

## JINR Newsletter #21, 5 June 2024

Dear colleagues and friends,

A remarkable scientific result of this week was the release of a publication in *Biotechnology Progress* featuring the new DLNP JINR development. Scientists have created a new hybrid material that can significantly simplify the process of isolating extracellular DNA from solutions.

Two major meetings took place at JINR. The ARIADNA Collaboration reviewed work plans for the support programme of the Russian Ministry of Science and Higher Education. Participants of the Baikal-GVD Collaboration are currently discussing the results of the project's past winter expedition.

Read about scientific results, educational activities, new awards for JINR scientists, and much more in the latest issue of the JINR Newsletter.



### JINR Flagship Projects

#### ARIADNA Collaboration discussed plans for programme of Russian Ministry of Science and Higher Education

On 31 May, the VBLHEP JINR Conference Hall hosted the ARIADNA Collaboration Workshop, which focused on the scientific programmes of the organizations supported by the Ministry of Science and Higher Education of the Russian Federation to carry out applied research at the NICA Complex.



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#### Baikal Collaboration Meeting at DLNP at JINR

On 4–7 June, JINR is hosting a working meeting of the Baikal Collaboration. The participants are discussing the results of the last expedition on the construction of the Baikal-GVD Telescope, the data analysis status, modeling software development issues, and plans for the creation of the Baikal Neutrino Observatory.

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### Education

#### Internship for South African students takes place at JINR

From 3 to 21 June, the Institute is hosting the UC JINR International Internship with the participation of 19 students from South African universities. For three weeks, the participants will work on scientific projects under the leadership of JINR employees, visit laboratories, and learn about the main research areas of the Joint Institute.

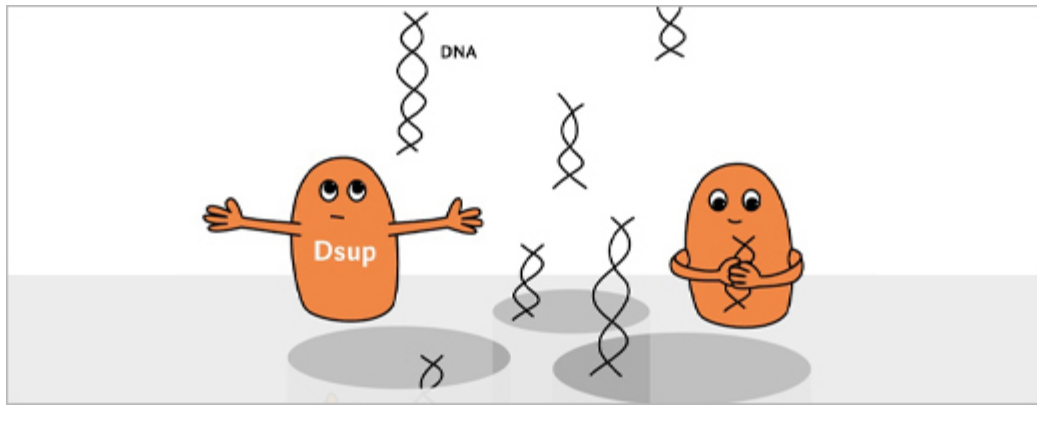


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### Research

#### JINR scientists developed unique method of DNA extraction

DLNP JINR scientists invented a new hybrid material that can greatly simplify the process of extracellular DNA isolation from solutions. To achieve this, they combined an innovative track membrane and a unique Dsup protein, which protects tardigrades from the effects of radiation and reactive oxygen species.



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#### Computer program for calculating cosmic particle spectra

On 21 May, JINR received a certificate of state registration of software titled "GCRs Spectra: program for calculating the spectra of primary particles of galactic cosmic radiation at various levels of solar activity". The author is LRB JINR Researcher Ivan Gordeev.

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#### Compact low-background helium-3-based neutron counter

The Joint Institute for Nuclear Research received a patent for the utility model. The invention enables the measurement of nuclear radiation, namely neutron detection using a helium-3 based proportional counter. The authors are employees at the Laboratory of Nuclear Problems at JINR.

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### Awards

#### JINR research team wins RAS Veksler Prize

On 27 May, at the General Meeting of the RAS Division of Physics, JINR Director Grigory Trubnikov, Deputy Head of the VBLHEP JINR Department Anatoly Sidorin, and VBLHEP JINR Acting Director Andrey Butenko received the Academician Veksler Prize for the series of papers titled "Multifunctional complex of heavy ion accelerators".



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#### JINR scientist receives prize of international journal

FLNP JINR Leading Researcher Mikhail Kiselev was awarded the Pharmaceutics 2022 Best Paper Award for the article "Methods of liposomes preparation: formation and control factors of versatile nanocarriers for biomedical and nanomedicine application", co-authored with Senior Researcher at the University of Messina Domenico Lombardo.

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### Publications

#### JINR Annual Report 2023

The report on JINR activities in 2023 was published. Last year, joint research was carried out with scientific centres around the world on 43 topics. 49 international scientific conferences and schools were held. More details about activities and results of work of JINR in 2023 are available in the Annual Report.



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### Announcements

#### Conference on hadron physics to take place in Gatchina with JINR participation

The HSFI-2024 conference, co-organized with JINR, will be held on 8–12 July at the Konstantinov St. Petersburg Nuclear Physics Institute (PNPI). The event aims to review and discuss progress in theoretical and experimental hadron physics, quantum chromodynamics (QCD), the Standard Model and its extensions. Registration is available until 15 June 2024.

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#### Lipnya-2024: registration opens

The AYSS JINR summer scientific school invites young scientists and specialists from Dubna. The activities include lectures and masterclasses, a round table with the JINR Directorate and the city administration, sports events, and much more. You can register [via the link](#), until 6:00 PM, 17 June.

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### Media

#### June wallpapers for your smartphones

The new issue features flerovium, an element with atomic number 114, which was synthesized in 1998 at the Joint Institute for Nuclear Research, as well as the JINR Yacht Club, where visitors can engage in water sports such as sailing.



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#### Seminar recording

We would like to offer you a recording of the seminar "Micromegas-based central tracker for the SPD Experiment" by Dmitry Dedovich.

[WATCH →](#)

#### Video about past week JINR and Dubna events

We offer you to watch a video review of highlights from the life of the Institute and Dubna.

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#### JINR Weekly Newspaper issued

A new issue of the JINR Weekly Newspaper #21 has been published. Please note that you can read an English version on the JINR Newspaper's website.

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### Upcoming Events

#### Conferences

- **3 – 21 June**, [Stage 1 of International Students Practice in JINR Fields of Research for students from RSA, JINR, Dubna](#)
- **4 – 7 June**, [Baikal Collaboration Meeting, JINR, Dubna](#)
- **7 June, 11:00 AM**, [Workshop "Programme of experiments on FLNR accelerators in second half of 2024". FLNR](#)
- **9 – 16 June**, [13th Conference of Young Scientists and Specialists \("Alushta-2024"\), Alushta, Crimea](#)

#### Seminars

- **6 June, 10:00 AM**, [VBLHEP "Colliders" lecture series, "Luminosity models in colliders" by Valery Lebedev](#)
- **6 June, 11:00 AM**, [BLTP "Fundamental symmetries at NICA \(EDM, axions, spatial parity non-conservation\)" by Nikolai Nikolae](#)
- **6 June, 11:00 AM**, [FLNP "Study of thermomechanical processes in fuel elements of the NEPTUNE Pulsed Reactor. Preparatory and main stage" by Dmitry Khmelitskiy, Sergey Andreev](#)
- **6 June, 11:30 AM**, [VBLHEP Dissertation Council, "Vector meson photoproduction in ultraperipheral collisions at the Large Hadron Collider" by Evgeny Kryshen](#)
- **6 June, 3:00 PM**, [BLTP Seminar in memory of Nikolay M. Plakida](#)
- **7 June, 11:30 AM**, [VBLHEP "Finding and understanding dark matter" by Gennady Kozlov](#)
- **10 June, 11:00 AM**, [BLTP Journal Club, "Beautiful and charming: Lattice QCD discovers a new tetraquark" by Chaita Ranjan Das](#)
- **10 June, 4:00 PM**, [JINR Scientists' Club, "Design and construction of the POLIS Polarised Ion Source for the PolFusion Experiment" by Alexander Soloviyov](#)

#### Culture

- **22 May – 16 June**, [daily from 1:00 to 7:00 PM \(except Monday\), JINR Mir Cultural Centre. Exhibition of watercolour illustrations](#)
- **6 June, 6:00 PM**, [JINR Universal Public Library, JINR Cinema Club](#)
- **6 June, 7:00 PM**, [JINR Universal Public Library, Summer Reading List book club](#)
- **7 June, 6:00 PM**, [JINR Universal Public Library, English speaking club](#)
- **7 June, 6:00 PM**, [JINR Universal Public Library, Presentation of Solar Neutrino book](#)
- **8 June, 2:00 PM**, [JINR Mir Cultural Centre, Recital of Format dance studio](#)

#### For Kids

- **7 June, 4:00 PM**, [JINR Universal Public Library, Popular science game for children](#)

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