued

New issue of the JINR Weekly Newspaper #1 has been published. Please note that you can read an English version on the JINR Newspaper's website.

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### Recalling founders

#### Georgi Nadjakov

On 8 January, the Joint Institute pays tribute to the memory of the outstanding Bulgarian physicist Georgi Stefanov Nadjakov (8.01.1897 – 24.02.1981), who made a significant contribution to the development of JINR during the first decades of the Institute's existence. The scientific heritage of Georgi Nadjakov relates to physics of dielectrics and semiconductors, magnetism, nuclear physics.

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#### Dmitry Blokhintsev

11 January marks the 115th anniversary of the birth of an outstanding Soviet physicist Dmitry Blokhintsev (1908 – 1979), one of the initiators of the establishment of the Joint Institute for Nuclear Research and its first Director.

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### Books

#### New books in Blotinka

The JINR Universal Public Library has presented new books for adults by Alexey Salnikov, Evgeny Vodolazkin, Narine Abgaryan, as well as detective stories and novels. It is a great opportunity to spend cold evenings at home with a fascinating book.



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### Sports

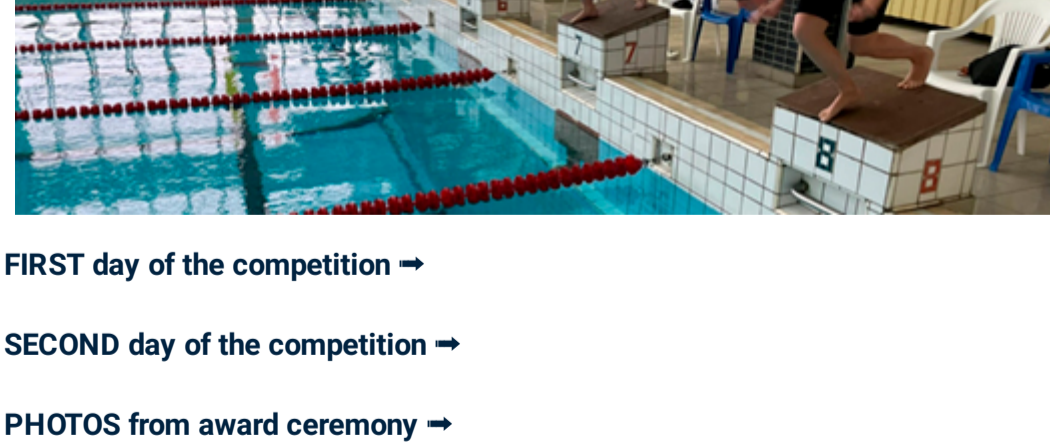
#### Go, hockey lovers!

Both beginners and professionals are kindly invited to play hockey! Games are held on Thursdays at the Snowman Skating Rink at 7:30 PM. Take your skates, sticks, and helmets for the first trainings. We have a truly hospitable team and welcome everyone who is keen on hockey.

For any inquiries, please call Vjergel Konstantin +7 926 279 81 59 or come to the skating rink at indicated time.

#### Dubna Open Swimming Championship

On 29 and 30 December 2022, the Dubna Open Swimming Championship dedicated to the memory of a USSR Master of Sports Nikolay Zuev was held in the Archimedes Swimming Pool of JINR.



[FIRST day of the competition →](#)

[SECOND day of the competition →](#)

[PHOTOS from award ceremony →](#)

#### Tennis Tournament in memory of D. Shirkov

On 5 and 6 January, the JINR Sports Club hosted a Christmas Tennis Tournament dedicated to the memory of RAS Academician, outstanding theorist Dmitry Shirkov. Dubna tennis players, JINR employees, children and grandchildren of the Academician joined the event.

[LEARN the results →](#)

### Upcoming Events

#### Advisory Bodies

- [17 – 18 January 2023, 56th Meeting of the Programme Advisory Committee for Condensed Matter Physics, JINR Scientists' Club](#)
- [23 January 2023, 57th Meeting of the Programme Advisory Committee for Particle Physics, JINR International Conference Centre, Dubna](#)

#### Seminars

- [16 January 2023, at 11:00 AM, BLTP, Journal Club: "Quantum spin dynamics of quasi-one-dimensional Heisenberg-ising magnets in a transverse field. Confined spinons, Eg spectrum, and quantum phase transitions" by Pavel Maksimov](#)
- [17 January 2023, at 11:00 AM, BLTP, "Neutrino spectra of magnetorotational supernovae and prospects for observations by Cherenkov detectors" by V. N. Kondratyev and D. Torekhan](#)

#### Culture

- [22 December 2022 – 22 January 2023, daily from 1:00 to 2:00 PM \(except Monday\), JINR Cultural Centre "Mir", Exhibition by JINR Artists' Club](#)
- [12 January 2023, at 7:00 PM, JINR Universal Public Library, Meeting of the book club "Hairin": discussing the autobiography "Me, Maya Pisetakaya"](#)
- [13 January 2023, at 6:30 PM, JINR Universal Public Library, Dubna Intellectual game's club](#)
- [13 January 2023, at 7:00 PM, JINR Scientists' Club, Lecture "Classicism"](#)
- [18 January 2023, at 7:00 PM, JINR Cultural Centre "Mir", Spain, Musical sketches](#)

#### For Kids

- [14 January 2023, at 5:00 PM, JINR Cultural Centre "Mir", Let's READers](#)

[ALL JINR EVENTS →](#)