

**PROPOSALS FOR THEMES AND PROJECTS
IN THE JINR TOPICAL PLAN OF RESEARCH FOR 2024**

The total number of themes in the Topical Plan for 2023 is 42,
including 36 themes and 48 projects concluding in the year 2023.

Large JINR Research Infrastructure

No. pp	Laboratory	Themes and projects for 2023 Theme and project leader	Names of large research infrastructures for 2024 Leader	Proposals of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
1.	VBLHEP	02-0-1065-2007/2023 NICA Complex: Design and Construction of the Complex of Accelerators, Collider and Physics Experimental Facilities at Extracted and Colliding Ion Beams Aimed at Studying Dense Baryonic Matter and the Spin Structure of Nucleons and Light Ions, and at Carrying out Applied and Innovation Projects <i>Kekelidze V. D. Sorin A. S. Trubnikov G. V.</i>	02-1-1065-2007/2026 NICA Complex: Design and Construction of the Complex of Accelerators, Collider and Physics Experimental Facilities at Extracted and Colliding Ion Beams Aimed at Studying Dense Baryonic Matter and the Spin Structure of Nucleons and Light Ions, and at Carrying out Applied and Innovation Projects <i>Kekelidze V. D. Sorin A. S. Trubnikov G. V.</i>	To restructure the theme into a large research infrastructure with implementation period until the end of 2026 <i>(Directorate of the Laboratory).</i>	To restructure the theme into a large research infrastructure with implementation period until the end of 2026.
		Project NUCLOTRON–NICA (2011–2023)* <i>Butenko A. V. Khodzhibagiyev G. G.</i>	Project 02-1-1065-1-2011/2024 NUCLOTRON–NICA <i>Butenko A. V. Khodzhibagiyev G. G.</i>	To continue the project until the end of 2024 <i>(Directorate of the Laboratory).</i>	To continue the project until the end of 2024.
		Project BM@N (2012–2026) <i>Kapishin M. N.</i>	Project 02-1-1065-2-2012/2026 BM@N <i>Kapishin M. N.</i>		To continue the project until the end of 2026.
		Project MPD (2011–2025) <i>Golovatyuk V. M. Kekelidze V. D.</i>	Project 02-1-1065-3-2011/2025 MPD <i>Golovatyuk V. M. Kekelidze V. D.</i>		To continue the project until the end of 2025.
		Project SPD (2020–2023) <i>Guskov A. V.</i>	Project 02-1-1065-4-2020/2024 SPD <i>Guskov A. V.</i>	To continue the project until the end of 2024 <i>(Directorate of the Laboratory).</i>	To continue the project until the end of 2024.
2.	DLNP	03-2-1100-2010/2023 Project BAIKAL (2013–2023) <i>Belolaptikov I. A.</i>	03-2-1148-2010/2028 BAIKAL-GVD <i>Belolaptikov I. A.</i>	To restructure the project into a large research infrastructure with implementation period until the end of 2028 <i>(STC of the Laboratory and 57th meeting of the PAC for NP).</i>	To restructure the project into a large research infrastructure with implementation period until the end of 2028.
3.	MLIT	06-6-1118-2014/2023 Information and Computing Infrastructure of JINR <i>Korenkov V. V.</i>	06-6-1118-2014/2030 Multifunctional Information and Computing Complex (MICC) <i>Korenkov V. V. Shmatov S. V.</i>	To restructure the theme into a large research infrastructure with implementation period until the end of 2030 <i>(STC of the Laboratory and 58th meeting of the PAC for PP).</i>	To restructure the theme into a large research infrastructure with implementation period until the end of 2030.
		Project MICC (2017–2023) <i>Korenkov V. V.</i>			To carry out work within the large research infrastructure.

*Project term in TP for 2023

№№ pp	Laboratory	Themes and projects for 2023 Theme and project leader	Names of large research infrastructures for 2024 Leader	Proposals of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
4.	FLNR	03-0-1129-2017/2023 Development of the FLNR Accelerator Complex and Experimental Setups (DRIBs-III) <i>Dmitriev S. N.</i> <i>Kalagin I. V.</i> <i>Sidorchuk S. I.</i>	03-5-1129-2017/2028 Development of the FLNR Accelerator Complex and Experimental Setups (DRIBs-III) <i>Kalagin I. V.</i> <i>Sidorchuk S. I.</i>	To restructure the theme into a large research infrastructure with implementation period until the end of 2028 (STC of the Laboratory). To restructure the theme into a large research infrastructure for the period until the end of 2030 (57th meeting of the PAC for NP).	To restructure the theme into a large research infrastructure with implementation period until the end of 2028.
			Project 03-5-1129-1-2024/2028 Construction of the U-400R accelerator complex <i>Kalagin I. V.</i> <i>Popeko A. G.</i>	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for NP).	To open a new project for the period 2024–2028.
			Project 03-5-1129-2-2024/2028 Development of the experimental setups to study the chemical and physical properties of superheavy elements <i>Eremin A. V.</i>	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for NP).	To open a new project for the period 2024–2028.
5.	FLNP		04-4-1149-2024/2028 Pulsed Neutron Source and Complex Spectrometer <i>Lychagin E. V.</i>	To open a large research infrastructure for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for CMP).	To open a large research infrastructure for the period 2024–2028.
		04-4-1105-2011/2023 Development of the IBR-2 Nuclear Facility with a Complex of Cryogenic Neutron Moderators <i>Vinogradov A. V.</i> <i>Dolgikh A. V.</i>	Project 04-4-1149-1-2011/2025 Development of the IBR-2 nuclear facility with a complex of cryogenic moderators <i>Vinogradov A. V.</i> <i>Dolgikh A. V.</i>	To restructure the theme 04-4-1105-2011/2023 into the project with implementation period until the end of 2025 (STC of the Laboratory). To open a project for the period 2024-2028 (57th meeting of the PAC for CMP).	To restructure the theme into the project with implementation period until the end of 2028.
		Project Development of a complex of cryogenic moderators at the IBR-2 facility (2014–2023) <i>Belyakov A. A.</i> <i>Bulavin M. V.</i>	Subproject 04-4-1149-1-1-2014/2025 Construction of a complex of cryogenic moderators at the IBR-2 facility <i>Belyakov A. A.</i> <i>Bulavin M. V.</i>	To restructure the project into the subproject with implementation period until the end of 2025 (project moved from the theme 04-4-1105-2014/2023) (STC of the Laboratory).	To restructure the project into the subproject with implementation period until the end of 2025.
		04-4-1142-2021/2025 Investigations of Functional Materials and Nanosystems Using Neutron Scattering <i>Kozlenko D. P.</i> <i>Aksenov V. L.</i> <i>Balagurov A. M.</i>	Project 04-4-1149-2-2021/2028 Investigations of functional materials and nanosystems using neutron scattering <i>Kozlenko D. P.</i> <i>Aksenov V. L.</i> <i>Balagurov A. M.</i>	To restructure the theme 04-4-1142-2021/2023 into the project with implementation period until the end of 2028 (STC of the Laboratory and 57th meeting of the PAC for CMP).	To restructure the theme into the project with implementation period until the end of 2028.
			Subproject 04-4-1149-2-1-2024/2028 Study of structure and dynamics of functional materials and nanosystems at the IBR-2 spectrometer complex <i>Kozlenko D. P.</i>	To open a new subproject for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for CMP).	To open a new subproject for the period 2024–2028.

<p>Project Development of an inelastic neutron scattering spectrometer in inverse geometry BJN (Bajorek–Janik–Natkaniec) at the IBR-2 reactor (2021–2023) <i>Chudoba D. M.</i></p>	<p>Subproject 04-4-1149-2-2-2021/2028 Development of an inelastic neutron scattering spectrometer in inverse geometry BJN (Bajorek–Janik–Natkaniec) at the IBR-2 reactor <i>Chudoba D. M.</i></p>	<p>To restructure the project into the subproject with implementation period until the end of 2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>) (project moved from the theme 04-4-1142-2021/2023).</p>	<p>To restructure the project into the subproject with implementation period until the end of 2028.</p>
<p>04-4-1143-2021/2023 Scientific and Methodological Research and Developments for Condensed Matter Investigations with IBR-2 Neutron Beams <i>Bodnarchuk V. I.</i> <i>Prihodko V. I.</i></p>	<p>Project 04-4-1149-3-2021/2028 Scientific and methodological research and developments for condensed matter investigations with IBR-2 neutron beams <i>Bodnarchuk V. I.</i> <i>Prihodko V. I.</i></p>	<p>To restructure the theme 04-4-1143-2021/2023 into the project with implementation period until the end of 2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>).</p>	<p>To restructure the theme into the project with implementation period until the end of 2028.</p>
<p>Project Construction of a wide-aperture backscattering detector (BSD) for the HRFD diffractometer (2021–2023) <i>Milkov V. M.</i></p>	<p>Subproject 04-4-1149-3-1-2021/2028 Construction of a wide-aperture backscattering detector (BSD-A) for the HRFD diffractometer <i>Milkov V. M.</i></p>	<p>To restructure the project into the subproject with implementation period until the end of 2028 (<i>STC of the Laboratory</i>) (project moved from the theme 04-4-1143-2021/2023).</p>	<p>To restructure the project into the subproject with implementation period until the end of 2028.</p>
	<p>Subproject 04-4-1149-3-2-2024/2028 Vector magnet for the work with polarized neutrons <i>Chemikov A. N.</i></p>	<p>To open a new subproject for the period 2024–2028 (<i>STC of the Laboratory</i>).</p>	<p>To open a new subproject for the period 2024–2028.</p>
	<p>Subproject 04-4-1149-3-3-2024/2028 Design and development of infrastructure elements for spectrometers at the IBR-2 reactor <i>Bodnarchuk V. I.</i></p>	<p>To open a new subproject for the period 2024–2028 (<i>STC of the Laboratory</i>).</p>	<p>To open a new subproject for the period 2024–2028.</p>
<p>04-4-1140-2021/2023 Development of the Conceptual Design of a New Advanced Neutron Source – Fast Pulse NEPTUN Reactor at JINR <i>Shvetsov V. N.</i> <i>Bulavin M. V.</i></p>	<p>Project 04-4-1149-4-2021/2028 Development of the conceptual design of a new advanced neutron source – Fast Pulse NEPTUN reactor at JINR <i>Lychagin E. V.</i> <i>Shvetsov V. N.</i> <i>Bulavin M. V.</i></p>	<p>To restructure the theme 04-4-1140-2021/2023 into the project with implementation period until the end of 2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>). To specify the project name: "A new advanced neutron source at JINR"</p>	<p>To restructure the theme into the project with implementation period until the end of 2028.</p>
	<p>Subproject 04-4-1149-4-1-2024/2028 Research and development for the justification of the draft design of the new advanced neutron source at JINR– NEPTUNE pulsed fast reactor <i>Lychagin E. V.</i> <i>Shvetsov V. N.</i> <i>Bulavin M. V.</i></p>	<p>To open a new subproject for the period 2024–2028 (<i>STC of the Laboratory</i>).</p>	<p>To open a new subproject for the period 2024–2028.</p>

Theoretical Physics (01)

№№ pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
6.	BLTP	01-3-1135-2019 Fundamental Interactions of Fields and Particles <i>Kazakov D. I.</i> <i>Teryaev O. V.</i>	To restructure the theme (<i>STC of the Laboratory</i>). To support the continuation of scientific research within the new topic structure of themes and projects (<i>58th meeting of the PAC for PP</i>).	To restructure the theme.
		<u>New project</u> 01-3-1135-1-2024/2028 Quantum field theory and physics beyond the Standard Model	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Kazakov D. I.</i> <i>Bednyakov A. V.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 01-3-1135-2-2024/2028 QCD factorization and hadron structure	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Anikin I. V.</i> <i>Mikhailov S. V.</i> <i>Teryaev O. V.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 01-3-1135-3-2024/2028 Phenomenology of strong interactions and precision physics	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Korobov V. I.</i> <i>Ivanov M. A.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 01-3-1135-4-2024/2028 Theory of hadronic matter under extreme conditions	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Braguta V. V.</i> <i>Kolomeytsev E. E.</i> <i>Nedelko S. N.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 01-3-1135-5-2024/2028 Theory of electroweak interactions and neutrino physics	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Arbuzov A. B.</i> <i>Naumov V. A.</i>	To open a new project for the period 2024–2028.
7.	BLTP	01-3-1136-2019 Theory of Nuclear Systems <i>Antonenko N. V.</i> <i>Dzhioev A. A.</i> <i>Ershov S. N.</i>	To restructure the theme (<i>STC of the Laboratory</i>). To open four new projects until the end of 2028 (<i>57th meeting of the PAC for NP</i>).	To restructure the theme.
		<u>New project</u> 01-3-1136-1-2024/2028 Microscopic models for exotic nuclei and nuclear astrophysics	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Voronov V. V.</i> <i>Dzhioev A. A.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 01-3-1136-2-2024/2028 Low-energy nuclear dynamics and properties of nuclear systems	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Ershov S. N.</i> <i>Antonenko N. V.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 01-3-1136-3-2024/2028 Quantum few-body systems	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Motovilov A. K.</i> <i>Melezhik V. S.</i>	To open a new project for the period 2024–2028.

		New project 01-3-1136-4-2024/2028 Relativistic nuclear dynamics and nonlinear quantum processes	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Bondarenko S. G.</i> <i>Larionov A. B.</i>	To open a new project for the period 2024–2028.
8.	BLTP	01-3-1137-2019 Theory of Complex Systems and Advanced Materials <i>Osipov V. A.</i> <i>Povolotsky A. M.</i>	To restructure the theme. (<i>STC of the Laboratory</i>).	To restructure the theme.
		New project 01-3-1137-1-2024/2028 Complex materials	To open a new project for the period 2024–2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>). Project leader: <i>Anitsash E. M.</i>	To open a new project for the period 2024–2028.
		New project 01-3-1137-2-2024/2028 Mathematical models of statistical physics of complex systems	To open a new project for the period 2024–2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>). Project leader: <i>Povolotsky A. M.</i>	To open a new project for the period 2024–2028.
		New project 01-3-1137-3-2024/2028 Nanostructures and nanomaterials	To open a new project for the period 2024–2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>). Project leaders: <i>Osipov V. A.</i> <i>Kochetov E. A.</i>	To open a new project for the period 2024–2028.
		New project 01-3-1137-4-2024/2028 Quantum field theory methods in complex systems	To open a new project for the period 2024–2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>). Project leader: <i>Hnatic M.</i>	To open a new project for the period 2024–2028.
9.	BLTP	01-3-1138-2019 Modern Mathematical Physics: Integrability, Gravity and Supersymmetry <i>Isaev A. P.</i> <i>Krivosos S. O.</i>	To restructure the theme (<i>STC of the Laboratory</i>). To support the continuation of scientific research within the new topic structure of themes and projects (<i>58th meeting of the PAC for PP</i>).	To restructure the theme.
		New project 01-3-1138-1-2024/2028 Integrable systems and symmetries	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Isaev A. P.</i> <i>Krivosos S. O.</i> <i>Tyurin N. A.</i>	To open a new project for the period 2024–2028.
		New project 01-3-1138-2-2024/2028 Supersymmetry, higher spins, gravity	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leader: <i>Ivanov E. A.</i>	To open a new project for the period 2024–2028.
		New project 01-3-1138-3-2024/2028 Quantum gravity, cosmology and strings	To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: <i>Pirozhenko I. G.</i> <i>Fursaev D. V.</i>	To open a new project for the period 2024–2028.

Physics of Elementary Particles and High-Energy Heavy Ion Physics (02)

Participation in international experiments

№№ pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
10.	VBLHEP	02-1-1066-2007 Investigation of the Properties of Nuclear Matter and Particle Structure at the Collider of Relativistic Nuclei and Polarized Protons <i>Lednicki R.</i> <i>Panebrattsev Yu. A.</i>	To restructure the theme <i>(Directorate of the Laboratory).</i>	To restructure the theme.
		02-1-1066-1-2010/2024 STAR (2010–2023) <i>Panebrattsev Yu. A.</i> <i>Lednicki R.</i>	To continue the project until the end of 2024 <i>(Directorate of the Laboratory).</i>	To continue the project until the end of 2024.
11.	DLNP VBLHEP	02-2-1081-2009 ATLAS. Upgrade of the ATLAS Detector and Physics Research at the LHC <i>Bednyakov V. A.</i>	To restructure the theme <i>(Directorate of the Laboratory).</i>	To restructure the theme.
		02-2-1081-1-2010/2025 ATLAS. Physical research at the LHC (2010–2023) <i>Bednyakov V. A.</i>	To continue the project until the end of 2025 <i>(Directorate of the Laboratory).</i>	To continue the project until the end of 2025.
		02-1-1081-2-2013/2025 Upgrade of the ATLAS detector (2013–2023) <i>Cheplakov A. P.</i>	To continue the project until the end of 2025 <i>(Directorate of the Laboratory).</i>	To continue the project until the end of 2025.
12.	VBLHEP	02-1-1083-2009 CMS. Compact Muon Solenoid at the LHC <i>Karzhavin V. Yu.</i>	To restructure the theme <i>(Directorate of the Laboratory).</i>	To restructure the theme.
		02-1-1083-1-2010/2025 CMS (2010–2023) <i>Karzhavin V. Yu.</i> <i>Golutvin I. A.</i>	To continue the project until the end of 2025 <i>(Directorate of the Laboratory).</i>	To continue the project until the end of 2025.
		02-1-1083-2-2010/2026 Upgrade of the CMS detector (2022–2023) <i>Karzhavin V. Yu.</i> <i>Golutvin I. A.</i>	To continue the project until the end of 2026 <i>(Directorate of the Laboratory).</i>	To continue the project until the end of 2026.
13.	DLNP	02-2-1085-2009 Studies of the Nucleon and Hadron Structure at CERN <i>Guskov A. V.</i>	To restructure the theme. <i>To specify the theme name:</i> "Experimental Verification of the Fundamentals of QCD" <i>(Directorate of the Laboratory)</i>	To restructure the theme.
		COMPASS-II (2011–2023) <i>Guskov A. V.</i>	To close the project <i>(Directorate of the Laboratory)</i>	To close the project.
		02-2-1085-1-2007/2028 BESIII (2007–2023) <i>Denisenko I. I.</i>	To continue the project until the end of 2028 <i>(STC of the Laboratory and 58th meeting of the PAC for PP).</i> (project moved from the theme 02-2-1123-2015/2023)	To continue the project until the end of 2028.
		New project 02-2-1085-2-2024/2026 Study of the fundamental properties of hadrons in the AMBER experiment (NA66)	To open a new project for the period 2024–2026 <i>(STC of the Laboratory and 58th meeting of the PAC for PP).</i> Project leader: <i>Guskov A. V.</i>	To open a new project for the period 2024–2026.
14.	VBLHEP	02-1-1087-2009 Research on Relativistic Heavy and Light Ion Physics. Experiments at the Accelerator Complex Nuclotron–NICA at JINR and CERN SPS <i>Malakhov A. I.</i>	To restructure the theme <i>(Directorate of the Laboratory).</i> Theme leaders: <i>Malakhov A. I.</i> <i>Afanasiev S. V.</i>	To restructure the theme.

		02-1-1087-1-2022/2024 NA61/SHINE (2022–2023) Malakhov A. I.	To continue the project until the end of 2024 (STC of the Laboratory and 55th meeting of the PAC for PP).	To continue the project until the end of 2024.
		02-1-1087-2-2017/2028 SCAN-3 (2017–2023) Afanasiev S. V.	To continue the project until the end of 2028 (STC of the Laboratory). To move to activity. The project to be introduced at January meeting of the PAC in 2024 (58th meeting of the PAC for PP).	To move to activity.
		02-1-1087-3-2022/2028 BECQUEREL2022 (2022–2023) Zarubin P. I.	To continue the project until the end 2028. To specify the project name: "BECQUEREL2023" (STC of the Laboratory). To move to activity (57th meeting of the PAC for NP).	To move to activity.
15.	VBLHEP	02-1-1088-2009 ALICE. Study of Interactions of Heavy Ion and Proton Beams at the LHC Vodopyanov A. S.	To restructure the theme (Directorate of the Laboratory).	To restructure the theme.
		02-1-1088-1-2010/2025 ALICE (2010–2023) Vodopyanov A. S.	To continue the project until the end of 2025 (Directorate of the Laboratory).	To continue the project until the end of 2025.
16.	VBLHEP	02-1-1096-2010 Study of Rare Charged Kaon Decays and Search for Dark Sector in Experiments at the CERN SPS Kekelidze V. D.	To restructure the theme (Directorate of the Laboratory).	To restructure the theme.
		02-1-1096-1-2010/2024 NA62 (2010–2023) Kekelidze V. D.	To continue the project until the end of 2024 (Directorate of the Laboratory and 55th meeting of the PAC for PP).	To continue the project until the end of 2024.
		02-1-1096-2-2017/2026 NA64 (2017–2023) Matveev V. A. Peshkikhonov D. V.	To continue the project until the end of 2026 (STC of the Laboratory and 58th meeting of the PAC for PP).	To continue the project until the end of 2026.
17.	VBLHEP	02-1-1106-2011 Investigations of Compressed Baryonic Matter at the GSI Accelerator Complex Ladygin V. P. Ivanov V. V.	To close the theme (Directorate of the Laboratory).	To close the theme.
		CBM (2011–2023) Ladygin V.P. Ivanov V.V.	To close the project. To move to theme activity 2-1-1097-2010 (Directorate of the Laboratory).	To move to theme activity.
		HADES (2010–2023) Ladygin V. P. Fateev O. V.	To close the project. To move to theme activity 2-1-1097-2010 (Directorate of the Laboratory).	To move to theme activity.
18.	DLNP	02-0-1108-2011/2023 PANDA Experiment at the FAIR Accelerator Complex Alekseev G. D.	To close the theme (STC of the Laboratory.)	To close the theme.
		PANDA experiment at the FAIR accelerator complex (2022–2023) Alekseev G. D.	To close the project To move to theme activity 02-2-1085-2009 (STC of the Laboratory).	To move to theme activity.

Experiments at the NICA accelerator complex

No pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
19.	VBLHEP	02-1-1097-2010 Study of Polarization Phenomena and Spin Effects at the JINR Nuclotron-M Facility Strokovsky E. A.	To restructure the theme (Directorate of the Laboratory). Theme leaders: Strokovsky E. A. Ladygin V. P.	To restructure the theme.
		02-1-1097-1-2010/2024 ALPOM-2 (2010–2023) Piskunov N. M.	To continue the project until the end of 2024 (Directorate of the Laboratory and 55th meeting of the PAC for PP).	To continue the project until the end of 2024.
		02-1-1097-2-2010/2024 DSS (2010–2023) Ladygin V. P. Janek M. Sekiguchi K.	To continue the project until the end of 2024 (Directorate of the Laboratory and 55th meeting of the PAC for PP).	To continue the project until the end of 2024.
20.	VBLHEP	02-1-1086-2009 Strangeness in Hadronic Matter and Investigation of Inelastic Reactions near Kinematic Boundaries Strokovsky E. A. Kokoulina E. S. Krivenkov D. O.	To restructure the theme (Directorate of the Laboratory). To transfer works on the NIS-GIBS experiment to the activity section	To transfer works on the NIS-GIBS experiment to the activity section. Project is to be submitted to the January 2024 PAC session.

Neutrino physics and astrophysics

No pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
21.	DLNP	02-2-1099-2010 Study of Neutrino Oscillations Naumov D. V. Olshesky A. G.	To restructure the theme. To specify the theme name: "Study of Neutrino Oscillations and Astrophysical Research".	To restructure the theme.
		02-2-1099-1-2009/2026 JUNO (2009–2023) Naumov D. V.	To continue the project until the end of 2026 (STC of the Laboratory and 58th meeting of the PAC for PP).	To continue the project until the end of 2026.
		02-2-1099-2-2015/2026 NOvA/DUNE (2015–2023) Olshesky A. G.	To continue the project until the end of 2026 (STC of the Laboratory and 58th meeting of the PAC for PP).	To continue the project until the end of 2026.
		02-2-1099-3-2015/2026 TAIGA (2015–2023) Borodin A. N.	To continue the project until to the end 2028 (STC of the Laboratory). Project moved from the theme 02-2-1125-2015/2023. To continue the project until to the end 2026 within the theme 02-3-1099-2010 (58th meeting of the PAC for PP).	To continue the project until the end of 2026.
22.	DLNP	02-2-1125-2015/2023 Astrophysical Research in the Experiment TAIGA Borodin A. N.	To close the theme (STC of the Laboratory)	To close the theme.
		TAIGA (2015–2023) Borodin A. N.	To continue the project within the theme 02-3-1099-2010.	To continue the project.
23.	DLNP	02-2-1144-2021 Search for New Physics in the Lepton Sector Glagolev V. V. Tsamalayidze Z.	To restructure the theme. Theme leader: Tsamalayidze Z.	To restructure the theme.
		02-2-1144-1-2021/2024 COMET (2021–2023) Tsamalayidze Z.	To continue the project until the end of 2024 (Directorate of the Laboratory and 57th meeting of the PAC for PP).	To continue the project until the end of 2024.
		T2K-II (2022–2023) Glagolev V. V. Davydov Yu. I.	To close the project (STC of the Laboratory).	To close the project.

Nuclear Physics (03)

№№ pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
24.	FLNP	03-4-1128-2017/2023 Investigations of Neutron Nuclear Interactions and Properties of the Neutron <i>Lychagin E. V.</i>	To close the theme (STC of the Laboratory and 57th meeting of the PAC for NP).	To close the theme.
		ENGRIN (2022–2023) <i>Zeynalov Sh. S.</i>	To close the project (STC of the Laboratory and 57th meeting of the PAC for NP).	To close the project.
		<u>New theme</u> 03-4-1146-2024 Nuclear Physics with Neutrons <i>Kopach Yu. N.</i>	To open a new theme. Theme leaders: <i>Kopach Yu. N.</i> <i>Sedyshev P. V.</i> <i>Shvetsov V. N.</i> (STC of the Laboratory).	To open a new theme.
		03-4-1146-1-2014/2028 Development of the tagged neutron method for determining the elemental structure of matter and nuclear reactions research (project TANGRA – tagged neutrons and gamma rays) (2014–2023) <i>Kopach Yu. N.</i>	To continue the project until the end of 2028 within the new theme 03-4-1146-2024 (STC of the Laboratory and 57th meeting of the PAC for NP).	To continue the project until the end of 2028.
		03-4-1146-2-2022/2026 Modernization of the EG-5 accelerator (2022–2023) <i>Doroshkevich A. S.</i>	To continue the project until the end of 2026 within the new theme 03-4-1146-2024. To specify the project name: "Modernization of the accelerator EG-5 and its experimental infrastructure" (STC of the Laboratory and 57th meeting of the PAC for NP).	To continue the project until the end of 2026.
		<u>New project</u> 03-4-1146-3-2022/2028 Investigation of the neutron nuclear interactions and neutron properties	To open a new project for the period 2024–2028. (STC of the Laboratory and 57th meeting of the PAC for NP). Project leaders: <i>Shvetsov V. N.</i> <i>Sedyshev P. V.</i>	To open a new project for the period 2024–2028.
25.	FLNR	03-5-1130-2017 Synthesis and Properties of Superheavy Elements, the Structure of Nuclei at the Limits of Nucleon Stability <i>Itkis M. G.</i> <i>Sidorchuk S. I.</i>	To restructure the theme. Theme leader: <i>Sidorchuk S. I.</i>	To restructure the theme.
		<u>New project</u> 03-5-1130-1-2024/2028 Investigation of heavy and superheavy elements	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for NP). Project leaders: <i>Itkis M. G.</i> <i>Karpov A. V.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 03-5-1130-2-2024/2028 Light exotic nuclei at the borders of nuclear stability	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for NP). Project leaders: <i>Kaminski G.</i> <i>Sidorchuk S. I.</i>	To open a new project for the period 2024–2028.
26.	DLNP	03-2-1100-2010 Non-Accelerator Neutrino Physics and Astrophysics <i>Yakushev E. A.</i>	To restructure the theme.	To restructure the theme.

New project 03-2-1100-1-2024/2028 Radiochemistry and spectroscopy for astrophysics and nuclear medicine	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for NP). Project leader: Filosofov D. V.	To open a new project for the period 2024–2028.
New project 03-2-1100-2-2024/2028 Investigations of reactor neutrinos on a short baseline	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for NP). Project leader: Zhitnikov I. V.	To open a new project for the period 2024–2028.
New project 03-2-1100-3-2024/2028 Nuclear spectrometry for the search and study of rare phenomena	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for NP). Project leader: Zinatulina D. R.	To open a new project for the period 2024–2028.
EDELWEISS/RICOCHET (2010–2023) Yakushev E. A.	To close the project (STC of the Laboratory)	To close the project.
DANSS-2 (2011–2023) Shirchenko M. V.	To close the project (STC of the Laboratory).	To close the project.
vGeN (GEMMA) (2010–2023) Lubashevsky A. V. Yakushev E. A.	To close the project (STC of the Laboratory).	To close the project.
SuperNEMO (2013–2023) Kochetov O. I.	To close the project (STC of the Laboratory).	To close the project.
GERDA (LEGEND) (2010–2023) Gusev K. N.	To close the project (STC of the Laboratory).	To close the project.
MONUMENT (2021–2023) Zinatulina D. R.	To close the project (STC of the Laboratory.)	To close the project.
BAIKAL (2009–2023) Belolaptikov I. A.	To restructure the project into a large research infrastructure 03-2-1148-2010/2028.	To restructure the project into a large research infrastructure 03-2-1148-2010/2028.

Condensed Matter Physics (04)

No pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
27.	FLNP	04-4-1105-2011/2023 Development of the IBR-2 Facility with a Complex of Cryogenic Neutron Moderators Vinogradov A. V. Dolgikh A. V.	To restructure the theme into a project. To carry out work within the framework of the project 04-4-1149-2024/2028.	To restructure the theme into a project.
		Construction of a complex of cryogenic moderators at IBR-2 facility (2014–2023) Belyakov A. A. Bulavin M. V.	To restructure the project into a subproject. To carry out work within the framework of the project 04-4-1149-2024/2028.	To restructure the project into a subproject.
28.	FLNP	04-4-1133-2018 Modern Trends and Developments in Raman Microspectroscopy and Photoluminescence for Condensed Matter Studies Arzumanyan G. M. Kučerka N.	To close the theme (STC of the Laboratory).	To close the theme.
		BIOPHOTONICS (2021–2023) Arzumanyan G. M. Kučerka N.	To close the project (STC of the Laboratory).	To close the project.
		New theme 04-4-1147-2024 Optical Methods in Condensed Matter Research	To open a new theme (STC of the Laboratory). Theme leaders: Arzumanyan G. M. Kučerka N.	To open a new theme.

		New project 04-4-1147-1-2024/2028 Nanobiophotonics	To open a new project for the period 2024–2027 (<i>STC of the Laboratory</i>). Project leaders: <i>Arzumanyan G. M.</i> <i>Mamatkulov K. Z.</i>	To open a new project for the period 2024–2028.
29.	FLNP	04-4-1142-2021/2023 Investigations of Functional Materials and Nanosystems by Neutron Scattering Methods <i>Kozlenko D. P.</i> <i>Aksenov V. L.</i> <i>Balagurov A. M.</i>	To restructure the theme into a project. To carry out work within the framework of the project 04-4-1149-2024/2028.	To restructure the theme into a project.
		Development of an inelastic neutron scattering spectrometer in inverse geometry BJN (Bajorek–Janik–Natkaniec) at the IBR-2 reactor (2021–2023) <i>Chudoba D. M.</i>	To restructure the project into a subproject. To carry out work within the framework of the project 04-4-1149-2024/2028.	To restructure the project into a subproject.
30.	FLNP	04-4-1143-2021/2023 Scientific and Methodological Research and Developments for Condensed Matter Investigations with IBR-2 Neutron Beams <i>Bodnarchuk V. I.</i> <i>Prikhodko V. I.</i>	To restructure the theme into a project. To carry out work within the framework of the project 04-4-1149-2024/2028.	To restructure the theme into a project.
		Construction of a wide-aperture backscattering detector (BSD-A) for the HRFD diffractometer (2021–2023) <i>Milkov V. M.</i>	To restructure the project into a subproject. To carry out work within the framework of the project 04-4-1149-2024/2028.	To restructure the project into a subproject.
31.	FLNP	04-4-1140-2020/2023 Development of the Conceptual Design of a New Advanced Neutron Source at JINR <i>Shvetsov V. V.</i> <i>Bulavin M. V.</i>	To restructure the theme into a project. To carry out work within the framework of the project 04-4-1149-2024/2028.	To restructure the theme into a project.
32.	FLNP	04-4-1141-2020/2023 Construction of the SOLCRYS Structural Research Laboratory at the SOLARIS National Center for Synchrotron Radiation <i>Kučerka N.</i>	To suspend work on the theme for a period of 1 year.	To suspend work on the theme for a period of 1 year.

Radiation Research in Life Sciences (05)

No pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
33.	LRB	05-7-1077-2009 Research of the Biological Effect of Heavy Charged Particles with Different Energies <i>Krasavin E. A.</i> <i>Bugai A. N.</i>	To restructure the theme. <i>To specify the theme name:</i> "Research on the Biological Effects of Ionizing Radiations with Different Physical Characteristics". Theme leaders: <i>Bugai A. N.</i> <i>Krasavin E. A.</i> (<i>STC of the Laboratory</i>).	To restructure the theme.
		Research of the biological effect of heavy charged particles with different energies (2009–2023) <i>Krasavin E. A.</i> <i>Bugai A. N.</i>	To close the project (<i>STC of the Laboratory</i>)	To close the project.
		New project 05-7-1077-1-2024/2028 Molecular, genetic and organism effects of ionizing radiations with different physical characteristics	To open a new project for the period 2024–2028 (<i>STC of the Laboratory and 58th meeting of the PAC for PP</i>). Project leaders: <i>Boreiko A. V.</i> <i>Lobachevsky P. N.</i>	To open a new project for the period 2024–2028.

		New project 05-7-1077-2-2024/2028 Radiation-biophysical and astrobiological research	To open a new project for the period 2024–2028 (STC of the Laboratory and 57th meeting of the PAC for CMP). Project leaders: Chizhov A. V. Rozanov A. Yu.	To open a new project for the period 2024–2028.
34.	LRB	04-9-1112-2013/2023 Research on Cosmic Matter on the Earth and in Nearby Space; Research on the Biological and Geochemical Specifics of the Early Earth Krasavin E. A. Rozanov A. Yu. Shvetsov V. N.	To close the theme (STC of the Laboratory)	To close the theme.
		Research on cosmic matter on the Earth and in nearby space; research on the biological and geochemical specifics of the early Earth (2013–2023) Krasavin E. A.	To close the project (STC of the Laboratory).	To close the project.
35.	DLNP	05-2-1132-2017 Biomedical and Radiation-Genetic Studies Using Different Types of Ionizing Radiation Mitsyn G. V. Yakovenko S. L.	To restructure the theme. To specify the theme name: "Study of Molecular Genetic Mechanisms of Adaptations of Extremophilic Organisms". Theme leader: Kravchenko E. V.	To restructure the theme.
		Further development of methods, technologies, schedule modes and delivery of radiotherapy (2017–2023) Mitsyn G. V.	To close the project (STC of the Laboratory).	To close the project.
		RADIOGENE: Molecular genetics of radiation-induced changes at the gene, genome and transcriptome level in <i>Drosophila melanogaster</i> (2017–2023) Afanasyeva K. P.	To close the project (STC of the Laboratory).	To close the project.
		05-2-1132-1-2021/2028 Study of the radioprotective properties of the damage suppressor (Dsup) protein on a model organism <i>D. melanogaster</i> and human cell culture HEK293 (2021–2023) Kravchenko E. V.	To continue the project until the end of 2028 (STC of the Laboratory and 57th meeting of the PAC for CMP). To specify the project name: "Protection against physical and chemical stresses with tardigrade proteins (TARDISS)".	To continue the project until the end of 2028.

Information Technology (06)

No№ pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
36.	MLIT	06-6-1119-2014 Methods, Algorithms and Software for Modeling Physical Systems, Mathematical Processing and Analysis of Experimental Data Adam G. Zrellov P. V.	To restructure the theme. Theme leaders: Shmatov S. V. Chuluunbaatar O. (STC of the Laboratory).	To restructure the theme.
		New project 06-6-1119-1-2024/2026 Mathematical methods, algorithms and software for modeling physical processes and experimental facilities, processing and analyzing experimental data	To open a new project for the period 2024–2026 (STC of the Laboratory and 58th meeting of the PAC for PP). Project leader: Shmatov S. V.	To open a new project for the period 2024–2026.
		New project 06-6-1119-2-2024/2026 Methods of computational physics for the study of complex systems	To open a new project for the period 2024–2026 (STC of the Laboratory and 57th meeting of the PAC for CMP). Project leaders: Zemlyanaya E. V. Chuluunbaatar O.	To open a new project for the period 2024–2026

Applied Innovation Activity (07)

№№ pp	Labora- tory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
37.	VBLHEP	07-1-1107-2011 Development and Construction of the Prototype of a Complex for Radiotherapy and Applied Research with Heavy-Ion Beams at the Nuclotron-M/NICA <i>Tyutyunnikov S. I.</i>	To restructure the theme. <i>To specify the theme name:</i> "Applied Research at the NICA Complex for Problems of Radiation Materials Science, Life Sciences and New Methods of Energy Generation". Theme leaders: <i>Belov O. V.</i> <i>Syresin E. M.</i>	To restructure the theme.
		07-1-1107-1-2011/2027 E&T&RM (2018–2023) <i>Tyutyunnikov S. I.</i>	To continue the project until the end of 2027 <i>(STC of the Laboratory 57th meeting of the PAC for NP).</i> <i>To specify the project name:</i> "Accelerator driven subcritical reactor (ADSR)". Project leader: <i>Tyutyunnikov S. I.</i>	To continue the project until the end of 2027.
38.	FLNR	05-5-1131-2017 Radiation Physics, Radiochemistry and Nanotechnology Investigations Using Beams of Accelerated Heavy Ions <i>Dmitriev S. N.</i> <i>Apel P. Yu.</i>	To restructure the theme. <i>To specify the theme name:</i> "Radiation Materials Science, Nanotechnological and Biomedical Studies with Heavy Ion Beams" <i>(STC of the Laboratory).</i>	To restructure the theme.
		<u>New project</u> 05-5-1131-1-2024/2028 Radiation tolerance of materials to high intensity heavy ion beams impact	To open a new project for the period 2024–2028 <i>(STC of the Laboratory and 57th meeting of the PAC for CMP).</i> Project leader: <i>Skuratov V. A.</i>	To open a new project for the period 2024–2028.
		<u>New project</u> 05-5-1131-2-2024/2028 Nanocomposite and functional track-etched membranes	To open a new project for the period 2024–2028 <i>(STC of the Laboratory and 57th meeting of the PAC for CMP).</i> Project leader: <i>Apel P. Yu.</i>	To open a new project for the period of 2024–2028.

Physics and Technology of Charged Particle Accelerators (08)

№№ pp	Labora- tory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers of STC and Directorate of Laboratories for 2024 Recommendations of the PACs (January, June 2023)	JINR Directorate's decision
39.	DLNP	08-2-1123-2015/2023 Study of Fundamental Interactions in e^+e^- Collisions <i>Zhemchugov A. S.</i>	To close the theme <i>(STC of the Laboratory).</i>	To close the theme.
		BESIII (2007–2023) <i>Denisenko I. I.</i>	To continue the project until the end of 2028 within the theme 02-0-1085-2009.	To continue the project until the end of 2028.
40.	DLNP	08-2-1126-2015 Development of Scientific DLNP Infrastructure for Research Using Semiconductor Detectors, Laser Metrology, Electrons, Positrons and Cryogenic Technology <i>Glagolev V. V.</i> <i>Shelkov G. A.</i>	To restructure the theme.	To restructure the theme.
		<u>New project</u> 08-02-1126-1-2024/2028 Design and development of the test zone for methodological studies of detectors at the linear electron accelerator in DLNP	To open a new project for the period 2024–2028 <i>(STC of the Laboratory).</i> Project leader: <i>Gostkin M. I.</i>	To open a new project for the period 2024–2028.

		08-2-1126-2-2016/2028 Precision laser metrology for accelerators and detector complexes (2016–2023) <i>Glagolev V. V.</i> <i>Lyablin M. V.</i>	To continue the project until the end of 2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>).	To continue the project until the end of 2028.
		08-2-1126-3-2016/2028 PAS (2016–2023) <i>Sidorin A. A.</i>	To continue the project until the end of 2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>).	To continue the project until the end of 2028.
		08-2-1126-4-2015/2028 Novel semiconductor detectors for fundamental and applied research (2015–2023) <i>Shelkov G. A.</i> <i>Rozhkov V. A.</i>	To continue the project until the end of 2028 (<i>STC of the Laboratory</i>). Project leader: <i>Shelkov G. A.</i>	To continue the project until the end of 2028.
		08-2-1126-5-2011/2028 GDH&SPASCHARM&NN (2011–2023) <i>Usov Yu. A.</i> <i>Kovalik A.</i>	To continue the project until the end of 2028 (<i>STC of the Laboratory and 57th meeting of the PAC for CMP</i>). To specify the project name: "GDH&SPASCHARM&NN". Project leader: <i>Usov Yu. A.</i>	To continue the project until the end of 2028.
41.	DLNP	08-2-1127-2016 Advanced Studies on Systems of New-Generation Accelerators and Colliders for Fundamental and Applied Research <i>Shirkov G. D.</i>	To restructure the theme	To continue the theme and to restructure. Theme leader: <i>Shirkov G. D.</i> <i>Trubnikov G. V.</i> <i>Gikal B. N.</i>
		New project 08-2-1127-1-2024/2024 Creation of test benches for testing individual systems of the MSC230 cyclotron <i>Karamysheva G. A.</i>	To open a new project for a period 2024–2024	To open a new project for the period 2024–2028. Project leader: <i>Karamysheva G. A.</i> <i>Yakovenko S. L.</i>

**Organization of Scientific Activity and International Cooperation.
Strengthening Human Resources. Educational Program (09)**

No pp	Laboratory	Code of the theme and project for 2024 Theme and project name / Leader for 2023	Offers for 2024	JINR Directorate's decision
42.	DSOA	09-8-1037-2001 Analytical and Methodological Work to Assess the Prospect of Scientific Research and Cooperation in the Main Directions of JINR's Development. Organization of International Cooperation <i>Matveev V. A.</i> <i>Nedelko S. N.</i>	To restructure the theme. To specify the theme name: "Analytical and Methodological Developments for the Organization of Scientific Research and International Cooperation in the Main Directions of JINR's Development". Theme leaders: <i>Matveev V. A.</i> <i>Nedelko S. N.</i> <i>Culikov O. A.</i>	To restructure the theme.
43.	UC	09-9-1139-2019 Organization, Support and Development of the JINR Human Resources Programme <i>Trubnikov G. V.</i> <i>Matveev V. A.</i> <i>Verkheev A. Yu.</i>	To restructure the theme. To specify the theme name: "Scientific and Educational Programs for the Training of Highly Qualified Personnel". Theme leaders: <i>Kamanin D. V.</i> <i>Verkheev A. Yu.</i>	To restructure the theme.
		09-9-1139-1-2021/2028 Open information and educational environment for supporting fundamental and applied multidisciplinary research at JINR (2021–2023) <i>Panebrattsev Yu. A.</i>	To continue the project until the end of 2028.	To continue the project until the end of 2028.
44.	BLTP	09-3-1117-2014 Dubna International Advanced School of Theoretical Physics (DIAS-TH) <i>Pirozhenko I. G.</i> Rector of DIAS-TH: <i>Kazakov D. I.</i>	To support the continuation within the new topic structure of themes and projects (<i>58th meeting of the PAC for PP</i>). To restructure the theme.	To restructure the theme.

	<p><u>New project</u> 09-3-1117-1-2014/2028 Dubna international advanced school of theoretical physics (DIAS-TH)</p>	<p>To open a new project for the period 2024–2028 (<i>STC of the Laboratory</i>). Project leaders: Kazakov D. I. Pirozhenko I. G.</p>	<p>To open a new project for the period 2024–2028</p>
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Chief Scientific Secretary

S. N. Nedelko

